Analysis of the Application of Agricultural Big Data in Agricultural Economic Management

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Abstract: With the rapid development of Internet technology, agricultural big data has begun to be applied and widely promoted, which has brought a strong boost to the development of agricultural economy and is also an inevitable requirement for the development of digital agriculture. This paper analyzes how to effectively and scientifically apply agricultural big data in agricultural economic management, and proposes ways to promote the construction of agricultural big data, so as to promote the healthy and stable development of agricultural economy.

1. Introduction

Agricultural economy occupies an important position in my country's economic development. Under the background of the information age, agriculture in some economically developed areas of our country has been modernized, but some backward areas are still operating in traditional ways. As a new technology and new method, agricultural big data can be applied to agricultural economic management, which can reduce the cost of agricultural production, sales, materials, and labor, and the big data platform can also update models for actual planting, such as remote monitoring, intelligent irrigation, etc. , to further reduce the expenditure on agricultural economic management and lay a good foundation for the sustainable development of agriculture. In recent years, big data technology has been widely used in different industries and fields, including promoting the transformation of modern agriculture[1]. Digital agriculture is a collection concept based on data, and it is the comprehensive application of big data in the field of agriculture. Big data has become a new driving force for agricultural development. It is the general trend to apply big data technology to provide solutions to the problems and challenges faced by the development of digital agriculture. Big data concepts and technologies play a key driving role in digital agriculture.

2. The role of agricultural big data in agricultural economic management

2.1 Promote the efficient development of agricultural economy

In agricultural production, the most important influencing factor is the natural environment, such as soil, temperature, humidity, etc., and all the factors involved in the natural environment are difficult to control and are generally uncontrollable. Therefore, the natural environment will always have a

huge impact on agricultural production and operation. After understanding the development of traditional agriculture in my country, it is found that agricultural production mainly relies on existing agricultural experience, and the traditional agricultural production model cannot meet the needs of social development. To promote the transformation and upgrading of agricultural production, modern production management methods and technologies must be used[2].

By analyzing agricultural big data, farmers and enterprises can keep abreast of agricultural production and make accurate forecasts for the future, thereby reducing industry losses and improving economic returns. In crop production, by using modern machinery, it is beneficial to increase crop yield and improve production efficiency. All in all, agricultural big data is very beneficial to the development of agricultural economy and can promote its scientific development.

2.2 Improve the structure of agricultural industry

In the process of traditional agricultural production, most of the workers have low educational level. They always adhere to the idea of small-scale peasant economy. They know almost nothing about the application of modern high-precision technology, and they have never considered using new technologies to promote agricultural production. , the current situation leads to low agricultural production efficiency and hinders agricultural development. In addition, in the production and operation of agricultural enterprises, various factors such as nature and market environment will affect and act on the production process, thereby causing various problems[3]. For example, in traditional agricultural production activities, the crops planted are often relatively single, and the planting methods are relatively traditional. Farmers and enterprises are not sensitive enough to the market and lack long-term planning, which affects production efficiency, reduces market competitiveness, and reduces corporate profits. . By playing the role of agricultural big data, they can keep abreast of the development of the industry and predict the development direction of the industry, so as to adjust and improve the current operation mode and planting mode, which is conducive to enriching the variety of agricultural products and improving agricultural productivity. Promote the optimization of sales methods, so as to optimize the overall structure of the agricultural industry, which is very beneficial to the sustainable development of the agricultural economy.

2.3 Making scientific agricultural decisions

At present, my country is promoting the transformation of agricultural production and management methods. The traditional production model is difficult to meet production needs. Most of the operations are completed through human resources[4]. Manual operations affect work efficiency and increase the error rate, thereby affecting the income of producers. In recent years, due to the continuous acceleration of urbanization in my country, a large number of workers from rural areas have poured into cities, especially young and middle-aged people in rural areas, which has injected more vitality into the research of agricultural production technology to a certain extent. To promote the development of agricultural economy, scientific agricultural decision-making is also essential. By giving full play to the role of agricultural big data, the government can improve various aspects of decision-making, such as increasing the salaries of scientific researchers, increasing the rewards for agricultural scientific and technological achievements, and making the use of science and technology in agricultural development higher. At the same time, through the use of agricultural big data, in addition to understanding the current situation, relevant departments and working subjects can also accurately predict the external environment, analyze and study crop growth data, so as to cultivate better varieties.

2.4 Accurately predict the production of agricultural enterprises

With the development of agricultural economy, the number of agricultural-related enterprises in the society has been increasing. The specific types include four aspects: enterprises that provide production materials and services, enterprises that provide agricultural products, enterprises that process agricultural products, and enterprises that distribute agricultural products. No matter what type of enterprises, their development is conducive to promoting the development of the national agricultural economy. For example, agricultural product distribution enterprises have created a variety of product sales channels, which help producers obtain more economic benefits. In the agricultural production chain, the agricultural product processing industry is a very critical link, which also provides more sufficient labor positions for enterprises, and the development of these enterprises promotes the progress of the entire market. With the continuous growth of these enterprises, both market development and technical processing have been affected to a certain extent, and the market competitiveness has declined[5].

3. Path analysis of promoting the application of agricultural big data

3.1 Accelerate the construction and application of agricultural big data to promote the construction of agricultural big data in both directions.

From the top, integrate data resources, give full play to the demonstration role of national and local agricultural big data, openly share research results and data, and build data centers at the national, provincial, city and county levels; from the bottom, cultivate data talents and standardize data Standardization of data in the process of transmission, storage and sharing, to achieve comprehensive and timely standardized collection, exchange and application of basic data, to realize mutual utilization and mutual analysis of resources, to better reflect the value generated by data, and to "dead" data Use well, use "live". Develop new agricultural business models based on market data; establish agricultural production and technology application standards based on international and domestic data; realize scale, industrialization, mechanization, refinement, and intelligence of agricultural production based on production and operation data; establish agricultural production based on big data. E-commerce platform to promote the marketization of agricultural production.

A multi-pronged approach to comprehensively build agricultural big data. Effectively popularize the agricultural Internet of Things. Based on the further opening of public sector data, the government will demonstrate and coordinate the establishment of a basic platform for agricultural big data; improve the big data trading platform, make data alive, coordinate the interests of all parties with the market as the center, mobilize the enthusiasm of all parties, coordinate the resources of all parties, and establish agricultural The big data cloud platform combining big data, "cloud" computing, Internet of Things and other technologies realizes the digitization, scientific and intelligentization of the whole chain of agricultural production and operation. The innovative agricultural information service platform provides intelligent and simplified service functions through "one-stop" services and informatization towns, and realizes a comprehensive agricultural information platform integrating agricultural production and operation, farmers' lives and rural construction, and makes information services an agricultural the "must" of production and life.

3.2 Innovation capital investment

According to the local conditions, rationally plan the scale, structure, scope and method of agricultural financial expenditure, use the two levers of "adjustment" and "leverage", clarify the responsibilities of the central and local financial agricultural expenditures, give full play to the

synergy of financial funds, and establish a scientific and effective Fiscal agricultural expenditure management mechanism, increase the disclosure of financial agricultural expenditure information, improve the supervision responsibility system and accountability mechanism for financial agricultural expenditure funds, and scientifically manage expenditure based on data analysis; clarify the position of the government and the market to avoid vacancy and offside , so that every agricultural financial investment can produce maximum benefits. Use the national financial data cloud platform to innovate rural finance and guarantee systems, promote and optimize rural inclusive finance, increase investment in agricultural credit, and connect the "main artery" of rural finance. Encourage commercial financial institutions to actively radiate rural areas and build rich financial service "capillaries". Policies promote commercial finance to actively innovate low-carbon, environmental protection and green finance, and use financial funds scientifically.

3.3 Develop smart e-commerce

Coordinate major e-commerce platforms. Coordinate government and social resources, adhere to the combination of public welfare and marketization, establish a coordinated promotion mechanism for the development of agricultural e-commerce at the ministry level, build an effective and reasonable benefit-sharing mechanism, strengthen overall coordination, support, guidance and service guarantees, and strengthen supervision of fair market competition , to coordinate the resources and interests of each platform. Break through the shortcomings of uneven development of agricultural e-commerce, optimize configuration, highlight features, adjust structure, promote integration, build brands, and establish image, so that production and agricultural e-commerce upstream and downstream are linked, and major agricultural e-commerce is linked to each other. Build a large e-commerce smart distribution system for agricultural products. Deeply promote the construction of cold chain logistics facilities for agricultural products, and open up the "city" channel for agricultural products without dead ends; the government leads major agricultural big data engineering projects, based on the application of big data, Internet of Things, blockchain, artificial intelligence, 5G network and other technologies to coordinate The data platform of various e-commerce and logistics enterprises promotes the sharing of resources of various e-commerce and logistics enterprises, strengthens the connection between farmers, agricultural enterprises, cold chain logistics enterprises, marketers and consumers, and establishes the standards for large-scale e-commerce supply chain management, Quality, service, early warning, and risk management and control systems, and promote the construction of a digital and intelligent agricultural e-commerce smart circulation system that includes the entire chain of production, processing, transportation, and sales.

3.4 Enhance the social and economic value of agriculture and rural areas

Guided by e-commerce, the scale, standardization and branding of agriculture will be rapidly realized, and then the smart agricultural countryside will be built. Create a comprehensive service platform for agricultural e-commerce, so that green waters and green mountains, folk customs, labor skills, land construction, characteristic food culture, characteristic agricultural products, etc. can be transformed into social and economic value. Deepen the cooperation between the government, agricultural enterprises, e-commerce platforms and various enterprises, give full play to the role of agricultural e-commerce in promoting the digitization of the supply side of agricultural products, and promote the penetration of the entire industrial chain. Constructing the core of the industry, leading e-commerce, supporting the comprehensive application of information technology, providing comprehensive services for scientific research institutions, financial institutions and enterprises, and driving various agricultural production and operation entities, including the construction of e-commerce brands of agricultural products, and innovative marketing of resources such as folk

customs and tourism. An agro-ecological e-commerce business that provides services for rural construction and farmers' happy life.

4. Conclusion

To sum up, under the current social background, as human society enters the era of big data, people's quality of life is constantly improving, and their consumption power is getting stronger and stronger, which also makes consumers' requirements for agricultural products continue to increase. In the face of this situation, in the development of my country's agricultural economy, the use of agricultural big data is of great significance, because the use of agricultural big data can effectively promote the transformation and upgrading of domestic traditional agriculture and play an important role in the development of the national agricultural economy. With the help of agricultural big data, the planting of crops can break through the limitations of regions and seasons, the efficiency of resource and technology sharing in the agricultural industry can be significantly improved, the agricultural management model will also be innovated, and the agricultural economic structure will be improved. It is conducive to improving the agricultural economic benefits of the whole country, thereby promoting the sustainable development of my country's modern agricultural economy.

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