

Agricultural Science and Technology in the Context of Rural Revitalization + Only “Rice” Cloud Business to Help Upgrade the Rice Industry

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Abstract

Most of the hardworking and simple farmers living in rural areas take the primary processed cash crop products as the main economic source, but due to the narrow marketing channels and insufficient radiation area in rural areas, the annual cash crops produced through primary processing cannot reach the established economic benefits in terms of price and sales volume, and the economic support role of cash crops cannot be fully effective. In view of this situation, relying on the background of rural revitalization and the country's support for the development of agricultural science and technology, the platform named only “rice” cloud business is put into practice from the theory, providing a key platform guarantee for the increase of cash crops' income and efficiency, providing a necessary basis for expanding the sales channels of rice crops, so that good crops can be directly transferred to customers through farmers' hands. It provides practical methods to reduce the maliciously depressed prices of bad suppliers, and effectively guarantees the interests of farmers.

Keywords

Rural Revitalization, Agricultural Science and Technology, Only “Rice” Cloud Business

1. Introduction

In the process of the national promotion of supply-side structural reform, the universal innovation has accelerated the speed of supply-side structural reform.

Under the background of rural revitalization, measures such as effectively improving people's income and creating new crop sales channels have attracted much attention. However, the traditional situation that middlemen purchase grain from farmers during the harvest season and sell the purchased grain at a large markup after hoarding, logistics, publicity and other processes cannot maximize the farmers' income. Through the innovation of agricultural science and technology, only "rice" cloud business, as an app, can open up the channel of communication between farmers and customers and cash crop trading. Customers subscribe on the app, and rice is delivered directly from the source, which provides reliable technical support and technological guarantee for shortening the supply chain and trading chain between farmers and customers. Based on the connotation and significance of agricultural science and technology innovation, this paper discusses the current situation and development prospects of the rice industry and proposes the main measures to help upgrade the rice industry, so as to provide farmers with ideas to create more income.

2. The Connotation and Significance of Agricultural Science and Technology Innovation

2.1. The Connotation of Agricultural Science and Technology Innovation

Agricultural science and technology innovation is an important method to promote the modernization of agricultural in developed countries. It has certain public characteristics, that is, the responsibility and mission of agricultural science and technology innovation not only falls on the experts and researchers engaged in agricultural industry alone, but also requires the collaborative participation of the majority of cash crop growers and maintainers with agricultural experience, so as to truly put into practice the application of the concept of innovation for all. In agriculture, scientific and technological innovation can help rationally allocate agricultural resources, minimize the impact of sudden changes in natural environment on agriculture through rational distribution and control, and provide necessary basis for ensuring profitability. From the perspective of the channels of agricultural science and technology innovation, it can be divided into agricultural biotechnology innovation, agricultural machinery technology innovation, agricultural Internet technology innovation and agricultural disaster reduction and prevention technology innovation, four kinds of innovation side by side, the purpose is to improve the quality and efficiency of agricultural development, and create the foundation and conditions for agricultural development. Among them, agricultural biotechnology innovation mainly starts from the genetic transformation of cash crops, cultivates crops suitable for natural environment through hybridization and excellent basic iterative protection, and creates the direction for saving the use of pesticides and related chemical fertilizer aid reagents. As a link closely related to the growth and harvest of cash crops, scientific and technological innovation of agricultural machinery is main-

ly from planting, care and maintenance, harvesting three processes, in order to reduce the workload of farmers and innovation, now the traditional artificial planting model is gone, replaced by more automatic mechanical planting machines, they do not care about the soil acid and alkali. Also do not need to consider the weather and other objective conditions, to improve the efficiency of farming to provide a solid foundation. As an emerging agricultural Internet technological innovation in recent years, it connects farmers closely through multiple layout construction. On the Internet platform, users can consult relevant agricultural experts about planting cash crops, and exchange planting experience with farmers, effectively providing a platform for farmers to seek advice on experience and problems. Broaden the channels for the prevention and control of pests and diseases. At the same time, the innovation of agricultural Internet technology provides certain employment opportunities for the majority of college students who return home to start businesses, shortens the distance between farmers and customers, helps shorten the length of the marketing chain, so as to directly benefit the majority of farmers. As an agricultural science and technology center for disaster reduction and prevention related to plant growth, relevant meteorological forecasting units can dynamically monitor the natural environment of landslides, high temperature weather and heavy rainfall, provide farmers with accurate early warning information, automatic drainage and automatic temperature control greenhouse equipment on standby to mitigate the impact of relatively extreme weather on cash crops.

2.2. The Significance of Agricultural Science and Technology Innovation to Promote the Development of Agricultural Industry

From the perspective of the development of agricultural industry, the new achievements and new ideas formed by the innovation of agricultural science and technology will steadily promote the development of agricultural industry. Agriculture is an important industry of the country, which not only determines the comprehensive strength of the country, but also the pillar industry to ensure the stable operation of the national economy. Agricultural innovation can promote the mass planting, harvesting and processing of crops, and reduce the cost. Today, with the significant increase in people's demand, the mode of artificial planting and harvesting is just not applicable to staple food crops produced in large quantities and at low prices. Agricultural science and technology innovation can also improve the proportion of automation in the process of agricultural development, so that more land effectively linkage, strengthen the effectiveness of joint production and contract in the fields, for more farmers to provide more peace of mind, less worry, more assured planting solutions, and effectively solving the sleepless nights of farmers in the process of planting. The biological results and control methods of agricultural science and technology innovation provide more green protection methods for crop growth, avoid the occurrence of pesticide pollution, prevent the spread of pesticides from affecting the cooperative balance

of nature, and effectively realize scientific planting.

2.3. The Practical Significance of Agricultural Science and Technology Innovation to Reduce Farmers' Workload

The domestic land is public ownership and provides farmers with more than 70 years of use time, and the land area of the country is vast, and the economic crop from the south to the north presents the change of the number of annual harvest step by step. The innovation of agricultural science and technology provides alternative work opportunities for farmers, and more farmers relying on a single land industry can have more time to develop the secondary industry and generate income for their families. Innovations in agricultural technology can dramatically reduce the workload of farmers, allowing most farmers to monitor their fields in real time without leaving their homes, and making farming readily available. Automated machinery and equipment such as automatic rice transplanter, automatic harvester and unmanned medicine aircraft can provide a solid guarantee to reduce farmers' workload. Compared with the traditional situation of employing people to complete the tillage, the use of machinery can reduce the cost of labor, more agricultural tasks can be completed in a short time, really reduce the workload for farmers.

3. The Rice Industry Market Status and Prospects

3.1. Rice Industry Market Status

According to the latest public data, domestic rice production reached 147 million tons and domestic rice consumption reached 143 million tons in 2019. The output decreased by 1.19 percent compared to last year, but the consumption increased by 1.41 percent (Data from USDA). More high-end rice began to occupy the market, by the end of 2019, the market scale of high-end exquisitely packaged rice reached 31.3 billion yuan, the price increased by 14.65% compared with last year (Data from China National Grain and Oil Center). It is expected that the market scale of high-end rice is expected to exceed 60 billion yuan in five years. As a country with large rice output, China exported 2.75 million tons of rice in 2019, up 16.73% year on year, while in 2020, China's rice export volume decreased to 2.3 million tons, while its rice export quota increased to \$1.06 billion (Data from China National Grain and Oil Center). It can be said that our rice is developing towards branding and functionalization. More new types of rice such as tribute rice, ecological rice, and other new rice types can be sold in the market, and functional rice can be fully distributed and marketed. At the same time, it provides a new raw material composition for making sushi, Cantonese sausage noodles and other snacks.

3.2. Millet Industry Market Status

Originated in China, millet has a history of more than 8000 years. It is the main food crop in the north of China because of its excellent drought resistance, easy

storage and strong barren tolerance. As the world's largest millet planting area and output, China's millet planting area reached 4,942,107 acres, and the planting area has been shrinking since the 1980s, due to the expansion of cash crops such as rice and corn. In 2021, China's millet crop output is 2.415 million tons, with a planting area of 137,753 acres. China's millet output accounts for more than 75% of the world's millet output, which is mainly planted in northeast China and North China. Among them, the millet output of Hebei Province ranks the first in China, accounting for one third of China's millet output, one fourth of the planting area, and more than half of China's trade volume. According to the questionnaire survey conducted by Zhang Xinshi et al. (Zhang et al., 2019). using the principle of random network, millet consumption of Chinese residents is still mainly primary products, mainly used for daily porridge cooking, and mainly consumed by families. The annual household consumption of millet is about 20 kg, increasing with the level of deep processing and people's demand for health care.

3.3. Rice Industry Development Prospects

Today, with the continuous upgrading of consumption structure, the trading companies responsible for the production and processing of rice attract more young people by creating new packaging and pre-processing of rice. More grain and oil brands create independent brands for rice, carefully designed packaging, set more health effects for rice functions, such as desugared rice and non-panning rice, the former can meet the needs of users of weight loss and sugar control programs for staple food, the latter can provide more convenience for more young people who are not willing to do the process of Amoy. Joint name with large national style and trend brands is also the development direction of rice. For example, the internationally famous restaurant chain brand KFC has been jointly named with golden arowana to sell rice in flagship restaurant stores, which improves the added value of rice through strict screening of planting conditions and other methods. More manufacturers with high-end rice production experience through independent packaging, the development of scale closely related to the number of people to improve the packaging characteristics of rice. At the same time, rice and millet are often ground into more fine powder, mixed in wheat flour, emitting a unique aroma from rice, some washing daily chemical manufacturers use rice washing water as the company's new generation of products, for example, using rice washing water as a proportion of shampoo and kitchen washing products can effectively supplement scalp nutrition and improve the washing chemical products easy to rinse.

4. The Main Measures to Help the Upgrade the Rice Industry

4.1. Optimize the Industrial Structure

Encourage high-quality rice processing enterprises to lead high-quality rice plant-

ing cooperatives and promote the development of new farmers' cooperative organizations. Encourage cooperation in the production and marketing of agricultural products, establish systems for technology development, production standards and quality traceability, build joint brands and share benefits. We will actively develop "order production" (Rural Operation Management, 2021; Rural Areas Agriculture Farmers, 2021). Guide high-quality rice purchase and sale enterprises and processing enterprises to sign contracts for purchasing and selling high-quality rice with farmers, family farms and farmers' cooperatives, set reasonable purchase prices, and form stable purchasing and marketing relationships. We will fully mobilize farmers' enthusiasm to participate in the production of high-quality rice orders, expand the coverage of orders, and raise the rate of order fulfillment. Through order production, it constantly drives the transformation of grain farmers from small and complete, small and weak, small and scattered to excellent and specialized, specialized and combined, and united and strong, promotes the construction of high-quality rice base, makes rice industry bigger and stronger, makes excellent and refined, and makes targeted design and transformation to meet the market demand. Diversified and three-dimensional industrial structure is created, so that the vast number of farmers is engaged in planting. It can also independently choose processing work, expand rice marketing channels, and create more income for the vast number of farmers.

4.2. Adjustment of Industrial Layout

In order to improve the comprehensive quality of rice, the traditional scattered planting industry layout is in urgent need of reform, and the new contracted mass production mode can meet the needs of collective rice planting. Promoting the integrated three-dimensional cultivation of rice, for example, in paddy fields in China, more farmers tend to raise fish and crabs between fields.

With the root nutrition of rice, aquatic organisms can grow more robust. At the same time, aquatic organisms coexist harmoniously with rice to catch insects and destroy rice crops. The industrial layout of mass planting provides convenient conditions for the work of automatic equipment, and the more mechanized equipment will be put into use, which will significantly reduce the food price and provide a prerequisite for the new type of rice to be put into use (Cai, 2020). It is the only option to realize agricultural modernization.

4.3. Guide the Processing and Utilization of By-Products

After secondary packaging, rice can become a by-product, to achieve the added value of the majority of farmers can choose fried rice, fried rice, etc. as a specific farm by-product processing, packaging and sales, rich rice sales channels, but also to create new jobs. Food is the priority of the people, food safety is the first, using the original ecological rice and millet rice flour and rice noodles because of the high nutritional value content often get the favor of the majority of diners, so the rice for fine processing and purification, create more edible grade rice, help

to create the development of rice consumable, to stimulate the people's demand for rice to provide necessary security.

4.4. Enhance Enterprise Scientific and Technological Innovation Capacity

Innovation is the key to developing the high-quality rice industry. It is necessary to take the initiative to follow up, adapt, introduce information, biology and new technology, promote the innovation and upgrading of high-quality rice processing products, and further promote the adjustment and optimization of the industrial structure (Yu et al., 2020). Sound food science and technology innovation of grain enterprises, strengthen the joint establishment of industrial technology innovation alliances with universities and research institutions, carry out research and development of key practical technologies and tackle key problems, and establish a consortium of industry-university-research and application that integrates scientific and technological research, production and manufacturing, and popularization and application, so as to promote deep integration of science and technology and industrial development and synchronous development. Centering on the high-quality development needs of the high-quality rice industry and aiming at the market demand, further strengthen the research and development and application of new varieties, new technologies, new products, new processes and new equipment, focusing on the breakthrough of key technologies in breeding, processing, quality testing, nutrition and health.

4.5. Development of E-Commerce

An important measure to help the upgrading of the rice industry is to develop e-commerce. Today, with the competitive development of the network and express transportation industry, more professional transportation equipment has been put into use, and express companies have also opened up the last kilometer nationwide, which provides a solid technical guarantee for the development of e-commerce in the rice industry. The majority of farmers should learn to apply for business license on the network, and strive to promote rice on the network channel, so as to really make profits to the majority of consumer groups, really let consumers taste the pollution-free green rice from the farmers and make greater efforts to ensure food safety. E-commerce also provides a new method and a new model for rice to go abroad and face the world. Under the current e-commerce development format, excellent rice can be known and recognized by people all over the world.

5. Concluding Remarks

Based on the above analysis, we can know that technological entrepreneurship based on agricultural industry can promote the modernization of agricultural industry in a fundamental sense, truly reduce the tasks for the majority of farmers and create multiple revenue channels. In today's consumption upgrading,

the government and society should actively adjust the industrial layout of planting industry and guide the processing and utilization of rice by-products. Meanwhile, relevant enterprises should independently improve their scientific and technological innovation ability to provide a solid foundation for the creation of more functional rice products. Relevant farmers should also actively develop e-commerce, and actively use the network to sell online. More agricultural products will be directly handed over to the vast number of consumer groups through the network channel, so as to make profits for consumers and avoid the situation of price suppression by middlemen. This paper only focuses on the revenue increase method of reducing circulation link by selling high-quality rice products through cloud business platform. Since millet is a primary product with less demand, it does not expand specific uses, promote the integration of millet industry chain and make deep innovation to give full play to the advantages of millet industry, which requires in-depth research.

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Conflicts of Interest

The authors declare no conflicts of interest regarding the publication of this paper.

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