Current Challenges and Potential Solutions of China's Agricultural Economy

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Abstract. Agriculture always plays a crucial role on the world economy, and it is the foundation of rural economy. Especially in China is the developing country which has large population, at the same time it is one of the top agricultural producing country in World. Agricultural development is to guarantee a national food security, at the same time, it is a important measures to narrow the gap between urban and rural areas. This article analyse the challenges that modern economy development in China to face with current situations which including impact of aging population education system high logistics cost, and propose countermeasures to accelerate the development of modern economy and agriculture pointedly.

1 Introduction

China had achieved great success in producing grain and it helps feed one-fifth of the world's population uses less than 10% of the world's arable land, which this is a significant achievement in food and nutrition security for the world [1]. The primary industry in China consists of agriculture, including the industries of crop-planting, forestry, animal husbandry and fishery. Along with an increasing health consciousness and the advancement of technology, China's economic development has made solid progress in advancing economic structural adjustment. The quality of life has also been a qualitative leap. People would like to strive for satisfaction and comfort life. In a similar way people's health demand for agricultural products is also more, which means that increasing China's agrarian economy must overcome challenges in the market.

Rapid productivity in agriculture is actively evolving the other economic sectors, while rural agriculture economy has always lagged behind the demand rises and the resource constraint that will hinder the China's economy [6]. The rural agricultural economy in China transitions through an extremely slow-growing, but as an engine of rural economy that adjusting and optimizing the agriculture developments is China's long term goal. It is an important to develop the agricultural economy from traditional agriculture to modern agriculture, speed up rural economy and increases local incomes of rural populations. This paper will analyse these crucial challenges China faces in the development of rural agriculture economy and the measures to promote growth in the agricultural sector.

2 Overview of China's agricultural economy

In 1970s, the adoption of economic reforms by China led China has been among the world's largest economy [3]. However, the level of mechanization of agricultural production in China is falling behind developed countries, the cultural level of farmers is generally low, and single industrial structure has led to the slow development of agricultural economy. Due to rural farmers rely on their own labour than machines, which cause they prefer to grow grain with high productivity to make a profit quickly. On the other hand, most farmers choose to give up the low-productivity gains in plant, such as soybean even though it is high demand in China. In contrast, strong U.S. soybean exports in world achieve about $7.7 billion in the first quarter of 2021 that was a huge number, almost double the amount in the same period last year [2]. Furthermore, the data show that China use the main importer of soybeans, which because there are a huge number of pigs to feed and soybean meal became a larger proportion of their diets.

Today, China's agricultural output mainly depends on farmers in rural areas. For the reasons that China's aging population, the loss of population in rural areas, and the low level of mechanization, which the increasing of China's labor cost will cause a decrease in the output of agricultural products in the future. Specifically, an imbalance in the activities of importing and exporting inevitably affect the economy of a country, which means large imports of basic agricultural products will lead to a large outflow of foreign exchange, which will create the economic crisis in the long run.
3 Challenges Faced by China's Agricultural Economy

3.1 Aging of Chinese society in agriculture

China is faced with aging of Chinese society in agriculture. As is known to all, China is a large population country and the second-largest economy. The result of China's rapid economic and social development over the past few decades has increased life expectancy and a dramatic reduction in infant mortality. However, this situation is accompanied by a sharp decline in the fertility rate, and the inevitable of an aging population. As a natural process, the aging of population trend in China almost may be similar to other countries [3]. However, there are some different reasons for population aging than others' countries. One is China's one child policy since 1979 in order to control the growth of population, and the other is the HUKOU system is China's household registration system, which lending to a number of the rural-to-urban migration since 1984s [3]. The data show the aging process in rural areas is also faster than that in cities. From 2010 to 2017, the aging proportion of pastoral increased 3.16%, but the aging proportion of urban increased 2.29%. When comparing the date of urban-rural ageing rates from 2010 to 2017, and find out that the ageing percentage gap between urban and rural areas also shows to relate to location development. In regions of where urban aging is faster than rural areas. The per capital GDP of some provinces, including Anhui, Hebei, Jiangxi, Hainan, Guangxi, Yunnan, Xinjiang, Tibet and further was also relatively low compared to other provinces from 2010 to 2017. The rural areas in Shanghai, Beijing, Jiangsu, Shandong, Guangdong, and Zhejiang were higher than urban areas in 2017 [3]. Migration of the rural population and a rapid the process of urbanization in the year of may result in this case.

3.2 Low level of education in rural areas

In China, living in cities is more attractive than living in rural areas. Most rural youth to choose to work in cities because cities offer a variety of employment opportunities and good wages. On the contrary, most rural areas lack a stable industrial base and employment needs. So the employment environment in rural areas cannot meet the needs of young people. In fact, cities had better public infrastructure and good social security. Cities can provide high-quality education, medical care and other resources to respond to the expectations of young people for future development. Relatively speaking, education popularity in rural areas is relatively low, and the ability to absorb information and innovation is also poor. The less educated farmers are lack of science and technology knowledge, management knowledge and so on. Therefore, in many areas, Chinese farmers still use the most traditional farming mode (figure 1). It is a long term problem that farmers short of education and training in science and technology in the rural of China. In traditional China's agriculture, the highest labor force almost is the farmers who have low-education in rural areas. Most rural people had high-educational who were leaving the countryside to find employment in the cities. Over time, the level of education of those people who left behind is generally low [4]. Even though Chinese government efforts to education, the education level of China's rural farmers still in low. On the basis of data of 2015 micro Census, there are almost 14% of the rural labour had the advantage of higher senior level of education, but compared to the data of the people living in the cities with 42%. China's rural labour force has quite lower level of education than Japan and Korea [4]. Hence, due to the overall quality of Chinese farmers is minimal, which restricts agriculture efficiency, farmers' income and rural economic development.

![Fig.1. Traditional and inefficient agricultural labor mode][9]

3.3 High logistics cost of agricultural products

Agriculture is the basic industry of the national economy. The entire supply chain made up for agriculture production, processing, sales and consumption, any one of the chain processes will influence the healthy development of agriculture and the income of farmers [5]. With the development of China's agriculture, the quantity and variety of agricultural products in China have
increased, however there are common situations, which occur frequently in rural areas. This is mainly due to the fact that the problem of the current agrarian product circulation standard system in China, which results in the violent fluctuation of agricultural product prices and the difficulty of buying expensive and selling.

The shipping cost and warehousing costs are two major parts of the logistics cost of agriculture products. Transportation cost refers to the cost of transporting agricultural products from the rural areas to the distribution center and the place of sale. The cost is mostly related to the transportation volume and transportation mileage. Warehousing costs are related to the quantity of agricultural products, storage time and storage temperature. Data shows transportation cost in China that will cost from 30% to 35% of the price of the sales prices, and the transportation cost of China's grain logistics enterprises is more than 10% higher than them, which is a staggering number compared to developed countries [5].

4 Recommendations

4.1 Attracting young people to return to rural areas

There is a serious aging problem in China’s rural areas. Therefore, attracting young people to return to rural areas for engagement and employment in agriculture and stay to join the rural revitalization. At the beginning is to set up and improve a complete set of policy systems for the training, introduction, management, use, flow, and incentives of young people, and strengthen the policy guarantee for the revitalization of rural talents.

It may be a key related factor to reduce the urban–rural aging gap when the urbanization rate is unchanging. Most cities to give up the HUKOU system and provinces implement the goals of urbanization. In short, disengaging regional-specific policies could be the solutions to the increasingly diverging aging situation [5]. Therefore, in the process of promoting rural revitalization, we must firmly grasp the fundamental factor of talents, continuously introduce talents, cultivate talents, and lay a solid foundation for rural revitalization.

4.2 Improving education system in rural areas

Education talent is one of the most vital elements in China's agriculture development. The main body of rural talent training covers a wide range and includes accelerating the cultivation of agricultural production and operation talents, rural secondary and tertiary industry development talents, rural public service talents, rural governance talents, and agricultural and rural science and technology talents.

Initially, improving the talent training system in higher education, strengthening agriculture education in agriculture-related colleges [4]. Achieving the training plan for outstanding agriculture talents to build a number of emerging agriculture-related majors. Furthermore, training institutions play a crucial role in skill to improve the training of local talents, which promote the effective connection between farmer training and vocational education. Farmers can learn the latest information to effectively use science and technology, such as soilless cultivation, mechanized production and other modes. Improve the sustainability of agricultural practices through improved agricultural technology development.

4.3 Reducing logistics cost for learning experience

As a global leader in agricultural production, US has the competent agricultural product logistics system, which is worth learned by development countries. The transportation in the United States is facilitated by roads, railways, and air, highways all over urban and rural areas, and highways can directly lead to every household in the countryside [5]. The United States has developed communication facilities and networks, and has a high level of technology and equipment for cold-chain storage. On the contrary, the transportation is inconvenient, and fresh agricultural products logistics infrastructure equipment is at a low in rural areas of China.

There is a developed agricultural information flow foundation in US. Almost 85% of farmers in the United States surf the internet, and the degree of agricultural products logistics services is prohibitive. The another
situation of agricultural market in China is that so many middlemen manipulate market prices so that the rural farmers are difficult to realize profits. To increase farmer's profits and offer cheaper products, which the agriculture market need to by make way for the middlemen, deal directly with farmers and build logistics chains [7]. The main logistics entities that connect the supply and demand of agricultural products in the United States are the sales cooperatives participated by farmers, the government’s agricultural product credit companies, agricultural and commercial associations, wholesalers, retailers, agents, processors, storage and transportation companies and futures in the origin market or central market speculators[5]. Various industries play active roles in the production and marketing of agricultural products. Therefore, it is not only save the cost of logistics, but also increases the income of farmers.

5 Conclusion

To sum up, the development of agricultural economy in China will have an impact on the development of its national economy. The result indicates that the agriculture growth mainly relies on the labour force of rural areas. The goal of China's agriculture could be to translate the agrarian economy from traditional agriculture to modern agriculture, and speed up rural economy and increases local incomes of rural populations. It is inevitable that science and technology will change agriculture. Modern agriculture depends on the extensive data, artificial intelligence technology and applications to reduce production costs, enhance the quality of agricultural products and improve agricultural production efficiency.

In order to get science and technology to better support agriculture, expand agricultural products and develop large-scale efforts to raise agricultural production. Meanwhile, moving the agricultural economy forward, it is necessary to proceed from the needs and conditions of rural market development, improve the management system, provide an institutional foundation for the better development of country's agriculture, and create a good agricultural environment. Attracting young people to return to rural areas for engagement and employment in agriculture and stay to join the rural revitalization. Education talent is part of the most vital elements in China's agriculture development. Diverse experience in the field of logistics could be help reduce logistics cost in the development of China's agriculture production. Those solutions that could light a path toward a more sustainable and efficient agricultural economy.

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