

## Current Situation and Development Trend of China's Agricultural Machinery Distribution



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**Abstract.** In the year of 2021, the Chinese government allocated 19 billion RMB for agricultural machinery subsidy. The data that accurately describes the scale of China's agricultural machinery market could be calculated by analyzing the national agricultural machinery purchase investment, the total value of the parts market and the replacement market could be inferred. Since the implementation of agricultural machinery purchase subsidies, China's comprehensive mechanization rate of crop cultivation, planting and harvesting has increased rapidly. In 2019, the national comprehensive mechanization rate of crop cultivation, planting and harvesting exceeded 70 percent, and the production of the three major food crops of wheat, rice and corn was basically mechanized. This paper analyzes the scale of the complete machinery market, the market scale of key products in the Chinese agricultural machinery market, the basic situation of Chinese agricultural machinery distribution companies, the basic situation of the Chinese agricultural machinery purchasing groups, and the main gathering platforms of the Chinese agricultural machinery distribution market, explaining the current status of China's agricultural machinery distribution, putting forward suggestions for the development of China's agricultural machinery distribution market. There are major contradictions in the agricultural machinery market in China. The most important one is between supply and demand. In terms of crops, the level of comprehensive mechanization of wheat, rice and maize is relatively high, while the level of comprehensive mechanization of cash crops such as cotton oil, sugar and vegetable tea is relatively low; from a regional perspective, the level of mechanization in the northern plains is relatively high, and the level of mechanization in the hilly and mountainous areas of the south is relatively low; from an industrial point of view, the level of mechanization of planting industry is relatively high, while the level of mechanization of animal husbandry, fishery and processing is low. Meanwhile, the contradiction between manufacturers and distributors, as well as the end-users is further intensifying. This article attempts to explain the efficiency and benefit of agriculture and the return on investment of agricultural machinery purchase. Only when agriculture is competitive, has good efficiency and benefits, and the purchase of agricultural machinery has a good rate of return on investment, can the industry develop healthily.

**Keywords:** China's agricultural machinery, current situation of distribution, development trends, market size, development suggestions.

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## Современное состояние и тенденции развития распределения сельскохозяйственной техники в Китае

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**Реферат.** В 2021 году правительство Китая выделило 19 миллиардов юаней на субсидирование сельскохозяйственной техники. Данные, точно описывающие масштабы китайского рынка сельскохозяйственной техники, могут быть получены

ны с помощью анализа программы государственного субсидирования закупки сельскохозяйственной техники, в результате чего можно сделать вывод об общей стоимости рынка автозапчастей. После введения субсидий на закупку сельхозтехники уровень комплексной механизации растениеводства быстро увеличился. В 2019 году он превысил 70 процентов, а производство трех основных продовольственных культур – пшеницы, риса и кукурузы – было в основном механизировано. Показали масштаб китайского рынка комплектного оборудования и ключевых видов сельхозтехники и основные рынки ее сбыта. Провели анализ состояния китайских компаний-дистрибьюторов и групп-закупщиков китайской сельскохозяйственной техники. Дали предложения по развитию рынка сбыта сельхозтехники в стране. Выявили серьезные противоречия, основным из которых стало несоответствие между спросом и предложением. Уровень комплексной механизации пшеницы, риса и кукурузы относительно высок, в то же время он относительно низок при производстве хлопкового масла, сахара и овощного чая. Уровень механизации на северных равнинах выше, чем в холмистых и горных районах юга. Из отраслей лучше механизировано растениеводство, в отличие от животноводства, рыболовства и переработки. Противоречие между производителями и дистрибьюторами, а также конечными потребителями только усиливается. Показали возможность эффективного ведения сельского хозяйства и обоснованного вложения инвестиций в покупку сельхозтехники. Только тогда, когда сельское хозяйство станет конкурентоспособным, эффективным и выгодным, а покупка сельскохозяйственной техники дает хорошую окупаемость инвестиций, отрасль может благоприятно развиваться.

**Ключевые слова:** сельскохозяйственная техника Китая, господдержка аграрного сектора, механизация сельского хозяйства, инвестиции в покупку сельхозтехники.

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China has become the world's largest agricultural machinery market. There are many articles about the production and application of agricultural machinery in China, but few researches on the circulation link from enterprises to consumers. The data used in this article includes data provided by companies, data provided by consumers, and agricultural machinery purchase subsidy data, so the accuracy is higher. In the year of 2018, the agricultural machinery subsidy was 17.4 billion Yuan. In this way, the total value of the parts market and the replacement market could be inferred to 66.34 billion yuan [1]. The author also argues that China's policy of agricultural machinery subsidy is continuous and steady in recent years. As the efficiency further increases and return on investment of agricultural machinery purchase further rises, agricultural machinery distribution in China will develop correspondingly (Fig. 1).

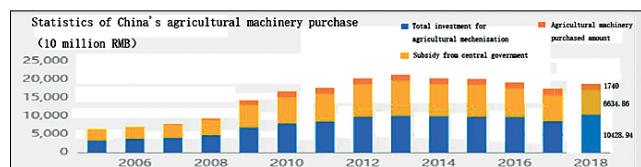


Fig. 1. Statistical changes in the purchase of agricultural machinery nationwide from 2006 to 2018 (data from the Ministry of Agriculture and Rural Affairs)

Since the implementation of agricultural machinery purchase subsidies, China's comprehensive mechanization rate of crop cultivation, planting and harvest has increased rapidly (Fig. 2). In 2019, the Ministry of Agriculture and Rural Affairs accelerated the transformation and upgrading of agricultural machinery [2]. The comprehensive mechanization rate of crop cultivation, planting and

harvest across the country exceeded 70%, which achieved the goal of the "13th Five-Year Plan" schedule one year ahead. The mechanization of the production of the three major food crops of wheat, rice and corn is basically realized [3].

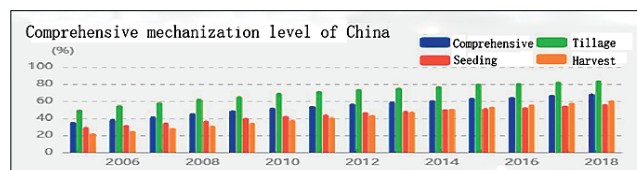


Fig. 2. Changes in the national comprehensive mechanization rate of crop cultivation and harvesting from 2006 to 2018 (data from the Ministry of Agriculture and Rural Affairs)

In the year of 2018, the comprehensive mechanization rate of China is over 70%, which is a relatively high figure. There are many hills and mountains in China, and it is difficult for agricultural machinery to enter the fields. However, in recent years, great achievements have been made in the development of agricultural machinery suitable for hilly and mountainous areas.

## Whole machinery market scale and key product market scale of China's agricultural machinery

In 2019, the sales of the whole agricultural machinery market in China was 64.7 billion yuan. Among them: Heilongjiang Province 9 billion yuan, accounting for 14%; Henan Province 6.1 billion yuan, accounting for 9%; Shandong Province 4.5 billion yuan, accounting for 7%; Anhui Province 4.5 billion yuan, accounting for 7%; Inner Mongolia 4.1 billion yuan, accounting for 6%; Jilin Province 4 billion yuan, accounting for 6%; Hebei Province 3.5 billion yuan, accounting for 5%; Hunan Province 3.1 billion yuan, accounting for 5%; other regions 26 billion

yuan, accounting for 40%. Heilongjiang, as well as Henan, Shandong and Anhui are the main grain producing areas in China, which are in line with the sales of agricultural machinery (Fig. 3).

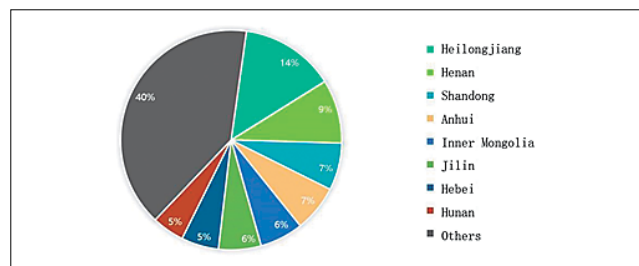


Fig. 3. Proportion of annual sales of the regional complete machine market

### Key products

Tractor, harvester and planter are the main agricultural machinery sold in China. The annual sales of tractors in China was 27.3 billion yuan, accounting for 42%; the annual sales of harvesting machinery was 16.2 billion yuan, accounting for 25%; the annual sales of sowing machinery was 3.6 billion yuan, accounting for 6%; the annual sales of other machinery was 17.7 billion yuan, accounted for 27% (Fig. 4).

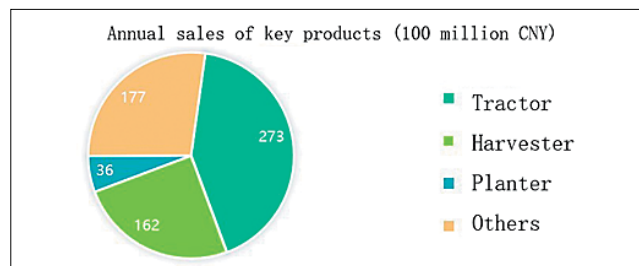


Fig. 4. Annual sales of national key agricultural machinery products

### Basic situation of China's agricultural machinery distribution enterprises

Agricultural machinery distribution companies are not evenly distributed in each province. This is closely related to the scale of the land and planting conditions. There are 1,757 agricultural machinery distribution enterprises with annual sales exceeding 10 million yuan. Among them: 220 in Shandong Province, 184 in Jiangsu Province, 168 in Henan Province, 163 in Anhui Province, 124 in Hebei Province, 112 in Inner Mongolia, 101 in Jilin Province, and 685 in other regions (Fig. 5).

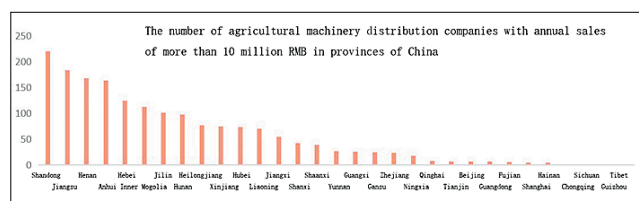


Fig. 5. National agricultural machinery distribution companies with annual sales exceeding 10 million yuan

### Basic situation of China's agricultural machinery purchase groups

There were 3649 purchasers with annual purchases exceeding one million yuan. Among them: 510 in Hunan Province, 419 in Xinjiang, 345 in Jiangsu Province, 312 in Jilin Province, 284 in Anhui Province, 217 in Inner Mongolia, 215 in Liaoning Province, 162 in Shandong Province, 147 in Jiangxi Province, 105 in Hebei Province, 103 in Henan Province and 830 in other regions (Fig. 6).

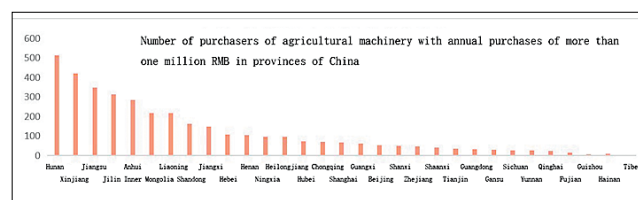


Fig. 6. Distribution of purchasers with annual purchases exceeding one million yuan nationwide

The number of agricultural machinery dealers is not even across provinces in China, because the demand situation in each province is not the same. For example, Heilongjiang Province produces the most food, but because of the large area of land, the sales are mainly large-scale machinery, so the number of dealers is not as many as that of provinces such as Henan, which has a smaller land area.

### Main gathering platform of China's agricultural machinery distribution market

1. China International Agricultural Machinery Exhibition. CIAME has a history of more than 60 years. It is a world-renowned professional international exhibition of agricultural machinery held annually (Fig. 7).



Fig. 7. China International Agricultural Machinery Exhibition 2021



In recent years, the exhibition area has exceeded 220,000 square meters. There are about 2,000 domestic and foreign exhibitors and a professional visitor of 135,000 person time. And more than 30 high-end forums and special events are held during CIAME. The exhibition is a world-renowned one and is known as a platform for global agricultural machinery business and brand communication, a platform for agricultural machinery information gathering and interaction, a platform for industrial policy and academic exchange, and a platform for modern agricultural technology and equipment integration and demonstration.

2. Agricultural machinery exhibitions in major provinces and main crop regions. There are more than 20 exhibitions each year.

3. Agricultural machinery field exhibition. It is the public industrial brand established by China Agricultural Machinery Distribution Association. The exhibition selects advanced technology and equipment to display and demonstrate in the field, organize on-site observations, directly dock products with farmers, and the farmers could learn about the machinery performance on the spot. The exhibition is arranged according to different crops and different regions, there are generally about 15 large-scale events throughout the year all over China.

#### **Suggestions for the development of China's agricultural machinery distribution market**

1. More attention should be paid to the importance of the guiding role of agricultural machinery purchase subsidies. The subsidy policy reflects the will of the government, and industry development needs to keep up with the situation. The latest policy is the "Guiding Opinions on the Implementation of Agricultural Machinery Purchase Subsidies from 2018 to 2020", which is also publicly available.

2. The distribution of agricultural machinery must be oriented to the entire process of agricultural production, comprehensive, high-quality and efficient. It is necessary to comprehensively consider crop types, topography and landform. The agricultural machinery industry must focus on the overall situation, change the grain-oriented development thinking, and shift from plain agriculture to hilly and mountain agriculture, from food crops to cash crops, horticultural crops, and feed crops [5]. It should develop towards the breeding and processing industries, and fully serve the overall idea of the adjustment of the planting industry structure.

3. It is necessary to strengthen the comprehensive agricultural technical service capabilities and transform to a comprehensive agricultural production technical service provider. Where the customers are, the boundaries of your organization are. The industry needs us to be brave in self-revolution and good at self-evolution. The only reason for survival is to better realize value creation, more comprehensive and in-depth service capabilities. At present, the root cause of the turbulence in the agricultural

machinery market is also that the industry has shifted from the pursuit of efficiency, agricultural machinery ownership, and overall mechanization rate to the pursuit of efficiency, agricultural machinery operation service volume, and single agricultural machinery service coverage [6].

For agricultural machinery operation services, it is necessary to be localized, to have incremental value creation, to deepen scientific and technological power and industry resources into the industrial chain of growers, to help them enlarge the cake, and then try to divide the cake [7-8].

4. It is necessary to attach importance to the socialized agricultural service model, and pay equal attention to the scale of planting and the scale of operation. Agricultural productive services refer to socialized services that run through the chain of agricultural production operations, directly completing or assisting in the completion of various aspects of agricultural operations before, during and after production. Accelerating the development of agricultural productive service industries is of great significance for cultivating new forms of agricultural and rural economy and building a modern agricultural industrial system, production system, and management system. To develop diversified alliances and cooperation to improve the degree of organization of small farmers is a must. The characteristics of China's agricultural resources and the situation of urbanization determine that it is unrealistic to follow the path of mass production and large-scale distribution similar to the United States.

For a long period of time in the future, "appropriate scale" will be the main focus; and scale is the basic prerequisite for the next stage of agricultural productivity improvement. Therefore, it is inevitable that the "agricultural socialized service system" with scale effect will link up and play the role of a platform that "empowers" small and medium farmers, forming a collaborative structure of "agricultural leader + service system + moderately large-scale farmers".

5. It is important to grasp the nature of business and study how to anchor the market. In a rapidly changing world, entrepreneurs will lose their overall grasp of future changes if they just focus on the competitors in front of them. The important thing is to explore how the market is changing, rather than blindly emphasizing how companies are "fickle" [9-10]. In the face of accelerating changes and increasingly complex competition in the business world, one must return to the essence of business to find a cognitive "anchor" for the rapidly changing market turbulence.

#### **CONCLUSIONS**

It is believed that in the future, the agricultural machinery industry must first pay attention to two core issues, namely: the efficiency and benefit of agriculture, and the return on investment of agricultural machinery purchase. To put it bluntly, it is whether agriculture makes

money and agricultural machinery makes money. The essence of agricultural machinery is to serve agricultural production. It is an input to agricultural production, and of course it is the cost of agricultural output. Only when agriculture is competitive, has good efficiency and bene-

fits, and the purchase of agricultural machinery has a good return on investment, can the industry develop healthily. It can be said that these two issues are the anchor of the industry.

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## Conflict of interest.

The author declares no conflict of interest.

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