

Impact of the COVID-19 Pandemic on Agriculture and Farmers in China and the Countermeasures

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Abstract

The outbreak of the COVID-19 pandemic in late January 2020 generated an enormous short-term impact on China's agricultural production and farmers' income. However, thanks to the introduction of corresponding policies at a later stage, the supply of agricultural products are now guaranteed, and the income of migrant workers is gradually rising. What cannot be ignored is that the fast spread of the pandemic abroad has brought great instability and danger to the import and export of China's agricultural products. Therefore, in terms of agricultural production, attention needs to be paid to whether the abroad pandemic would reduce the import of agricultural products; The government should provide more support for domestic food testing, food transportation, and food storage while encouraging farmers to continue to invest in farm production. In terms of farmers' income, the role of e-commerce in the sale of agricultural products should be fully brought into play; financial and political support for small and medium-sized enterprises and farms should be enhanced; the smooth development of poverty alleviation projects should be steadily pushed forward.

Keywords

Agriculture, Food, Farmers, Migrant workers, China, COVID-19, Pandemic.

1. Introduction

The COVID-19 pandemic started just before the Chinese New Year holidays and Spring plowing. Its negative impact on Chinese agricultural production and farmers' incomes was exacerbated by the lockdown policy taken earlier in the year to contain the spread of the virus. In a short period, the supply of means of production was insufficient, unsold farmed poultries were buried or slaughtered, and the prices of agricultural products fluctuated sharply. However, because of proper macro-control and successful implementation of various countermeasures, the impact of the pandemic on agriculture and farmers was controlled, the supply and prices of agricultural products were stabilized, and farmers' income was protected. In this paper, I will elaborate on the impact and potential problems caused by the COVID-19 pandemic in China from six aspects: grain industry, fruit and vegetable industry, livestock Industry, special breeding industry, farmers' income, and agricultural development. Then I will summarize the relevant policies that have been introduced to contain the impact of the COVID-19 pandemic on Chinese agriculture and farmers, and propose practically meaningful suggestions to support China's agricultural development and farmers' livings.

2. The Impact of the COVID-19 Pandemic on Grain Industry

2.1. The COVID-19 Pandemic Increased the Production Cost of Grain, Which May Reduce the Grain Yield

Since January 23rd, various provinces of China have begun to close villages and roads and set up checkpoints to impede the spread of the pandemic, which has delayed the sowing of grain and hindered the supply of means of production. Winter wheat, for example, needs to be fertilized and sprayed pesticides in February and March each year. However, since the entrances of villages were closed, the fertilizers and pesticides cannot be supplied on time. Meanwhile, the pandemic in Hubei Province has led to a significant reduction in fertilizer production. In 2019, the national share of fertilizer production in Hubei Province is about 12.3%, of which phosphate fertilizer production accounts for about 40%. Since the COVID-19 pandemic in Hubei reduced the operating rate of fertilizer production enterprises and the sale decline of fertilizer in the last year made phosphate fertilizer inventory poor, there was a huge shortage of phosphate fertilizer at the beginning of the year. The yield of phosphate fertilizer in February was 1.305 million tons, down 26% year-on-year, and prices rose sharply, increasing the pressure on farmers and negatively influencing the food production in 2020.

2.2. The COVID-19 Pandemic Made Grain Prices Fluctuate

Because of China's smallholder production model, more than 60 percent of total grain sales are distributed by grain brokers. However, since they usually lack an understanding of market information and related policies, grain brokers are exposed to greater risks of fluctuations in grain prices. Grain brokers also have some price suppression and fraudulent purchases and sales to grain growers, resulting in large economic losses to farmers. Food prices fluctuated greatly in early 2020 because grain brokers were hoarding grains and the public was in a panic. According to the National Bureau of Statistics, food prices increased by 0.6 percent in the first quarter of 2020. In addition, farmers' storage capacity has been challenged: they rarely have corn storage facilities, so they can only take the "ground lying grain" form of storage, which means the corn laid in the open yard to be dry. However, with rising temperatures, more and more molds and rodent infestations happened, resulting in huge post-production losses. According to related data, more than 10 percent of the "ground lying grain" was destroyed this year.

2.3. The COVID-19 Pandemic Made the Food Import of China Unstable

The COVID-19 pandemic and the locust plague that happened early this year have reduced food production in many countries, many of which have set restrictions on food exports. For example, Vietnam announced in late March a ban on the country's rice exports (which has now been changed to an export quota of 800,000 tons). Kazakhstan, Ukraine, and Russia have issued bans or restrictions on grain exports. However, export bans on grains would not influence the food security of China. For example, China imported 480,000 tons of Vietnamese rice in 2019, which just accounted for a negligible share of the total rice yield in China - 209.61 million tons. This has resulted from China's year-round policy of maintaining "basic self-sufficiency in grains and absolute ration security", with the self-sufficiency rate of the three major grains - rice, wheat, and corn - remaining above 95%. According to the National Bureau of Statistics, in 2019, China imported 17.918 million tons of cereal, which just accounted for 2.9% of the total yield of cereal, 613.68 million tons. However, China's imports on soybean and rapeseed are huge, and the foreign supply is highly unstable this year. In 2019, China imported 88.511 million tons of soybeans, which accounted for 489% of the domestic yield, 18.1 million tons; the yield of rapeseed in China in 2019 was 13.484 million tons, but China imported 2.737 million tons, which accounted for 20.3% of the yield. The main sources of soybean imports are the United States, Argentina, and Brazil, while the main sources of rapeseed imports are Canada, Russia,

and Australia. These countries are currently affected by the COVID-19 pandemic and it is doubtful that they will be able to maintain the production of soybeans and rapeseeds and export them to China. Since mid-June, the number of new confirmed cases of COVID-19 in the United States have increased rather than decreased. As of July 20, the cumulative number of confirmed cases in the U.S. reached 3.819 million, with an average of 66,000 new cases per day for seven days, seriously hindering the normal work of the food production and processing industry and hitting the safety of the food supply chain. China imported 8.412 million tons of soybeans from the U.S. in the first quarter of 2020, accounting for only 82.9 percent of soybean imports in the same period last year. If soybean imports are insufficient, edible vegetable oils and protein feeds will be at risk of shortages, with a huge negative impact on the country's daily dietary needs and livestock farming.

3. The Impact of the COVID-19 Pandemic on Fruit and Vegetable Industry

The lockdown during the pandemic negatively affected both the production and the sale of fruits and vegetables. On the production side, there was a short period of supply cuts and price increases for means of production in February and March; on the market side, in early 2020, the price difference of seasonal fruits and vegetables between farms and markets was as high as several times. Strawberries matured during the early lockdown period, so the picking labor was in a huge shortage while harvesting the strawberries. Meanwhile, strawberry sales and prices plummeted due to the closure of local food markets and the bad storage of strawberries. Farmers also faced the stagnant sale of vegetables. For example, the Shenghong Fruit and Vegetable Cooperative, which manages more than 65 acres of vegetables and 86 greenhouses in Shandong Province, was unable to transport vegetables from the countryside to any city after the outbreak of the COVID-19 pandemic. As a result, thousands of tons of vegetables became unsalable and its business volume was less than 40% of the previous year. However, benefitting from the subsequent proper macro-control in China and the timely introduction of various countermeasures, the current prices of means of production does not only rise but even declined. As shown in Figure 1, the price of urea increased by 1.16% in March this year, but then fell rapidly. Its price decreased by 1.15% in April, 0.82% in May, and 0.48% in June. The urea price in June was 2,062 RMB/kg, down 6.19% year-on-year. Similarly, as shown in Figure 2, compound fertilizer prices also fell after a small increase of 0.16% in January this year. Its price decreased by 0.14% in February and 0.71% in March. Although the price rebounded up 0.39% in April, then it fell back again in May and June. As of June, the price of compound fertilizer was 2,799 RMB/kg, down 2.82% year-on-year. It is interesting that, since February this year, urea and compound fertilizer prices have been lower than the same period last year, which means the lower production costs of farmers. The phenomenon of rapid rise and fall of prices also exists in vegetables. As shown in Figure 3, since October 2019, the average price of 28 kinds of vegetables has been rising. In January and February of 2020, the average price of 28 kinds of vegetables reached a record high: in January, the price reached 5.17 RMB/kg, up 23.68% year-on-year; in February, the price reached 5.69 RMB/kg, up 17.08% year-on-year. After reaching the highest point in the recent two years, the price began to fall rapidly. As of May, the average price of 28 kinds of vegetables fell to 3.86 RMB/kg, down 6.31% year-on-year. However, it cannot be ignored that the average price of 28 kinds of vegetables rebounded to 4.00 RMB/kg in June, up 4.44% year-on-year. The price fluctuation of vegetables needs to be kept within a reasonable range, so the work of stabilizing the price of vegetables is challenging but significant.

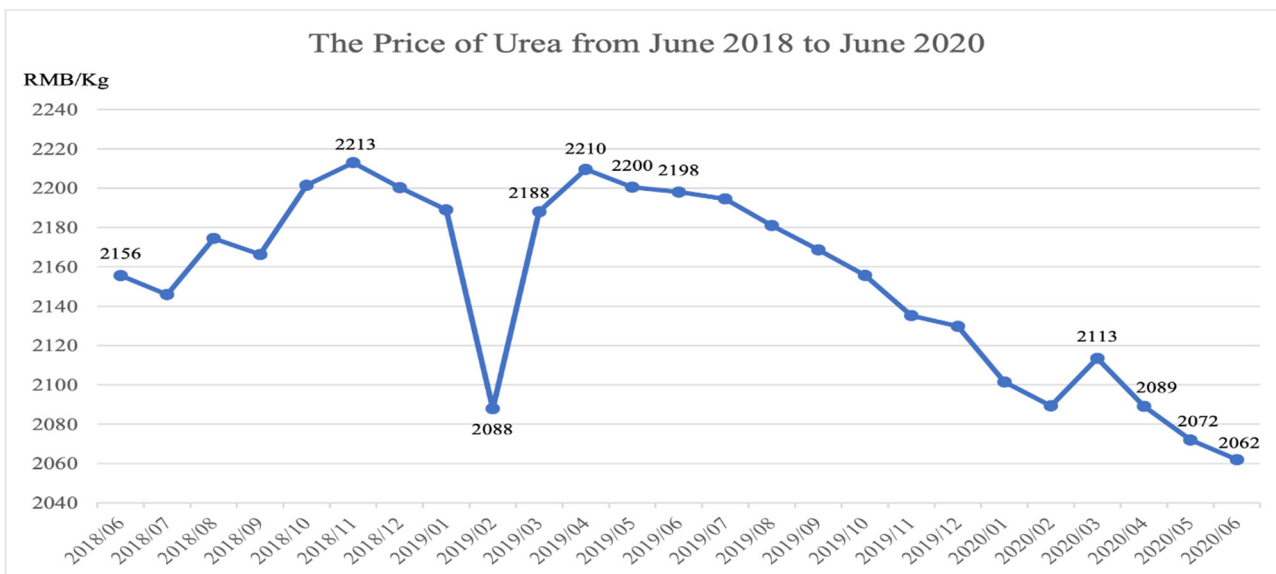


Figure 1. The Price of Urea from June 2019 to June 2020

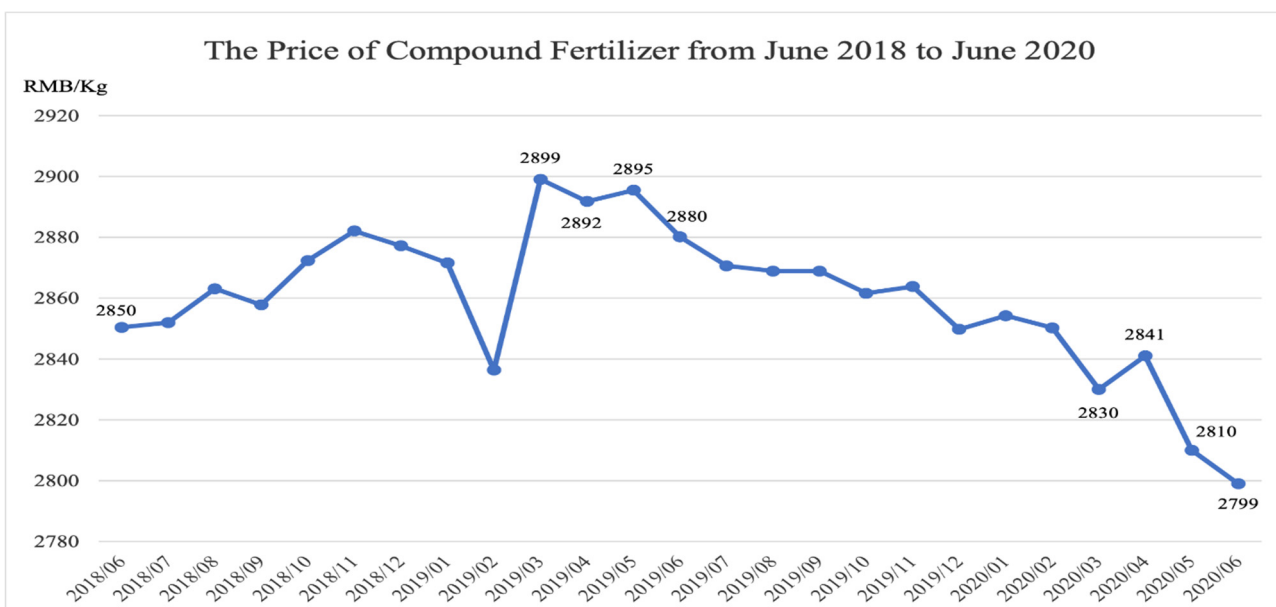


Figure 2. The Price of Compound Fertilizer from June 2018 to June 2020

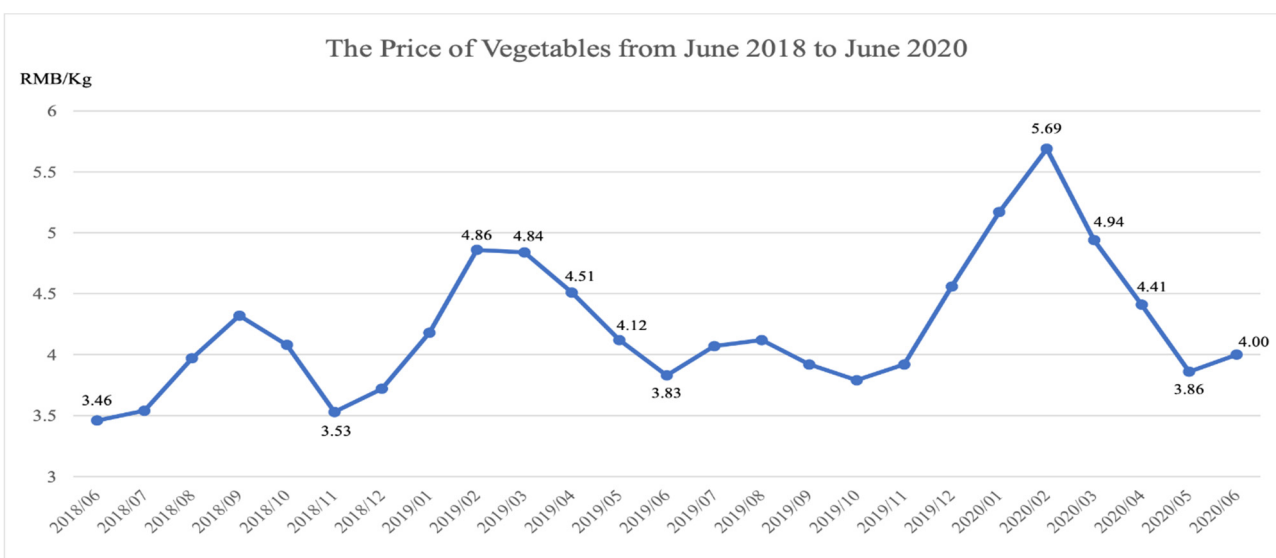


Figure 3. The Price of Vegetables from June 2018 to June 2020

4. The Impact of the COVID-19 on Livestock Industry

4.1. The COVID-19 Pandemic Impeded the Transportation of Fodders and Laborers

The impact on the livestock industry during the pandemic is concentrated in feed supply cuts, labor shortages and stagnant sales of food. For example, chicken production is estimated to drop by 21% in the first half of 2020. In the first quarter of this year, about 30 million chickens were unsold in Guangdong and Guangxi, the major places of chicken production, with prices dropping by 50 percent and 40 percent respectively year-on-year. The feed supply to the chickens was delayed due to the lockdown policy, leaving farmed chickens nowhere to sell and nothing to feed. To mitigate losses, some farmers had to starve chickens to death or bury them. Some farmers even did not buy any chicken seedling for the future business, resulting in a potential shortage risk of poultry production in the next year. China's swine industry is also challenged by the COVID-19 pandemic after experiencing supply shortages in the second half of 2019. For instance, there are 176 swine slaughterers in Henan Province, but only about 30% of them had resumed work as of mid-February, making it difficult to maintain normal breeding and production, and causing a rapid rise in pork prices. After reaching 46.83 RMB per catty (1 catty equals to 500 grams) in January 2020, pork prices reached a record high of 49.83 RMB per catty in February, up 171% year-on-year. The pork price did not fall until March when China imported large quantities of pork and sold stored frozen meat. From March to June, 517,132 tons, 526,439 tons, 502,799 tons and 531,244 tons of pork were imported, up 139%, 124%, 64% and 105% year-on-year, respectively. As of June, pork prices had fallen to 42.11 RMB per catty, up 95% year-on-year.

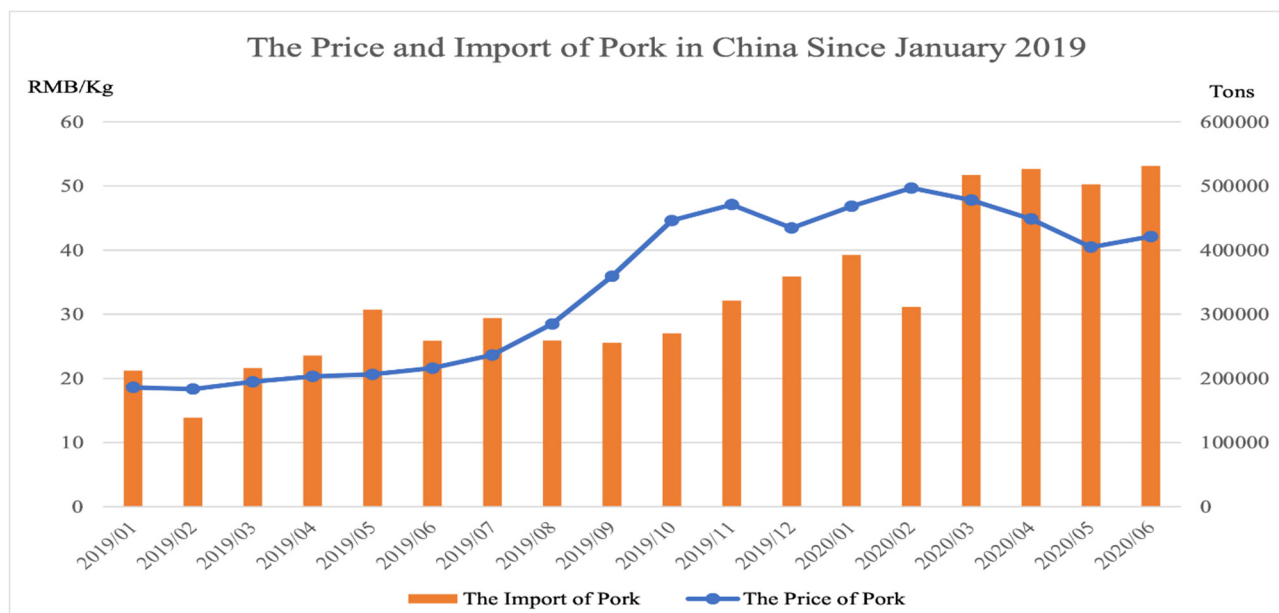


Figure 4. The Price and Import of Pork in China Since January 2019

4.2. The COVID-19 Pandemic Reduced the Meat Import of China and Rose the Meat Price up

It must be paid attention that the imported meat supplies, including pork, are very unstable. Most countries are still highly affected by the pandemic, and food safety problems in the production and transportation process will certainly increase the instability of China's meat import. Germany is China's largest pork supplier, with an annual pork export volume of about 500 million euros to China. According to the General Administration of Customs of China, 359,576 tons of pork was imported from Germany from January to April 2020. On June 17,

however, more than 400 employees of a plant of Germany's largest meat processing company, Tonnie's, were diagnosed with COVID-19, and Chinese customs immediately stopped importing their meat products. On June 21, China Customs suspended the import of products from the poultry meat slaughterhouse of Tyson, a meat product company in the U.S, because about 2,000 employees were infected by the COVID-19 days before. This will not only reduce the supply of poultry products and increase the price of poultry products but also reduce its depressing effect on pork prices. Therefore, the supply of meat must be paid attention to and guaranteed. The instability of the meat import, the severity of the domestic production losses, and the decline in the purchase of poultry seedlings and young animals will have a potential long-term negative impact on the livestock industry production.

5. The Impact of the COVID-19 on Special Breeding Industry

Special breeding industry is composed of farms where farmers breed wild or wild-like animals, such as bamboo rats, pheasants, pigeons and so on. However, the early statement that COVID-19 comes from wild animals had a devastating impact on the special breeding industry. On February 24, the Standing Committee of the National People's Congress of China adopted the *Decision on Completely Prohibiting Illegal Wildlife Trade, Eradicating Bad Practices of Indiscriminate Eating of Wild Animals, and Effectively Safeguarding People's Lives and Health and Safety*, which called for banning all trade and breeding of wild animals for food. All issued business permits for wild animals are withdrawn. As a result, the farmers breeding wild or even wild-like animals face not only the huge expenses of current breeding but also the problem of not being able to sell them in the future. Moreover, the special breeding industry is a major power fighting against poverty and has effectively increased farmers' income in recent years. The severer the impact on the industry, the higher possibility that more farmers back to poverty.

6. The Impact of the COVID-19 Pandemic on Farmers' Incomes

6.1. The COVID-19 Pandemic Reduced Farmers' Wages of being Migrant Workers

Since the COVID-19 pandemic caused stagnant sales and reduced production of agricultural products, farmers' revenue from managing farms has declined a lot. Besides, since many Chinese farmers are also rural migrant workers in cities, the late resumption of work and production has resulted in a drop in farmers' wage income. According to the National Bureau of Statistics, China's per capita disposable income in 2019 was 16,021 RMB, of which 6,583 RMB is the wages from working in cities. According to the Ministry of Human Resources and Social Security Department, the number of rural migrant workers who returned to work reached 100 million on March 19, 2020. The data collected in 2019 shows that there are 174 million migrant workers. Then the rate of migrant workers returning to work in March this year is only 57 percent. China has started to fully resume work and production since April. Based on the average monthly income of 3,962 RMB per migrant worker in 2019, migrant workers have lost nearly 1 trillion RMB in wage income in the first three months of 2020. Since the pandemic may cause many small and medium-sized enterprises closed or even bankrupt, migrant workers also face the risk of unemployment.

6.2. The COVID-19 Pandemic Struck the Farm Tourism

Farm tourism, an emerging industry in recent years, also took a huge hit during the COVID-19 pandemic. In the first three months of 2020, all projects including sightseeing agriculture, picking gardens, countryside restaurants, and countryside hotels shut down, and farm tourism revenue was basically zero. 7 million innovative entrepreneurs who returned to their hometowns from cities and 31 million rural innovative entrepreneurs were unable to

guarantee their business income. Besides, the dividends for farmers involved in farm tourism have also fallen miserably. According to research data from the Beijing Municipal Bureau of Agriculture and Rural Affairs, 5 out of the 31 farm tourism enterprises surveyed had lost dividends of around 4.026 million RMB. One farm hotel in Beijing called neighborhood rural lodge adopted a cooperative business model, but farmers may lose 30% of the regular dividends at the end of the year.

6.3. The COVID-19 Pandemic Cut Down China’s Agricultural Exports

The decline in agricultural exports caused by the COVID-19 pandemic has also lowered farmers' income. China's agricultural exports fell by 10.2 percent year-on-year in January and February 2020, according to data from China's General Administration of Customs. As of June, total agricultural exports in 2020 fell 3.8 percent year-on-year. If the pandemic cannot be contained and affect agriculture again, the export value may decrease more, and farmers in some provinces with large agricultural exports may lose their income a lot. For example, Sichuan province has been exporting agricultural products such as kiwifruit and red-hearted pomelo to Europe and countries along the "Belt and Road" all year round, and the total export value of agricultural products in 2018 has reached 5.6 billion RMB. However, the export of agricultural products is hampered by the COVID-19 pandemic, which will reduce the income of Sichuan farmers with the export business of agricultural products.

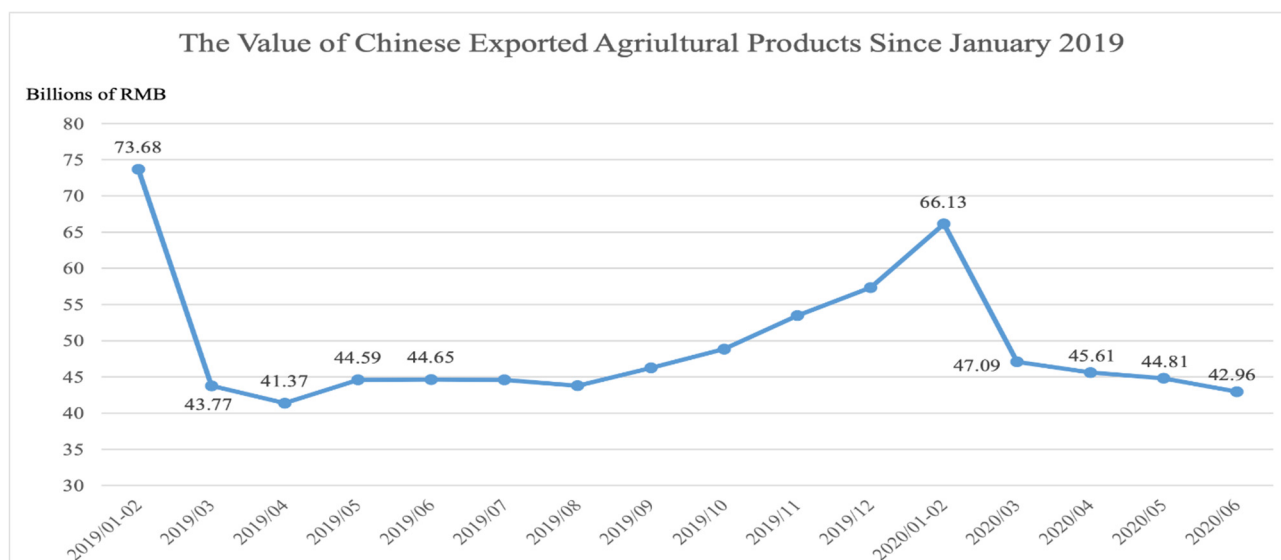


Figure 5. The Value of Chinese Exported Agricultural Products Since January 2019

7. The Impact of the COVID-19 Pandemic on Chinese Agricultural Development

7.1. The COVID-19 Pandemic Reduced the Investment in Agriculture

According to the World Investment Report 2020 released by the United Nations Conference on Trade and Development (UNCTAD), the COVID-19 pandemic will result in a 40% decline in global foreign direct investment (FDI). As shown in Figure 5, according to China's National Bureau of Statistics (NBS), the country's fixed-asset investment (excluding farm households) fell by 3.1% in January-June 2020, and the rate reached a staggering 24.5% in January-February. It is worth noting that the national fixed asset investment in agriculture, forestry, animal husbandry, and fisheries in January-February 2020 fell by 24.7% year-on-year, including a 31.9% drop in agriculture investment, a 17.4% drop in forestry investment, a 7.7% drop in animal husbandry investment, and a 41.9% drop in fisheries investment. From January to June 2020,

national fixed asset investment in agriculture, forestry, animal husbandry, and fisheries rose by 5.5% year-on-year, proving that the Chinese government has played a positive and leading role in making investment policies in agriculture-related fields. But even so, the short-term impact of the plunge in agricultural investment at the beginning of the year on agricultural infrastructure and business projects cannot be ignored, and it is important to be aware of the potential problems and uncertainties it may bring in the future. The decline in agricultural investment not only affects farmers' incomes but also leads to a lack of momentum in Chinese agricultural development.

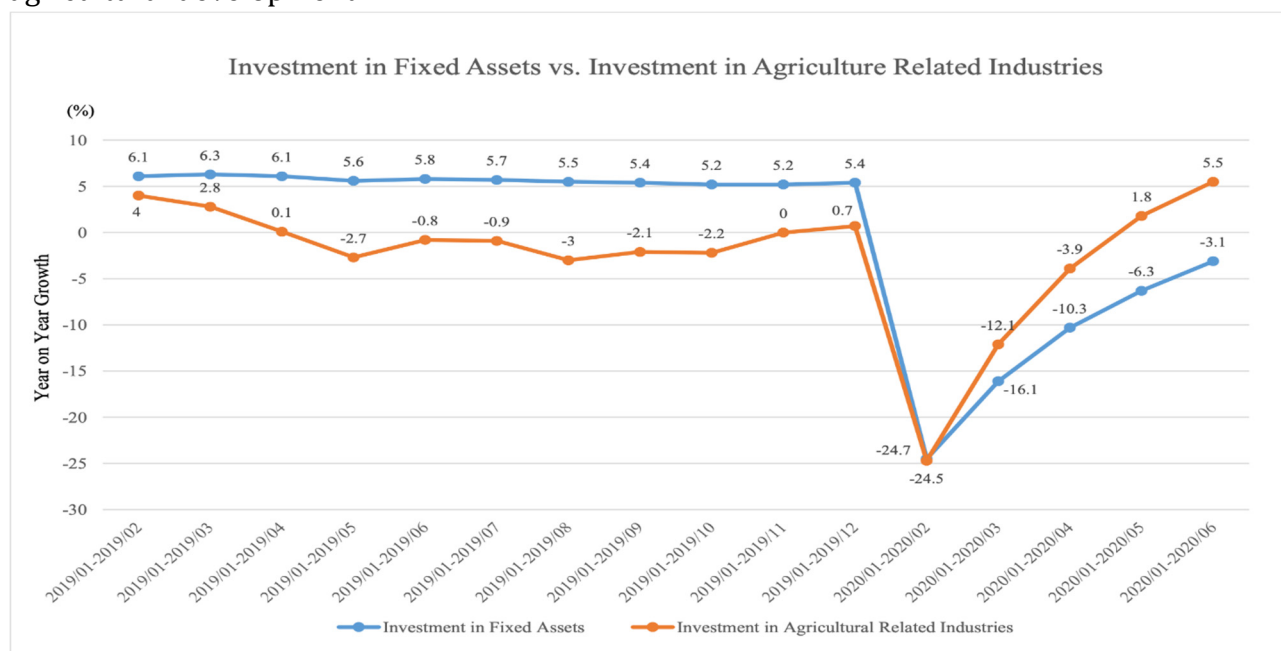


Figure 6. Investment in Fixed Assets vs. Investment in Agriculture Related Industries

7.2. The COVID-19 Pandemic Impeded the Improvement of Rural Area and Farmers' Livings

The pandemic adds difficulty to the Chinese government's task of building a comprehensive moderately prosperous society and cutting poverty in 2020. The postponement of the comprehensive moderately prosperous society means that rural construction and the livelihood of farmers will remain at a low level, thus hindering the development of Chinese agriculture. There are still 5.51 million people, 52 counties, and 2,707 villages below the poverty line in China. The difficulties brought by the pandemic on the progress of poverty alleviation are mainly reflected in three aspects. First, during the lockdown period early this year, it was difficult for poor people and those who have just gotten rid of poverty to return to work. According to data from the State Council's Poverty Alleviation Office, in 2019, there were 27.29 million documented poor laborers working outside the villages, and their wage income accounted for about two-thirds of their families' total income. However, by the end of March 2020, in 25 provinces of China, only about 20 million people below the poverty line had already returned to work, down 20 percent year-on-year. Among the 52 poor counties stated before, only 2.11 million people had returned to work, down 17 percent year-on-year. Delays in resuming work and unstable employment will raise the risk of losing incomes. Second, agricultural products in poor areas were unsalable early this year. During the pandemic, consumer demand for food products decreased and sales of agricultural products like honey and tea in poor areas declined, leading to a drop in the income of the poor. Besides, because farmers in poor areas often have insufficient business capacity and storage capacity, the stagnant sale of agricultural products made them suffer huge economic losses. Thirdly, poverty alleviation projects have resumed late and the resumption rate is low. Data from the State

Council's Joint Prevention and Control Mechanism on April 1, 2020, shows that in 22 provinces in the central and western regions, only 220,000 out of a total of 370,000 poverty alleviation projects were processing, with a resumption rate of only 60 percent. These three factors not only make it more difficult to cutting poverty for the remaining poor farmers and areas but also increase the risk of impoverishment for those who have already been above or just at the poverty line. Once their incomes are lowered and their time in poverty is longer, they will not invest so much into the agricultural production, which may decline China's agricultural output in the future and slow down the agricultural development.

7.3. The COVID-19 Pandemic Decelerated the Modernization of Agriculture and Urbanization Progress in China

The comprehensive mechanization rate of crop farming and harvesting nationwide exceeded 70 percent in 2019, up 3 percent from 67 percent in 2018. This is benefited from the subsidies for purchasing agricultural machinery and policies stimulating agricultural investment. Nevertheless, the declining agricultural investment caused by the COVID-19 pandemic is detrimental to the development of agricultural mechanization, the improvement of rural productivity, and the liberation of rural labor. The less mechanized agriculture is, the more farmers needed in the countryside, and the less labor flowing into the city. This has a negative impact on China's rate of urbanization, which will be magnified again by the late resumption of work by migrant workers and increasing unemployment. In the end, it will prolong the current stage of Chinese agriculture characterized by insufficient agricultural resources, low levels of science and technology, and low market competitiveness.

8. China's Countermeasures to the COVID-19 Pandemic

In terms of agricultural production, in order to quickly eliminate the impact of lockdown policy on the production and supply of agricultural products, in February the Ministry of Agriculture and Rural Development successively issued *"Emergency Notice on the Maintenance of Animal Husbandry Normal Production and Marketing Order to Protect the Meat, Egg and Milk Market Supply"* and *"Emergency Notice on the Solution of the Current Practical Difficulties to Speed up the Resumption of Production in Breeding Industry"*. Both proposed that the transportation of agricultural products and means of production should not be hindered, and the resumption of work in meat and fodder companies should be sooner. In April, the Ministry of Agriculture and Rural Development published *"The Advice on Accelerating the Construction of Cold Chain Facilities for the Storage and Preservation of Agricultural Products"*, proposing to strengthen agricultural infrastructure equipment, improve the quality of agricultural products, and reduce post-production losses of agricultural products. In June, the Ministry of Agriculture and Rural Affairs and the Ministry of Finance released the *"Agricultural Support Policies in 2020"*, proposing to issue a number of subsidies, including subsidies for arable land conservation, purchase subsidies on agricultural machinery, government incentive funds on the production of swine, cattle, and sheep, and producer subsidies on corns, soybeans, and grains. Agricultural products and means of production are also encouraged to be imported. For instance, the Chinese customs started to allow the import of US barley and fresh blueberries on May 13. The data of the Ministry of Rural Agriculture also shows that total pesticide imports in January-April 2020 reached 50,113.48 tons, up 37.4 percent compared to the same period last year.

In terms of farmers' income, in March, the Ministry of Agriculture and the Ministry of Human Resources and Social Security published the *"Plan for Expanding the Scale of Local Employment of Migrant Workers in Hometown"*, proposing to ensure the employment and income of the migrant workers in hometown, and suggesting allocation to five areas: agriculture, engineering, innovation, entrepreneurship and community service. In April, the *"Guidelines for Social Capital Investment in Agriculture and Rural Areas"* was issued to encourage and guide society to

increase investment in agriculture and rural development. At the same time, the China Banking and Insurance Regulatory Commission also issued a series of policies to help agriculture, including the *"Notice on the Key Work of Banking and Insurance Industry in Serving Agriculture, Villages, and Farmers in 2020"*, which proposed that financial, banking, and insurance industries should support agriculture and promote the poverty alleviation work. Policies to promote the sale of agricultural products have also been released one by one, such as the *"Guiding Opinions on the 'Internet Plus' Project of Selling Agricultural Products from the Village to the City"*, which proposed to create an online market for rural agricultural products by e-commerce and solve the problem of stagnant sales of agricultural products. From February 18 to March 20, farmers' cooperatives post nearly 150 thousand videos online to introduce their food products, got about 2.1 billion views, and made more than 200 million RMB of the trading volume. In June, Chinese Premier Li Keqiang introduced the concept of the "street vendor economy", which has increased employment opportunities for low-income people, represented by migrant workers. At the same time, the State Council issued the *"Opinions on the Implementation of Support for the Domestic Sale of Export Products"*, which proposed that products supposed to be exported, including agricultural products, are welcomed to enter the domestic market. This policy would open the domestic market for farmers who exported food products but suffered less abroad orders and guarantee the incomes for migrant works who work for foreign trade enterprises.

9. Conclusion

Currently, the prices of grain, vegetables, meat, and means of production have gradually stabilized after the huge fluctuations in January and February 2020, some of which are even below the same period in 2019. Thus, the countermeasures that China has taken so far have effectively mitigated the short-term impact of the COVID-19 pandemic on agriculture. However, the long-term impact of the pandemic on agriculture still exists. First, China should always pay attention to the impact of the pandemic on the countries that are the food import source of China, such as the United States, the major soybean import source, and Germany, the major pork import source. It is significant to build a multi-channel and multi-source agricultural import market to disperse the risks and instability that the pandemic may bring to food imports. Second, we can improve farmers' confidence in the future food market by making policies related to tax cuts, subsidies, and easy loans in agriculture-related industries, and encourage farmers to buy seedlings and reduce their production cost. The government should make sure there will be a sufficient supply of food in the next year. Third, corresponding with rising sales of agricultural products via e-commerce, the government should increase investment in the logistics industry and improve the food supply chain system, including the cold chain, so that food can be supplied as immediately as possible in case of the COVID-19 pandemic outbreaks in any city again. Fourth, the relative agriculture departments should provide guidance and advice to farmers on solving problems like reduced production and bad food storage, and strengthen their knowledge in selling food and developing food cooperatives. The government should promote transparency in food prices and increase farmers' bargaining power in selling food to protect their earnings. At the same time, education and training should be provided to grain brokers to improve their skills. It is also necessary to restrict their bargaining power in the market to prevent price increases caused by the hoard of grain in case of an international food crisis in the future. Fifth, the government should inspect strictly the impact of the COVID-19 virus on the safety of domestic and imported food. The safety check on the cold chain is important since it is the reason of the recurred pandemic in Beijing in June and Dalian in July. Once any food contaminated by COVID-19 is destroyed or unsalable, the government should deal with the possible food shortage problem immediately. At the same time, the relative agriculture departments should strengthen the prevention and control of contagious animal diseases, including African swine fever, so that the supply of meat would be sufficient and stable.

In terms of farmers' income, in addition to focusing on poverty alleviation for the remaining 5.51 million people below the poverty line, the government should also focus on the employment of migrant workers and the revenue of farmers who have just been lifted out of poverty. First, e-commerce for selling agricultural products should still be promoted to expand the online food market and ensure incomes for farmers. Second, the government should strengthen the assistance to small and medium-sized enterprises since they employ most migrant workers and always have business with low-income farmers. The survival of small and medium-sized enterprises is the premise of income and employment for farmers and migrant workers. Third, rural tourism needs to be recovered quickly and takes the benefits of holidays in the second half of the year. The thriving rural tourism would increase the income of farmers and entrepreneurs in the countryside, who are the engines of rural development and poverty alleviation. Fourth, the government should assist farmers who breed wild or wild-like animals in transforming their business. After the ban on trading and breeding wild animals, the government should guide the farmers on how to dispose of the fed wild animal and transform the breeding base into new business. Financial and political support should also be provided to the farmers to make sure they will not come back below the poverty line. Fifth, the government should accelerate the resumption of poverty alleviation projects and ensure that the poverty alleviation work is in smooth progress.

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