



Research on China's Agricultural Overseas Investment in Southeast Asia under The Belt and Road Initiative

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Abstract. Faced with the dual challenges of food demand pressure brought by population growth and increasing scarcity of agricultural resources, China has continuously increased overseas agricultural investment under the "Belt and Road" initiative, aiming to ensure national food security and expand international agricultural cooperation. This paper analyzes the current situation, trend, causes and existing problems of China's overseas agricultural investment, and puts forward countermeasures. The study found that the overall scale of China's foreign agricultural investment continues to grow, and the investment area is mainly concentrated in Southeast Asia and Europe, mainly in the field of planting. Regional economic integration, industrial complementarity and other factors have promoted agricultural cooperation between China and ASEAN and other countries. However geopolitical frictions also pose challenges to advance cooperation. Therefore, China needs to diversify the sources of agricultural imports, promote the transformation and upgrading of the agricultural industry, and actively explore new agricultural investment markets and industrial chain integration models, such as complementary cooperation with agricultural energy in the Middle East.

Keywords: The Belt and Road; food security; industrial complementarity; geopolitical challenges

1 Introduction

1.1 Background

Since 2013, the Chinese government has attached great importance to the 'going out' of agriculture. By promoting the Belt and Road Initiative, it has created more opportunities for enterprises in overseas agricultural markets. China's foreign agricultural investment has shown a sustained growth trend, covering planting, animal husbandry, forestry, fishery, etc., covering Asia, Europe, Africa, Oceania and other continents and regions. Among them, the ASEAN region is one of the key areas of China's agricultural foreign investment.

1.2 Related Research

Based on the theory of Overseas Direct Investment (OFDI) and New Economic Geography, Tian and Liu explore the factors that influence China's agricultural land investment in countries along the 'Belt and Road.' Through the zero-inflated Poisson model, they found that frequent and large-scale economic exchanges between countries helped to form a unique bilateral relationship and also reduced China's disadvantage in agricultural investment in the host country. In addition, the political stability and institutional environment of the host country are also one of the determinants of China's choice of investment location [1]. Zhang believes that the Belt and Road strategy has laid a solid foundation for China's outward direct investment. China's direct foreign investment in recent years has been concentrated in countries that are not conducive to sustainable development. It is believed that through the evaluation of investment in countries along the Belt and Road, the signing of agreements, the construction of foreign economic and trade cooperation zones and additional measures, the investment layout at this stage can be optimized [2]. Yao et al. Used the two-stage minimum square method (2SLS) to study whether the agricultural investment of the Belt and Road has an impact on the food security of the host country. Through the analysis of the data, they concluded that for most host countries, agricultural investment has improved their level of food security. This ensures the sustainable development of investment (the United Nations regards food security as an essential tool for sustainable development) [4]

Wright and Pardey first proved that Marx's statement that world famine is inevitable is wrong. Secondly, it is expounded that the challenges of food supply in the

21st century mainly come from income growth, leading to a richer, more diverse diet and increased demand for animal products as well as continued investment in the public sector is essential to support basic and cutting-edge technological innovation to ensure social benefits and address environmental, food safety issues [5]. Tian et al. evaluated the arable land resources of 48 'Belt and Road' countries from 2008 to 2016 through TOPSIS technology, and found that Chinese enterprises should carry out joint development with the host country and support the sustainability of long-term investment in cultivated land; it should also invest in countries with high levels of arable land and low risk of corruption [7].

1.3 Objective

This paper aims to sort out the current situation of China's foreign agricultural investment, focusing on the analysis of China's agricultural investment situation and cooperation areas in the ASEAN region. The paper discusses the driving factors of agricultural cooperation between China and ASEAN countries from the macro and micro levels, and puts forward suggestions for strengthening agricultural cooperation between the two sides in the future.

2 Current Situation and Trend of Overseas Agricultural Investment

2.1 Agricultural Investment Background

From the demand side, the world population is expected to reach 9 billion to 10 billion people by 2050, leading to an increase in agricultural demand. From the production point of view, land and water resources are limited, and the world's cultivated land area is gradually declining. This has prompted China to increase its total foreign agricultural investment through technological innovation, land and water resources management and other means to meet the growing demand. Especially in developing countries, investment will focus on solving the problems of low agricultural productivity and food shortage, and promote the sustainable development of agriculture. [1]

2.2 Scale

According to statistics from the Development Planning Department of the Ministry of Agriculture and Rural Affairs, by the end of the 12th Five-Year Plan period, China's foreign agricultural investment stock reached 9.44 billion US dollars, an increase of 70% over five years ago. By the end of 2021, this number not only did not show a downward trend but showed great growth potential. [2] Over the past seven years, China's foreign agricultural investment stock has increased by 3.2 times, reaching \$ 27.115 billion. This trend reflects China's deepening and expansion in the field of agriculture. The Chinese government hopes to provide more opportunities for Chinese enterprises to invest in agriculture overseas by promoting the "Belt and Road" initiative. [3]

China also presents a very clear layout in choosing host countries. At present, China has launched more than 800 foreign agricultural investment cooperation projects, covering many continents. Investment is mainly concentrated in Asia and Europe. From the perspective of investment flow and investment stock, Asia is the main destination for foreign agricultural investment. In 2021, Asia's investment flows will be \$ 800 million, accounting for 48.13% of total investment flows; the investment stock is \$ 11.698 billion, accounting for 43.14% of the total investment stock. This shows China's continued attention and investment in the Asian agricultural market. Europe is the second largest destination for China's foreign agricultural investment. In 2021, the investment flow in Europe was USD 498 million, accounting for 29.96% of the total investment flow, and the investment stock was USD 7.602 billion, accounting for 28.04% of the total investment stock. Oceania and Africa have seen relatively little investment due to several regional factors or market constraints. [4]

2.3 Countries Along the Route

By the end of 21, China has invested in the establishment of a total of 1120 agricultural enterprises, an increase of 110 compared with 2020. Among them, there are 609 in Asia, 176 in Africa, 140 in Europe, 89 in Oceania, 70 in North America and 36 in South America. In Asia, from the perspective of investment stock and flow, Indonesia, Laos and Israel are the top three countries, with 2.262, 2.259, and 1.526 billion US dollars and 213, 105, 165 million US dollars respectively. From the number of enterprises to do a ranking, Southeast Asian countries account for a large

proportion of high. Myanmar (101), Laos (91) and Indonesia (62) are the top three countries in the number of Chinese investment enterprises in Asia.

3 Macro-micro

3.1 Macro-factor Analysis

The main reason for China is that the economic environment has promoted frequent trade between China and ASEAN countries. In recent years, China and ASEAN have signed a number of agreements to promote economic development. After the Asian currency crisis in 1997, in response to the 'Trans-Pacific Partnership' agreement. In 2011, the draft of the RCEP was confirmed at the ASEAN Economic Ministers' Meeting, which will finally come into force on January 1, 2022.

The signing of the RCEP agreement is of strategic significance to the economic growth and cooperation between China and ASEAN countries. First of all, based on the original more reduced tariffs. Although the China-ASEAN Free Trade Area already existed before the signing of this agreement, RCEP has made trade more free. For ASEAN countries, China has adopted a consistent tax reduction policy for them - pledging to gradually eliminate tariffs on 1,400 agricultural products in ASEAN countries. This promotes the rapid development of agriculture in the ASEAN region and balances regional development. For China, not only the import and export costs are reduced compared to the past, but also Chinese enterprises are more convenient to invest in ASEAN countries. The 15 member countries of RCEP have adopted a negative list management approach to investment in agriculture, which has reduced investment restrictions in agriculture. In addition, the RCEP agreement provides customs clearance convenience for cargo transportation. It will reduce the obstacles encountered in the clearance of goods and shorten the clearance time. For example, the implementation of RCEP will shorten the clearance time of perishable food and fast goods between China and Thailand to less than 6 hours.

Table 1. China's tax reduction on ASEAN agricultural products.

	Number of tax items	Proportion	Specific tax items
Maintain or is about to be zero	960	65%	Tropical fruits, aquatic products, beverages, nuts
10-20 years after the entry into force of the agreement is reduced to 0	404	28%	Wine, honey, fish, almonds, essential oils, nuts
Exception handling	106	7%	Food, Sugar, Vegetable Oil, Coffee

Table 2 Thailand's tax reduction on Chinese agricultural products.

Thailand	Number of tax items	Proportion	Specific tax items
Maintain or is about to be zero	895	53%	Livestock products, tomatoes, lettuce, grapes, apples
10-20 years after the entry into force of the agreement is reduced to 0	461	27%	Fish, fruits, nuts, vegetable oils, honey, wine
Exception handling	87	5%	Cattle, poplars, horses and their edible miscellaneous taxes under some special tax items are included.

Table 3 Vietnam's tax reduction on Chinese agricultural products.

Vietnam	Number of tax items	Proportion	Specific tax items
Maintain or is about to be zero	840	50%	Fresh cold fish, shelled eggs, natural honey
10-20 years after the entry into force of the agreement is reduced to 0	692	41%	Milk and cream, potatoes, coffee, nuts, pineapple, etc.
Exception handling	143	8%	Black tea, rice, sugar, tobacco

3.2 Areas of Cooperation

Agricultural Trade Cooperation. The essential reason why China and ASEAN can trade in agricultural products is that the climate difference between the two sides leads to the differentiation of agricultural products. ASEAN countries are generally located in tropical and subtropical regions, mainly producing tropical agricultural products such as fruits, coffee and cocoa. Most of China belongs to a temperate or subtropical climate, mainly producing cereals and other temperate products. With the rising income of Chinese people, domestic consumers' demand for high-quality fruits and aquatic products is gradually increasing. Due to the large population size and rapid urbanization process in ASEAN countries, the demand for food and vegetables and other bulk products is also increasing. The high degree of agreement between the consumer demand of the two sides makes the trade of agricultural products develop rapidly.

Second, China and ASEAN countries have complementary advantages in production capacity. China's agricultural product processing capacity has been continuously improved, and the ASEAN region has a large land resource advantage in the production of agricultural primary products, which can form an efficient division of labor in the industrial chain.

On the one hand, ASEAN countries generally have good arable land resource endowments and production conditions [5]. The tropical region of ASEAN has a warm and humid climate and sufficient sunshine, which is very suitable for planting tropical economic crops such as fruit and palm oil. On the other hand, due to China's

advantages in processing, it can complement the excellent production base of primary agricultural products in the ASEAN region. [6]

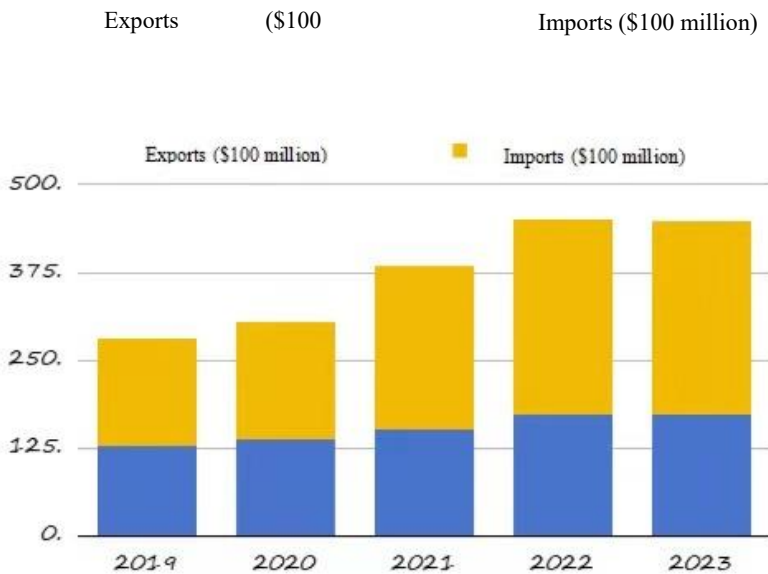


Fig. 1. The import and export volume of agricultural products between China and Dongmen countries in the same period in the past four years.

Breeding Cooperation in the Seed Industry. In recent years, the two sides have carried out multi-level cooperation in germplasm resource sharing and breeding technology exchange. Due to the differences in climatic conditions and geographical environment between China and ASEAN countries, the two regions can share crop germplasm resources, because these resources contain valuable genetic genes and are the basis of breeding work. Among them, the collection, preservation, and utilization of germplasm resources can be strengthened to provide a richer genetic gene pool for breeding new varieties. For example, China has established a cooperative relationship with Thailand, Vietnam and other countries for the exchange and utilization of major crop germplasm resources such as rice and corn. [7] In addition, China and ASEAN have deep exchanges and cooperation in the field of breeding technology. For China, ASEAN countries have their advantages in conventional breeding and the breeding of tropical crops such as bananas and mangoes. For ASEAN, China has rich experience in cross-breeding technology on staple crops such as rice and wheat. This allows both

sides to give full play to their own advantages and strengthen the exchange of breeding theory and practical technology. China and the Philippines have complementary advantages in agricultural science and technology, breeding talents and germplasm resources, which lays a foundation for the breeding cooperation agreement (cultivation of new maize varieties and breeding technology) signed by the Chinese Academy of Agricultural Sciences and the University of the Philippines at Los Banos in 2021.

Smart Agriculture. China and ASEAN countries are cooperating in the field of digital agriculture. ASEAN countries, they can take advantage of China's advantages in the field of agricultural processing technology, agricultural materials, agricultural machinery and equipment to enhance the comprehensive production capacity of crops. On the other hand, China can achieve industrial chain optimization through intelligent upgrading of both ends of the value chain such as rice breeding, processing and warehousing, and logistics with ASEAN countries.

First of all, both sides actively promote the concept and mode of Internet agriculture. In Thailand, Myanmar and other countries, China uses the Internet of things, cloud computing, big data and other technologies to build a big agricultural data platform and agricultural remote sensing monitoring system, providing theoretical and technical support for local digital transformation. For example, Thailand's Charoen Pokphand Group works with partners such as Huawei Cloud. To ensure the quality of durian exported to the Chinese market, the group has applied cloud computing, artificial intelligence, 5G and other technologies to the durian grading process. This technology can quickly obtain the maturity percentage of each durian through near-infrared spectroscopy and AI algorithms, and finally improve the maturity prediction accuracy from 50% to 91%.

Secondly, China's intelligent agricultural machinery and equipment are promoted and applied in ASEAN countries. As an important means to improve agricultural production efficiency and achieve fine management, China has made remarkable progress in independent innovation in this field, and has developed a number of intelligent agricultural machinery equipment suitable for different agronomic links, which can be widely promoted and applied in ASEAN countries. Among them, China's independent research and development of agricultural plant protection drones is a representative. This UAV can realize high-precision variable spraying, which not only improves the utilization rate of pesticides, but also effectively reduces the

pollution of pesticides to the environment. At present, the products of many Chinese UAV companies have been promoted and applied in Thailand, Vietnam, Myanmar and other ASEAN countries, which has greatly improved the efficiency of pesticide application - the UAV can spray 96-120 mu of rice fields per day, which is 4-5 times more efficient than manual spraying. In addition, the Chinese company Zoomlion has signed agricultural services and smart farm pilot cooperation agreements with a number of ASEAN local partners, and will establish demonstration bases in the ASEAN region. In addition, we also want Indonesia, Thailand, Laos, Cambodia and other ASEAN countries to export high-end agricultural machinery products in batches to improve the level of local mechanization.

4 Outlook

In recent years, the United States has imposed a series of trade protectionist measures on China. In 2018 and 2019, China's agricultural import quota from the United States dropped to 16.21 billion US dollars and 14.27 billion US dollars, respectively, with year-on-year growth rates down 32.7% and 40.7% from 2017 as the base. At the same time, US agricultural exports to China, such as seafood, have also been affected to a certain extent, resulting in a decline in China's agricultural export quota to the United States. Although the first-stage economic and trade agreement between China and the United States has eased and recovered the agricultural trade relations, the strategic contradictions between the two sides have not been eliminated, and there are still many uncertainties in the future trend. The United States has imposed a series of protectionist measures on China. They not only raise taxes on Chinese agricultural products exported to the United States, but also restrict Chinese enterprises from investing in agriculture in the United States. In addition, Canada and some Latin American countries have also received the influence of the United States, making it difficult to maintain a large number of agricultural cooperation with China. For example, Brazil, Argentina and other countries are prohibited from exporting genetically modified seeds and agricultural product processing technology to China under the diplomatic pressure of the United States.

5 Conclusion

This paper analyzes the trend of continuous growth of China's foreign agricultural investment, and the investment sites are mainly concentrated in Europe and Asia. In Asia, ASEAN countries are the main destinations of China's agricultural investment, accounting for a large proportion. The main driving force of agricultural cooperation between China and ASEAN countries is the complementary demand for agricultural products and agricultural production capacity of both sides. China's demand for high-quality agricultural products is growing, while ASEAN countries have good production conditions for tropical agricultural products. At the same time, China has advantages in agricultural product processing, intelligent agricultural machinery and equipment, and can cooperate with ASEAN countries at both ends of the industrial chain.

Under the additional trade protection imposed by the United States, China needs to further strengthen cooperation with ASEAN countries in the field of agriculture if it wants to get rid of US sanctions and dependence on the single market. On the one hand, we should expand the scope of agricultural trade and strengthen the coordinated development of tropical agricultural production and processing; on the other hand, we should deepen the sharing of germplasm resources and the exchange of breeding technology, and cultivate more excellent varieties adapted to climate change. This not only enables China to reduce the impact of US policies, but also makes good use of the huge space for cooperation between China and ASEAN countries in the agricultural field, making positive contributions to ensuring regional food security and achieving mutual benefit and win-win results.

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