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“Transformation of Low Added Value of Vietnamese Agriculture - the Path of Sino-Vietnamese Agricultural Cooperation under Adaptive Regulation”

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ABSTRACT

In the context of the increasing output of Vietnam's agricultural products and foreign sales market, its industrial development is faced with problems such as imperfect policies, great environmental pressure, shortage of talents, and backward science and technology. As The largest importer of Vietnam, China enjoys obvious advantages in agricultural cooperation and development with Vietnam, and the two sides have established cooperation mechanisms and platforms. The two sides can work together to advance agricultural cooperation by improving the efficiency of agricultural economy, innovating organizational structure, enhancing production and application of science and technology, optimizing cooperation mechanisms and protecting the ecological environment.

Introduction

1. Current Situation and Demand of Agricultural Development in Vietnam

1.1 Status Quo of Agricultural Development in Vietnam

In the 1980s, Vietnam was a country of food scarcity and hunger. Under the pressure of food shortages, the Vietnamese Government allocated most of its public investment to the agricultural sector, to agricultural research and extension, agricultural irrigation and infrastructure, and agricultural input production facilities. Subsequently, Vietnam's agricultural productivity rose rapidly, making a significant contribution to national food security and successfully competing in international markets with cheap and fresh food. Agricultural policies in the 1990s led to an intensive monoculture system of farming in Vietnam. Rice monoculture is practiced in the Mekong Delta region, but this intensive rice production requires extensive use of inorganic fertilizers and pesticides, resulting in local water pollution and soil sterility. Coffee and pepper are produced in Vietnam's central highlands, and these crops have contributed to massive deforestation and groundwater depletion. This, coupled with the expansion of coastal shrimp farming, has severely damaged local mangroves and ecosystems. At the same time, agricultural land is under pressure from rapid urbanization and industrialization.

Vietnam's agricultural productivity increased after 2000. Since 2001, the proportion of small farmers

with less than 0.2 hectares of arable land has increased from 26% to 35% in 2011. Production growth reduced the proportion of undernourished people from 46% during 1990 to 13% during 2012. Along with this achievement, Vietnam has radically improved its position in global agricultural markets, becoming the world's largest exporter of cashews and black pepper, the second largest exporter of coffee and cassava, and the third largest exporter of rice and fisheries. In 2013, the agricultural structure adjustment plan was implemented on the basis of making full use of export advantages, which enabled agricultural production to maintain a high growth rate. The average income per hectare of farmland increased from 72.2 million to 84.5 million. Vietnam's agricultural production structure began to change, to adapt to the direction of the market economy, formed a large area, such as the red river delta, the Mekong delta southeast of rice production, rubber industry, coffee industry in central highlands, and the mountains of tea cultivation, town of north-central vegetables and flower planting, the Mekong delta fruit and aquaculture. Among them, animal husbandry has made positive changes in technology and scientific application. However, the overall picture shows that restructuring in the agriculture, forestry and fisheries sectors has been slow due to unclear and unpredictable mechanisms and agricultural development policies. The policy of equal land distribution has long fragmented agricultural land. While

the Land Law 2013 promotes the development of land markets, the maintenance of land use rights, the area of land per household, and the selection, transfer and exchange of crops to ensure equal access to land for the rural population, it limits the ability to accumulate land and discourages investment in long-term development. Vietnamese families have some of the smallest farms in the world, making it difficult to mechanize, modernize and mass-produce. Rural infrastructure has improved significantly over the past decade, but investment has not kept pace with economic growth, leading to serious infrastructure bottlenecks. Vietnam needs to improve the policy environment so that investments can continue to adapt the agricultural sector to the challenges of growing demand and climate change, while making better use of limited resources.

While Vietnam's agriculture has made remarkable progress in terms of productivity, output and exports, it has brought problems of inefficient resource use, unsustainability, loss of farmers' welfare, poor quality and unsafe food. The biggest beneficiaries of the industry's growth are not farmers or domestic consumers, but foreign consumers and large multinational agricultural companies, who benefit from lower Labor costs and lax environmental regulations. As a result, resource-based agriculture has increased the income gap between the agricultural and non-agricultural sectors and between rural areas. Concerns about

food safety and environmental degradation are also emerging in Vietnam. The Vietnamese government is aware of these problems and in response, Hanoi has initiated several policy reforms, including an agricultural restructuring program, a Good Agricultural Practices (GAP) and certification program, a food safety program, value chain development, land consolidation and automation. These policies are aimed at achieving a diversified, sustainable and high value-added agricultural sector, but so far they have been ineffective and slow to be implemented. Hanoi cannot afford a state-led agricultural sector development strategy because of its limited capacity and degraded land resources.

1.1.1 The Output and Sales Market of Agricultural Products in Vietnam is Developing Rapidly

Vietnam's agriculture has achieved rapid and steady growth in planting, animal husbandry, forestry and fisheries. In year 1986, 2005 and 2014, the output value of agriculture, forest and fisheries reached VND65.1 trillion, VND82 trillion and VND830 trillion respectively. Agriculture, forestry and fisheries accounted for 0.61% of the country's GDP growth rate in 2014 (up 5.98% from 2013). The sector's export turnover jumped from \$400 million in 1986 to \$12 billion in 2007 and \$30.86 billion in 2014. Some commodities, such as rice, coffee, rubber, cashews, pepper, wood and wood products, and seafood, are already listed among the world's

largest exports. New cooperatives, high-tech agricultural enterprises, and community agricultural service cooperatives and joint-stock companies have opened up new avenues for agricultural development in Vietnam. Through production and marketing cooperation, farmers and enterprises play a key role in the value chain of agricultural products. The emergence of producers, sellers and farmers' organizations helped to form stable agricultural areas and establish agricultural brands to meet market demands in the era of integration.

According to a report by Vietnam's Ministry of Agriculture and Rural Development (MARD), the main overall targets for the agricultural sector in 2018 exceeded the full-year plan and were higher than the previous year's targets. At the same time, Viet Nam and the European Union (EU) formally signed the Voluntary Partnership Agreement on Forest Law Enforcement, Governance and Trade (VPA/FLEGT), which clears the international market for the export of timber and forest products in the forestry sector. Forestry output increased by 6.1%. The capacity of agriculture, forestry and fishery industry continues to be strengthened towards intensive processing. In 2018, 16 modern vegetable, pork and poultry processing plants were put into operation across the country, with a total investment of about VND8.7 trillion (\$374.1 million).

1.1.2 The Scientific Level of Agriculture in Vietnam Has Been Significantly Improved

Socio-economic infrastructure has been established in rural areas and scientific and technological progress has been applied at different stages of agricultural production to improve the productivity, quality, efficiency and competitiveness of agricultural products. Dikes, roads and fishing infrastructure have been strengthened. More markets have been established, updated and upgraded, thus increasing the value of trade in goods and services and making a significant contribution to the marketing of agricultural products, the promotion of production and the improvement of people's lives. The application of science and technology in agricultural production is becoming increasingly popular with the use of new varieties, biotechnology and advanced cultivation methods. In addition to mechanization in the stages of agricultural production, such as irrigation, harvesting and cleaning of agricultural products, processing of animal feed and aquaculture, advanced technologies have been applied to the initial processing and preservation of agricultural products, trees and aquatic products. Vietnam, a country that once imported millions of tons of grain, is now the world's third-largest rice exporter (after India and Thailand). The rural poverty rate dropped by 1.8% annually. The cultural, scientific and technological level of the peasants has improved markedly. Health care,

universal education and cultural information activities have been further strengthened, and political security and social order have been maintained.

Vietnam's agricultural production capacity is large, but the cost of many products is high due to weak agricultural support industries and low labor productivity. In addition, due to the limitations of quality, model and marketing methods, the competitiveness of goods is not high. Most of Vietnam's major exports are semi-processed and do not have trademarks. Agricultural export markets remain unstable, undiversified and dependent on certain traditional markets. In addition, restrictions on forecasting capacity, national regulatory agencies and enterprises also contributed to the dispersion of agricultural exports. In recent years, Viet Nam has established concentrated and large-scale raw material regions to meet the needs of international competition in global value chains, effectively complementing agricultural development mechanisms and policies in accordance with international standards and practices. Agricultural productivity is expected to increase significantly in the coming period.

1.1.3 Production and Sales Market Development of Vietnam's Agricultural Products

In 2014, the value of fishery output increased by 6.8 percent compared with 2013. The value, quality and efficiency of offshore fishing have increased thanks to the application of advanced technology. Aquaculture

output reached 3.4 million tons in 2014, up 6.1 percent from the previous year. Afforestation was strengthened to keep the forest coverage rate at 41.5% and increase the gross forest output by 7.1%. Large forests were planted. The agricultural, forest and aquatic product processing industries continue to flourish with the formation of many new high-tech processing plants. Today, there are 2,790 craft villages including 240 traditional craft villages across the country, which provide permanent and irregular jobs for about 11 million people. New cooperative; High-tech agricultural enterprises; And community agricultural service cooperatives and corporations. These models have opened up new ways for the country's agricultural development. Through production and marketing cooperation, farmers and enterprises play a key role in the value chain of agricultural products. The emergence of producer-seller farmer organizations has helped to form stable and sustainable agricultural areas and to establish agricultural brands to meet market demands in the era of integration. Relations of production have evolved in more appropriate ways, involving different economic sectors of agriculture. So far, as many as 24,000 farms have been registered under the new standards. By the end of 2014, the agricultural and rural economies had been restructured to promote the production of agricultural products with higher market demand and economic value. In 2014, rice production reached a record 45 million

tons, up nearly 1 million tons from 2013. Livestock and poultry breeding flourished, with higher yields per unit of key products such as meat, milk and eggs, and the emergence of many industrial-scale high-tech breeding farms.

According to a report by the Ministry of Agriculture and Rural Development (MARD), the agriculture sector's main overall target for 2018 exceeded the full-year plan and was higher than the previous year's target. Among them, the total output value of agriculture, forestry and fishery increased by 3.76 percent, reaching the highest level in nearly seven years, and output value increased by 3.86 percent. The forest coverage rate reached 41.65%. The sector had export earnings of \$40.02 billion and a trade surplus of \$8.72 billion. The 10 commodity categories with export turnover of more than \$1 billion remained unchanged, with five items generating revenues of more than \$3 billion, including timber and wood products (\$8.86 billion), shrimp (\$3.59 billion), fruits, vegetables, vegetables (\$3.81 billion), coffee (\$3.46 billion) and cashews (\$3.43 billion). We will continue to adjust the production structure in a more appropriate and effective way according to market demand. Many models of vegetable, flower and fruit production using high-tech and organic techniques have emerged, bringing in five times as much income as rice production. Crop output value increased 2.52 percent, higher than the target of 2.5 percent. In the livestock

sector, some animal products were initially exported, such as frozen pork to Myanmar and chicken to Japan through official channels. Livestock production soared 3.98 percent, higher than the target (2.1 percent). The fisheries sector enjoyed continued success in 2018, with total production reaching 7.74 million tons, up 6.1 percent, with a sharp increase in the proportion of high-value products, with the number of prawns reaching almost 800,000 tons, up 7.1 percent; Fish amounted to 1.426 million tons, up 11.1 percent.

Viet Nam and the European Union (EU) formally signed the Voluntary Partnership Agreement on Forest Law Enforcement, Governance and Trade (VPA/FLEGT), and the forestry sector has cleared the international market for the export of timber and forest products. Forestry output increased by 6.1%. The capacity of agriculture, forestry and fishery industry continues to be strengthened towards intensive processing. In 2018, 16 modern vegetable, pork and poultry processing plants were put into operation across the country, with a total investment of about VND8.7 trillion (\$374.1 million).

After 30 years of innovation, agriculture contributes 18-35% of the value of the country's exports. By 2015, Vietnam was the world's largest exporter of cashews and black pepper, the second largest in coffee and cassava, and the third largest in rice and seafood. The central Institute of Economic Management -CIEM (2014) showed in a

study that the productivity and competitiveness of each Vietnamese agricultural product are quite different. The product groups with high RCA ($RCA \geq 2.5$) are those with competitive advantage and market expansion opportunities after integration, such as rice, coffee, cashews, tea and pepper. The product group with low RCA ($1.0 \leq RCA \leq 2.5$) is the commodity with low production advantage, weak competitiveness and potential combined impact, such as sugarcane, animal feed, milk, vegetables and fruits. Vietnam's agricultural production capacity is large, but the cost of many products is high due to weak agricultural support industries and low labor productivity. In addition, due to the limitations of quality, model and marketing methods, the competitiveness of goods is not high. Most of Vietnam's major exports are semi-processed and do not have trademarks. Agricultural export markets remain unstable, undiversified and dependent on certain traditional markets. In addition, restrictions on forecasting capacity, national regulatory agencies and enterprises are major obstacles to the fragmentation and unsustainable nature of agricultural exports. In recent years, the State has supported the agricultural sector in connection with the processing and marketing of agricultural products to establish concentrated and large-scale raw material regions to meet the needs of international competition in global value chains. Mechanisms and policies for agricultural development are effectively complemented in accordance

with international standards and practices. They create convenience, transparency and long-term stability to attract the private sector and improve the competitiveness of value-chain-related enterprises. As a result, agricultural productivity is expected to rise significantly in the coming period.

1.1.4 Scientific level of Agriculture in Vietnam

Socio-economic infrastructure has been established in rural areas and scientific and technological progress has been applied at different stages of agricultural production to improve the productivity, quality, efficiency and competitiveness of agricultural products. Many irrigation projects have been built and put into use. All dikes, roads and fishing infrastructure have been strengthened. More markets have been established, updated and upgraded, thus increasing the value of trade in goods and services and making a significant contribution to the marketing of agricultural products, the promotion of production and the improvement of people's lives.

The application of science and technology in agricultural production is becoming more and more popular with the use of new varieties and varieties, biotechnology and advanced cultivation methods. In addition to mechanization of agricultural production stages such as irrigation, harvesting and cleaning of agricultural products, processing of animal feed and aquaculture, advanced technologies have been applied to the initial processing and preservation of

agricultural, forest and aquatic products, helping to extend the shelf life of food. Products while retaining their nutritional value. Industrialization and modernization of agriculture and rural areas have contributed to the improvement of the material and spiritual life of farmers. The life of farmers and the rural economy has been significantly improved. Vietnam, a country that once imported millions of tons of grain, is now the world's third-largest rice exporter (after India and Thailand). The rural poverty rate dropped by 1.8 percent annually. The cultural, scientific and technological level of the peasants has improved markedly. Health care, education and cultural information activities have been further strengthened. In rural areas, political institutions have been strengthened. The status of farmers has been improved, political security and social order maintained.

1.2 Problems Faced by Vietnam's Agricultural Development

The agricultural sector shows different patterns of growth and performance. Fisheries and aquaculture are growing at about 8.8 per cent a year, driven mainly by nearshore fisheries rather than shrimp aquaculture, which is facing production losses due to disease. Livestock production also grew at a remarkable average annual rate of 4.7 per cent, characterized by high volatility, linked in part to disease outbreaks and fluctuations in the cost of animal feed. Domestic milk production still accounts for a small share of livestock sector

added value, while pork production accounts for about 70 per cent of growth in the sub-sector. Despite the overall strong performance, many constraints remain. Minister of Agriculture and Rural Development Nguyen Xuan Kiang said Vietnam still faces many challenges in agricultural and rural development. In particular, potential risks in consumer markets are increasingly volatile, while the ability to forecast supply and demand remains limited. The issue of removing the European Commission's "yellow card" against Vietnamese fishing has not been definitively resolved, as have other issues, including adverse prices for industrial crops, potential outbreaks of animal and plant epidemics, and food safety management.

The agricultural sector, which has shown a downward trend in recent years, is characterized by low profitability of small farmers, underemployment of agricultural workers, generally low value-added and limited technological or institutional innovation. The development of the agricultural sector often comes at the expense of the environment, particularly in the form of overuse of chemical inputs, deforestation, biodiversity loss, land degradation, water pollution and greenhouse gas emissions. Rising labor costs also hamper Vietnam's ability to compete internationally. This leads to a huge loss of investment, income and jobs, and severely limits the profitability of farms.

Vietnam's performance in agricultural output, output and exports is

more impressive than its achievements in efficiency, farmer welfare and product quality. Vietnam lags behind its regional peers in agricultural land, Labor and water productivity, and has experienced strong growth in total factor productivity in recent years. A gulf is forming between farm and non-farm incomes and income inequality is increasing in rural areas. Much of Vietnam's agricultural trade is in the form of commodities, often sold at lower prices than major competitors because of quality or other differences. At home, there are growing concerns about food safety. More and more inputs produce more and more output at higher and higher environmental costs. Much of Vietnam's agricultural growth has come from the expanded or more intensive use of land and other natural resources, as well as the relatively heavy use of fertilizers and other pesticides. As a result, Vietnam's agricultural success has come at the expense of the environment. The environmental consequences of Viet Nam's agricultural success include the increasing incidence of deforestation and depletion of fishery resources, land degradation and water pollution. As a result, Vietnam's agricultural growth is heavily dependent on human, natural and chemical factors of production. Vietnamese agriculture is now at a turning point. The agricultural sector now faces increasing domestic competition for Labour, land and water from cities, industry and services. Rising labor costs are beginning to curb the industry's ability to compete globally as

a low-cost producer of bulk commodities. Concerns are growing about the consequences of excessive inputs and the use of natural resources (for the environment and farmers' profitability). Now, several environmental problems are seriously affecting the productivity and international standing of Vietnamese goods. Vietnam has bright opportunities in both domestic and international markets, but to compete effectively in these markets will depend on farmers and businesses providing reliable (food and other) products with quality and safety.

1.2.1 Agricultural Policy is Inflexible and Lacks Innovation Mechanism

The first problem that Vietnam's agricultural sector has been facing is its institutional failure to regulate production, environmental regulations, and agricultural input and output markets. The second problem is the sector's weak ability to generate and disseminate information transparently, the problem of information asymmetry. The third problem is the lack of human resources, the lack of young, educated, skilled and entrepreneurial talent. Policy and institutional reforms that promote innovation and efficiency, such as those on agricultural land, research and food security, are therefore crucial. However, state-led development strategies are not flexible enough to face the new challenges posed by international markets, new geopolitical situations and climate change. But the Vietnamese

government is not ready to give up control of agricultural resources, and the current public agricultural administration system is too large to be disintegrated. This means that the future of Vietnam's agricultural sector remains uncertain and depends on whether the government can reform its agricultural administrative system.

On the other hand, some experts believe that scattered small plots of land prevent companies from investing and investing in agriculture. At the same time, barriers imposed by land accumulation policies marginalize farmers and hinder the development of Vietnamese agriculture. Vietnam has one of the lowest areas of arable land per capita, according to a report released by the Vietnam Economic and Policy Research Institute. Vietnam's agriculture relies on 76m plots of land owned by 10m farmers, hindering the adoption of technology. Therefore, centralized production areas need to be established under the background of high integration of global integration and intensified climate change.

Over the past 30 years, Viet Nam has opened up to international markets by acceding to various bilateral and multilateral trade agreements. International market integration is a powerful force to boost the agricultural sector. The older generation of trade agreements focused on tariff reductions, custom procedures and sanitary and phytosanitary requirements. Recent "next generation" trade agreements, such as the Comprehensive Progress

Agreement for the Trans-Pacific Partnership, the Vietnam-Eu Free Trade Agreement and the Investment Protection Agreement, and the Regional Comprehensive Economic Partnership (RCEP), offer more opportunities for agriculture, especially on labor, social and environmental issues. Yet fundamental institutional reform is needed.

1.2.2 The Environmental Safety Problem Has not been Solved

The issue of removing the "yellow card" issued by the European Commission against Vietnamese fishing has not yet been definitively resolved. Other issues, including adverse prices of industrial crops, potential outbreaks of animal and plant epidemics, and food safety management, are key factors affecting The development of Vietnamese agriculture. In recent years, the profitability of small farmers has been low, agricultural workers have been underemployed and the development of the agricultural sector has often come at the expense of the environment, particularly in the form of overuse of chemical inputs, deforestation, biodiversity loss, land degradation, water pollution and greenhouse gas emissions. Rising labor costs also hamper Vietnam's ability to compete internationally. This has resulted in a huge loss of investment, income and employment opportunities, while severely limiting the profitability of farms. Much of Vietnam's agricultural growth has come from the expanded or more intensive use of land and other

natural resources, as well as the relatively heavy use of fertilizers and other pesticides. The environmental consequences of Viet Nam's agricultural success include the increasing incidence of deforestation and depletion of fishery resources, land degradation and water pollution.

1.2.3 Increasing Income Inequality

Income inequality is rising in rural Vietnam. Much of Vietnam's agricultural trade is in the form of commodities, often sold at lower prices than major competitors because of quality or other differences. Vietnamese agriculture is now at a turning point. The agricultural sector now faces increasing domestic competition for Labour, land and water from cities, industry and services. Rising labor costs are beginning to curb the industry's ability to compete globally as a low-cost producer of bulk commodities. Concerns are growing about the consequences of excessive inputs and the use of natural resources (for the environment and farmers' profitability). Now, several environmental problems are seriously affecting the productivity and international standing of Vietnamese goods. Vietnam's ability to compete effectively in these markets will depend on farmers and businesses providing reliable (food and other) products that guarantee quality and safety.

1.3 Opportunities and Challenges of Agricultural development in Vietnam

Nowadays, in the context of deep integration of international

economy and global integration, Vietnam's agriculture is faced with technological innovation of its agricultural products, improving import and export markets, coping with environmental changes and other problems.

1.3.1 Export Market of Agricultural Products Needs to be Expanded

Vietnam currently has many important agricultural products on world markets, including staple commodities such as rice, coffee, pepper, cashews and tea, which are of increasing export value. As a result of the global crisis, agriculture maintained a trade surplus even during the recession. Vietnam has relations with more than 200 countries and regions, has signed trade agreements with 61 countries and most Favored nation agreements with 68 countries. In the context of deeper integration into the international economy, especially with commitments to join and implement bilateral and multilateral trade agreements, Vietnamese agricultural products will have greater access to more major international markets and to modern science and technology. These opportunities, combined with the fundamental advantages that Vietnamese agriculture now possesses, enhance the competitiveness of agricultural products in integration.

1.3.2 Use Modern Science and Technology to Increase Opportunities to Attract Foreign Investment

Integration has boosted foreign investment in Vietnam. In 2016,

Vietnam had nearly 550 agricultural FDI projects, with the average capital of agricultural FDI projects being about us \$6.7 million per project. Designed to improve productivity, efficiency and sustainability. Foreign investment is associated with the development of new technologies and has contributed greatly to raising productivity and improving the efficiency of agricultural production, processing and trade.

1.3.3 Focus on Integration and Strengthen International Competition

Despite the risks and uncertainties of international trade, Vietnamese farmers have gradually become familiar with and gradually improved the competitiveness of Vietnamese agricultural products, rather than relying on government subsidies. To participate in the integration process is to accept competition, so integration is also an opportunity for better institutions, policies and government. In addition, Vietnam’s own companies will have to make significant changes to seize consolidation opportunities.

1.3.4 The Agricultural Sector Has Low Competitiveness and Diversified Product Output

Although the growth rate of the agricultural sector has recovered, it is not yet firmly established, and in the context of increasing competition, it has exposed many fragmentations and deficiencies, namely fragmented, uncoordinated, low-productivity and low-quality agriculture. Agricultural labor currently accounts for more than

42 percent of the country’s workforce but only more than 16 percent of GDP. This is why Vietnam, though ranked third in value, is at the bottom of the southeast Asian rankings. The small scale of operations combined with high operating costs is the reason why Vietnam’s agricultural productivity consistently ranks last, posing a serious threat to the competitiveness of the entire industry. Markets are volatile, fragmented and dependent on certain traditional markets that are riskier. Countries such as the European Union, the United States and others tend to protect trade. Therefore, the size, openness and increasing diversity of larger markets will challenge the competitiveness of Vietnam’s agricultural sector.

1.3.5 Agricultural Land is in Short Supply and Water Resources are in Urgent Need of Development

Land and water are increasingly scarce in Vietnam, not only due to the effects of climate change, environmental disasters, but also due to under-exploitation of water resources. In addition, the deterioration of water quality is a particularly big problem. Vietnam uses up to 82 percent of its fresh water for agriculture. Water pollution in Vietnam’s rivers is threatening the sustainability of agricultural water. In addition to the risk of drought, water resources are affected by increased flow from river systems, forcing farmers to rely more on groundwater. Fisheries and coastal resources are also vulnerable to

temperature changes, flooding and salt intrusion. Vietnam has about 11.9 million rural households, 80 percent of which have arable land of less than 1 hectare. Only 20% of the population farm more than one hectare. In fact, farmers are relying more and more on small plots of land and using more and more fertilisers to boost productivity, with little regard for the long-term environmental impact. Agricultural land continues to decline as a result of industrialization and urbanization. According to the Ministry of Agriculture and Rural Development, an average of 7,400 hectares of agricultural land, or about 1 percent of the total land area, has been transferred to non-agricultural land each year since 2000. In addition, the rural environment is poorly managed, with waste water, industrial areas and craft village exhaust pollution directly damaging the environment, endangering sustainable livelihoods and the depletion of aquatic resources.

1.3.6 Agricultural Technical Human Resources Need to be Optimized

As a result of population growth, At least 1.4 to 1.6 million people are added to Vietnam’s labor force each year, 900,000 of whom have added jobs in the agricultural sector and rural areas. This has put enormous pressure on employment and large numbers of rural-urban migrants. The aging of the workforce and the difficulty of maintaining young talent in agriculture are other challenges. Starting in 2013, Vietnam officially entered an aging population. In this context,

agriculture is driven by competition among cities, industry and service industries to attract managerial talent and high-quality human resources, so the impact on agriculture is even more severe, according to the Population Administration. Maintaining human resources in agriculture is a huge challenge, especially for high-quality personnel.

1.3.7 Climate Change Needs Attention

Vietnam is vulnerable to climate change. Agriculture is at great risk because agricultural production depends heavily on stable climatic and agro-ecological conditions. The World Bank asserts that the environmental consequences of Vietnam's agricultural success include deforestation and depletion of fishing stocks, land degradation and increasing water pollution. Climate change is having a negative impact on crops and livestock systems in much of the country. Natural disasters, particularly storms, floods and droughts, are expected to increase in intensity, frequency and scale across the country, leading to land scarcity and a shortage of agricultural land. Weather anomalies lead to the reversal of traditional production structures. Governments need to manage resources sustainably.

2. Advantages of China-Vietnam Agricultural Cooperation

2.1 The Agricultural Products of the Two Countries are Complementary to Each Other and the Import and Export Trade Environment is Optimized

Over the past 30 years, Vietnam has enjoyed strong economic growth, driven by international trade and foreign investment. During this period, the Government reformed all key sectors of the economy and began to privatize listed companies, thereby improving the business environment in order to promote production and exports, stimulate consumption and investment, improve social conditions and adopt effective monetary and fiscal policies. Vietnam's agriculture will need to shift towards more sustainable market-oriented economic growth, characterized by reliable supply, predictable quality, guaranteed food safety and value-added.

China has been the largest importer of Vietnam's agricultural products and will strengthen cooperation with Vietnam to promote agricultural trade. Vietnam's agricultural products can enter the Chinese market through trade fairs and exhibitions, and enterprises can establish cooperative partnerships. Vietnam's agricultural production capacity is extremely huge, and it has a great advantage in the production of coffee, pepper, rubber and cashew nuts. China is a big import market for Vietnam's agricultural products, and the cooperation potential between the two countries is still great. Both sides can consider the possibility of supplying agricultural products to the world. The two countries have strengthened scientific and technological cooperation to cope with climate change and natural disasters, and further

develop agro-processing industries. Cooperation between the two countries will focus on science and technology, linking agribusiness, developing agricultural markets, rural development, climate change adaptation and cross-border disease control.

2.2 The Existing Cooperation Mechanism between the Two Countries Provides a Platform for Bilateral Cooperation

China and Vietnam have jointly set up cooperation platforms including demonstration bases, demonstration parks and joint laboratories, laying a solid foundation for bilateral scientific and technological cooperation and development. As early as 1999, with the support of the Ministry of Science and Technology of the two countries, China and Vietnam jointly established the first China-Vietnam comprehensive agricultural technology demonstration research and promotion base, from which seedless watermelon quickly entered the Vietnamese market. Since then, The cooperation and exchange between Vietnam and China's Guangxi, Yunnan and other provinces with regional advantages have become increasingly frequent. The two sides have jointly established several technology exchange and demonstration platforms, and China's scientific and technological influence on Vietnam and even ASEAN countries and regions has been further enhanced. On the other hand, the exchange of scientific and technological personnel is the most basic and common way of China-Vietnam

agricultural scientific and technological cooperation. From the 1950s to the 1970s, the agreements, protocols and minutes of the talks between China and Vietnam stipulated that China would provide agricultural scientific and technological assistance to Vietnam in the form of accepting students and delegations to study in China and sending experts to Vietnam for exchanges. At the same time, international project cooperation is the effective measure to achieve the leap development of agricultural science and technology, such as a number of Sino-Vietnamese border since 2008 serious animal or plant epidemic prevention and control project, since 2010 China that slope - Vietnam gaoping kind of mulberry sericulture cooperation projects, implemented in 2014 in the sturgeon health breeding technology research and demonstration projects, And since August 2016, Guangxi Academy of Agricultural Sciences has carried out two special research projects on migratory pest control technology, which have played an important role in promoting the development of disease prevention and control, aquaculture and other fields in Vietnam.

3. Suggestions on the Development of China-Vietnam Agricultural Cooperation

In the near future, in the context of a socialist oriented market economy and international integration, the following solutions should be adopted to effectively develop the agricultural sector on both sides:

3.1 Promote the Transfer of Agricultural Commodity Production to Knowledge-based Agricultural Production in the Direction of Modern Market Economy, and Realize Economic Efficiency in Scale and Value Chain.

Vietnam can continue to build concentrated agricultural production areas to meet the demand for agricultural products in domestic and international markets to ensure quantity and quality. To this end, land must be concentrated in various forms to promote mechanization of production, improve quality and reduce costs in the value chain. In order to does not change the ownership of land, the government should develop agricultural land rental market, and develop related services, such as information, registration and dispute resolution services, such as land acquisition, in order to improve the performance of the market, promote the application of international quality standards, implementation at all stages of production and distribution of advanced technical process. Great importance should be attached to the good management of the organization, production, operations and services of the development of commodity agriculture, avoiding the pursuit of profit but focusing only on quality. In the process of Sino-Vietnamese agricultural science and technology cooperation, agricultural departments should pay attention to change the old thinking of farmers and guide them to improve their acceptance and understanding of

agricultural science and technology, so as to effectively apply the new technology to the actual agricultural production. The government can carry out training courses for farmers, large farmers and other groups, so as to improve the efficiency and optimize the cooperation effect of agricultural science and technology cooperation between the two countries.

3.2 Innovation and Development of Organizational Production Forms

Focus on developing forms of cooperation and linking them in the value chain with the global consumption system to build linkages in the production and consumption of agricultural products. Governments should provide technical and other forms of assistance to help private enterprises, particularly small and medium-sized food processing enterprises and informal distribution networks, improve their food safety management capacity. Through industry associations, the government can consider forming clusters in aquaculture, specialty rice, fruit, flowers and other industries. Enhanced national or regional product branding (a combination of marketing, legal protection and quality control) can lead to strong growth in domestic and international agricultural markets. In addition, it is necessary to promote the renewal and development of agricultural cooperatives and farms towards mass production and quality commodities, and to actively seek information on participation in international competition; Strengthening the transfer of Labor from

agriculture to other rural occupations; Pay attention to improve labor productivity, reduce production costs; Encourage agricultural diversification by easing restrictions on land use and build more flexible irrigation infrastructure to adapt to different crops. At the same time, there is a need to strengthen veterinary services, monitor diseases, improve the capacity to enforce regulations on the use of pesticides, antibiotics and promote access to capital by farmers and small businesses.

3.3 Increase Research, Transfer and Application of Science and Technology for Agricultural Development, Especially in the Closed Value Chain from Production to Purchase, Processing and Sale of Products, and Strengthen the Application and Linkages of High Technology.

The application of biotechnology and advanced production processes will create products of high quality, high productivity, high added value and environmental friendliness. To promote the domestic scientific and technological talents to put themselves in the agricultural science and technology environment and professional language environment of the partner country, quickly integrate into the cooperation atmosphere, and improve the ability of foreign cooperation; For scientific and technological talents who have not had the opportunity to go abroad for exchange, bilateral agricultural education resources will be gradually shared. Strengthening the training of

bilingual agricultural science and technology personnel. China and Vietnam may, through joint construction of talent training bases, regularly carry out scientific and technological and language training for professional and technical personnel and provide opportunities for further study, training and study abroad.

3.4 To Optimize the Immature Mechanism and Improve the International Competitiveness

Develop new cooperation pattern in the form of joint meeting, establish the agricultural science and technology cooperation management coordination mechanism, by setting up the meeting office, by a government agency or agricultural institutions to supervision and management of cooperation, establish contact closely, head of the system at the same time, the two governments and the department of agriculture under the system of keeping the long-term close contact, through regular meeting, Formulate a macro direction for bilateral agricultural science and technology cooperation, clarify the responsibilities of all cooperation participants (departments, institutions, units, etc.), coordinate the division of labor, and prevent uneven distribution or waste of resources. In addition, it is necessary to establish a perfect sharing mechanism of agricultural science and technology resources, build a wide coverage of agricultural science and technology, strong professional, clear pertinence, smooth communication channels, facing

the world portal website can adopt the membership authentication system, make full use of the advantages of modern Internet, break the limitations of traditional cooperation mode; We will actively build foreign cooperation platforms for agriculture-related enterprises, provide preferential policies and capital subsidies to agricultural science and technology enterprises, and foster and support leading enterprises in scientific and technological innovation through funds and projects. Further improve agricultural science and technology service system and information service system, timely provide industry development trends, advanced production technology and other information; Encourage enterprises to actively participate in international exhibitions, high-tech exhibitions, etc., to broaden the way of international exchanges and cooperation; Actively introduce new and high technologies, encourage enterprises to seek independent innovation, reform and upgrade the traditional agricultural science and technology development path, further improve the efficiency and quality of scientific and technological achievements transformation, so as to make enterprises more international competitiveness.

3.5 Develop Market and International Economic Integration

The two sides can establish key national product brands, local characteristics related to geographical indications, promote the development of agricultural processing chains, and

resolve legal issues to minimize the risks of international integration; Establish a unified system of agricultural production technical standards. The two sides should seize the opportunity, proceed from their own actual conditions, and gradually jointly establish a system of agricultural production technology standards, strictly supervise the process of agricultural technology transfer and achievement transformation, and promote the unification of technical inspection standards of the two sides. Relevant standards and regulations can also be jointly formulated to make rational use of agricultural resources and improve the quality of bilateral agricultural science and technology cooperation.

3.6 Develop Infrastructure to Meet the Needs of Large-scale Commodity Production and Enhance Resilience to Climate Change.

Vietnam's agriculture is threatened by climate change risks such as changes in temperature, rainfall and increased frequency and intensity of extreme weather events. Therefore, countries need to develop strategies to adapt to climate change, increase public investment in disaster prevention projects and reduce negative environmental impacts. Through close cooperation, the two sides should promote the development of forecast and early warning systems and link them with agricultural advisory services. Improving the management efficiency of water resources and irrigation systems

by strengthening community supervision of local residents; Upgrade basic infrastructure systems in rural and mountainous areas to create favorable conditions for socio-economic development and integrate natural disaster prevention activities into local socio-economic development plans.

3.7 Jointly Establish the Agricultural Science and Technology Cooperation Fund

In light of the national conditions of the two countries, it is suggested that the two governments jointly set up a special fund for agricultural science and technology cooperation to provide necessary research fees, training fees and product technology research and development fees. At the same time, it is suggested that the two governments reasonably guide the injection of social capital and actively increase the sources of funds to improve the stability and sustainability of agricultural science and technology cooperation. Stick to "walk out" and "come in". At present, China and Vietnam should take the "invitation-in" strategy as one of the key points of cooperation and actively explore new ways of "invitation-in" agricultural science and technology based on Vietnam's resources, technologies and talents. The government should carry out open cooperation from various perspectives, at various levels and in broad fields to create more exchange opportunities, and at the same time, strengthen investment and investment in

Vietnam's agriculture by business and precision. In particular, it should vigorously introduce PPP projects, encourage enterprises to cooperate with the government, and promote independent innovation in Vietnam's agriculture. Gradually from the current non-profit agricultural science and technology cooperation model to the real international agricultural science and technology cooperation model, to achieve a two-way balance of cooperation.

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