

The Impact of Green Trade Barriers on the Export of Agricultural Products in Shandong Province and Its Countermeasures

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Abstract:

Green trade barriers have become one of the important trade protection measures in international trade by means of environmental measures, strong concealment and high rationality. Shandong Province is a major agricultural province in China, and agriculture plays an important role in the economy of Shandong Province, and green trade barriers hinder the export of agricultural products in Shandong Province, affect the economic stability of Shandong Province, and even affect the national agricultural development. Since China's accession to the WTO, agricultural exports have been restricted by tariffs, import quotas and "green environmental protection requirements", which has hindered the entry of agricultural products into the world market, and the imminent implementation of the recently controversial "carbon tariff" will bring new challenges to agricultural exports. Based on the concept and types of green trade barriers, this paper analyzes the reasons for the restriction of agricultural development based on the current situation of agricultural exports in Shandong Province, and finally puts forward practical countermeasures.

Keywords:

Green Trade Barriers, Export of Agricultural Products, Carbon Tariffs, Countermeasure

1. Introduction

Agriculture plays a huge role in economic development, with the development of the times, environmental protection and sustainable development have been widely emphasized, and developed countries have generally built trade barriers. The export of agricultural products in Shandong Province is of great significance to the entire trade market, and Shandong Province is suffering from the dual obstacles of tariff and non-tariff barriers erected by developed countries. As one of the technical barriers to trade, green trade barriers are receiving more and more attention from all over the world [1], and the analysis of the impact of green trade barriers on agricultural products in

Shandong Province will become a guide for agricultural trade and domestic economic development.

Since the middle of the 21st century, the issue of trade and environment has been widely raised, and green consumption has become the trend of the new era. In recent years, the rapid development of green trade, the rapid rise of carbon barriers, ESG and supply chain requirements have posed new challenges to the operation and trade of enterprises, and more environmental protection provisions have been incorporated into regional trade agreements and the restructuring of changeable rules caused by WTO reform, but some countries have carried out trade protection in the name of environmental protection, resulting in the formation of green trade barriers. The emergence of green barriers has restricted the export of China's agricultural products, and domestic agricultural products, including quality, packaging, etc., have failed to be in line with the world, especially developed countries. Under the pretext of protecting the environment, developed countries have implemented trade protection measures, raised market standards and trade thresholds, and increased the complexity of the trade market. The export of agricultural products has a huge impact on Shandong Province, and in recent years, agricultural export products have been continuously impacted by green trade barriers.

Although Western countries have restricted trade in this way, we cannot deny green trade barriers in its entirety, and we must recognize the disadvantages and advantages of green trade. After China's reform and opening up, due to the vigorous development of production, many resources are over-exploited and utilized, destroying the ecology, and there are more serious environmental problems at this stage, and the emergence of green trade barriers will strengthen China's environmental protection efforts from the side. On the other hand, due to the increase in the weight of environmental protection in international trade, competitive green products have become a trend, prompting enterprises to carry out industrial upgrading and accelerate the development of green products, not only have the opportunity to seize the green product market, but also green products will benefit the people. Therefore, to deal with the problem of green trade barriers, we should not only analyze the harmful side and then take effective measures to solve it, but also analyze the beneficial aspects and make use of them, so that Shandong Province and domestic export trade can develop better.

2. A Review of the Theory of Green Trade Barrier

2.1. The concept of Green Trade Barriers

Green trade barriers are trade protection measures set up by importers to protect their own ecological environment and trade markets [2]. Green barriers are essentially a kind of technical trade barriers, which refer to the obstruction of foreign imports by importing countries through laws, regulations, assessment methods, etc., raising the market access threshold, so as to achieve trade import restrictions. Due to their inherent rationality and feasibility, green trade barriers are separated from technical trade barriers and are increasingly used by many developed countries. At present, the essence of green trade is that Western developed countries rely on their own environmental protection and product science and technology level, and adopt legal methods to stipulate industry standards, so as to hinder the export of developing countries. Most of the green trade barriers are non-tariff barriers, but they also include a small number of tariff barriers, such as the controversial carbon tariff. Broadly speaking, green trade barriers are to exclude foreign products that do not meet the

standards from entering the country, and in a narrow sense, they are trade barriers set up by a country for foreign goods, and the real purpose is not environmental protection, but actually trade protection.

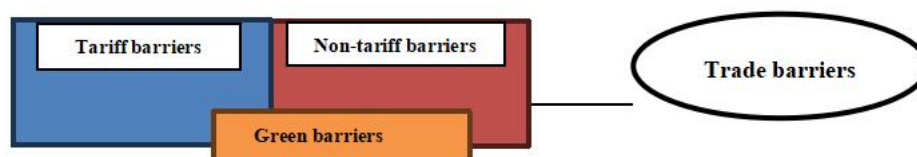


Figure 1. Classification of Green Trade Barriers.

2.2. Historical Context of Green Trade Barriers

The ecological environment has deteriorated and resources are in short supply. Since the beginning of the new era, the world has vigorously developed productive forces and rapid industrialization, bringing about rapid economic growth and improving living standards, while causing serious damage to the ecological environment, such as global warming, London smog, and Minamata disease in Japan [3]. The consequences of serious damage to the earth's ecology are becoming more and more apparent, such as the increase of harmful substances in the atmosphere, the destruction of the ozone layer has greatly increased the probability of human skin diseases, river pollution, and so on. People are paying more and more attention to environmental issues.

Consumers are changing their mindset and pursuing an environmentally friendly lifestyle. With the increasing influence of the concept of green environmental protection, the demand for green goods is expanding all over the world, and consumers are affected by the concept of sustainable development and pay more attention to the environmental protection level of products when consuming, which leads to changes in market demand and affects the supply side changes in the international trade market.

Contradictions between developed and developing countries. Since the beginning of the 21st century, under the influence of the economic crisis, there has been a surplus of supply, and developed countries have ostensibly advocated and condemned trade protection measures, but in fact they have been more urgent to find more hidden trade barrier measures. Under the development pattern of economic globalization and trade integration, countries around the world have lowered tariffs and opened up their markets, so traditional measures cannot effectively protect their own trade markets.

2.3. Manifestations of Green Trade Barriers

2.3.1. Green Tariffs

Green tariffs are tariffs imposed by developed countries on top of the normal tariffs on imported products that pollute the environment. For example, carbon tariffs refer to the imposition of additional tariffs on imports with high energy consumption [4]. On February 9, 2023, the European Parliament's Committee on Environment, Public Health and Food Safety (ENVI) adopted the European Carbon Border Adjustment Mechanism (CBAM) agreement, which will be effective from October 1, 2023. On the one hand, the imposition of carbon tariffs will increase export costs, lose price advantages, and have a negative impact on export trade. On the other hand, carbon tariffs are conducive to the transition of enterprises to a low-carbon economy.

2.3.2. Green Technology Standards and Regulations

Green technology standards are standards issued by countries or organizations to reduce environmental pollution. [5] Developed countries have set strict environmental standards. [6] Technical barriers to trade (TBT) are green barriers to environmental protection. Technical barriers to trade are in international trade, in which the importing country sets access standards in terms of technology, health, safety, etc., and promulgates terms and regulations that restrict or prohibit trade to protect similar goods in its own country. Developed countries have established strict environmental protection standards and assessment procedures. [7] These standards are based on the national conditions of developed countries, which can be met for them, but cannot be met at all for developing countries in the short term, which will lead to the inability of developing country products to enter the markets of developed countries, hinder the economic development of developing countries, and consolidate the position of developed countries in the trade market.

2.3.3. Green Environmental Label

The green environmental label is a graphic on the product or its packaging, issued by the government according to certain standards, the purpose is to show consumers that the product meets environmental protection requirements in the whole process from research to production and sales, and is harmless to human health and nature. Green environmental labeling can guide consumers to consume green products, and then promote the transformation of industrial structure of production enterprises, increase the production of green products, reduce the damage to the environment, and benefit human health. Developing countries must obtain the green environmental label of developed countries before they can export to the market of developed countries, and the different standards for green environmental labeling in different countries make it more difficult for exporting countries to export products, thus forming barriers.

Table 1. Green environmental labels by country and region.

	Eco-label content	Implementing Organs
United States	Green signature system	Green signature
Japan	Eco-friendly labels	Japan Environmental Association
Germany	Blue Angel logo	UBA.RAL and EL
Korea	Environmental labeling system	Minister of the Environment
Netherlands	Eco-friendly labels	Environmental Review Fund
France	NF - Ecological Environment	Standardization Institute
Canada	Environmental choices	Eco-friendly Canada
Nordic Parliament	White swan logo	Minister of the Environment

2.3.4. Green Health and Quarantine System

For the purpose of protecting the ecological environment and people's health, the importing country implements strict health and quarantine standards and procedures for imported products through intelligent quarantine equipment and digital technology. Developed countries are very strict in reviewing food safety and hygiene indicators, because there is no unified food safety and hygiene standards, so that some countries with their own technical advantages to formulate extremely high food quarantine standards, forming trade barriers.

2.3.5. Green Subsidies

Green subsidy usually refers to environmental subsidy, which is a subsidy policy initiated by the government to solve environmental protection problems as the starting point, and the perception of environmental protection in the consciousness of economic subjects is deviated or can not effectively invest in environmental protection. [8] Green subsidies are mostly used by the government to provide enterprises with green equipment, introduce environmentally friendly processes and technologies, including funds, tax incentives and exemptions, and loans at low interest rates. It is a means of internalizing environmental costs and calculating environmental and resource costs as costs. Governments in developing countries sometimes provide environmental subsidies to companies that cannot afford to pollute the environment.

2.4. Characteristics of Green Trade Barriers

Reasonableness of the name and the content of the expression. On the surface, green trade barriers are to protect human health and environmental resources, in line with the theme of green and sustainable development, and in the current situation of serious environmental pollution, it conforms to the needs of consumers for green consumption, so the content of the performance is reasonable, and the essence of trade protectionism is concealed.

Formal legitimacy. Green trade barriers are regulated and enforced through legal means, under specific laws, such as the TBT agreement.

Concealment. Green trade barriers are usually used to protect the environment and human health, and strict commodity standards are set to block foreign goods, and to protect domestic markets with a high degree of concealment.

Extensiveness. Green trade barrier protection is extensive, from the initial process before production to the final process after sale. It runs through primary, intermediate and manufactured goods, and involves trade in products, technology and services.

3. The Impact of Green Trade Barriers on the Export Trade of Shandong Province

3.1. The current Situation of Agricultural Product Exports in Shandong Province

3.1.1. The Export of Agricultural Products Occupies an Important Position in Foreign Trade

As a major economic province in China, Shandong's exports account for a large proportion of the country's total product exports, and it is an important base of grain, cotton, vegetables, fruits and aquatic products in China. The export volume is leading in the country, ranking first in the country for 24 consecutive years. China's earliest existing agricultural encyclopedia "Qi Min Yaoshu" came from Shandong, so Shandong has a rich agricultural cultural heritage, in addition to the eastern coast of Shandong Province, the Yellow River flows through, rich aquatic products, diversified terrain, climate and sufficient rain to form a diversified agricultural product structure in Shandong Province. In 2022, the export of agricultural products in Shandong Province will be 139.4 billion yuan, an increase of 12.6% over 2021, accounting for 21.3% of the total export of agricultural products in the country, with a high market share. Planting agricultural products are the most, and animal husbandry agricultural products rank second. The total export value of aquatic products is low,

the storage of aquatic products is difficult, the transportation cost is high, and the implementation of green trade barriers has seriously hindered exports.

3.1.2. Growth in total Exports of Agricultural Products

As can be seen from Figure 2 and Figure 3, the export value of agricultural products in Shandong Province showed an increasing trend from 2008 to 2021, and declined in 09, 12, 15 and 18. In 2010, the export growth rate reached a maximum of 30%. In 2018, it was greatly affected by green trade barriers, with negative growth and a decline in total exports. By the outbreak of the new crown epidemic in 20 years, the export of agricultural products in Shandong Province was hit by a double blow, and the total export growth was slow. Shandong's agricultural exports are generally growing, and the growth rate has changed from high speed to steady growth in recent years, but the growth rate is relatively slow.

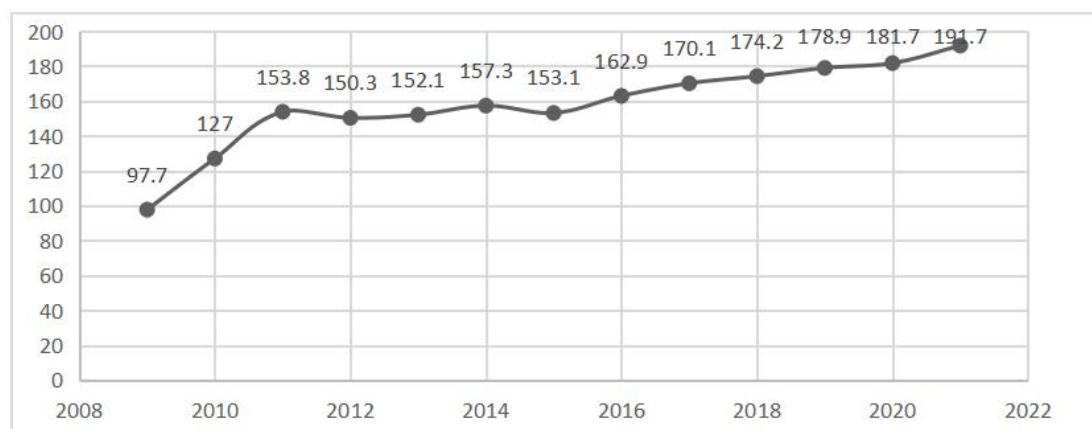


Figure 2. Trend of total export of agricultural products in Shandong Province.

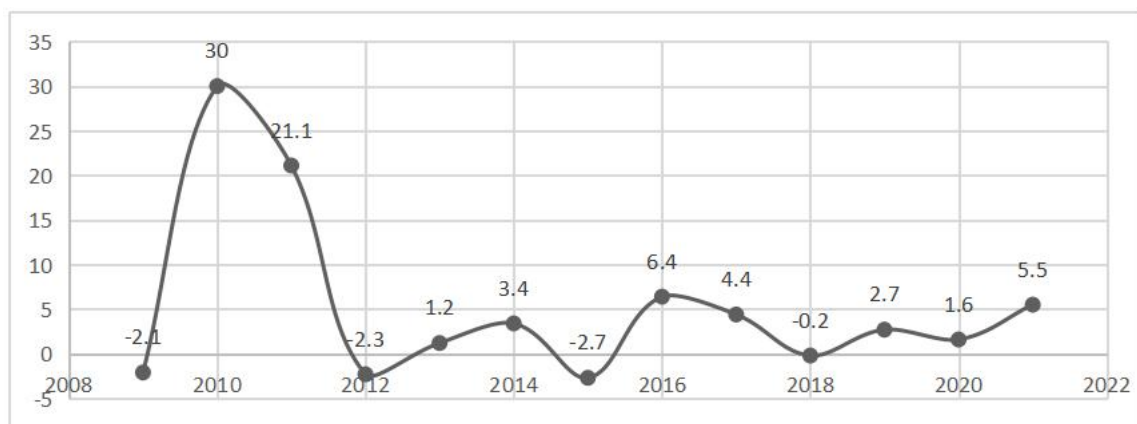


Figure 3. Changes in the growth rate of agricultural exports in Shandong Province.

3.1.3. The Scope of Export of Agricultural Products is Relatively Narrow and the Concentration is High

Shandong Province's agricultural exports are mainly concentrated in Asia, with key export targets such as Japan, ASEAN, and the European Union, and the number of exports to Japan and South Korea has decreased in recent years [9]. Due to the superior natural geographical advantages of South America, the developed planting industry, and the small complementarity of agricultural products between Central

Africa and Central African countries, the export volume to Central Africa and South America is very limited, and the proportion of export value is low.

3.2. The International Competitiveness of Shandong's Agricultural Products

3.2.1. Trade Competition Index (TC)

It reflects the competitive advantages of domestic products and the same foreign products, and can exclude the impact of inflation. TC index = (export value - import value) / (export value + import value), the value is between -1 and 1. TC>0, indicating that exports are greater than imports. TC<0, indicating that exports are less than imports.

As can be seen from Figure 4, the TC is negative in 10 to 15 years, and imports are greater than exports. Fifteen years later, the export of agricultural products in Shandong Province increased, the TC value was greater than 0, and the export was greater than the import, but the TC value was still small and the international competitiveness was limited. By 2021, the TC value will become negative, reflecting the decrease in the international competitiveness of agricultural products in Shandong Province in recent years.

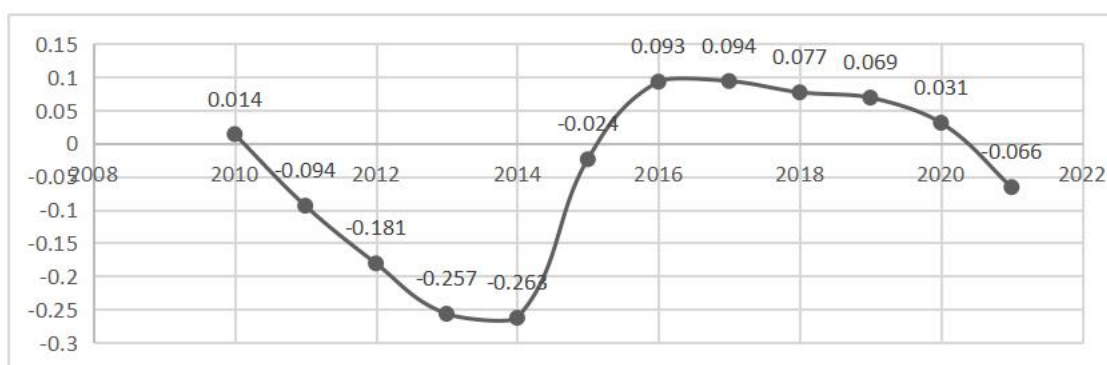


Figure 4. Trend chart of agricultural trade competition index (TC) in Shandong Province.

3.2.2 Explicit Comparative Advantage Index (RCA)

It is possible to measure the competitiveness of a product in the international market and reflect its comparative advantage in trade.

$$\text{Calculation formula: } RCA = (X1/X2) / (W1/W2) \quad (1)$$

X1 refers to the export value of a commodity; X2 refers to the country's total value of merchandise exports; W1 refers to the world export value of a commodity; W2 refers to the total value of world merchandise exports. If the RCA value is >1, the export has a comparative advantage. If the RCA value is <1, the comparative advantage is decreasing. In the same period, the comparative advantage of industries with large RCA values grew faster than those with small RCA values.

It can be concluded from Figure 5 that the RCA index of agricultural exports in Shandong Province is basically greater than 1, but there is a large fluctuation and a downward trend, which reflects that Shandong Province has a comparative advantage and strong competitiveness in agricultural development, but the international competitiveness has decreased in recent years.

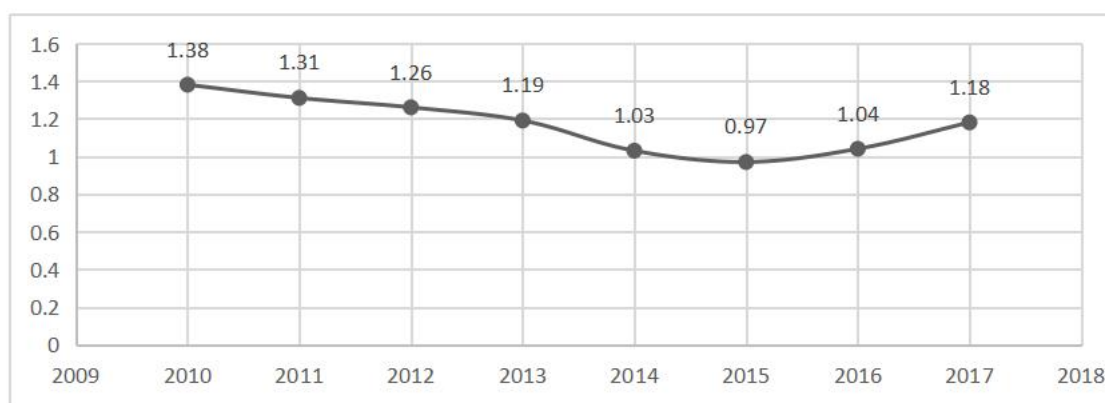


Figure 5. Changes in the explicit comparative advantage index (RCA) in Shandong.

3.3. The Impact of Green Trade Barriers on Shandong Province

3.3.1. Green Trade Barriers Promote Technological Progress

Green trade barriers promote technological progress. The implementation of green trade barriers has challenged the quality level of agricultural products in Shandong Province, exposed the lack of agricultural product testing technology, improper testing standards and other problems, which requires the Shandong Provincial Government to pay attention to the improvement of agricultural product testing standards and breakthroughs in testing instruments, enterprises to adapt to the international standard of high-tech production and processing of agricultural products, and this measure in promoting enterprise technological innovation, improve production efficiency at the same time, but also be able to enlarge low-tech enterprises, so as to eliminate the destruction of the environment, products do not meet the standard enterprises, It is conducive to optimizing the structure of Shandong's agricultural industry and enabling enterprises to achieve innovative development to improve their export competitiveness.

Encourage the government to innovate and improve the agricultural development system. Under the impact of green trade barriers, Shandong Province has carried out many institutional innovations in order to stabilize the stable development of agriculture. Shandong Province, together with the General Administration of Quality Supervision, Inspection and Quarantine of the People Republic of China, has created a provincial and ministerial joint conference system to deal with various problems in agriculture, coordinate the export of agricultural products, and under the leadership of the main leaders of the government, convene various departments related to the export of agricultural products such as customs, foreign trade, industry and commerce, health, quarantine, and quality inspection to conduct joint meetings, comprehensively grasp the information resources, and the member units of the joint conference perform their duties to achieve the coordinated development of agricultural exports. Secondly, the Shandong Provincial Government attaches great importance to the production and operation of agricultural product enterprises, awards the honorary title of enterprises that innovate the development of agricultural technology and realize green and environmentally friendly production, and recommends the customs system to implement preferential measures for the export of enterprises, so as to promote the development of the whole industry with leading enterprises and enhance their international competitiveness.

3.3.2. Negative Impacts

Green trade barriers increase the cost of exports. Green trade barriers to extremely high technical standards and environmental protection regulations to restrict the export of agricultural products, to break through the barriers to recovery, increase the export of agricultural products need to improve the technical level of Shandong Province, such as increasing the certification of environmental labels, improve the level of agricultural production and processing to reduce chemical residues, improve the level of green quarantine, etc., these requirements greatly increase the export of agricultural products required funds and cycles, thereby increasing export costs, reducing product competitiveness. For example, after Japan implemented the “positive list system” that strictly restricts the residues of agricultural products, the number of agricultural products that meet the standards in Shandong Province has been greatly reduced, and the export cycle and procedures have increased, making it difficult for agricultural products from Shandong Province to enter Japan.

The traditional price advantage of agricultural products in Shandong Province has been weakened. Shandong Province has a strong agricultural foundation, a large population, a wide area of land supply, low cost, a long history of agricultural development, and low prices of agricultural products, forming a price advantage. However, due to the implementation of green trade barriers, developed countries have raised the quality standards of agricultural products, pursued green organic food, and strictly restricted the residues of chemical substances in agricultural products, which has weakened the price advantage of traditional agriculture with low technology level in Shandong Province.

Cause trade frictions. Due to the difference in economic and technological levels between developed and developing countries, developed countries advocate boycotting the import and export of commodities that do not meet environmental protection standards, which in turn greatly hinders the import and export trade of developing countries. Developing countries generally believe that environmental measures should be based on fairness and justice, so there will inevitably be friction and conflict between developed and developing countries.

The scope of agricultural exports has decreased. Countries with high technology standards, such as Japan, the United States, and the European Union, are the main targets of Shandong's exports, and green trade barriers limit Shandong's exports to these major trading partners. Second, the rise in the renminbi exchange rate has increased the export cost of agricultural products and reduced exports.

3.4. Shandong Province is affected by green trade barriers

3.4.1. International cause analysis

The deterioration of the earth's ecological environment continues to worsen, and environmental deterioration in the form of global warming, ozone layer hole has occurred on a large scale. The production and lifestyle that consumes a lot of resources has the greatest impact on the environment. The people's awareness of environmental protection has increased. Developed countries have a strong financial base and technical level, and they are more invested in protecting the environment and health. People pay more attention to the quality of life, and live with the concept of green only because of production. The WTO provides a legal basis for green barriers, and the WTO does not object to the green trade barrier clauses, as long as it protects

humans, animals and plants, and the ecological environment, and does not constitute intentional discrimination, it can formulate guidelines, so it can be considered that the WTO provides a legal basis for green trade barriers.

Japan: China has a long history of trade with Japan, and Shandong Province has close trade with Japan, and Japan is the largest trade partner of Shandong Province. However, Japan has set up a large number of trade protections in its trade with China, and the adoption of the “Seedling Amendment” has caused Shandong Province to pay a large amount of patent fees for agricultural products exported to Japan, which has had a serious impact on agricultural products such as green onions, garlic and spinach in Shandong Province. Japan has repeatedly used unreasonable technical rules, standards, and complicated health and quarantine systems to hinder Shandong and China's exports of Japanese products through various tariff and non-tariff barriers, thus weakening the advantage of low prices of agricultural products in Shandong Province. In addition, Japan is the main export market for agricultural products in Shandong Province, and any change in Japan's import market will have a great impact on Shandong's agricultural products.

United States: Trade between China and the United States can grow rapidly due to their vast differences in natural resources, consumption levels, and economic and industrial structures, as well as their strong complementarity. China exports labor-intensive products to the United States, and the United States exports capital-intensive products to China. The United States is the second largest trading partner of Shandong Province. The United States has adopted high-standard food and quarantine measures to control the import of agricultural products, the United States has detained China's agricultural products on the grounds of green environmental protection, and China has encountered many restrictions from the United States' green trade barrier policies. In the context of frequent bilateral or volatile trade frictions in recent years, China, as a developing country, will inevitably have trade frictions with developed countries or regional economic organizations, and enterprises will be hit the hardest by the promotion of green barriers. Enterprises need to break through the high-tech blockade and meet the technical standards of developed countries under the hindrance of trade frictions.

European Union: The European Union is an important trading partner of Shandong. However, we should also be aware that the EU is setting up trade barriers, including green barriers, to restrict imports, and various standards have brought great challenges to Shandong Province's trade, such as the EU's suspension of China's animal-derived videos, which has seriously affected Shandong Province's foreign trade exports and industrial development. According to the trade structure, there is a big difference between the structure of China's exports and EU imports. The proportion of high-tech products imported by the EU has increased, and the proportion of traditional primary products has decreased, while Shandong Province's exports to the EU are mainly traditional primary products, which are easily restricted by standards and indicators, so the product structure of Shandong's exports to the EU needs to be adjusted urgently.

3.4.2. Domestic and Provincial Reasons

China's law enforcement supervision and management system needs to be improved. First of all, there is great difficulty in environmental law enforcement in China, and a multi-headed law enforcement situation has been formed. China's

environmental protection by the competent department of environmental protection is mainly responsible, other environmental protection related departments are managed separately, this system due to the existence of more environmental management departments, easy to form a multi-headed law enforcement situation, due to the division of authority is not clear enough, it is easy to lead to the relevant departments competing for the management of favorable matters, ignoring the unprofitable management matters, resulting in the emergence of law enforcement intensive belt and law enforcement vacuum, so that the efficiency of environmental law enforcement decreases, and the difficulty increases. Agricultural products need a green and stable production environment, and environmental problems lead to the production quality of agricultural products cannot be guaranteed. Secondly, China's administrative law enforcement is not open enough, which makes the law enforcement process not transparent. For a long time, China's administrative law enforcement is usually dealt with with some administrative interpretations and internal decisions that are not disclosed, and the public cannot know that there is no public policy information, which leads to unfairness in the process of administrative law enforcement, which provides space for black-box operations, and ultimately makes the relevant standards and rules not open enough, hindering enterprises from producing and processing agricultural products that meet the standards, which affects the quality of agricultural products to a certain extent, and makes it easy for producers to focus on the output and income of agricultural products and ignore quality and safety issues. If the quality is not up to standard, it will not be able to pass the green level required by the international world, and will eventually lead to the emergence of green trade barriers.

There are flaws in China's environmental protection legal system. China's main environmental protection legislation exists in the form of administrative regulations and rules, which can easily lead to system chaos. Second, there is insufficient control over the transfer of foreign polluting enterprises to China. Since the reform and opening up, China's economy has continued to develop rapidly, attracting polluting enterprises from other countries to transfer to China, and foreign low-environmental protection industries have been exported to China in various forms, which has made China's environmental protection work face huge challenges. The development of laws related to green labeling is relatively late, and there is a lack of special legislation on the management of environmental labeling, which affects the value of environmental labeling. China's green technology standards are not unified enough, and there are differences between the state and local governments and within the industry, which makes it difficult to adapt to international standards, resulting in developed countries using green standards to implement green barriers to agricultural products in Shandong Province. In terms of green packaging, there is no specific law in China that prohibits or restricts specific packaging materials, resulting in environmentally harmful packaging still exists and threatens the ecological environment.

The legal system on green environmental protection standards for agricultural products needs to be improved. China's current green environmental protection system is not mature enough, there is a lack of clear requirements in some areas, and the level of regulations on green technology standards, green packaging and green environmental protection labels is low, which cannot match the demand for green standards for agricultural products in China's export trade.

The environmental protection tax is not perfect. Taxation is a good tool for regulating the macroeconomic market and is widely used to protect the ecological environment. The imposition of environmental protection tax can effectively coordinate the benign development between economy and environmental protection, and is conducive to the protection of the environment while developing the economy of developing countries. China's environmental protection tax needs to be improved, involving fewer industrial fields and low efficiency, which hinders the effective confrontation of green trade barriers.

Shandong Province has backward quarantine methods. The implementation of green trade barriers in importing countries is mainly through advanced green quarantine equipment and technology to discover substances harmful to the ecological environment and human health in the products of importing countries. Breaking through green trade barriers requires exporting countries to master high-level green quarantine methods to effectively identify and control hazardous substances in export products. The green quarantine system in Shandong Province is relatively backward, with few testing points, backward inspection equipment, and testing technology to be improved, which makes it difficult to effectively guarantee the quality of exported agricultural products.

Enterprises do not have enough ability to certify ISO14000. ISO14000 series of environmental management standards is a management standard launched by the International Organization for Standardization (ISO) to improve environmental quality and promote sustainable economic development, and is an important measure for enterprises to break through green trade barriers.

4. Shandong Province's Countermeasures to Break through Green Trade Barriers

4.1. Develop Economies of Scale and Reduce Production Costs

Develop economies of scale and reduce production costs. Shandong Province should eliminate and reorganize enterprises with insufficient ability to resist risks through market mechanisms, form economies of scale with stronger productivity, effectively reduce various expenses and costs, and stipulate standardized production technologies and production standards to solve the uneven quality of agricultural products. The government has increased policy and financial support for agricultural product enterprises, formed a modern agricultural system, and provided better growth conditions for crops by high-tech means. The government should improve the status of agricultural products industry, give full play to the advantages of agricultural experts in colleges and universities, carry out school-enterprise cooperation, improve the content of agricultural technology, such as pollution-free clean technology, biodegradation technology, biological disaster control technology, etc., develop ecological agriculture, promote green technology innovation, and enhance the international competitiveness of green products.

Establish an early warning mechanism for green trade barriers. With a sound early warning mechanism, Shandong Province can quickly grasp the development of green trade barrier standards, first of all, the establishment of a green trade barriers data center, tracking changes in foreign standards and rules, in advance to obtain favorable information, so that there are relevant enterprises to do a good job of prevention and response. Second, improve the information mechanism of agricultural products, and

the government should have a good understanding of the agricultural development situation in the province, such as the changes in the output of agricultural products, market prices, and land planting area. Therefore, the government has set up special institutions to strengthen the grasp of the dynamics of international and domestic agricultural products, collect and update the changes in the structure of the agricultural industry in a timely manner, and guide enterprises to produce effectively.

Improve legislation on trade and the environment. First of all, it is necessary to establish a legal system for green development, because the most fundamental measure to deal with green trade barriers is environmental legislation, which regulates economic development through laws and strengthens law enforcement. Second, it is necessary to advocate the implementation of international norms, make maximum use of the rules of the World Trade Organization and the World Trade Organization, and the government should thoroughly study various environmental protection clauses and cases, and fully grasp the procedures for resolving disputes. The technical regulations and standards of Shandong Province are in line with international standards, which is conducive to the international trade of agricultural products, and is also conducive to the unification of agricultural industry production standards and the realization of green transformation. In addition, by making full use of the preferential clauses in the WTO agreements that are favorable to developing countries, Shandong Province has used the clauses to suspend the performance of some obligations when it encounters an unfair situation in export trade, and has used the time it has gained to improve its technology. Pay attention to the important position of farmers, guide them to understand various trade terms, conduct bidding and trial work, integrate with international market demand, improve agricultural production methods and technologies, and guide future agricultural production work.

Improve the level of detection of drug residues in agricultural products. The ability of entry-exit inspection and quarantine directly affects the degree of foreign implementation of green trade barriers to China, and the inspection level of China's agricultural products cannot meet international standards, so the inspected agricultural products are sometimes found to have excessive drug residues. Shandong Province should increase investment in research and development, improve the ability of quarantine departments to detect drug residues, formulate and implement advanced and efficient testing standards, update equipment, and improve testing capabilities.

4.2. Decision-making Suggestions for Market Players

4.2.1. Promote green marketing methods

Green marketing is to take ecological protection as the premise of enterprise production and operation, and apply it in all aspects of enterprise production and manufacturing.

Carry out green technology innovation, strengthen the application of modern bioecological technology and pest detection technology in the field of agricultural product processing and transportation, and enhance the competitiveness of agricultural products.

The use of green packaging, green packaging will not pollute the ecological environment, harmless to human health, can be reused and recycled, in line with the theme of green packaging. Enterprises should adapt to international standards when

selecting packaging materials and abide by the "4R+1D" principle of green packaging. [10]

Establish a green system of management, accounting system, green marketing methods, etc. Implement a management system with the goal of saving resources, reducing pollution, and sustainable and healthy development, and actively enhance competitiveness with green labels. Green accounting system refers to the financial management of enterprises, in the cost of labor, capital and raw materials at the same time, but also to calculate the cost of resources and environmental occupancy, correctly reflect the impact of the environment on enterprises and consumers, enterprises will green packaging, green promotion and the production of green products when increasing the input for environmental protection into the cost of products, to achieve cost internalization.

4.2.2. Implement a Brand Development Strategy

The brand has a great influence on international trade, and a good brand image can have many positive effects. The implementation of agricultural product brands is of great significance to the strategy of agricultural going out, and is an effective measure to solve the problem that Shandong Province is at a disadvantage in the "price war". In recent years, a good brand image has increasingly become a symbol of trade success, consumers continue to increase brand awareness, tend to buy environmentally friendly green products, agricultural products enterprises should conform to the trend of the times, increase investment in brand building, upgrade product quality, increase the added value of agricultural products in Shandong Province with a good brand effect, and contribute to the promotion of the international image and regional characteristics of Shandong agricultural products. In addition, emphasis should be placed on increasing the production of high-grade products and breaking through the market for high-value-added products, so as to reduce the situation of relying on primary products and causing anti-dumping investigations due to conflicts of interest with agricultural products of importing countries.

Seek government support. When green product production enterprises encounter green trade barriers, they should seek government funds and technical support, strive for tax incentives and government subsidies, reduce costs, vigorously promote agricultural product brands, give full play to the premium effect, and improve the competitiveness of agricultural products.

4.2.3. Strengthen the Organization of Agricultural Industry Associations

Agricultural trade associations are non-profit organizations made up of farmers, businesses, and research institutes that provide information to their members. Cooperate with affiliated enterprises in the industry, make good use of the role of the association, do not kill each other, compete to reduce prices, and jointly establish a green industrial system to enhance international competitiveness with overall advantages.

4.2.4. Open up new Markets

New markets include China, Argentina, Mexico, India, Indonesia, Brazil, South Korea, Poland, Turkey, and South Africa. Enterprises should actively explore emerging markets, diversify exporters, and resist the impact of green trade barriers. Agricultural export enterprises should grasp the strategies of China-South Korea Free

Trade Agreement, China-ASEAN Free Trade Area, and the "Belt and Road", vigorously develop cross-border e-commerce, improve the competitiveness of international trade, continuously transform and upgrade to modernization, and improve the quality and international reputation of agricultural products in our province on the basis of a good brand image, so as to cope with various challenges.

5. Conclusions

Green trade barriers are twofold. Green barriers are nominally legitimate and reasonable, but in essence, they are trade restrictions imposed by developed countries on developing countries in the name of protecting the environment. Objectively, it has a certain positive effect, but what is even greater is its negative effect. At present, green trade barriers have had a great negative impact on Shandong's exports, and it is also said that there is an intensifying trend, which is not conducive to the development of Shandong's export trade. In the face of green trade barriers, it is difficult for any country and any enterprise to stay outside the tide of international green trade, our enterprises only conform to the green trend, on the basis of fully understanding the implementation characteristics and laws of green barriers in various countries, deepen the reform of agricultural production methods, improve the information service system, increase investment in science and technology, and realize green agriculture and sustainable development of agriculture in order to effectively improve the competitiveness of agricultural exports in Shandong Province, better respond to green barriers, and realize the leapfrog development of agricultural product production and export.

Conflicts of Interest

The author declares that there is no conflict of interest regarding the publication of this article.

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