

Research on Cross-Border E-Commerce of China's Agricultural Sector and Its Enlightenment to Vietnam

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Abstract: China leads the world in import and export activities through e-commerce. With substantial production capacity, China's export market spans a wide range of goods, with agricultural products among the first to benefit from cross-border e-commerce (CBEC), achieving significant success. In contrast, although agricultural products are a key export sector for Vietnam, the adoption of e-commerce in this area has faced numerous challenges from the outset. This study examines China's experience with CBEC in agricultural exports and identifies lessons to enhance Vietnam's effectiveness in applying CBEC to its agricultural exports.

Keywords: China; cross-border e-commerce (CBEC); agricultural exports; Vietnam

1. Introduction

With the advancement of globalization and internet technologies, cross-border e-commerce (CBEC) has become a critical channel for the distribution of agricultural products. As a major agricultural nation with abundant resources and vast market potential, China has identified CBEC as a strategic tool to enhance the international competitiveness of its agricultural products and promote rural revitalization. The Chinese government has implemented a series of supportive policies to accelerate the development of CBEC. For example, the Central Economic Work Conference held in late 2023 emphasized the importance of cultivating new drivers for foreign trade, consolidating the foundations of foreign trade and foreign investment, and expanding intermediate goods trade, service trade, digital trade, and cross-border e-commerce exports.

Local governments have also responded proactively by introducing policies to promote agricultural CBEC. As a result, various e-commerce platforms have emerged nationwide, ranging from comprehensive platforms such as Alibaba, JD.com, and Pinduoduo to specialized agricultural platforms such as Huinongwang and Bainongwang. The active participation of these corporations has created a dynamic ecosystem, accelerating the development of e-commerce for the import and export of fresh agricultural products. These platforms have established new sales channels for agricultural enterprises, presenting both opportunities and challenges for agricultural trade. The rapid expansion of the digital economy has diversified agricultural sales models. These platforms not only improve supply chain efficiency but also broaden international market access for Chinese agricultural products, paving the way for the growth of CBEC.

In the context of globalization and the rapid expansion of e-commerce, Vietnam has recognized the strategic importance of developing cross-border e-commerce as a key channel to promote exports of its major agricultural products, such as coffee, rice, cashews, and tropical fruits. Both Vietnam and China are developing economies

where agriculture plays a central role, with many similarities in geography, climate, culture, and political institutions. The strong growth of cross-border e-commerce in China, particularly in the agricultural sector, provides a valuable model for Vietnam to adopt. China's successful strategies can support Vietnam in enhancing supply chain efficiency, improving product quality, and significantly expanding access to international markets. Such improvements not only strengthen the global competitiveness of Vietnam's agricultural products but also ensure sustainable and efficient export activities in the digital era, contributing to the overall economic development of the country.

2. Development Conditions for Cross-Border E-Commerce in China's Agricultural Exports

2.1. Policy Environment Supporting Cross-Border E-Commerce Development

The growth of cross-border e-commerce in agricultural exports requires robust state policy support. As early as 2015, the Chinese government recognized the potential of cross-border e-commerce. However, it was not until 2020, during the global economic crisis triggered by the COVID-19 pandemic, that the unique online operational model of e-commerce gained significant attention in export activities. The pandemic underscored the importance of cross-border e-commerce, driving rapid growth in demand for this trade model. To ensure sustainable national economic development, China intensified its support for cross-border e-commerce by promoting the establishment of comprehensive cross-border e-commerce zones, fostering favorable conditions for the sector's expansion.

Since 2021, the Chinese government has implemented a series of supportive policies to encourage innovation and development in the sector. Among the most prominent are policies related to the creation of cross-border e-commerce pilot zones. These pilot zones, developed in phases, aim to align regional development with global trade trends, enabling nationwide growth in cross-border e-commerce exports. Additionally, the pilot zones allow each region to leverage and enhance its competitive advantages, promoting balanced development across the country.

In addition to domestic initiatives, China has actively pursued international cooperation in e-commerce. Approximately 60% of the 22 free trade agreements (FTAs) signed by China contain provisions related to e-commerce. Moreover, China has taken a leading role in signing the Regional Comprehensive Economic Partnership (RCEP). Chapter 12 of RCEP, titled "E-Commerce" is regarded as the first comprehensive and high-level multilateral framework for e-commerce in the Asia-Pacific region, effectively facilitating trade exchange and cooperation throughout the region [1].

The "E-commerce Silk Road" initiative has also achieved significant success. According to the "E-commerce Silk Road Cooperation Development Report (2016–2023)" released by the Chinese Ministry of Commerce's Institute of International Trade and Economic Cooperation, as of October 2023, China had established e-commerce cooperation dialogue mechanisms with 30 countries across Central and Eastern Europe, Central Asia, and other regions. The expanding "circle of friends" under the "E-commerce Silk Road" initiative continues to generate new momentum for the high-quality development of the Belt and Road Initiative (BRI) [2].

2.2. Stability and Development of Agricultural Exports

Given its significant agricultural potential, China has implemented comprehensive policies and allocated substantial financial support to advance its agricultural sector. These efforts have resulted in notable progress. Since acceding to the World Trade Organization (WTO), China's agricultural exports have achieved sustained growth and diversification.

Recent data from the Ministry of Agriculture and Rural Affairs of the People's Republic of China reveal that the export value of agricultural products has steadily increased over the past five years, as depicted in Figure 1.

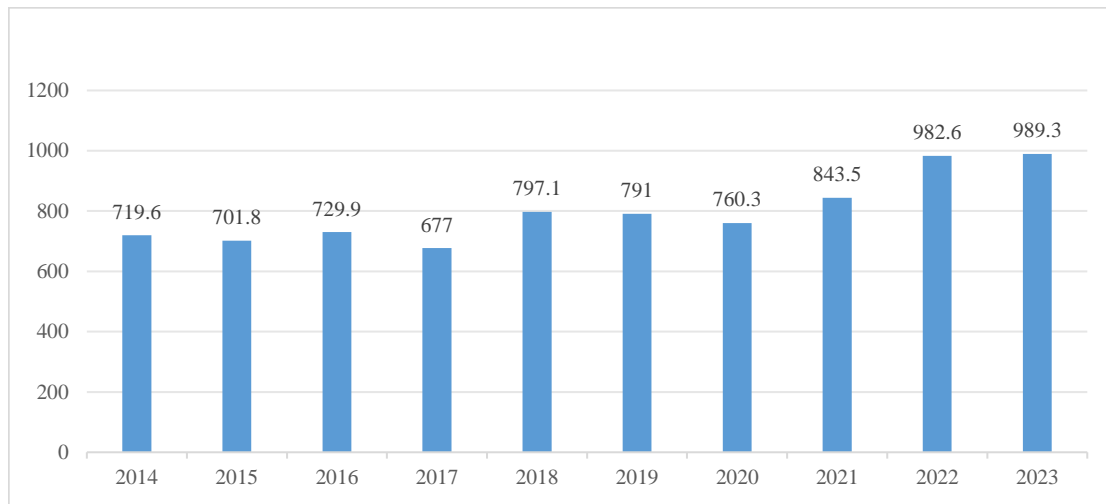


Figure 1. Value of Export of China's Agricultural Products from 2014 to 2023 (billions U.S dollars). Source: General Administration of Customs of the People's Republic of China (<http://www.customs.gov.cn>).

According to the data shown in the chart, China's agricultural exports have fluctuated since 2014, but the overall trend indicates continuous expansion. Export value, which stood at USD 719.6 billion in 2014, declined slightly between 2014 and 2017, reaching a low of USD 677 billion in 2017. This decline resulted from several complex factors related to the global economic and trade environment. One major factor was reduced import demand from key partners, particularly the United States, amid escalating trade tensions. Additionally, the decline was influenced by China's domestic policy adjustments, emphasizing import controls and domestic production to ensure food security and promote sustainable economic growth.

From 2018 to 2019, the sector experienced recovery, with exports increasing to USD 797.1 billion in 2018 and stabilizing at approximately USD 791 billion in 2019. Although the sector was heavily impacted by the COVID-19 pandemic in 2020, with exports falling to USD 760.3 billion, China maintained its position as the world's fifth-largest agricultural exporter. By 2023, agricultural exports rebounded to USD 989.3 billion, reflecting a rapid post-pandemic recovery and demonstrating China's ability to adapt and expand its market share in the global agricultural sector.

China's efforts in agricultural investment and international cooperation have also deepened. The country has established broad agricultural partnerships with over 140 countries and maintained stable cooperative relationships with 94 nations worldwide [3].

In conclusion, the consistent growth of China's agricultural exports, combined with the expansion of agricultural investment and cooperation, provides a solid foundation for the further development of agricultural exports through cross-border e-commerce.

2.3. High Global Demand for Agricultural Products

The consumption of agricultural products has been a fundamental and indispensable need throughout human history. It is estimated that by 2050, the global population is projected to reach 9.1 billion, with the majority of growth concentrated in developing countries that lack adequate resources and advanced technology to invest in agriculture [4]. This demographic shift is expected to significantly increase the demand for agricultural products. Consequently, the importance of international trade in ensuring food security will grow, resulting in a substantial rise in global agricultural trade transactions in the future.

2.4. Competitive Advantages of China's Cross-Border E-Commerce Sector

China boasts the largest and fastest-growing cross-border e-commerce sector in the world. According to statistics from the General Administration of Customs of China, the scale of China's cross-border e-commerce imports and exports increased nearly tenfold between 2019 and 2023. In recent years, the sector has sustained a high annual growth rate, averaging 15% [5]. This rapid development is driven by several factors, with the

following being the most critical elements directly influencing the industry's expansion.

First, a favorable policy environment has provided strong momentum for the sector's growth. Government policies and guidelines introduced since 2021 have created an enabling environment, facilitating favorable conditions for the development of e-commerce in general and cross-border e-commerce in particular.

Second, a well-developed logistics infrastructure has been essential in transforming the concept of cross-border e-commerce into reality. Logistics plays a critical role in ensuring seamless cross-border trade. According to the China Federation of Logistics and Purchasing, the market value of China's logistics sector surpassed USD 48.27 trillion in 2023. Additionally, the country hosts more than 9,000 A-grade logistics companies, with the combined revenue of the top 50 logistics firms exceeding USD 249 billion [6]. These impressive figures place China's logistics sector among the largest in the world for seven consecutive years and confirm its status as the largest logistics market in the Asia-Pacific region [7].

Third, Chinese cross-border e-commerce enterprises demonstrate strong competitiveness. As of the first quarter of 2024, China had 120,000 cross-border e-commerce companies [8]. In addition to the large number of enterprises, platforms such as Alibaba and JD.com consistently rank among the top global cross-border e-commerce companies.

2.5. Development Scale Analysis

Data from the China Customs Administration reveals that the scale of China's agricultural imports and exports has steadily grown from 2019 to 2023, reaching approximately USD 3,330.4 billion in 2023. The "Big Data Analysis Report on Regional Development of E-commerce in China" indicates significant growth in agricultural logistics, with the total value surpassing USD 700 billion annually for three consecutive years, from 2021 to 2023 [9].

The foreign trade market has become increasingly essential to agricultural trade. Since the outbreak of the COVID-19 pandemic, many agricultural exporters have shifted to online platforms, utilizing B2B e-commerce to promote their products, which has driven rapid growth. Data from Alibaba's international platform shows that in 2020, cross-border e-commerce exports of agricultural products increased by 183% compared to the same period in 2019 [10].

From the perspective of trade partners, the top five markets for China's cross-border e-commerce agricultural exports are Hong Kong (China), Taiwan (China), the Philippines, Malaysia, and Russia. Notably, the export value of agricultural products to Hong Kong (China) amounts to approximately USD 300 million [11].

3. Development Characteristics

3.1. Structure of Exported Agricultural Products

According to data from the ECBD, China's primary agricultural exports predominantly consist of easily preserved goods. In 2023, the leading agricultural products exported through cross-border e-commerce included powdered milk, fruits, garlic, and spices. The main export markets are Japan, South Korea, and the United States, with Japan alone contributing approximately 10.4% of China's total cross-border e-commerce revenue, equivalent to USD 11 billion [12].

Additionally, various dried agricultural products, spices, and other easily preserved agricultural goods have begun to be exported through foreign e-commerce platforms and social commerce channels. Notably, Laoganma sauces and Chinese strawberries are now available on Amazon.

3.2. Agricultural Product Export Models

Currently, China's cross-border e-commerce for agricultural products has established dominant models such as B2B (Business-to-Business), B2C (Business-to-Consumer), and B2B2C (Business-to-Business-to-Consumer). Among them, the two primary models are the direct B2B export model and the overseas warehouse export model.

3.2.1. Direct B2B Cross-Border E-Commerce Export Model

This model enables domestic enterprises to conduct transactions with foreign businesses through cross-border e-commerce platforms, allowing them to export goods, including agricultural products, directly to international buyers with the support of cross-border logistics services. This model helps mitigate risks related to non-receipt of goods by importers. However, it involves high costs and longer processing times, as exporters must passively wait for demand to arise, potentially delaying the supply chain. Pilot zones for cross-border e-commerce exports under this model have been established, covering a diverse range of products. For instance, data compiled by the Information Center of the Ministry of Agriculture and Rural Affairs reveals that in May 2021, dried celery and dried chili, valued at USD 48,887, were declared at Huzhou Customs and exported for the first time under the B2B e-commerce model [13].

3.2.2. Cross-border E-commerce Export Model with Overseas Warehouses

Under this model, domestic enterprises export goods, including agricultural products, to overseas warehouses through cross-border logistics. Transactions are conducted on cross-border e-commerce platforms, with products shipped directly to end consumers from the overseas warehouses. This approach enables faster delivery to buyers but presents risks, such as the potential accumulation of unsold inventory after export. The overseas warehouse export model has been widely adopted in China. According to data from the Information Center of the Ministry of Agriculture and Rural Affairs, in December 2021, the first B2B cross-border e-commerce export warehouse in the Tianshui Comprehensive Cross-border E-commerce Pilot Zone successfully processed a shipment of 6375 boxes (120 tons) of fresh apples, which were transported overland to Gyirong Port and subsequently delivered to an overseas warehouse in Nepal. Additionally, in December 2021, the Deyang Comprehensive Cross-border E-commerce Pilot Zone exported various food products, including spices and salted fish, to overseas warehouses in Hong Kong (China) through its B2B e-commerce export warehouse network [13].

Although it has not evolved as extensively as the other two models, the B2C model targeting end consumers has nonetheless delivered noteworthy results and presents promising prospects for the export of agricultural products. The share of the B2C cross-border e-commerce model in agricultural product trade has steadily increased each year, becoming a key driver of growth in the cross-border e-commerce market. This expansion has also generated additional demand for cross-border e-commerce logistics. According to iResearch, B2C exports accounted for 32.2% of cross-border e-commerce in 2022, with projections suggesting that this share will reach 33.6% by 2025. Furthermore, data from China Communications Research indicates that the B2C cross-border e-commerce market was valued at 532 billion USD in 2022 [14].

3.3. Marketing Strategies and Brand Promotion

In 2021, under the sustained impact of the COVID-19 pandemic, local governments across China seized the opportunity to develop new forms of cross-border e-commerce. They actively explored and established new channels to market agricultural products through cross-border e-commerce, helping agricultural enterprises secure international orders and creating new avenues for agricultural products to enter global markets. As a result, the “e-commerce + agricultural products” marketing strategy emerged, significantly boosting sales, building brand recognition, and expanding agricultural distribution channels.

A key component of this model is strengthening information connectivity throughout the production and consumption chain—from cultivation to supply, and from agricultural producers to consumers—thereby preventing blind or uncoordinated agricultural production. In this strategy, sellers select online marketing methods tailored to their products, resources, and target audiences. In China, the most effective marketing approach has been “webcasting + agricultural products” commonly referred to as live-streamed agricultural sales. This method enhances consumer engagement, dispels doubts about product quality, and promotes the visual appeal of agricultural products.

The success of live-streaming in promoting agricultural exports is well-documented. For example, in

Tianshui City, Gansu Province, the Tianshui Comprehensive Cross-border E-Commerce Pilot Zone organized multiple live-streaming events to highlight local specialty agricultural products, including Huanium apples, Qin'an peaches, cherries, onions, garlic, and Chinese medicinal herbs from Zhangjiachuan County. These products were introduced to foreign trade markets for the first time through these events, resulting in significant breakthroughs in Gansu's agricultural exports. In one notable event, 300 tons of Huanium apples were sold through live-streaming, with most purchases originating from Malaysia, generating USD 248,695 in revenue. Additionally, 90 tons of Tianshui peaches were pre-sold to Singapore, with an estimated value of USD 262,511.

Another notable example comes from Yunnan Province, where Pu-erh tea producers have actively utilized live-streaming platforms to promote their products in international markets. These producers have organized live-stream sessions that not only showcase the unique production process of Pu-erh tea—highlighting traditional fermentation methods and the influence of various tea-growing regions on flavor—but also include interactive tea-tasting sessions. These interactive elements have attracted significant interest from international tea enthusiasts. As a result of these live-streaming efforts, Yunnan's Pu-erh tea has successfully penetrated key international markets, including the United States, the European Union, and Japan.

In addition to live-streaming, short videos have become an increasingly popular tool for marketing agricultural products. In Xinjiang, local agricultural cooperatives have produced a series of short videos showcasing their melons. These videos highlight the vast melon fields basking in bright sunlight, the traditional farming methods passed down through generations, and the process of cutting open the juicy, sweet melons. In addition to their visual appeal, the videos convey a sense of authenticity, emphasizing the quality and heritage of the products. Widely shared on international social media platforms, these videos have successfully captured the attention of overseas importers. Consequently, the export volume of Xinjiang melons has significantly increased.

In conclusion, these various marketing strategies and case studies vividly demonstrate the effectiveness of different online marketing techniques in promoting China's agricultural products in the cross-border e-commerce environment. They also underline the significance of brand promotion and targeted marketing within this context.

3.4. Customs Management and Supervision

Compared to traditional trade, foreign trade conducted through cross-border e-commerce is characterized by decentralization and high transaction frequency, posing significant challenges to customs supervision. In recent years, Chinese customs authorities have researched and implemented new supervision methods tailored to these evolving dynamics. They have also proposed improvements to the supervision model to enhance the efficiency of cross-border e-commerce management, particularly for agricultural products. To streamline export operations, four customs supervision models—1210, 9610, 9710, and 9810—are currently in use, each serving distinct functions:

Model 1210: This model follows the warehouse entry regime. Its primary function is to divide bulk shipments into smaller portions. Cross-border e-commerce platforms send goods to domestic bonded logistics centers, where they are processed for retail distribution through online sales channels for customs clearance. Unsold goods remain in the bonded center without requiring customs declarations and can be directly returned overseas if not sold.

Model 9610: This model applies to goods that have already been sold and are stored in a temporary bonded warehouse while awaiting clearance and subsequent domestic delivery.

Model 9710: Known as “direct B2B cross-border e-commerce export” this model allows buyers and sellers to complete transactions online, with goods delivered directly to buyers through transportation services.

Model 9810: Referred to as the “overseas B2B cross-border e-commerce warehouse model” this model involves sellers storing goods in overseas warehouses. When a transaction is completed online, the goods are shipped directly from the overseas warehouse, eliminating the need to transport them from the seller's country for each order.

The diversity of these supervision methods and models provides effective tools for monitoring import and export activities. Moreover, they enable enterprises to benefit from more favorable customs procedures, logistics

operations, and inspection processes.

4. Evaluation of Agricultural Exports through Cross-Border E-Commerce in China

Based on the analysis of the conditions, scale, development characteristics, and practices of China's agricultural exports through cross-border e-commerce, it is clear that China holds significant advantages. These advantages are driven by international demand and the inherent strengths of the country's agricultural and e-commerce sectors. However, the success of China's progress in this field is inseparable from the role and contributions of the government. Through policies and region-specific development strategies targeting key areas and different phases, alongside rigorous supervision that monitors industry trends and evolving demands, the Chinese government has built a robust foundation for the growth of agricultural exports via cross-border e-commerce.

The active involvement and engagement of local governments in promptly resolving challenges for enterprises also play a crucial role in facilitating the adoption of cross-border e-commerce for agricultural exports. Many regions are actively exploring and investing in competitive specialty agricultural products. For example, to promote strawberry exports, Yinchuan City in Ningxia has allocated special funds to support cross-border e-commerce in brand development, infrastructure improvement, and logistics operations. The city has also sought to attract Amazon to establish an e-commerce innovation center, further enhancing its position in the cross-border trade ecosystem.

Despite these efforts, the application of cross-border e-commerce (CBEC) in China's agricultural exports continues to encounter several challenges and difficulties, including:

(1) Limited International Competitiveness

Exporting agricultural products through e-commerce demands a high level of standardization. In China, most agricultural exports are produced by farmers, whose capacity for quality control and production is constrained by low skill levels. In addition, the processing depth of export products remains insufficient. As of now, China's agricultural product processing rate stands at 68%, approximately 20 percentage points lower than that of developed countries [15]. Moreover, research and development (R&D) in new agricultural varieties and food products has progressed slowly, and the range of processed products remains limited, creating a weak foundation for developing new specialty products that could become global best-sellers.

Another key factor limiting the international competitiveness of China's agricultural products is the weakness of product branding. There are relatively few internationally recognized agricultural and food brands. Among the top 500 global agricultural and food brands, only five are Chinese, and three of these are wine brands.

(2) Limitations in Logistics Services

The current cross-border e-commerce trade in agricultural products primarily involves bulk shipments to ports, warehousing, customs clearance for small consignments, and express delivery to end customers. However, the development of logistics services, particularly cold chain logistics for fresh agricultural products, lags behind the rapid growth of cross-border e-commerce, leading to high logistics costs. In 2023, China's total social logistics costs amounted to 14.4% of GDP, a figure significantly higher than that of developed countries in Europe and the United States [16]. Logistics costs for certain agricultural products are especially high, accounting for one-fourth of their total market value, thereby reducing the international competitiveness of these products.

Furthermore, cold chain circulation remains underdeveloped in China. The cold chain quality maintenance rate for meat, fruits, and vegetables is approximately 30% and 20%, respectively—only one-third and one-fourth of the rates achieved by developed countries. This limitation not only hinders the improvement of agricultural product quality but also leads to significant waste during transportation, further increasing product costs.

Additionally, the logistics infrastructure in foreign markets faces challenges. Although China has intensified

overseas investments by establishing warehouses in target markets, the current number of warehouses remains insufficient to meet the high storage standards required for agricultural products. Furthermore, high construction, rental, and labor costs hinder efforts to expand both the quantity and quality of overseas storage facilities.

(3) Shortage of High-Quality Human Resources

The export of agricultural products through e-commerce demands a highly skilled and specialized workforce. However, the current education and training system has failed to meet the growing demands of the market effectively. In 2023, Chinese companies engaged in cross-border e-commerce, particularly in agricultural exports, posted more than 200,000 job openings. Yet, the supply of university graduates has fulfilled only approximately 45% of the actual market demand, resulting in a significant gap between labor supply and demand [17].

Companies seek employees with expertise not only in agriculture and international trade but also in digital tools and cross-border supply chain management. However, current training programs have not kept pace with the sector's rapid development, leading to a severe shortage of high-quality talent. This shortage presents major challenges for companies in recruiting, retraining, and retaining qualified personnel, placing substantial pressure on the sustainable development of the sector moving forward.

5. Lessons from China's Cross-Border E-Commerce of Agricultural Products for Vietnam

5.1. *Enhancing the Quality and Building the Brand of Vietnamese Agricultural Products*

5.1.1. Enhancing the Quality of Agricultural Products

To address the challenges related to the quality of agricultural products in Vietnam, a comprehensive and coordinated approach is essential.

The government must take a leading role by implementing key policies. Subsidy programs should be introduced to provide financial support to farmers adopting GAP, HACCP, and ISO 2000 standards. For example, partial compensation could be offered for the purchase of organic fertilizers or advanced pest-control equipment that comply with these standards, thereby reducing the financial burden on farmers.

Training and extension services are also crucial. Local training centers should be established in rural areas, where agricultural experts can conduct regular workshops covering essential topics such as the proper application of fertilizers and pesticides according to GAP standards and modern preservation techniques. To ensure broad impact, at least 10 training centers should be established within the next two years in major agricultural regions. Additionally, demonstration farms should be set up across different provinces. These farms will act as practical learning sites, showcasing best practices in agricultural production. Each province should have at least one demonstration farm within three years, allowing farmers to observe and learn firsthand.

Local governments and cooperatives also play a vital role. They should form production support teams consisting of agronomists, veterinarians (for livestock-related agriculture), and technicians. These teams should visit farms regularly, providing on-site guidance. To ensure effective coverage, each team should visit at least 50 farms per month. Moreover, knowledge-sharing platforms should be established. These platforms, both online and offline, will facilitate experience exchange among farmers. Monthly meetings or webinars should be organized, allowing successful farmers to share their experiences in implementing international standards, thereby inspiring and educating others.

Farmers must also take an active role in enhancing their expertise. At least 70% of farmers should participate in at least one training session related to international production standards annually. Additionally, joining farmer associations offers multiple benefits. These associations can facilitate collective learning and enhance farmers' bargaining power. Through these associations, farmers can negotiate better prices for inputs that meet international standards and access information on new production methods, helping them stay updated and make informed decisions to improve the quality of their agricultural products.

5.1.2. Building the Brand of Vietnamese Agricultural Products

Strong branding is critical, as it not only enhances the reputation of Vietnamese agricultural products but also increases export volumes through e-commerce channels. To achieve this, the government should lead efforts by providing guidance to both enterprises and farmers in developing authentic Vietnamese agricultural brands. Concurrently, support should be extended for geographical indications and product labeling to highlight distinctive products.

First, the government should establish Brand Development Centers in key agricultural export regions. These centers will serve as hubs for professional services such as brand design, brand strategy development, and in-depth market research. They will equip businesses and farmers with the expertise needed to develop strong, recognizable brands.

Second, geographical indication protection funds should be allocated. These funds are essential for preserving the unique identity of local products. They can be used to finance legal actions against unauthorized uses of local product names, thus safeguarding the integrity of geographical indications. Additionally, these funds can support promotional campaigns that emphasize the distinct characteristics of products tied to specific regions, enhancing their market competitiveness.

Exporting enterprises, meanwhile, must combine high product quality with effective marketing strategies on e-commerce platforms. This requires the development of comprehensive content marketing plans. These plans should include high-quality videos, blog posts, and infographics that tell the brand story, demonstrate the production process, and highlight the unique attributes of the products. For example, a coffee-exporting enterprise could produce engaging videos showcasing the traditional Vietnamese coffee-making process and emphasizing the distinct flavor profiles of Vietnamese coffee to attract consumers.

In addition, customer engagement strategies are essential. Enterprises should respond to customer inquiries within 24 hours, conduct regular surveys to collect valuable feedback, and establish customer loyalty programs. These initiatives will help foster strong customer connections, improving satisfaction and long-term loyalty.

Furthermore, brand protection is essential, as counterfeiting poses a severe threat to the reputation of Vietnamese agricultural products. To combat this issue, the government should establish Anti-Counterfeiting Task Forces in collaboration with relevant industries. These task forces will perform market inspections to identify counterfeit products and collaborate with international law enforcement agencies to take action against counterfeiters, protecting Vietnamese brands from illegal imitation in foreign markets.

Finally, enterprises should be encouraged to adopt digital brand protection tools, such as blockchain technology, to guarantee product authenticity and instill consumer confidence. The government can offer incentives or subsidies to enterprises implementing these advanced technologies, further strengthening the brand protection ecosystem for Vietnamese agricultural products.

5.2. *Improving the Legal Environment and E-Commerce Infrastructure*

5.2.1. Policy and Legal Environment

For the sustainable development of Vietnam's cross-border e-commerce in agricultural products, the government plays a crucial role in strengthening the legal framework for e-commerce and ensuring alignment with international regulations. This harmonization is essential to create a transparent and favorable business environment for export enterprises.

To achieve this, a dedicated E-commerce Law Revision Committee should be established. The committee, consisting of legal experts, e-commerce practitioners, and representatives from international trade organizations, will be responsible for conducting a comprehensive review of existing e-commerce laws within one year. Based on this review, they will propose amendments to adapt the legal system to the current and evolving e-commerce landscape.

Additionally, the government should actively participate in international e-commerce treaties and incorporate relevant provisions into domestic law. Specifically, at least two key international e-commerce treaties should be integrated within the next two years to ensure that Vietnam's e-commerce legal framework

aligns with global best practices.

Moreover, supportive policies are crucial to facilitating business operations. One such policy involves the development of tax incentive packages specifically for agricultural e-commerce exports. For example, export taxes could be reduced by 10–20% for products that meet predetermined quality and branding standards. These incentives must be clearly defined and effectively communicated to enterprises, encouraging them to meet these criteria and boost exports.

Another important measure is the establishment of One-stop Export Service Centers in major cities. These centers will play a critical role in simplifying the export process by handling all export-related procedures, including customs clearance, documentation, and regulatory compliance, in one location. By providing efficient services, these centers will streamline e-commerce export procedures and further facilitate the growth of agricultural e-commerce exports.

5.2.2. Developing Logistics and International Payment Infrastructure

In the context of cross-border e-commerce of agricultural products, the development of both domestic and international logistics is essential for optimizing supply chains. To achieve this, the Vietnamese government should take proactive measures. First, it should invest in logistics infrastructure and attract capital to key export regions. This involves formulating a comprehensive Logistics Infrastructure Investment Plan spanning five years. The focus of this plan should be the construction of modern warehouses, cold-storage facilities, and transportation hubs within key agricultural export areas. These facilities will enhance storage and transportation capacities, ensuring the quality and timely delivery of agricultural products.

Additionally, the creation of Special Economic Zones for Logistics in strategic locations is essential. These zones can serve as magnets by offering tax incentives and other benefits to attract logistics companies and related industries. In doing so, these zones will foster a concentrated and efficient logistics ecosystem tailored to the specific needs of agricultural exports.

However, infrastructure alone is not sufficient; logistics companies must also enhance their operational capabilities and work closely with export enterprises to mitigate transportation risks. To achieve this, they should engage in Logistics Capacity Building Programs. These programs should focus on improving supply chain management, integrating advanced tracking technologies, and elevating transportation service quality. The government can support these efforts by offering subsidies to make it more feasible for companies to upgrade their operations.

Another critical initiative is the establishment of Joint Risk-sharing Mechanisms between logistics companies and export enterprises. For example, they can jointly invest in insurance policies designed to cover potential losses during transportation. This collaborative approach will distribute risks more evenly and provide a safety net for both parties involved in the logistics process.

In terms of international payment systems, the Central Bank holds significant responsibility. It should implement supervisory policies to ensure secure transactions. Specifically, the Central Bank should issue Payment System Oversight Regulations for international payment systems, comprehensively addressing anti-money laundering (AML), fraud prevention, and data security. These measures will create a secure environment for financial transactions related to cross-border e-commerce.

To ensure compliance, regular audits of payment service providers are essential. Each major provider should undergo at least one annual audit to monitor their operations and prevent misuse or security breaches.

Export enterprises, meanwhile, must carefully evaluate appropriate payment methods for each market to ensure efficient and secure transactions. To assist them, the government, in collaboration with industry associations, should develop Payment Method Evaluation Guidelines. These guidelines should consider various factors, including market preferences, transaction costs, and security risks. Additionally, Payment Option Training should be provided to export enterprises. This training, delivered through webinars, workshops, or online courses, will equip enterprises with the knowledge needed to make informed decisions regarding payment options in international markets.

5.3. *Developing a High-Quality Workforce*

In the realm of cross-border e-commerce, human resources are undeniably a critical factor for success. For Vietnam, with its ambitions in this sector—particularly regarding agricultural products—prioritizing the training of a workforce with specialized skills is essential. This workforce should possess expertise in both e-commerce and agricultural products while also demonstrating proficiency in foreign languages and international trade law.

The Vietnamese government plays a crucial role in supporting these efforts by implementing policies that encourage specialized e-commerce training programs. Training grants should be provided to educational institutions and enterprises conducting e-commerce training related to agricultural exports. These grants, covering up to 50% of the training costs, will serve as incentives to develop high-quality programs. Moreover, establishing E-commerce Training Centers is necessary. Over the next three years, at least ten specialized centers should be established across the country. These centers should offer comprehensive courses ranging from basic e-commerce operations to advanced international trade and marketing strategies, equipping the workforce with a broad spectrum of relevant skills.

The education sector must also fulfill its responsibilities by aligning curricula with market demands. This requires strengthening Industry-Academia Collaboration, where educational institutions work closely with the e-commerce and agricultural industries. Industry experts should participate in curriculum design, guest lecturing, and internships. To ensure practical relevance, at least 20% of the curriculum should be developed in consultation with industry representatives. Additionally, dedicated career counseling services should be provided within educational institutions. These services should offer detailed insights into career paths in agricultural e-commerce, current job market trends, and the specific skills required for various roles. Such efforts will help students make informed career decisions and better prepare for future employment.

Enterprises also play a significant role in developing the workforce. They should allocate at least 3% of their annual revenue to in-house training programs focused on enhancing employee skills in e-commerce platforms, international marketing, and customer service. Furthermore, joint training initiatives with educational institutions should be encouraged. For instance, an enterprise could collaborate with a local university to offer a specialized course on agricultural e-commerce marketing. Through these collaborations, students gain hands-on experience by working on real-world projects, bridging the gap between theory and practice.

Finally, workers must be proactive in updating their knowledge to meet the ever-changing market demands. To support this, both the government and enterprises should provide incentives for continuous learning. These incentives could include tax breaks for individuals who complete relevant training or bonuses for employees acquiring new skills. Additionally, the use of online learning platforms offering courses related to e-commerce and international trade should be promoted. The government can facilitate access by subsidizing platform fees for workers in the agricultural e-commerce sector. This comprehensive approach will ensure the availability of high-quality human resources, thereby strengthening the competitiveness of Vietnam's cross-border e-commerce exports.

5.4. *Embracing the Livestreaming Trend*

Livestreaming, with its inherent convenience and visual interactivity, has emerged as a dominant shopping trend. In the context of agricultural exports, enterprises must leverage this trend to effectively connect with consumers. Through e-commerce platforms, businesses can showcase their products and cultivate distinct brand identities in an engaging manner, thereby capturing the interest of international customers.

To facilitate the adoption of livestreaming, the government and industry associations should take proactive measures. First, they should organize Livestreaming Training Programs for agricultural export enterprises. These programs should be comprehensive, covering essential aspects such as livestreaming techniques to ensure smooth and professional broadcasts, content creation strategies to produce captivating and informative streams, and audience engagement methods to foster interaction and build loyal viewership.

Second, Livestreaming Studios should be established in key agricultural export regions. These studios, equipped with professional lighting, high-quality cameras, and advanced audio equipment, will provide an

optimal environment for enterprises to conduct livestreams. To encourage their use, the government could offer subsidies, reducing the financial burden associated with accessing these state-of-the-art facilities.

In addition, Influencer Collaboration Guidelines should be developed. These guidelines will serve as a framework for agricultural export enterprises when partnering with social media influencers. The guidelines should include criteria for selecting influencers, such as their audience demographics, engagement rates, and relevance to the agricultural product niche. Additionally, contract negotiation tips should be provided to ensure fair and mutually beneficial partnerships. Best practices for collaborative livestreams should also be outlined to maximize the promotional impact of the products.

Finally, the government can play a pivotal role by launching Livestreaming Promotion Campaigns at the national level to promote Vietnamese agricultural products. These campaigns could feature well-known local and international influencers, leveraging their extensive followings and influence. To maximize visibility, these campaigns should be promoted across multiple media channels, significantly enhancing the presence of Vietnamese agricultural products in the highly competitive global livestreaming market.

6. Conclusion

In summary, by implementing appropriate policies and strategic orientations and leveraging its inherent advantages in agriculture and e-commerce, China has successfully developed cross-border e-commerce (CBEC) for agricultural exports, achieving notable milestones. The analysis of China's experience suggests that, despite Vietnam's considerable strengths in agricultural production, export capacity, and rapid e-commerce growth, several challenges remain. These challenges include enhancing product quality, building and protecting agricultural brands, and improving the legal framework, logistics infrastructure, and human resource development to meet the demands of international markets.

Furthermore, Vietnam must swiftly adapt to changing consumer behaviors, particularly the rise of livestreaming-based shopping, which has gained momentum due to its high interactivity and visual appeal. Successfully capturing and utilizing these emerging consumer trends will be crucial for businesses to access target markets and foster the sustainable growth of cross-border e-commerce in agricultural exports.

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Author Contributions

T.B.N.B. was responsible for the conception and design of the study, data collection, analysis, and interpretation of data. T.B.N.B. also drafted the manuscript and approved the final version for submission. H.D. provided invaluable support and contributions to this research. Special thanks are extended to her for offering valuable insights and constructive feedback during the preparation of this manuscript. All authors have read and agreed to the published version of the manuscript.

Institutional Review Board Statement

This study did not involve any human or animal subjects and therefore did not require ethics approval.

Informed Consent Statement

Not applicable.

Data Available Statement

All data used in the study were obtained from publicly available sources.

Conflicts of Interest

The authors declare no conflict of interest. There are no financial or personal relationships that could have influenced the research presented in this manuscript.

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