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TUÂN THỦ CÁC BIỆN PHÁP PHI THUẾ QUAN (NTMS) CỦA EU: CƠ HỘI VÀ THÁCH THỨC ĐỐI VỚI XUẤT KHẨU TRÁI CÂY VÀ RAU CỦ VIỆT NAM

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Tóm tắt

Việt Nam có tiềm năng lớn về xuất khẩu rau quả nhờ điều kiện tự nhiên thuận lợi. Liên minh châu Âu (EU), đặc biệt sau EVFTA, là thị trường nhập khẩu trọng điểm. Tuy nhiên, việc tiếp cận thị trường này đòi hỏi tuân thủ nghiêm ngặt các Biện pháp Phi thuế quan (NTMs) của EU. Vì vậy, nghiên cứu này làm rõ thực trạng tuân thủ NTMs của xuất khẩu rau quả Việt Nam, đồng thời phân tích các cơ hội và thách thức. Áp dụng phương pháp định tính qua phân tích dữ liệu thứ cấp từ các nguồn chính thức và học thuật uy tín, quá trình phân tích bao gồm đánh giá quy định, phân tích dữ liệu thương mại và cảnh báo, tổng hợp nghiên cứu và tham khảo quốc tế. Kết quả chỉ ra tiềm năng tăng trưởng xuất khẩu đáng kể nhưng các doanh nghiệp Việt Nam đối mặt thách thức lớn trong việc đáp ứng tiêu chuẩn SPS và TBT. Các vấn đề nổi cộm gồm kiểm soát dư lượng thuốc trừ sâu, tuân thủ kiểm dịch, triển khai hệ thống an toàn thực phẩm, truy xuất

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nguồn gốc và hạn chế về hạ tầng logistics, nhất là chuỗi lạnh. Trên cơ sở đó, nghiên cứu đề xuất các khuyến nghị cho Chính phủ và doanh nghiệp nhằm nâng cao năng lực tuân thủ, khắc phục rào cản và thúc đẩy xuất khẩu rau quả bền vững sang EU.
Từ khoá: NTMs, Việt Nam, EU, trái cây, rau củ

COMPLIANCE WITH THE EU'S NON-TARIFF MEASURES (NTMS): OPPORTUNITIES AND CHALLENGES FOR VIETNAM'S FRUIT AND VEGETABLE EXPORTS

Abstract

Vietnam holds significant potential for fruit and vegetable exports, leveraging its favorable natural conditions. The European Union (EU), particularly post-EVFTA, represents a key import market. However, accessing this market demands strict compliance with the EU's Non-Tariff Measures (NTMs). Therefore, this study clarifies the compliance status of Vietnam's fruit and vegetable exports regarding these complex NTMs, while also analyzing the associated opportunities and challenges. Employing a qualitative approach through secondary data analysis from credible official and academic sources, the analytical process involved regulatory assessment, trade and alert data trend analysis, literature synthesis, and international benchmarking. Findings indicate substantial export growth potential, yet Vietnamese enterprises face major challenges in meeting EU SPS and TBT standards. Prominent issues include pesticide residue control, phytosanitary compliance, implementation of food safety systems, traceability, and infrastructural limitations, especially concerning cold chains. Based on these findings, the study proposes recommendations for both the government and exporters aimed at enhancing compliance capacity, overcoming barriers, and promoting sustainable fruit and vegetable exports to the EU.
Key words: NTMs, Vietnam, EU, fruits, vegetables

1. Introduction

Vietnam's fruit and vegetable industry is vital to its economy, serving both domestic needs and increasingly targeting exports, particularly to discerning markets like the EU. While the EVFTA offers advantages, expanding EU market share presents Vietnamese exporters with significant compliance challenges, especially regarding EU NTMs like Sanitary and Phytosanitary and Technical Barriers to Trade standards. Despite existing research on EVFTA and NTMs, a gap persists in current, in-depth analysis of EU NTM compliance within Vietnam's fruit and vegetable sector. This study comprehensively assessed this compliance, identifying challenges and opportunities to recommend strategies for Vietnamese businesses to effectively leverage the EU market. The research employs qualitative methods with secondary data analysis from reliable sources and synthesizes relevant studies to address these issues.

2. Overview of Vietnam's fruits and vegetables industry and its export performance to the EU

2.1. Vietnam's fruit & vegetable industry

2.1.1. Production capacity

Data from FAOSTAT and MARD illustrates area and output fluctuations for Vietnamese fruits and vegetables (Table 1):

Table 1: Vietnam's Cultivated Area and Production of Fruits and Vegetables (2014–2023)

Year	Area (ha)	Area growth	Production (million tons)	Production growth
2014	2,989,972	-	31.76	-
2015	3,385,843	+13.2%	32.60	+2.6%
2016	3,452,923	+2.0%	33.33	+2.2%
2017	3,483,166	+0.9%	33.35	+0.04%
2018	3,539,476	+1.6%	34.85	+4.5%
2019	3,385,389	-4.4%	38.03	+9.1%
2020	3,604,706	+6.5%	39.10	+2.8%

2021	3,604,716	~0%	40.94	+4.7%
2022	2,729,515	-24.3%	138.30	+238.0%
2023	2,609,489	-4.4%	133.01	-3.8%

Source: FAOSTAT and MARD, 2025

Vietnamese fruit and vegetable cultivation expanded significantly from 2014-2021, peaking at 3.6 million hectares (a 20.5% increase). A sharp 24.3% decline occurred from 2022 due to climate change (drought, saline intrusion) and land conversion, particularly in the Mekong Delta. Despite being reduced in area, 2023 fruit production reached 13.88 million tons (8.2% increase), indicating continued export capacity (Annual Report on Fruits and Vegetables 2023). Fruit tree cultivation in 2024 reached 1.32 million hectares, accounting for 32% of total fruit and vegetable area. Mekong Delta and Southeast are key export-oriented production hubs. Advanced technologies like drip irrigation have increased productivity (30-40%), but challenges remain, such as saline intrusion impacting star apple output in Tien Giang (USDA FAS, 2021). Detailed regional breakdown of fruit tree area and output in 2023 is as below:

Table 2: Distribution of fruit tree area by region in Vietnam in (2023)

Region	Area harvested (ha)	Production (million tons)	Share (%)	Main crops
Mekong Delta	412,800	6.2	32%	Durian, mango, rambutan
Southeast	322,500	4.8	25%	Grapefruit, orange, rambutan
Central Highlands	193,500	1.5	15%	Avocado, durian, banana
Red River Delta	129,000	0.8	10%	Lychee, longan, dragon fruit
Other regions	232,200	0.6	18%	Dragon fruit, pineapple, banana
Total	1,290,000	13.9	100%	

Source: Annual Fruit and Vegetable Report, 2023; PSAV-MARD, 2023

Despite diverse exported fruits meeting EU needs (Agricultural Journal, 2023), Vietnamese fruit and vegetable production faces challenges: fragmented farming (85% < 1

hectare), hindering quality control; high post-harvest losses (25-30%); and 65% dependence on the Chinese market (Mekongasean, 2023).

2.1.2. Export performance

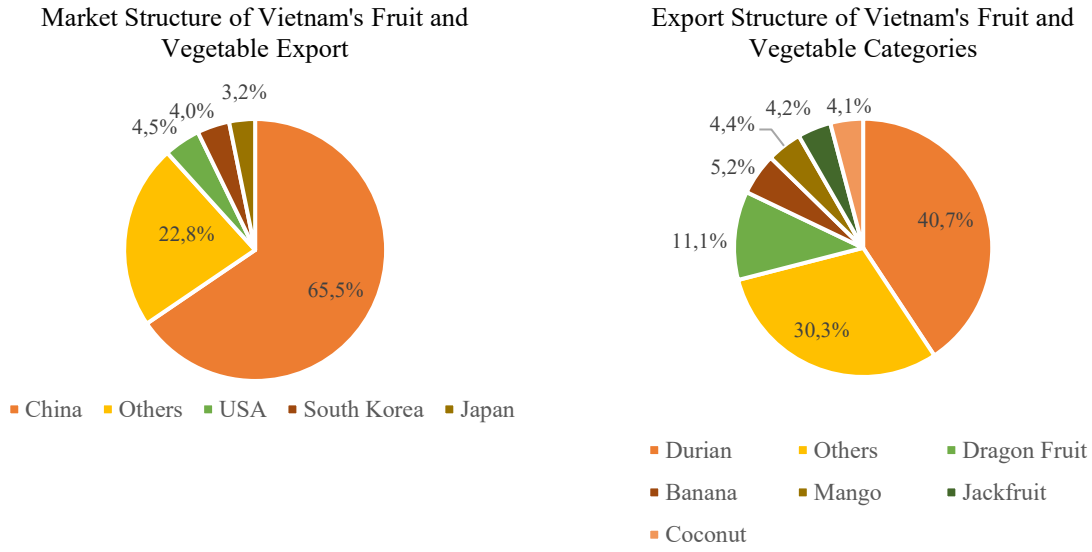
Although Vietnam's fruit and vegetable export turnover slowed down in 2019, in the past 5 years, this is still the agricultural product group with the strongest breakthrough. In 2023, the export turnover of fruits and vegetables reached 5.69 billion USD, marking a nearly 70% increase compared to 2022. This growth momentum continued in 2024, with export turnover reaching $7.2 billion, a 27.1% increase year-on-year, setting a record in the history of Vietnam's fruit and vegetable industry. Forecasts show that fruit and vegetable export turnover in 2025 could exceed 8 billion USD and aim to reach 10 billion USD by 2027.

Figure 1: Vietnam's Fruit and Vegetable Export Value (2019-2024)

Source: General Department of Vietnam Customs Data, 2024

In 2023, Vietnam's leading fruit and vegetable export markets included China, the US, South Korea, and Japan, accounting for 77.2% of the country's total fruit and vegetable export turnover. The key export commodities during the same year comprised durian, dragon fruit, banana, mango, jackfruit, and coconut, contributing 69.7% of the total export value of fruits and vegetables. Notably, durian recorded impressive growth with the highest export value.

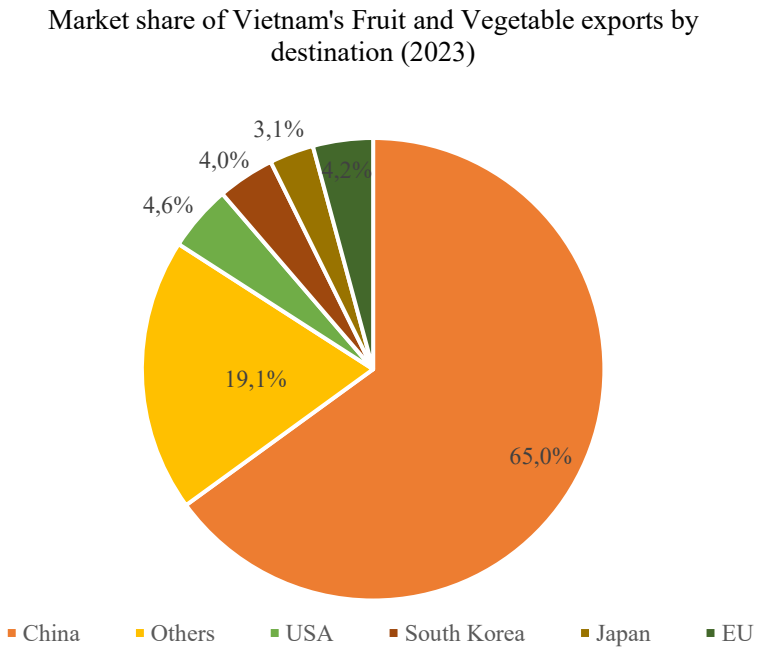
Figure 2: Market Structure of Vietnam's Fruit and Vegetable Export & Export Structure of Vietnam's Fruit and Vegetable Categories (2023)



Source: General Department of Vietnam Customs Data, 2023

Currently, the European Union (EU) is one of the key export markets for Vietnamese fruits and vegetables, along with China, the United States and South Korea. Data in 2023 shows that China is the largest market, accounting for 65% of Vietnam's total fruit and vegetable exports, followed by the United States (4.6%), the EU (4.2%) and South Korea (4.0%). Although the export share to the EU is still low compared to China, it is still considered a high-potential market due to growing demand and advantages from the EVFTA.

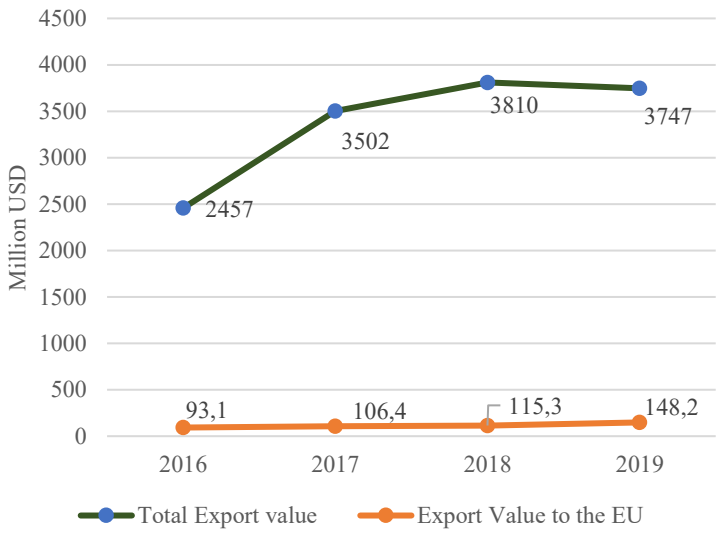
Figure 3:3 Share of Vietnam's Fruit and Vegetable Exports by Destination (2023)



Source: Compiled from General Department of Vietnam Customs Data, 2023

According to calculations from the General Department of Vietnam Customs (2023), Vietnam's fruit and vegetable export turnover to the EU has continuously increased in recent years. Notably, even in 2019, when the country's total fruit and vegetable exports decreased, this market still maintained a double-digit growth rate.

Figure 4: Vietnam's Fruit and Vegetable Exports to the EU Were on an Upward Trend During the Period 2015–2019



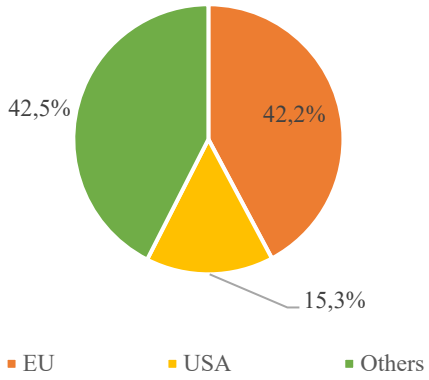
Source: General Department of Vietnam Customs Data, 2019

2.2. Vietnam's export performance to the EU

In this section, this paper is chosen to use data from 2014 to 2023 to ensure comprehensiveness and depth in the analysis. This period clearly reflects the changing trend in Vietnam's fruit and vegetable export turnover to the EU, including the period before and after the EVFTA came into effect – an important factor affecting trade performance. At the same time, this is also the period when the EU continuously adjusted SPS and TBT measures, making market access increasingly complicated. Continuously monitoring data for 10 years allows the paper to accurately assess the growth rate, identify potential products, and clarify the challenges that are hindering the competitiveness of Vietnamese fruit and vegetables in the EU market.

2.2.1. The EU's demand for fruit and vegetable imports

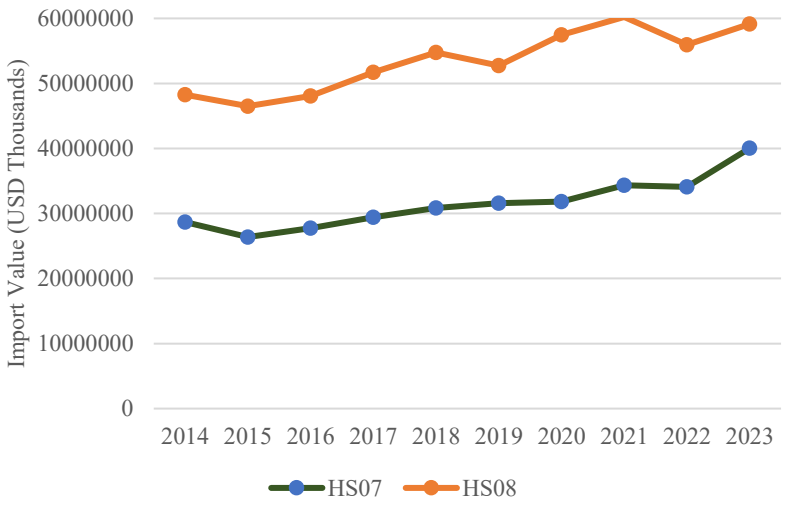
Figure 5: The average import ratio of the EU compared to the total global exports of vegetables and fruits (HS codes 07, 08) from 2014 to 2023 (%)



Source: ITC Trademap, 2023

From 2014 to 2023, the EU led the world in fruit and vegetable consumption, with HS07 and HS08 imports serving 27 member countries (about 448,8 million people in 2023). The EU's share of global fruit and vegetable imports remained stable at around 42.5%, followed by the USA at 15.3% (ITC Trademap, 2023). From that, it can be seen that the EU is a massive fruit and vegetable import market and has great appeal for exporters around the world. Despite minor fluctuations, it is a saturated, mature market. The WTO Center notes that strict import requirements lead the EU to establish long-term supplier relationships, making entry difficult for new exporters. Türkiye, the US, South Africa, and Morocco are EU key suppliers (ITC Trademap, 2023).

Figure 6: Growth in the EU's import demand for vegetables and fruits (HS codes 07, 08) from 2014 to 2023 (USD Thousands)



Source: ITC Trademap, 2023

From 2014 to 2019, imports of HS07 and HS08 grew moderately, increasing by about 3 billion USD and over 4 billion USD, respectively. HS07 saw steady growth, while HS08 experienced strong fluctuations, with sharp import declines in 2019 and 2022 but peaking in 2021. The most notable surge occurred in 2023. HS07 imports soared to 40,033,949 thousand USD, the highest in a decade, while HS08 reached 59,159,326 thousand USD, nearly matching the 2021 peak. The EU's post-pandemic recovery drove higher food demand, with consumers shifting to healthier diets, increasing fiber intake, and embracing vegetarianism. This sharp rise signals a new phase for EU fruit and vegetable demand.

Table 1: Top 5 Most Imported Vegetables (HS07) into the EU from 2014 to 2023 (Compared to Total HS07 Imports: 314,942,900 thousands USD)

Code	Product label	Total value (USD Thousands)	Ratio
070200	Tomatoes, fresh or chilled	50,510,906	16.04%
070960	Fresh or chilled fruits of the genus Capsicum or Pimenta	29,298,211	9.30%
070190	Fresh or chilled potatoes (excl. seed)	22,662,554	7.20%
071080	Vegetables, uncooked or cooked by steaming or by boiling in water, frozen (excl. potatoes, ...	19,164,032	6.08%
070700	Cucumbers and gherkins, fresh or chilled	15,878,230	5.04%

Source: ITC Trademap, 2023

Table 2: Top 5 Most Imported Fruits and Nuts (HS08) into the EU from 2014 to 2023 (Compared to Total HS08 Imports: 534,859,208 thousand USD)

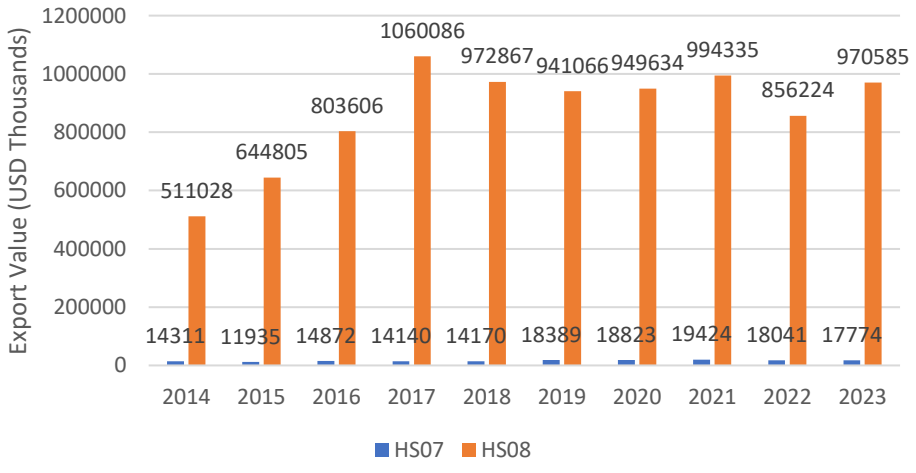
Code	Product label	Total value (USD Thousands)	Ratio
080390	Fresh or dried bananas (excl. plantains)	65,106,093	12.17%
080610	Fresh grapes	35,406,069	6.62%
080212	Fresh or dried almonds, shelled	26,412,581	4.94%
080440	Fresh or dried avocados	25,916,710	4.85%
080510	Fresh or dried oranges	25,119,231	4.70%

Source: ITC Trademap, 2023

2.2.2. Current Vietnam's fruit and vegetable export status to the EU

Vietnam ranked 37th in vegetable exports (HS07) and 12th in fruit and nut exports (HS08) to the EU between 2014 and 2023 (ITC Trademap, 2023). Despite an average export share of only 0.0514% for HS07 and 1.6202% for HS08, Vietnam remains the only Southeast Asian country in the top 15, competing directly with major exporters HS08 like the US, South Africa, and Turkey.

Figure 7: Vietnam's Fruit and Vegetable (HS07, HS08) Export Value to the EU from 2014 to 2023 (USD Thousands)



Source: ITC Trademap, 2023

The export value of HS08 was 50–60 times higher than HS07, but over 90% came from Fresh or dried cashew nuts, shelled, highlighting the limited presence of Vietnamese fruits in the EU market. Meanwhile, the low export value of HS07 is largely due to increasingly strict SPS and TBT regulations. From 2014 to 2017, exports of HS08 grew steadily, peaking at over $1 billion in 2017 before declining slightly to $856 million in 2022, then recovering by 13% in 2023. The post-2017 decline reflects the growing impact of SPS and TBT trade barriers. In the first 10 months of 2023, the EU issued 55 notifications against Vietnamese agricultural products, with 23 related to fruits and vegetables, increasing the risk of shipment rejections. HS07 exports to the EU remained stable between $14 million and $19 million over the past decade but showed no significant breakthroughs, maintaining a small market share compared to competitors in the EU.

Table 3: Top 5 Most Exported Vegetables (HS07) from Vietnam to the EU from 2014 to 2023 (Compared to Vietnam's Total HS07 Exports: 161,879 thousand USD)

Code	Product label	Total value of Vietnam's exports to the EU from 2014 to 2023 (USD Thousands)	The ratio of Vietnam's exports to the EU compared to Vietnam's global exports for HS07 from 2014 to 2023 (%)
071040	Sweetcorn, uncooked or cooked by steaming or by boiling in water, frozen	40,926	25.28%
071080	Vegetables, uncooked or cooked by steaming or by boiling in water, frozen (excl. potatoes, ...	19,680	12.16%
071159	Mushrooms and truffles, provisionally preserved, e.g., by sulphur dioxide gas, in brine, in ...	15,994	9.88%
071151	Mushrooms of the genus "Agaricus", provisionally preserved, e.g., by sulphur dioxide gas, in ...	13,836	8.55%
071450	Yautia "Xanthosoma spp.", fresh, chilled, frozen or dried, whether or not sliced or in the ...	10,276	6.35%

Source: ITC Trademap, 2023

Vietnam's leading vegetable export under HS07 is Sweetcorn, uncooked or cooked by steaming or by boiling in water, frozen, accounting for a quarter of the country's vegetable exports to the EU. The second-largest export is 071080, a high-demand code ranked 4th among EU imports from 2014–2023, with a total import value of $19.16 billion (Table 3). Despite Vietnam's presence in this market, its export share remains minimal at around 0.1%, far behind competitors like China ($227 million) and Turkey ($79 million). However, this indicates potential for growth.

Table 4: Top 5 Most Exported Fruits and Nuts (HS08) from Vietnam to the EU from 2014 to 2023 (Compared to Vietnam's Total HS08 Exports: 8,704,236 thousand USD)

Code	Product label	Total value of Vietnam's exports to the EU from 2014 to 2023 (USD Thousands)	The ratio of Vietnam's exports to the EU compared to Vietnam's global exports for HS08 from 2014 to 2023 (%)
080132	Fresh or dried cashew nuts, shelled	7.891.989	90.67%
081090	Fresh tamarinds, cashew apples, jackfruit, lychees, sapodillo plums, passion fruit, carambola, ...	271.936	3.12%
081190	Frozen fruit and nuts, uncooked or cooked by steaming or boiling in water, whether or not sweetened ...	147.666	1.70%
080550	Fresh or dried lemons "Citrus limon, Citrus limonum" and limes "Citrus aurantifolia, Citrus ...	98.002	1.13%
080212	Fresh or dried almonds, shelled	60.129	0.69%

Source: ITC Trademap, 2023

Vietnam's top export product to the EU under HS08 is fresh or dried cashew nuts, shelled, accounting for a massive 90.67% of the country's total global exports. This product dominates not only in the EU but also in global trade.

The second-largest category, fresh tropical fruits (including tamarinds, cashew apples, jackfruit, lychees, and passion fruit), holds a much smaller share of HS08 exports to the EU. Vietnam's contribution remains modest at $271.9 million, just 0.03% of the EU's total HS08 imports. However, from 2014–2023, Vietnam ranked 5th in exporting these fruits to the EU, surpassing Thailand and Malaysia.

For fresh or dried almonds are high-demand EU imports, ranking the 3rd (Table 4). Vietnam has significant production potential for almonds (HS080550) due to its tropical climate, especially in Central regions. Since 2018, exports of fresh or dried almonds (HS080212) to the EU have surged, showing fluctuations but still highlighting new opportunities in this market.

2.2.2.1. Potential fruit and vegetable export to EU

From the above analysis, it is evident that Vietnam has a diverse export market worldwide, particularly in the EU. Although its market share remains small, the potential for growth is clear. In the table below, the five selected fruit and vegetable products with high potential for Vietnam's exports to the EU are identified based on specific criteria. The selection follows three long-term and two short-term factors, ranked in order of priority from left to right. A product must meet all five criteria to be considered a promising export for Vietnam in the EU market.

- Long-term criteria:
- The product must be among the top 20 most imported into the EU from 2014–2023.
- The product must be among the top 15 most exported by Vietnam to the world from 2014–2023.
- The product must be among the top 15 most exported by Vietnam to the EU from 2014–2023.
- Short-term criteria:
- The product must have a positive average export growth rate from Vietnam to the EU between 2019–2023 (>0%).
- The product must have a positive average import growth rate in the EU between 2019–2023 (>0%).

Table 5: Vietnamese Fruit and Vegetable Products with High Export Potential to the EU

Code	Product Label	Long term criteria			Short term criteria	
		Top 20 most imported into the EU from 2014–2023	**Top 15 most exported by Vietnam to the world from 2014–2023**	**Top 15 most exported by Vietnam to the EU from 2014–2023**	**Average export growth rate from Vietnam to the EU between 2019–2023 (>0%)**	**Average import growth rate in the EU between 2019–2023 (>0%)**
080550	Fresh or dried lemons "Citrus limon, Citrus limonum" and limes "Citrus aurantifolia, Citrus ...	YES	YES	YES	5.31%	3.05%
081190	Frozen fruit and nuts, uncooked or cooked by steaming or boiling in water, whether or not sweetened ...	YES	YES	YES	21.50%	0.71%
080450	Fresh or dried guavas, mangoes and mangosteens	YES	YES	YES	16.53%	2.71%
070960	Fresh or chilled fruits of the genus Capsicum or Pimenta	YES	YES	YES	17.03%	7.63%

070999	Fresh or chilled vegetables n.e.s.	YES	YES	YES	23.28%	7.86%

2.2.3. Facilitation from the EU-Vietnam Free Trade Agreement

2.2.3.1. Tariffs

The EVFTA brings great advantages to Vietnamese fruits and vegetables through the EU's commitment to immediately eliminate 94% of tariff lines for this item, including many key products such as lychee, longan, rambutan, dragon fruit, pineapple, and melon. Most of the tariff lines committed to be eliminated have MFN tax rates of over 10%, even over 20% for some products. In addition, the EU also commits to protecting 39 geographical indications (GIs) of Vietnam, including 17 GIs related to fruit products, creating favorable conditions for Vietnamese agricultural products to access the EU market at more competitive prices compared to countries in the region that do not have FTAs with the EU such as Thailand, China, Malaysia, Indonesia.

2.2.3.2. Investment

EVFTA creates a driving force to promote investment in deep processing to increase the added value and quality of Vietnamese fruit and vegetable products according to international standards. Vietnam can attract investors from the EU and countries with experience in agricultural processing such as Japan, Korea, Thailand, Philippines, Malaysia to develop processing and preservation technology and diversify products. In particular, the consumer trend in the EU increasingly favors organic, natural and environmentally friendly products, opening opportunities for Vietnam to develop this segment to increase export value to the European market.

3. The EU's non-tariff measures on Vietnamese fruit and vegetable exports

3.1. Overview of non-tariff measures applied to fruits and vegetables

While there is no official definition of non-tariff measures (NTMs), NTMs generally encompass all mandatory government requirements, rules, and regulations that impose informational, compliance-related, and procedural costs, affecting the trade flows of goods and

services. According to UNCTAD's classification system, NTMs are divided into two main groups: technical measures and non-technical measures. Technical measures comprise Sanitary and Phytosanitary (SPS) measures, Technical Barriers to Trade (TBT) measures, and pre-shipment inspections which primarily aim to protect health, safety, and the environment. In contrast, non-technical measures include traditional trade policies such as import licensing, quotas, price controls, subsidies, and trade remedies (e.g., anti-dumping and countervailing measures) that regulate market access and competition.

NTMs are typically implemented to achieve legitimate policy objectives such as protecting human, animal or plant health, protecting the environment, providing consumer information and ensuring product safety. However, they can also become trade barriers if their requirements are overly stringent, lack transparency or are discriminatory.

In the context of the European Union (EU), NTMs are governed by a complex legal framework that includes EU regulations, directives, and decisions, alongside the commitments under the World Trade Organization (WTO). In particular, the WTO Agreement on the application of Sanitary and Phytosanitary (SPS) measures and the Agreement on Technical Barriers to Trade (TBT) measures provide the foundational rules that shape the EU's application of these NTMs. These two groups of technical measures are particularly important in regulating fruit and vegetable imports into the EU market and directly affect the market access of exporting countries.

– *Sanitary and Phytosanitary Measures (SPS)*: SPS, as defined by the WTO's SPS Agreement, specifically refers to measures applied to protect human, animal or plant life or health from risks arising from pests, diseases, additives, toxins or contaminants in food and feed. For fruit and vegetable imports into the EU, these measures translate into a complex system of regulations focused on ensuring food safety, controlling pesticide residues through strict Maximum Residue Levels (MRLs), preventing the introduction of dangerous plant pests through phytosanitary measures, and requiring traceability systems to manage potential risks throughout the supply chain. The application of these measures is based on scientific principles and risk assessment methods.

– *Technical barriers to trade (TBT):* TBT is an agreement within the WTO that aims to ensure that technical regulations, technical standards and conformity assessment procedures associated with labelling and packaging do not become unreasonable barriers to trade worldwide.

The agreement allows countries to adopt measures to protect human health, safety, the environment and prevent deceptive trade practices, as long as those measures are not discriminatory or used as a form of disguised protectionism. TBT emphasizes transparency, encourages the use of international standards and promotes mutual recognition in conformity assessment.

3.2. Implementation of EU's non-tariff measures on Vietnamese fruit & vegetable exports

The European Union (EU) is among the regions with the highest frequency and coverage of non-tariff measures (NTMs) on imported goods, especially in the agricultural and food sectors. These measures, including Sanitary and Phytosanitary (SPS) measures and Technical Barriers to Trade (TBT) measures, are implemented by the EU with the aim of protecting human, animal and environmental health. However, they are often considered trade barriers, significantly affecting exporting countries, particularly developing countries with advantages in the agricultural sector.

According to the WTO Center and Integration - VCCI (2019), the EU is currently imposing 34 non-tariff measures (NTMs) on fruits and vegetables imported from Vietnam, including 26 Sanitary and Phytosanitary (SPS) measures and 8 Technical Barriers to Trade (TBT) measures. This makes the EU become one of the import markets applying the highest number of SPS and TBT measures to Vietnamese fruits. Although these measures serve important public policy goals, they pose numerous challenges for Vietnamese enterprises in accessing the EU market, complying with technical requirements, and maintaining competitiveness.

3.2.1. Implementation of EU's SPS measures

Meeting the EU's food safety standards, including the implementation of HACCP systems (as per Regulation (EC) 852/2004) and adherence to market-preferred certifications like GlobalG.A.P., remains a challenge for many Vietnamese businesses. Although Vietnam is undertaking efforts to enhance capacity through international cooperation, RASFF alerts related to microbiological safety, such as the detection of Bacillus cereus in dried wood ear mushrooms (RASFF 2023.5820), indicate that effective control over biological hazards throughout the supply chain has yet to achieve the consistency required by the EU.

Violations of Maximum Residue Levels (MRLs) for pesticides represent the most critical and prevalent issue, evidenced by a significant increase in RASFF alert frequency (>80% in 2023) which continued at high levels into 2024 (RASFF Window, 2025). Key Vietnamese exports like dragon fruit, durian, and peppers are frequently found to contain residues exceeding the EU's strict MRLs (Regulation (EC) No 396/2005), involving substances such as Chlorfenapyr, Carbendazim, and Pyraclostrobin. Specific cases, like multiple residues found in durian (RASFF 2023.4004) or Dithiocarbamates in dragon fruit (RASFF 2023.1727), have led the EU to impose intensified border controls with high inspection frequencies (10-50%) for numerous Vietnamese products, increasing the risk of rejection and significant economic losses.

Regarding phytosanitary controls (Regulation (EU) 2016/2031), Vietnam still faces difficulties in ensuring products are free from pests and diseases. Despite investments in required treatment technologies (like irradiation for fruit fly control), RASFF alerts concerning mold on dragon fruit (RASFF 2023.2169) suggest that weaknesses in integrated pest management and post-harvest handling persist, hindering consistent compliance with EU import standards for plant health.

Finally, implementing effective traceability systems compliant with Regulation (EC) 178/2002's "farm-to-fork" requirement remains a significant hurdle, largely due to Vietnam's fragmented production structure. Incidents such as the detection of Cadmium in mangosteens (RASFF 2023.5370) highlight not only the importance of traceability in risk management but also the challenges in effectively implementing such systems. While technological solutions like QR codes are being adopted to enhance transparency, establishing reliable traceability covering the complex smallholder supply chains remains a major challenge to fully meet EU expectations.

3.2.2. Implementation of EU's TBT measures

The EU requires imported fruit and vegetables to comply with Regulation (EU) No. 1169/2011 with labels that fully display required information. The purpose is to help consumers have a basis to make accurate purchasing decisions. One of the issues that the EU warned about Vietnam's agricultural exports in early 2025 was the mislabeling of allergens. Some products such as breaded shrimp do not clearly state that they contain eggs, or organic cashew powder does not mention the presence of peanuts - substances that can cause severe allergies to consumers. The reason is that many Vietnamese businesses, especially small and medium-sized

enterprises, still lack understanding or have not fully updated the technical regulation for labeling rules, leading to errors and decreasing competitiveness in the EU market. (Vietnamplus, 2024)

One of the important technical regulations of the EU for imported agricultural products is compliance with marketing standards on product quality. These regulations are stated in Regulation (EU) No. 1308/2013, which aims to ensure uniformity and minimum quality for EU consumers. However, many Vietnamese enterprises have not yet fully met these requirements. For example, some dragon fruit and durian shipments have been subject to increased inspection at EU border gates in 2024 due to failure to meet appearance and quality standards. This not only slows down the customs clearance process but also increases costs and the risk of import rejection. In addition to improving the quality of cultivation, Vietnam needs to pay more attention to the stages of preliminary processing, classification and packaging of products to synchronously meet the strict technical criteria of the EU market.

4. Compliance with EU's non-tariff measures: opportunities and challenges

4.1. Opportunities for Vietnamese fruits & vegetables exports from complying the EU's non-tariff measures

4.1.1. Market expansion and export value growth

First, overcoming trade barriers caused by NTMs allows businesses to access the EU - a massive market with nearly 450 million people and strong purchasing power. SPS measures, such as pesticide residue control, ensure food safety, enabling Vietnamese fruits and vegetables to meet the EU's high-quality standards and attract more consumers. At the same time, TBT measures, including labeling and marketing standards, enhance transparency, making it easier for products to gain wider acceptance in this market. This creates opportunities not only to increase foreign exchange earnings but also to diversify export markets and reduce dependence on China. Furthermore, the growth of exports to the EU contributes to Vietnamese GDP increase, creates stable employment, and improves incomes for Vietnamese people, especially in key agricultural areas.

4.1.2. Improving quality and reputation

To overcome the lack of information and production capacity, Vietnamese businesses and farmers must proactively research and adopt SPS and TBT measures, enhancing production processes with advanced systems like HACCP and standards such as GlobalG.A.P.. For instance, meeting SPS requirements on pesticide residues through safer farming practices and stricter quality control ensures compliance with EU standards while building consumer trust. Similarly, adhering to TBT measures on labeling and marketing standards strengthens Vietnam's brand credibility, boosting competitiveness against exporters like Thailand and South Africa.

If Vietnam effectively implements these measures, it will significantly enhance its reputation as a reliable exporter of high-quality fruits and vegetables. This growing reputation makes Vietnam a trusted trading partner, increasing national reputation among global buyers—beyond just the EU—and paving the way for long-term trade partnerships. Furthermore, as 'Made in Vietnam' products gain recognition for quality and safety, particularly in the EU, this not only makes export growth but also attracts foreign investment into agriculture. Consequently, Vietnam achieves its position in the global market, ensuring sustained economic growth and long-term improvement.

4.1.3. Attracting Foreign Direct Investment and Technology Transfer

Compliance with SPS and TBT measures create valuable opportunities for Vietnam's fruit and vegetable sector to attract foreign investment and adopt modern technologies. Meeting the EU's requirements makes Vietnam an attractive destination for foreign direct investment (FDI), especially from European companies looking to take advantage of Vietnamese affordable labor costs and rich agricultural resources. These partnerships allow the introduction of advanced technologies, such as traceability systems and sustainable farming methods, improving production efficiency and product quality.

Additionally, the need to meet EU export standards encourage investment in Vietnam supporting industries like food safety testing and certification services. For example, to comply with EU regulations on pesticide residues, Vietnam can attract foreign firms to invest in modern laboratories and upgraded processing facilities, improving export quality and expanding market access.

4.2. Challenges for Vietnamese fruits & vegetables exports in meeting the EU's non-tariff measures

4.2.1. Lack of information and guidance on EU regulations

A fundamental barrier lies in the persistent difficulty for many Vietnamese exporters, particularly SMEs, to effectively access, interpret, and stay abreast of the EU's complex and dynamic SPS and TBT regulatory landscape. The sheer volume and technical nature of these regulations, coupled with frequent updates driven by scientific assessments or policy shifts like the Farm to Fork Strategy, create a significant informational challenge. Many enterprises lack dedicated resources or systematic approaches for proactively monitoring EU legislative developments, often leading to a reactive stance when new requirements emerge (WTO Center and Integration - VCCI, 2022). This is further complicated by potential language barriers and the need to understand not only EU-level directives but also specific interpretations or enforcement practices at the member state level.

Beyond understanding the technical rules, navigating the associated administrative procedures and documentation requirements presents another significant hurdle. The finding that approximately 30% of shipments face documentation or procedural issues at EU borders underscores this complexity (VCCI, 2023). Furthermore, ensuring compliance with intricate labelling requirements across the diverse linguistic and consumer information standards of the 27 member states demands meticulous attention to detail and incurs additional costs for packaging design and verification. The effectiveness of existing support mechanisms from government bodies and industry associations in disseminating timely, practical, and easily understandable guidance also appears limited, leaving many businesses struggling to find reliable support for specific compliance queries or navigating unforeseen issues (MARD, 2023). This information gap extends to market intelligence, hindering the ability to adapt products to evolving EU consumer preferences regarding sustainability or ethical sourcing, and complicating efforts to build the long-term trust with EU buyers necessary for sustained market presence.

4.2.2. Constraints in capacity and resources to follow the EU's high standards

The inherent characteristics of Vietnam's agricultural production system, combined with resource limitations, significantly constrain the sector's ability to consistently meet the EU's high standards. The predominance of small-scale, fragmented farming (with 85% of farms under 1

hectare) is a core structural challenge. This fragmentation makes the widespread, uniform adoption of demanding standards like GlobalG.A.P. exceptionally difficult due to the high per-farm investment needed for infrastructure upgrades, comprehensive record-keeping systems, and farmer training. It also inherently complicates the establishment of robust traceability systems capable of providing detailed farm-to-fork transparency mandated by EU regulations (Regulation (EC) 178/2002).

These structural issues directly impact the capacity to manage key SPS risks, most notably pesticide residue (MRL) control. Smallholders often face economic pressures that may lead to the use of cheaper, non-EU-approved pesticides. Compounding this is often limited access to updated technical knowledge regarding appropriate application rates, approved active ingredients for specific crops destined for the EU, and correct pre-harvest intervals, thereby increasing the risk of MRL violations documented frequently by RASFF. Similarly, implementing and maintaining rigorous food safety management systems, such as HACCP, requires significant financial investment in hygienic facility design, controlled processing environments, testing equipment, and specialized expertise. These requirements pose a substantial barrier for many SMEs lacking the necessary capital and technical know-how.

Furthermore, the sector faces a critical shortage of skilled human resources across the value chain. This includes a lack of adequately trained agricultural extension workers to effectively disseminate GAP knowledge, insufficient numbers of qualified plant health specialists for robust pest surveillance and management at the farm level, and a deficit of experienced quality control (QC) personnel within processing facilities capable of ensuring consistent adherence to both SPS and TBT specifications. This human resource gap hinders the effective implementation and supervision of compliance protocols, contributing to the inconsistencies observed in product quality and safety.

4.2.3. Inadequate infrastructure to facilitate exports to the EU market

Vietnam's fruit and vegetable exports to the European Union (EU) market are currently facing many difficulties due to limitations in physical and institutional infrastructure throughout the agricultural supply chain. Among these, fragmented production remains one of the most pressing issues. Over 85% of farming households in Vietnam cultivate on plots smaller than one hectare (Vietnam Briefing, 2024), which hinders the application of standardized production processes and traceability systems. This fragmentation has significantly delayed the widespread

adoption of international standards like Good Agricultural Practices (GAP) and Hazard Analysis and Critical Control Points (HACCP), as compliance with these standards is a prerequisite for market access to the EU.

In addition to on-farm production constraints, the post-harvest infrastructure in Vietnam remains underdeveloped. Post-harvest losses are still alarmingly high, estimated at around 25% for fruits and over 30% for vegetables (PSAV–MARD, 2023). The key contributing factors include a lack of cold storage facilities, standardized packaging lines, and modern preservation technologies. These infrastructural deficits not only reduce the commercial value of the products but also elevate the risk of non-compliance with the EU's stringent SPS requirements, particularly those related to maximum residue limits (MRLs) and microbiological standards. Moreover, inadequate transportation infrastructure, particularly in production zones, leads to logistical bottlenecks and delays in shipping perishable goods. Given that 98% of agricultural imports into the EU are subject to non-tariff measures (NTMs) (UNCTAD, 2023), such delays significantly increase the likelihood of shipment rejections and financial losses for Vietnamese exporters.

Another weakness comes from institutional infrastructure, particularly in testing and certification systems. Currently, only a limited number of domestic laboratories are recognized as meeting international standards to conduct inspections of technical requirements of the EU market such as MRL analysis or microbiological testing. This forces businesses to send samples to international or third-party laboratories, increasing costs and prolonging the processing time of export procedures (VCCI, 2019). Meanwhile, experience from Morocco has shown the clear effectiveness of strategic investment in infrastructure. Thanks to public-private partnerships in upgrading packaging systems, cold chain logistics and export certification processes, the value of Moroccan fruit and vegetable exports to the EU market increased by more than 60% in the period 2014–2021 alone (ITC Trademap, 2022), clearly demonstrating that effective infrastructure investment is a prerequisite to meet increasingly stringent EU SPS standards.

5. Recommendations for Vietnamese government and exporters

5.1. For Vietnamese government

5.1.1. Prioritize investment in internationally accredited agricultural testing systems.

One of the major barriers currently facing Vietnamese fruits and vegetables when accessing the EU market is the lack of internationally standardized testing laboratories, leading to many shipments being rejected due to failure to meet standards for pesticide residues (MRLs), heavy metals or harmful microorganisms. To overcome this problem, the Government needs to focus on investing in and upgrading testing laboratories in key production areas such as the Mekong Delta and the Central Highlands, ensuring that they are accredited according to ISO/IEC 17025 standards. Adequate equipment and specialized human resources will help increase proactiveness in quality control, while reducing costs and processing time for exporting enterprises.

5.1.2. Develop a digital traceability system using modern technology.

Transparent traceability along the value chain is becoming a mandatory requirement of the EU market, especially in the context of increasing regulations on food safety and commercial fraud. In that context, the Government needs to deploy an electronic traceability system that integrates modern technologies such as QR codes, blockchain and geographic information systems (GIS). In addition to technological infrastructure, there needs to be a synchronous training program for farmers and businesses in recording production logs and managing data according to international standards. Experience from Thailand shows that the successful implementation of the TraceThai system - using blockchain to protect data and prevent fraud - has helped the country increase consumer confidence and expand its market share of organic products. This is a model that can be used as a reference for Vietnam to gradually improve its traceability capacity, aiming to meet the strict standards of the EU.

5.1.3. Enhance logistics infrastructure and cold chain systems to meet EU standards

High logistics costs and underdeveloped cold storage systems are serious bottlenecks in Vietnam's fruit and vegetable export chain. To improve this situation, the Government needs to promote the public-private partnership (PPP) model to invest in logistics centers and standard cold storage in large growing areas. At the same time, supporting businesses to optimize shipping routes and expand direct shipping routes to the EU is a necessary solution to shorten

shipping times, reduce quality loss and transit costs through intermediate ports such as Singapore or Hong Kong. The lesson from Chile is a typical example: the country has cooperated with Maersk to implement an integrated logistics solution that enables agricultural products to be transported to China in just 21 days, thereby maintaining the freshness and quality of the products to consumers. This experience shows that Vietnam can absolutely learn and apply similar models to improve its agricultural export logistics capacity.

5.1.4. Establish an early warning and information system for EU SPS and TBT regulations

A common challenge that Vietnamese enterprises face is the lack of timely and accurate information on changes in SPS and TBT regulations from the EU. To overcome this, it is necessary to build a centralized electronic information portal managed by the State, with the function of periodically updating new standards related to pesticide residues, lists of prohibited substances, traceability and quarantine requirements. This system should integrate data from reputable international channels such as WTO-SPS, the EU rapid alert system (RASFF), and coordinate with domestic agencies such as VCCI, the Ministry of Industry and Trade and the Ministry of Agriculture and Rural Development to disseminate information to enterprises. At the same time, organizing training courses and workshops to raise awareness and implementation capacity for local managers and enterprises is also a necessary solution to enhance the policy response capacity of the production sector.

5.2. For Vietnamese exporters

5.2.1. Proactively seeking and utilizing regulatory information

5.2.1.1. Proactive regulatory intelligence implementation is essential

Vietnamese exporters must shift from a reactive to a proactive stance regarding EU regulations. This requires establishing dedicated internal processes or assigning specific staff responsible for routinely and systematically monitoring official EU sources. Key resources include the EU's RASFF portal (for real-time alerts on border rejections and non-compliances), the EU Trade Helpdesk (trade.ec.europa.eu) (for detailed import requirements), official communications from DG SANTE (for SPS and food safety updates), and the Official Journal of the EU (for new legislation). Weekly checks of these sources are recommended for timely awareness of new regulations, MRL changes, emerging issues, and compliance updates affecting their specific products.

5.2.1.2. Engagement with information channels should be broadened

Beyond official EU websites, exporters should actively engage with other relevant information channels. Subscribing to email alerts from DG SANTE and participating in online forums and webinars hosted by reputable European industry associations (such as Freshfel Europe) can provide direct insights into emerging NTM issues, interpretations, and practical compliance challenges faced by others in the sector. Actively participating in training sessions organized by Vietnamese government agencies and industry associations is also crucial to supplement understanding and clarify specific national implementation aspects. Relying solely on information provided by buyers can be insufficient and potentially delayed.

5.2.2. Investing in capacity and implementing robust compliance systems

5.2.2.1. A commitment to genuine food safety excellence is crucial

Exporters must move beyond viewing certifications merely as paperwork and commit to achieving genuine food safety excellence demanded by the EU market. This necessitates implementing a comprehensive, farm-to-fork HACCP system that emphasizes verifiable daily practices. Training for both farm-level supervisors and processing staff is critical for conducting daily, documented pre-harvest risk assessments and implementing real-time monitoring of Critical Control Points (CCPs) using digital tools where feasible. Conducting monthly internal HACCP audits by certified personnel ensures control effectiveness and facilitates prompt corrective actions.

5.2.2.2. Robust and transparent traceability systems must be implemented

Like QR codes or blockchain, it is essential for meeting EU demands and building buyer trust. These systems should capture granular, verifiable data (inputs, harvest, processing, temperature logs) accessible to importers. Leading exporters in Thailand and South Africa, for example, have successfully used such technologies to enhance transparency and strengthen partner confidence, demonstrating a valuable approach for Vietnamese firms (WTO, 2020; SA Fruit Journal, 2022). Similar efforts focusing on data integrity and accessibility are increasingly seen across various exporting nations such as Peru, or Columbia, aiming for premium markets.

5.2.2.3. Rigorous multi-tiered quality control programs should be established

Exporters must implement a three-tiered Quality Control (QC) program. This involves firstly training and empowering in-house QC staff for systematic daily inspections against EU

standards at critical points, with documented findings and corrective actions. Secondly, supplementing internal checks with batch pre-shipment inspections by reputable independent third-party agencies provides objective verification. Thirdly, establishing a protocol for routinely sending representative samples to EU-accredited laboratories for comprehensive testing (especially MRLs) serves as a crucial final verification. Strengthening internal controls and systematic testing protocols, similar to the strategies employed by Chile to successfully address MRL challenges, is essential for minimizing risks.

5.2.3. Enhancing competitiveness through infrastructure and market engagement

5.2.3.1. Invest in or secure access to post-harvest and cold chain infrastructure

Prioritizing investment in, or securing reliable access to, appropriate post-harvest handling facilities and robust cold chain infrastructure is critical for maintaining quality. Implementing best practices for rapid pre-cooling and unbroken temperature control, potentially learning from the technological applications and logistics optimization seen among US exporters, can significantly reduce quality degradation during long transit (USDA FAS, 2020). Many successful exporting countries, including competitors in the Southern Hemisphere, and New Zealand place strong emphasis on cold chain integrity.

5.2.3.2. A data-driven direct buyer engagement approach should be adopted

To build sustainable business, exporters should shift towards a proactive, data-driven market engagement strategy. This involves conducting regular, in-depth EU market research, actively participating in major trade fairs for networking and feedback, and critically, cultivating direct, long-term relationships with key EU buyers. Utilizing market insights to continuously adapt product offerings, packaging, and sustainability practices allows for precise alignment with EU demand and helps build the trust necessary for lasting partnerships, moving beyond purely transactional interactions.

Conclusion

This study has comprehensively analyzed the current status of Vietnam's compliance with the EU's non-tariff measures (NTMs) in the context of fruit and vegetable exports. The results show that although Vietnam has great potential thanks to its climate advantages and abundant agricultural output, accessing the EU market still faces many barriers due to the strict system of

regulations on food safety (SPS) and technical barriers to trade (TBT). These regulations require high standards on pesticide residues, plant quarantine and traceability, putting great pressure on businesses, especially farmers and small & medium-sized enterprises (SMEs) with limited resources.

However, compliance with the EU's NTMs also opens strategic opportunities for Vietnam to improve product quality, improve the national image and gradually access higher-value markets. Meeting strict standards will help increase sustainable export capacity, attract foreign investment, and promote the modernization of agricultural production towards safety and sustainability. In addition, effectively taking advantage of incentives from EVFTA will help Vietnam reduce its dependence on traditional markets such as China, diversify markets and increase competitiveness on a global scale.

To realize this potential, there needs to be synchronous coordination between the government and businesses. The State needs to increase investment in testing infrastructure, cold chain logistics and digital traceability systems; at the same time, develop early warning mechanisms and promptly update changes from the EU. On the business side, it is necessary to improve quality management capacity, increase proactive access to legal information and build sustainable relationships with EU partners. Although the path to compliance with EU NTMs still faces many challenges, this is also a key opportunity for Vietnam to upgrade its agricultural value chain, reduce dependence on traditional markets and affirm its position in global agricultural trade.

References

Agricultural Journal (2023), "Agricultural Journal, Issue 7", *Agricultural Journal*, Available at: https://tapchi.vnua.edu.vn/wp-content/uploads/2023/07/tap-chi-so-7.14.pdf (Accessed: 12 March 2025).

Annual Fruit and Vegetable Report (2023), "Annual Fruit and Vegetable Report 2023", Available at: http://agro.gov.vn/images/files/Bao%20cao%20thuong%20nien%20rau%20qua%202023.pdf (Accessed: 12 March 2025).

Codex Alimentarius (2023), *Codex Pesticide Residues in Food Online Database*, Rome: FAO and WHO. Available at: https://www.fao.org/fao-who-codexalimentarius/codex-texts/dbs/pestres/en/ (Accessed: 12 March 2025).

European Commission (2002), *Regulation (EC) No 178/2002 on General Food Law*, Brussels: European Commission. Available at: https://eur-lex.europa.eu/eli/reg/2002/178/oj (Accessed: 12 March 2025).

European Commission (2004), *Regulation (EC) No 852/2004 on the Hygiene of Foodstuffs*, Brussels: European Commission. Available at: https://eur-lex.europa.eu/eli/reg/2004/852/oj (Accessed: 12 March 2025).

European Commission (2005), *Regulation (EC) No 396/2005 on Maximum Residue Levels of Pesticides*, Brussels: European Commission. Available at: https://eur-lex.europa.eu/eli/reg/2005/396/oj (Accessed: 12 March 2025).

European Commission (2016), *Regulation (EU) 2016/2031 on Protective Measures Against Pests of Plants*, Brussels: European Commission. Available at: https://eur-lex.europa.eu/eli/reg/2016/2031/oj (Accessed: 12 March 2025).

European Commission (2019), *Regulation (EU) 2019/2072 on Protective Measures Against Pests*, Brussels: European Commission. Available at: https://eur-lex.europa.eu/eli/reg/2019/2072/oj (Accessed: 12 March 2025).

European Commission (2020), *Farm to Fork Strategy*, Brussels: European Commission. Available at: https://food.ec.europa.eu/horizontal-topics/farm-fork-strategy_en (Accessed: 12 March 2025).

European Commission (2023), *EU Pesticides Database: Maximum Residue Levels*, Brussels: European Commission. Available at: https://food.ec.europa.eu/plants/pesticides/maximum-residue-levels_en (Accessed: 12 March 2025).

Europhyt (2022), *Europhyt Annual Report 2022*, Brussels: European Commission. Available at: https://food.ec.europa.eu/plants/plant-health-and-biosecurity/europhyt_en (Accessed: 12 March 2025).

FAOSTAT & Ministry of Agriculture and Rural Development (MARD) (2024), *Compiled Data on Area and Production of Fruits and Vegetables in Vietnam*, Ministry of Agriculture and Rural Development, Hanoi.

Industry and Trade Magazine (2023), "Current Status and Solutions for Developing Vietnam's Fruit and Vegetable Exports", *Industry and Trade Magazine*, Available at: https://tapchicongthuong.vn/thuc-trang-va-giai-phap-phat-trien-xuat-khau-mat-hang-rau-qua-viet-nam-69215.htm (Accessed: 12 March 2025).

Kinh tế Nông thôn (n.d.), "Các rào cản phi thuế quan và biện pháp khắc phục khi xuất khẩu rau quả Việt Nam vào EU", *Kinh tế Nông thôn*, Available at: https://kinhtenongthon.vn/Cac-rao-can-phi-thue-quan-va-bien-phap-khac-phuc-khi-xuat-khau-rau-qua-Viet-Nam-vao-EU-post59078.html (Accessed: 13 March 2025).

Kirin Capital (2024), "Báo cáo triển vọng ngành hàng trái cây tại Việt Nam", Available at: https://kirincapital.vn/wp-content/uploads/2024/04/BAO-CAO-TRIEN-VONG-NGANH-HANG-TRAI-CAY-TAI-VIET-NAM.pdf (Accessed: 13 March 2025).

MARD (2023), *Report on the Number of GlobalG.A.P Certified Planting Areas 2023*, Hanoi: Ministry of Agriculture and Rural Development. Available at: https://www.mard.gov.vn/ (Accessed: 12 March 2025).

Mekongasean (2023), "Fruit and Vegetable Exports in 2023: Forecast to Reach 5.6 Billion USD", *Mekongasean*, Available at: https://mekongasean.vn/xuat-khau-rau-qua-nam-2023-du-bao-cham-moc-56-ty-usd-2585.html (Accessed: 12 March 2025).

MOIT (2023), *Report on Fruit and Vegetable Exports to the EU 2023*, Hanoi: Ministry of Industry and Trade. Available at: https://moit.gov.vn/ (Accessed: 12 March 2025).

PSAV-MARD (2023), *PSAV-MARD Document*, Available at: https://psav-mard.org.vn/upload/T%C3%A0i%20li%E1%BB%87u_VN/2023/Master%20Slide%2007.12.2022_VN.pdf (Accessed: 12 March 2025).

The Investor (2024), "Typhoon Yagi Inflicts $2.4 Billion Damage on Vietnam's Agriculture Sector", *The Investor*, Available at: https://theinvestor.vn/typhoon-yagi-inflicts-24-bln-damage-on-vietnams-agriculture-sector-deputy-minister-d12460.html (Accessed: 12 March 2025).

UNCTAD (2019), *Key Statistics and Trends in International Trade 2019*, United Nations Conference on Trade and Development. Available at: https://unctad.org/system/files/official-document/ditctab2019d5_en.pdf (Accessed: 13 March 2025).

UNCTAD (2024), *Key Statistics and Trends in International Trade 2024*, United Nations Conference on Trade and Development. Available at: https://unctad.org/system/files/official-document/ditctab2024d2_en.pdf (Accessed: 13 March 2025).

USDA FAS (2021), *Vietnamese Fruit Production and Exports Confront the Challenges of Salinity Intrusion and COVID-19*, GAIN Report VM2021-0012, USDA Foreign Agricultural Service, Ho Chi Minh City.

Vietnam Briefing (2024), "Vietnam's Agri-Export Turnover Soars in 2024", *Vietnam Briefing*, Available at: https://www.vietnam-briefing.com/news/vietnams-agri-export-turnover-soars-in-2024-showi-for-foreign-investment.html/ (Accessed: 12 March 2025).

VietnamPlus (2024), "Ngành rau quả Việt Nam đặt mục tiêu xuất khẩu 10 tỷ USD vào năm 2030", *VietnamPlus*, Available at: https://www.vietnamplus.vn/nganh-rau-qua-viet-nam-dat-muc-tieu-xuat-khau-10-ty-usd-vao-nam-2030-post1006134.vnp (Accessed: 13 March 2025).

VNA (2024), "EU Increases SPS Inspections on Vietnamese Fruits and Vegetables", *Vietnam News Agency (VNA)*, Available at: https://vnanet.vn/Frontend/TrackingView.aspx?IID=7881288 (Accessed: 13 March 2025).

VCCI-WTO Center (2024), *Vietnam from the Perspective of Businesses: Invisible Barriers in Trade*, Hanoi: Vietnam Chamber of Commerce and Industry (VCCI). Available at: https://wtocenter.vn/file/19602/viet-nam-goc-nhin-cua-doanh-nghiep--rao-can-vo-hinh-trong-thuong-mai-1-8.pdf (Accessed: 12 March 2025).

WTO (2012), *World Trade Report: Trade and Public Policies – A Closer Look at Non-Tariff Measures in the 21st Century*, Geneva: World Trade Organization. Available at: https://www.wto.org/english/res_e/booksp_e/non_tariff_measures_e.pdf (Accessed: 13 March 2025).

WTO Center Vietnam (n.d.), *Non-Tariff Barriers in Trade*, Available at: https://trungtamwto.vn/file/16033/1-6%20raocankt.pdf (Accessed: 12 March 2025).

Trung tâm WTO và Hội nhập (n.d.), "EVFTA và ngành rau quả Việt Nam: Tổng quan và tình hình áp dụng các biện pháp phi thuế quan của EU", *Trung tâm WTO và Hội nhập*, Available at: https://trungtamwto.vn/chuyen-de/17730-evfta-va-nganh-rau-qua-viet-nam-tong-quan-va-tinh-hinh-ap-dung-cac-bien-phap-phi-thue-quan-cua-eu (Accessed: 13 March 2025).