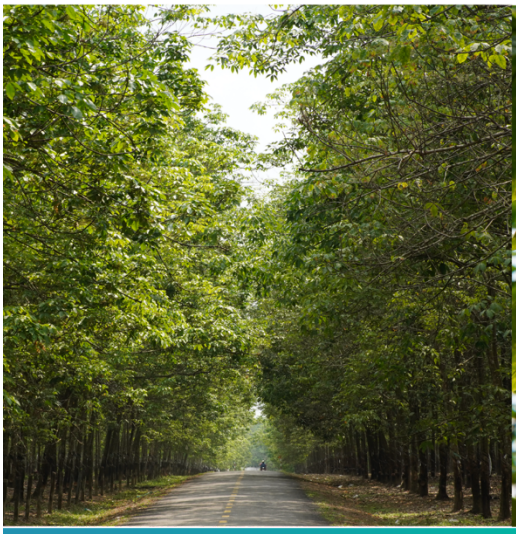

SMALLHOLDER RUBBER SUPPLY CHAIN:

Current status and capacity to meet EU deforestation regulation

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EU	European Union
EUDR	European Union Deforestation Regulation
FDI	Foreign Direct Investment
FSC -Cert	Forest Stewardship Council certification
FSC-FM	Forest Stewardship Council - Forest Management
PEFC-FM	Programme for the Endorsement of Forest Certification
SFM	Sustainable Forest Management
SME	Small and Medium-sized enterprise
RP	Rubber Products
GDC	General Department of Vietnam Customs
GSO	General Statistics Office of Vietnam
MARD	Ministry of Agriculture and Rural Development
PC	People's Committee
USD	United States Dollar
VFCO	Vietnam Forest Certification Office
VFCS	Vietnam Forest Certification Scheme
VN	Vietnam
VND	Vietnam dong (currency)
VRA	Vietnam Rubber Association
VRG	Vietnam Rubber Group

SUMMARY

Currently, over 60% of the raw material for the rubber industry originates from smallholders. Approximately 7.4% of the rubber industry's export revenue, including natural rubber (NR) and rubber products (RP), comes from the European Union (EU) market. The EU has introduced the EU Deforestation Regulation (EUDR), which mandates that rubber products imported into this market (a) comply with all requirements of the exporting country and (b) ensure that the production process does not contribute to deforestation. The smallholder rubber supply chain is now facing the need for extensive transformation to meet EUDR requirements.

Vietnam's smallholder rubber supply chain faces significant challenges, including the lack of a traceability system across the entire chain, insufficient baseline data on coordinates and boundaries of smallholder plots, and fragmented information and transaction evidence between stages of the chain, particularly between farmers and intermediate agents , as well as among agents. Additionally, some agents operate informally without business registration, and transactions between agents often lack adequate documentation for traceability purposes. Processing enterprises, especially small and medium-sized enterprises (SMEs), lack the tools and resources to control input materials. These issues are widespread within the current smallholder supply chain. Given the prevalence of these challenges, most supply chains involving smallholders currently fail to meet EUDR requirements.

Pioneering models are emerging within the industry to restructure the smallholder supply chain to comply with EUDR. Specifically, some private enterprises are collaborating with farmers and intermediate agents to reorganize supply chain activities to ensure traceability, collect data, and provide evidence related to land, maps, and transactions within the chain to meet EUDR standards. The success of these models demonstrates the potential for scaling up within the smallholder rubber supply chain, provided the necessary conditions are met.

Meeting EUDR requirements demands coordinated efforts among enterprises, smallholders, agents, local authorities, and other stakeholders. The focus of this process includes establishing robust chain mechanisms among supply chain actors; standardizing and implementing a comprehensive traceability information system; supporting farmers in data collection; and encouraging the formation of farmer groups to reduce transaction costs and enhance their position when partnering with enterprises. Intermediate agents need to formalize their operations, ensure transparency in information, and comply with legal requirements. Local authorities play a critical role in facilitating connections between enterprises and smallholders, providing information and evidence to verify the legality of rubber plantation areas, and supplying foundational data such as 2020 forest maps and plantation databases.

Smallholders, intermediate agents , and SMEs are particularly vulnerable due to limited resources, information, and capacity. Importers from the EU and other markets should consider providing financial and technical support, as well as collaborating with Vietnamese enterprises to build traceability systems and restructure supply chains to enable traceability and reduce risks related to legal compliance. enterprises within the industry, particularly large ones with available resources or plans to source rubber from smallholders, should support farmers and intermediate agents in transforming current practices to comply with EUDR requirements.

Although not all NR and RP sourced from smallholders are exported to the EU, restructuring the current smallholder supply chain to meet traceability requirements is a mandatory trend for all stakeholders in the future. Complying with these requirements presents an opportunity to modernize the rubber supply chain, enhance industry governance, promote sustainable income for smallholders, and contribute to sustainable development goals. Achieving this requires appropriate support mechanisms, fostering sustainable linkages among supply chain actors, particularly between enterprises, smallholder households, and intermediate agents . Additionally, all parties in the supply chain must diligently fulfill their responsibilities, ensuring strict compliance with the legality requirements at each stage of the chain.

Rubber nurery garden in Dau Tieng, Binh Duong. Source: Forest Trends

1. Introduction

1.1. Background

The rubber production and processing industry is one of Vietnam's most significant export sectors. In 2024, the total rubber plantation area in the country reached nearly 910,000 hectares, with approximately 80% in the latex harvesting phase. These areas are managed by households (smallholders) and enterprises, primarily state-owned enterprises under the Vietnam Rubber Group (VRG), with a smaller portion from private enterprises and FDI enterprises. Smallholder plantations are typically fragmented, with each household commonly managing just a few hectares. In contrast, plantations of enterprises are large, ranging from hundreds to thousands of hectares per enterprise, often referred to as large-scale plantations. Currently, smallholder plantations account for approximately 490,000 hectares, equivalent to 54% of the total area, while large-scale plantations cover 420,000 hectares (46% of the total area). This report focuses on the smallholder rubber supply chain.

Smallholder plantations have increasingly become a critical source of raw material for the industry. The area under smallholder cultivation has steadily grown over the years, officially surpassing large-scale plantations in 2017. Currently, approximately 264,000 households are engaged in production, contributing 819,000 tons of latex in 2024, equivalent to 63% of the total 1.3 million tons of domestic raw materials. The supply of rubber from smallholders is expected to remain stable in the coming years.

On June 23, 2023, the European Union adopted Regulation 2023/1115 on deforestation-free products (EUDR) to address deforestation caused by commodity crop production. This regulation, applicable to seven commodity groups including rubber, will take effect on December 30, 2025. Under the EUDR, products exported to the EU must comply with all requirements of the producing country and ensure that their production does not contribute to deforestation. The regulation mandates traceability across the entire supply chain, down to individual production plots.

Vietnam exports rubber products, including natural rubber (NR) and rubber products (RP), to the EU. In 2024, the export value of these rubber products to the EU reached USD 627 million, accounting for 7.4% of the industry's total export revenue. While the exact volume of smallholder-sourced raw rubber entering the EU export supply chain is not precisely quantified, it is certain that a portion of this material is included in the NR and RP exported to this market.

Compliance with EUDR requirements is mandatory for rubber products exported to the EU. The current smallholder rubber supply chain is highly complex, involving numerous households at the production stage and multiple levels of intermediate agents connecting farmers to processing enterprises. Meeting EUDR requirements given the current state of the smallholder supply chain poses significant challenges for all stakeholders. Failure to comply with these requirements risks excluding households from the supply chain.

Some private enterprises in the industry are currently collaborating with smallholdersto establish supply chains that meet EUDR requirements. Lessons from these models provide valuable insights for organizing smallholder-inclusive supply chains in the future, ensuring legality, deforestation-free production, and traceability.

Focusing on assessing the adaptability of the smallholder rubber supply chain to EUDR requirements, this report provides insights into the current state of the household-involved rubber supply chain. It

examines the actual operations of smallholders, identifying key shortcomings through the lens of both the Vietnamese government's regulations and EUDR requirements. The report also gathers information on transactions between smallholders and intermediate agents , evaluating their level of compliance. Additionally, it summarizes lessons from initiatives by companies collaborating with smallholders to implement activities and organize supply chains that comply with EUDR. Based on this information, the report offers recommendations to strengthen the smallholder rubber supply chain, ensuring traceability, compliance with Vietnamese laws, and alignment with international requirements, including the EUDR.

1.2. Scope and research methodology

The report is based on survey data collected in January 2025, focusing on supply chains directly involving smallholdersin Binh Duong, Binh Phuoc, and Gia Lai. The first supply chain involves enterprises engaged in processing and exporting activities. This chain is organized by enterprises in collaboration with smallholders to meet EUDR requirements. Raw rubber from these linked smallholders is processed and exported to the EU, with EU buyers accepting that the products comply with EUDR. In this report, this supply chain is tentatively referred to as the **"EUDR-compliant supply chain."** The term "tentatively" is used because, although EU buyers accept the products as EUDR-compliant, they have not yet been officially recognized by EU regulatory authorities as fully meeting the regulation's requirements, as the EU has not yet issued guidance on criteria for full EUDR compliance, and the EUDR management systems of EU member states are not yet fully operational.

The second supply chain surveyed is the conventional smallholder supply chain, involving households but with no activities undertaken to meet EUDR requirements. In this report, the term **"conventional supply chain**" is used to describe this chain. Surveys of this supply chain were also conducted in Binh Duong and Gia Lai in January 2025.

Survey activities for each supply chain included interviews with representatives of the involved parties, focusing on the operations of smallholders, intermediate agents , and enterprises directly participating in the chain. The study also involved direct observations of the activities of these parties to understand their operational mechanisms. Interviews and observations focused on aspects such as land use, latex harvesting, transactions between parties, their understanding of legal requirements related to their activities, and their capacity to meet these requirements. Additionally, consultations were held with regulatory agencies such as the Department of Crop Production and Plant Protection, the Department of Forestry and Forest Rangers, and several commune People's Committees, which are responsible for inspecting and monitoring certain activities within the supply chain.

In addition to the primary data mentioned above, the report utilizes secondary data from the General Department of Customs (GDC), the General Statistics Office (GSO), and other reports and studies. These sources focus on aspects such as area, productivity, volume, export and import values, and specific information about the smallholder rubber supply chain.

The report focuses on natural rubber (NR) and rubber products (RP). In this report, NR refers to raw rubber, categorized into two types: (1) unprocessed NR, which is raw rubber freshly harvested from trees in the form of liquid latex or coagulated latex; and (2) processed NR, which is raw rubber that has undergone preliminary processing such as chemical treatment, rolling, centrifugation, or block formation, resulting in specific formats such as rubber sheets, rubber blocks, or concentrated latex, used as input for further refining. RP refers to finished (refined) products made from NR, such as tires, shoe soles, mattresses, gloves, etc., which are final products requiring no further processing.

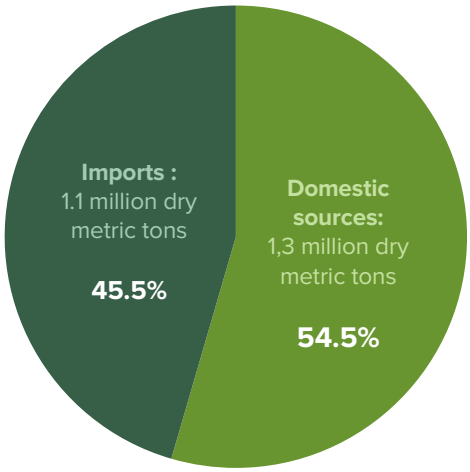
The report consists of four main sections. The first section provides general information on the background, objectives, methodology, and scope of the study. The second section outlines key aspects of the industry, including information on raw rubber supply and the export status of NR and RP in Vietnam, with a focus on exports to the EU market. The third section details EUDR requirements, the operational status of the smallholder rubber supply chain—including both the "EUDR-compliant" chain and the conventional, "non-EUDR-compliant" chain—and the main shortcomings and limitations in meeting EUDR requirements. The fourth section discusses key points regarding the compliance level of smallholder rubber supply chains for each stakeholder, the practical operations of the chain in relation to EUDR requirements, and provides recommendations to strengthen the supply chain toward meeting EUDR requirements.

2. Raw material supply and output products of Vietnam's rubber industry

2.1. Raw material supply

The raw material supply for Vietnam's rubber industry currently includes domestic sources and imports. According to data from the GSO and the GDC, in 2024, the Vietnam rubber industry utilized 2.385 million dry metric tons of NR, with domestic sources accounting for more than half (Figure 1).

Figure 1. Total raw material supply of the rubber industry in 2024

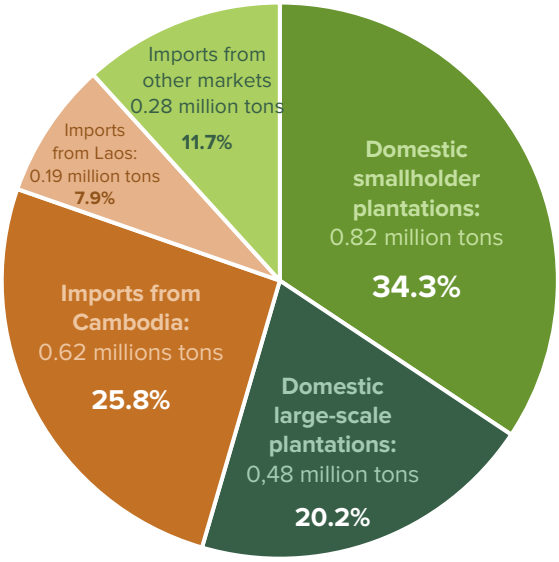


Source: Forest Trends, compiled from data of the GSO and the GDC

Figure 2 illustrates the main sources of raw rubber supply for Vietnam in 2024. The largest sources, in descending order, are: domestic smallholder plantations, imports from Cambodia, domestic large-scale plantations, and imports from Laos.[1]

[1] *The supply from domestic smallholder and large-scale plantations is estimated based on the proportion of these two sources in 2023.*

Figure 2. Volume and proportion of raw materials used in Vietnam's rubber industry in 2024, by main sources



Source: Forest Trends, compiled from data of the GSO and the GDC

Domestic supply from smallholders

The domestic raw rubber supply comprises sources from smallholders and large-scale plantations managed by enterprises.

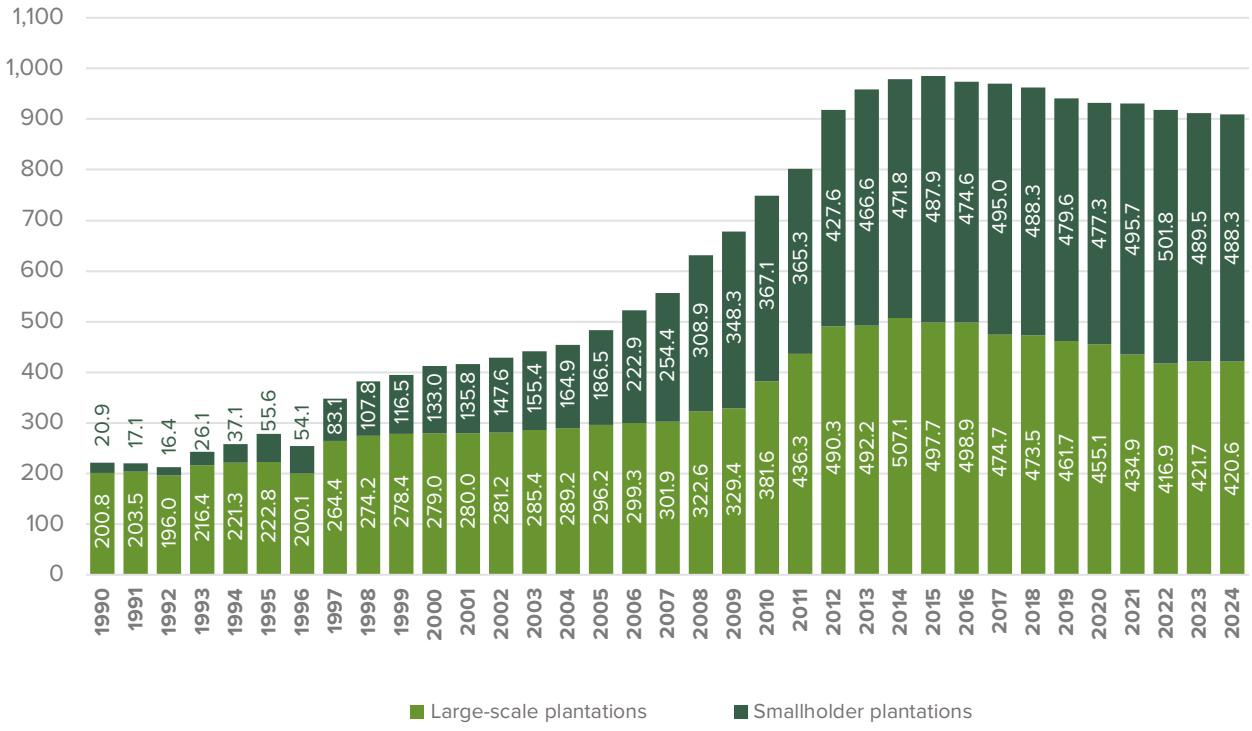
In 2024, the total rubber plantation area in Vietnam was approximately 910,000 hectares, with 80% of this area in the latex harvesting phase, yielding 1.3 million dry metric tons of raw latex. This area includes about 488,000 hectares from 264,000 smallholders, contributing approximately 819,000 tons, accounting for 54% of the total area and 63% of the total output of the industry.[2]

Figures 3 and 4 illustrate the area and output of smallholder plantations (compared to the area and output from large-scale plantations). The volume and proportion of raw material from smallholders have been consistently increasing in recent years,[3] highlighting their growing importance to the industry.

[2] *The large-scale plantation area is approximately 421,000 hectares, managed by around 160 state-owned, private, and FDI enterprises, with the majority being state-owned. The supply from large-scale plantations is about 481,000 tons.*

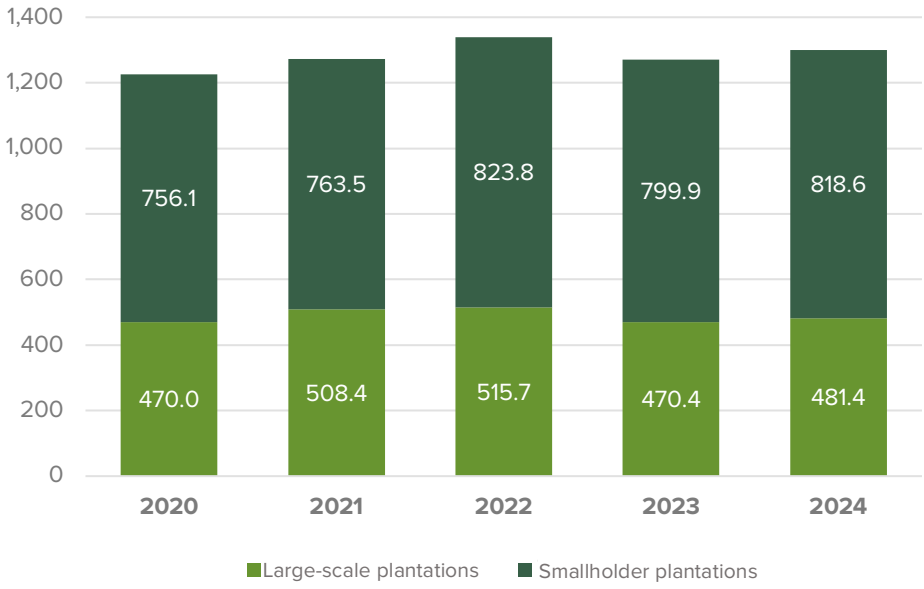
[3] *Primary reasons: (1) the reduction in the latex-harvesting area of large-scale plantations due to the conversion of some areas to alternative uses (such as industrial zones, urban development, highways, or airports) and the replanting of certain areas; (2) the higher productivity of smallholder rubber plantations compared to large-scale plantations; and (3) the higher proportion of smallholder plantation areas currently yielding latex (88%) compared to large-scale plantations (70%). Some reports indicate that rubber varieties planted in smallholder areas also achieve higher latex yields than those in large-scale plantations, as smallholder areas, developed more recently, may have access to newer, high-yielding hybrid varieties.*

Figure 3. Vietnam's rubber plantation area by large-scale and smallholder, 1990 – 2024 ('000 ha)



Source: VRA, compiled from data of the GSO, Statistics Office, and Provincial Departments of Agriculture and Environment. The 2024 data for large-scale and smallholder plantations is estimated using 2023 area proportions.

Figure 4. Rubber latex production in vietnam by large-scale and smallholder plantations, 2020–2024 (thousand dry metric tons)

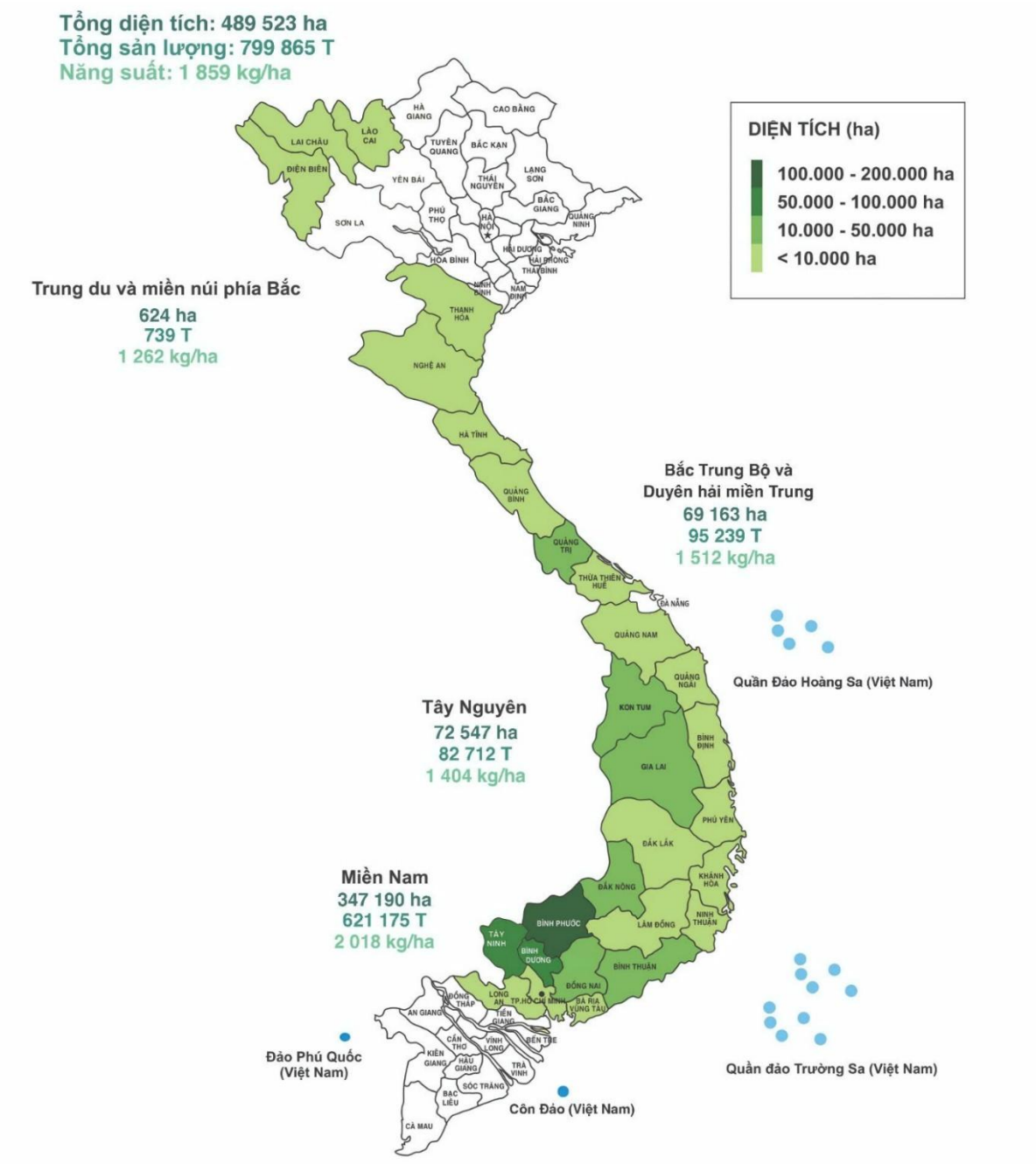


Source: VRA, compiled from data of the GSO. The 2024 data breakdown by large-scale and smallholder plantations is estimated based on the output proportions in 2023.

Distribution of smallholder plantations

Figure 5 is a map illustrating the distribution of smallholder plantations in 2023. The parameters shown on the map indicate that, in general, smallholder plantation has a wide coverage across all regions nationwide, with the exception of the Mekong Delta provinces and the Northern Midlands and Mountainous areas. The largest concentrations of smallholder rubber plantations are found in the Southeast provinces like Tay Ninh, Binh Phuoc, and Binh Duong, as well as some provinces in the Central Highlands.

Figure 5. Distribution of smallholder plantations in Vietnam in 2023



Source: VRA, compiled from data of the GSO, Statistics Office, and Provincial Departments of Agriculture and Environment.

Smallholder rubber cultivation began before 1975 in the Southeast region of Vietnam. Initially, individual households spontaneously planted rubber on very small plots. By 1975, smallholder plantation area reached approximately 4,500 hectares, accounting for 6% of the total rubber area nationwide.

During the 1993–2008 period, rubber cultivation expanded to several provinces in the Central region and the Central Highlands. This expansion was encouraged by state-led forest development programs and projects that promoted planting rubber on vacant land and barren hills. Additionally, some international organizations focused on supporting smallholder rubber development from 2001 to 2015, leading to a faster increase in smallholder plantation area.

From 2005 to 2012, smallholder area expanded rapidly due to soaring global latex prices. During this time, many households converted part or all of their agricultural land (previously used for crops, fruit trees, etc.) to rubber cultivation. The government's recognition of rubber as a multi-purpose tree in 2008 allowed its expansion onto forest land, which significantly boosted smallholder plantations, eventually surpassing large-scale plantation area.[4] Appendix 1 provides detailed information on smallholder and large-scale plantation areas by locality.

Beyond domestic supply (from smallholders and large-scale plantations), Vietnam's rubber industry also relies on a significant source of imported raw materials. Each year, Vietnam imports over 1 million tons of raw rubber, with 70% of imports coming from Cambodia (the majority) and Laos. A portion of this imported supply is blended with the domestic smallholder supply before processing. However, specific information regarding this blending process is currently unavailable. Appendices 2.1, 2.2, and 2.3 provide detailed information on imported supply sources.

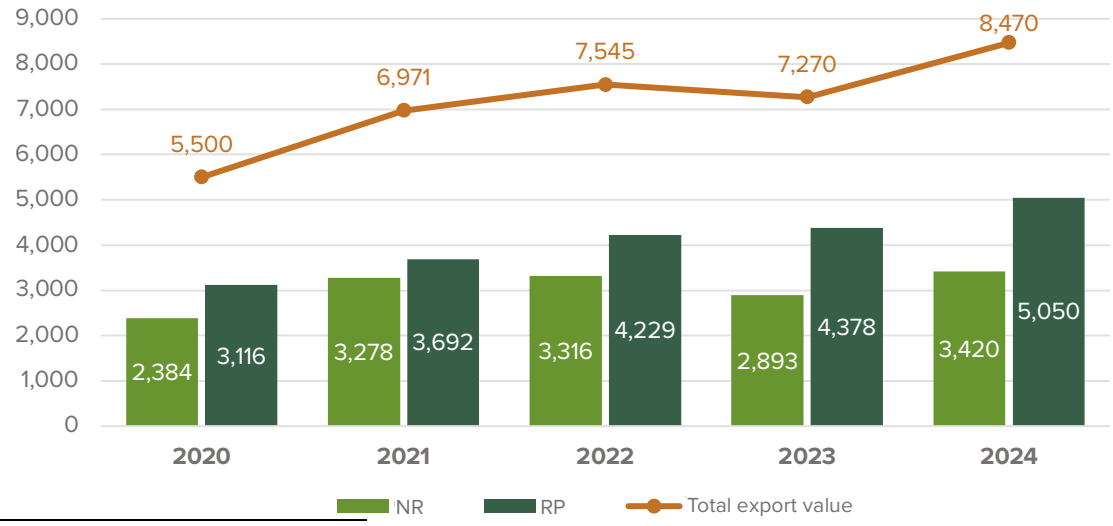
2.2. Output products of the rubber industry

Vietnam exports NR and RP. In 2024, the export value of these two groups reached USD 8.5 billion.

2.2.1. Exported goods

Vietnam exports rubber products to 180 countries and territories. Export value shows an increasing trend (Figure 6).

Figure 6. Vietnam's export value of NR and RP, during 2020 – 2024 (million USD)



[4] *Tran Thi Thuy Hoa et al. (2021).*

Source: VRA synthesis from GDC data

Tires (HS4011), compounded rubber (HS400280), natural rubber (HS4001), shoe soles (HS6406), and components and technical rubber (HS4016) were the highest-value export items throughout the period (Figure 7).

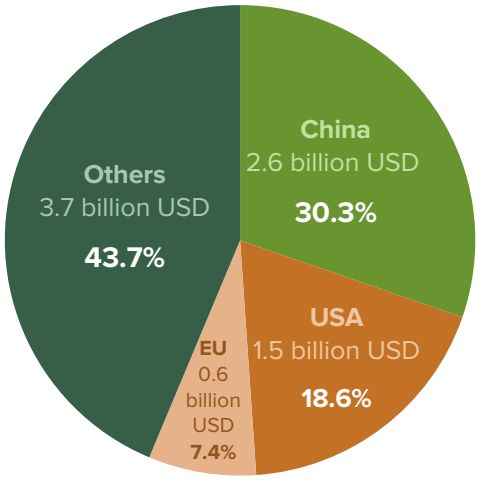
Figure 7. Vietnam's export value of NR and RP by items, during 2020 – 2024 (million USD)

Source: VRA synthesis from GDC data..

2.2.2. Export markets

Vietnam's import markets for rubber products are diverse; however, its three largest markets are China, the United States, and the EU, respectively (Figure 8).

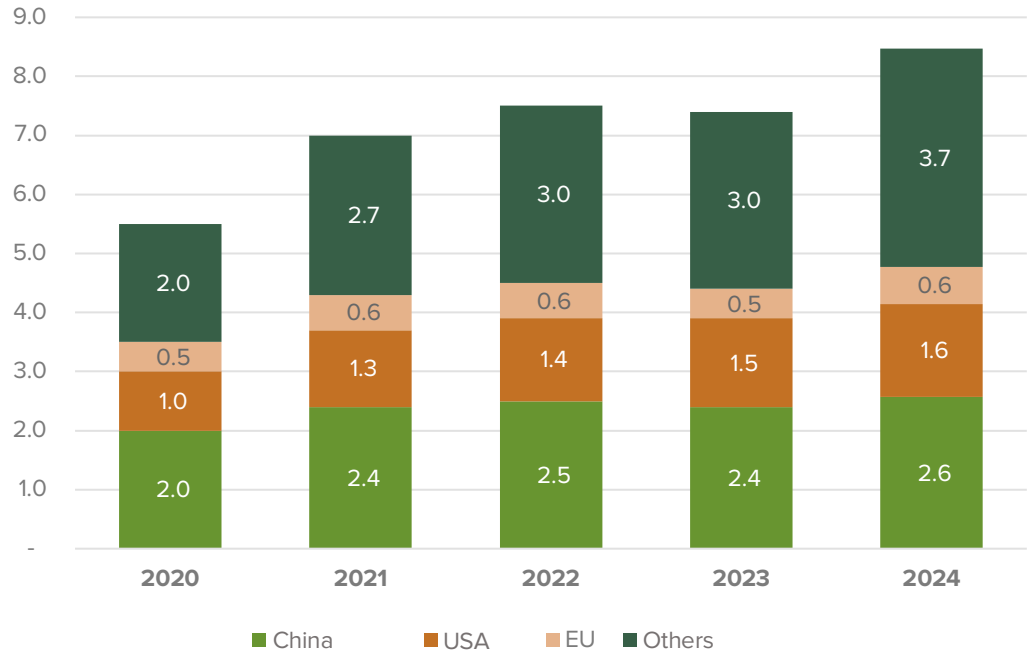
Figure 8. Vietnam's export value and proportion of NR and RP in 2024 by markets



Source: VRA and Forest Trends synthesis from GDC data.

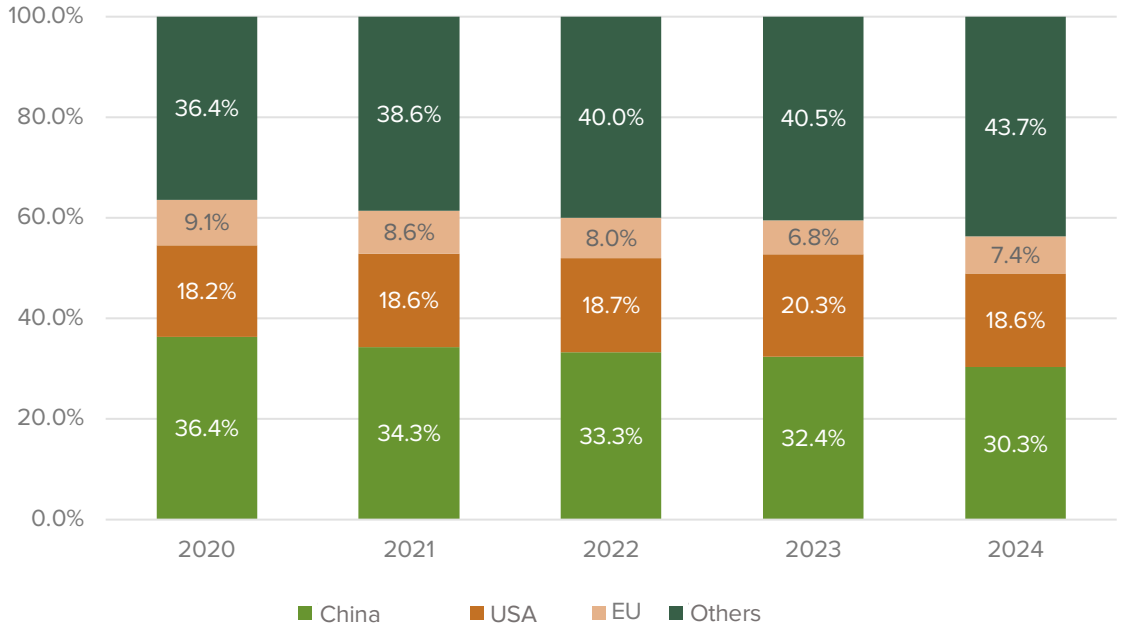
Figures 9 and 10 show the export value and proportion of Vietnam's rubber products (including both NR and RP) by key markets during the 2020–2024 period.

Figure 9. Vietnam's export value of NR and RP by markets, during 2020 – 2024 (billion USD)



Source: VRA and Forest Trends synthesis from GDC data.

Figure 10. Proportion of Vietnam's export value of NR and RP by markets, during 2020 – 2024



Source: VRA and Forest Trends synthesis from GDC data..

Appendix 3 provides detailed information on the volume and export value of NR products, while Appendix 4 details the export value of specific RP from Vietnam annually during the 2020–2024 period.

In 2023, the EU introduced the EU Deforestation Regulation (EUDR). This regulation will come into effect on December 30, 2025. The following section provides basic information about this regulation.

2.3. EUDR Requirements

Rubber is one of the seven commodity groups subject to the EUDR. Under the EUDR, rubber products cannot be placed on the EU market if (i) their production causes deforestation and forest degradation (referred to simply as deforestation), and (ii) supply chain activities do not comply with the laws of the producing country. The EUDR officially applies from December 30, 2025, for large-scale EU importers, and from June 30, 2026, for small and medium-sized importers. The cut-off date for determining deforestation is December 31, 2020. If raw rubber is produced on land converted from forest after December 31, 2020, then that raw rubber and any rubber products using it are not permitted for import into the EU.

The EUDR stipulates that a product is considered legal if all activities in its supply chain—from production and processing to transport and consumption—fully comply with the regulations of the producing country. These regulations include requirements for land use, labor, environmental protection, business registration, taxes, fees, and more. Products imported into the EU must be accompanied by detailed information about the product, quantity, geographical coordinates of the production plot, production time, supplier contact information, and comprehensive, verifiable evidence proving that the production process did not cause deforestation. EU importers must collect complete information and evidence, including:

- Here's the translation of the required information, using the most accurate economic phrasing and maintaining the original paragraph structure:

- Information on the production plot: A map detailing the forest status related to the production plot as of December 31, 2020; the location, position, boundaries, and geographical coordinates of the production plot. For plots larger than 4 hectares, multi-point/polygon geographical coordinates must be provided. Plots of 4 hectares or less require point coordinates; Documents confirming legal land use rights.

- Product Information: Date of production, harvesting, and entry into production; transaction date; product type, quantity, quality, and unit of measurement of the product;

- Buyer-Seller Information: Name; address; contact information (phone, email, etc.); identity verification documents; business registration certificate; tax identification number;... of individuals and entities supplying products to the enterprise;

- Other Information and Evidence: Compliance with environmental protection regulations, tax regulations, business establishment, fire prevention and fighting, labor utilization, occupational safety, ensuring human rights, etc.

EU importers are required to collect this information, along with evidence that allows for traceability. Based on the information gathered about activities within the supply chain, importers must identify related risks and implement risk mitigation measures to ensure that the supply chain's risk of illegality and deforestation is negligible. Importers need to commit to these assurances by issuing a Due Diligence Statement, which must be submitted to the importing country's EU oversight body before the goods are imported.

Therefore, to meet their accountability reporting requirements, EU importers must ensure that all stakeholders in the supply chain—including rubber smallholders, intermediate agents, and processing factories—collect and provide/transfer all necessary information to the importer. A lack of information from any stage of the chain, including from smallholders, means the chain does not meet EUDR requirements, and the products generated by that chain will not be accepted in the EU.

Rubber supply chains exporting to the EU, where raw materials from smallholders, must also strictly comply with the aforementioned requirements. Table 1 summarizes the information and evidence requirements at each stage of the supply chain as mandated by the EUDR.

Table 1. Information and evidence requirements under EUDR for smallholder rubber supply chain activities

Types of information and evidence	Responsible stakeholders				
	Small-holders	Intermediate agent	Export Processing enterprises	EU Importers	Other (MARD)
Boundary map of the forest area as of December 31, 2020					X
Geographical coordinates of the rubber cultivation plot	X				
Information and identity verification documents of the owner (land use rights holder) of the latex and rubber cultivation plot (name, address, phone number, national ID, etc.)	X				
Evidence of compliance with the laws of the producing country					
• ***Land rights**: Documents confirming legal land use rights for the rubber cultivation plot (e.g., Certificate of Land Use Rights / Land Allocation Decision, etc.)*	X				
• ***Labor practices**: Labor contracts, compliance with child labor regulations, etc.*	X	X	X		
• ***Regulations on taxes, environmental protection, and other regulations** (e.g., business registration, customs, etc.)*		X	X		
Information/Evidence in latex transactions:					
• *Date of latex harvest, location of the harvesting garden, transaction date, type, quality of latex (rubber content), quantity of latex transacted*	X				
• *Contact information for the seller and buyer (name, representative, address, contact details, tax identification number, etc.)*	X	X	X		
• *Contracts, sales agreements*		X	X		
• *Invoices, transaction receipts*		X	X		
Information and evidence in rubber product transactions (NR and RP):					
• *Evidence and information related to the raw materials used for the transacted item (relevant documentation from previous transactions)*			X		
• *Production date of the transacted item*			X		
• *Country of production of the transacted item*			X		
• *Transaction date*			X	X	
• *Quantity, type, and HS code of the transacted item*			X		
• *Information about the enterprise and contact details of the seller and buyer (name, representative, address, contact details, enterprises information, tax identification number, etc.)*			X	X	
• *Contracts, sales agreements*			X	X	
• *Invoices, transaction receipts*			X		
• *Export documentation (customs)*			X		
• *Due Diligence Statement / Accountability Report from the selling enterprise*			X		
Supply chain Due Diligence Statement (submitted to the competent EU authority) including risk assessment information and risk mitigation measures				X	

3. Smallholder rubber supply chain in Vietnam

3.1. Key components of the smallholder rubber supply chain

The main characteristics of the smallholder rubber supply chain in Vietnam, regarding its involved stakeholders and operational management mechanisms, are outlined as follows:[5]

Smallholders

Vietnam has nearly 264,000 farming households involved in rubber cultivation, covering an area of almost 490,000 hectares. On average, each household manages less than 2 hectares. Each household may own 1-3 plots of land, with some even having 5-7 plots or more. Most smallholders practice monoculture.

Households typically begin tapping rubber when the trees are 5-7 years old, depending on the tree's growth rate and the household's economic conditions. Once the trees are old enough to be tapped, households harvest latex for about 8 months, starting from April or May (depending on the onset of the rainy season in each region) until January of the following year. Households tap every 2-3 days. They often divide their rubber-growing area according to their chosen tapping frequency and organize daily tapping and collection on each divided section. Households with multiple plots usually divide the daily tapping area by plot and systematically tap in sequence according to the tapping frequency (as mentioned above). The purpose of tapping on alternate days and dividing the area by tapping frequency for daily harvesting is to avoid over-exploitation, which can negatively impact tree quality and lifespan, reduce daily labor intensity (tapping, collecting/emptying latex), and ensure a steady daily income from latex.

The latex households harvest daily can be in the form of liquid latex or coagulated latex (cup lump, scrap rubber). Liquid latex is usually sold by the household on the same day, while coagulated latex can be accumulated for a few days to reach a sufficient quantity for transport and subsequent sale. In some cases, households might even mix impure coagulated latex with liquid latex and sell it daily.

Due to the typically small production area of each household and the limited daily latex yield, most households do not sell latex directly to processing factories, as these factories usually purchase large volumes. The majority (over 95%) of household latex is sold through intermediate agents. The remaining 5% is sold directly to processing factories. In some localities, almost 100% of the latex from households is sold to agents.

Intermediate agents

Households sell their latex to intermediate agents (also known as local traders or dealers) in their area. There's no official statistic on the number of active agents. However, direct surveys in some localities indicate that each commune with rubber areas has about 10-20 agents, depending on the scale of

[5] *Some information in this section is derived from the report* ***"Linking Natural Rubber Consumption from Smallholders: Current Status and Policy Aspects,"*** *conducted by Forest Trends, RRIV, and VRA in 2021. For the full report, please refer to: https://mkresourcesgovernance.org/wp-content/uploads/2024/06/76_2021_Lien-ket-tieu-thu-cao-su-thien-nhien-tu-ho-tieu-dien.pdf; hoặc: https://goviet.org.vn/upload/aceweb/content/Lien%20ket%20tieu%20thu%20mu%20cao%20su%20tieu%20dien.pdf*

rubber cultivation in the vicinity. A commune-level agent might operate from one or multiple collection points within their commune or across other communes.

After being collected from individual trees, the latex is transferred into containers (such as cans, plastic drums, or nylon bags with a maximum capacity of about 80-100 liters) and transported to the agent's collection point. At the collection point, the agent's representative and the rubber garden owner jointly confirm: (1) quantity, (2) type of latex (liquid or coagulated), (3) dry rubber content, (4) purchase price, and (5) total transaction value. The seller can receive immediate payment if desired, or settle the account with the buyer and receive payment after a series of transactions or a specific period.[6] If the household receives deferred payment, the two parties will also confirm (6) the names of the buyer and seller, and (7) the transaction date. In such cases, the agent provides the seller with a logbook or information slip recording all the aforementioned details for each transaction, serving as the basis for future payment.

After purchasing latex from households, agents typically sell liquid latex on the same day. Coagulated and scrap latex are sold after a certain period, once a sufficient volume for a shipment has been accumulated. Agents can sell directly to processing factories or resell to other agents. The purchasing of smallholder rubber by agents is generally quite complex. Smaller agents often sell to larger ones. Observations from surveyed areas show that rubber from households often passes through 1 to 3 levels of agents before reaching a processing factory. Small agents (Tier 1) collect from households and then sell directly to a processing factory or resell to larger agents (Tier 2). Tier 2 agents can then sell directly to a processing factory or to an even larger agent (Tier 3). Only then does the Tier 3 agent supply latex to the processing factory. Intra-level trading among agents is also common.

Surveys of several agents in Binh Duong and Gia Lai provinces indicate that an agent can purchase latex daily from numerous agents within and outside the province, covering distances up to 60-70 km. The agent then sells this latex to various processing factories both within and outside the province, with distances from the agent's collection point to the buyer's processing factory reaching up to 100 km.

Typically, liquid latex is sold by agents to processing factories on the same day, while coagulated latex is stored until a sufficiently large weight (enough for a truckload) is accumulated, which can take several days, before being sold to a factory. Some agents, when receiving small quantities of liquid latex from households, perform coagulation themselves and only sell to other agents or processing factories once a sufficient volume is reached. A batch of latex from one agent might be sold to one or several processing factories.

NR processing enterprises (preliminary processing)

Liquid latex and coagulated latex (unprocessed NR) sourced from smallholders are processed by preliminary processing enterprises into various raw rubber types such as sheet rubber and block rubber.... (also known as processed natural rubber). These products serve as inputs for downstream processing (refining) to produce finished rubber goods like tires, mattresses, and shoe soles.

Currently, there are approximately 170 enterprises involved in preliminary processing, including state-owned enterprises (SOEs), private enterprises, and FDI enterprises, with private enterprises being the most numerous (118). Each preliminary processing enterprise may operate several factories located in provinces with readily available supply. Private and FDI enterprises do not own rubber plantations, so

[6] *Many households prefer to receive a lump sum payment for specific purposes, opting for deferred payment, typically after about a week or 10 days, and usually no longer than one month.*

they rely primarily on supply from smallholders. While some state-owned processing enterprises have their own rubber areas, they also purchase smallholder rubber to meet their expanded production needs. The supply from smallholders accounts for less than 10% of the total raw material input for these SOEs, with the remaining 90% coming from the enterprises' own plantations.

Some preliminary processing enterprises, including SOEs, private, and FDI firms, also utilize imported raw rubber from Cambodia and Laos.

RP manufacturing enterprises (downstream processing)

Processed NR originating from smallholders and processed by preliminary processing enterprises serves as the input for downstream processing. The output of this refining stage includes final rubber products such as tires, shoe soles, and mattresses. These products cater to both the domestic and export markets.

Currently, 456 enterprises are involved in downstream processing. This refining stage sees participation from state-owned, private, and FDI enterprises, with private enterprises being the most numerous, accounting for approximately 70.4%. Some enterprises are involved in both preliminary and downstream processing stages.[7]

In addition to raw materials sourced from smallholders, many downstream processing enterprises also obtain supplies from large-scale plantations and imports. Currently, there's no information available on whether raw materials from domestic smallholders are blended with other supply sources during the production process of these downstream processing enterprises, or to what extent such blending occurs.

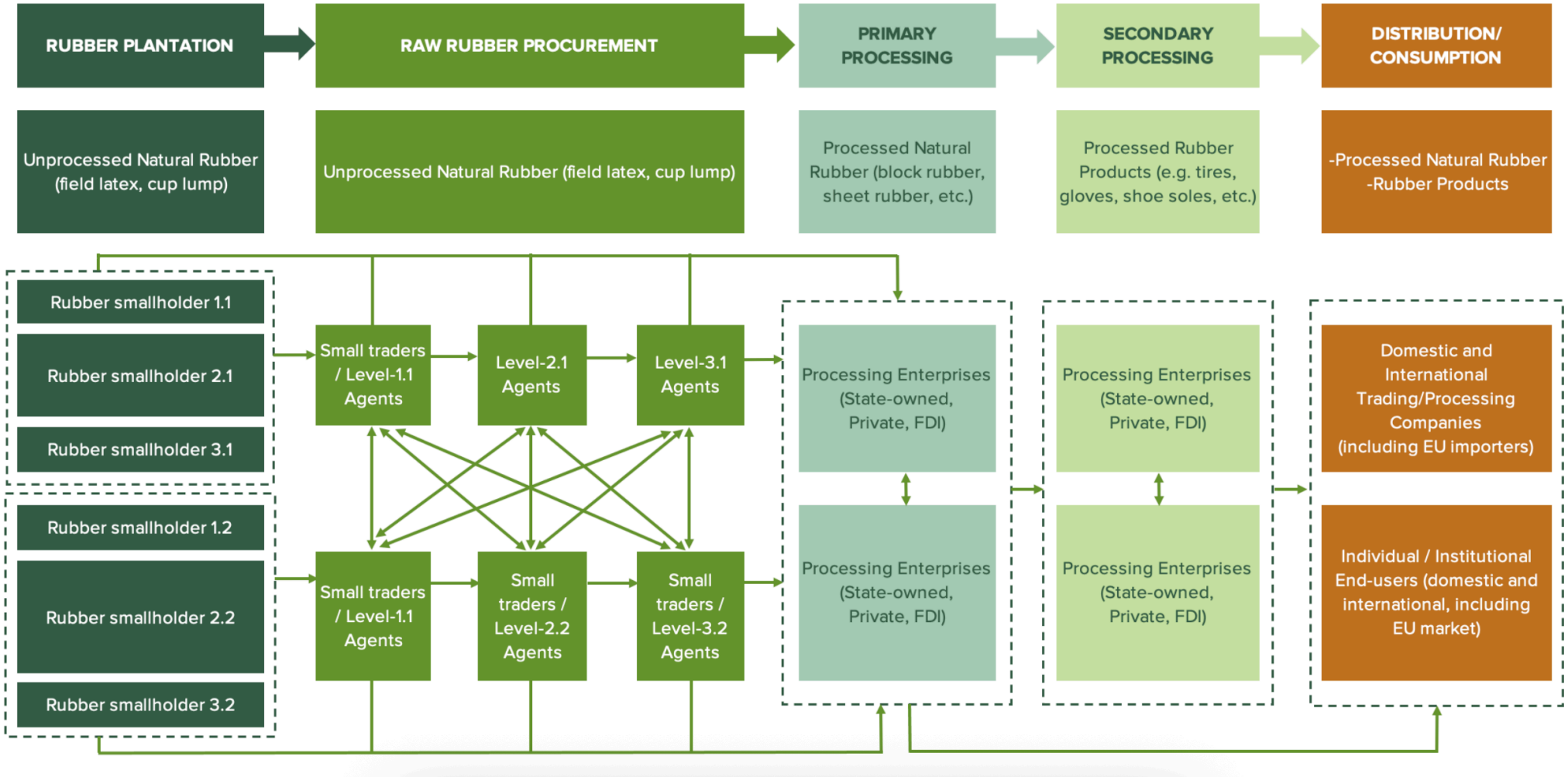
Enterprises distributing/consuming NR and RP

The output products from preliminary and downstream processing enterprises that use raw materials from smallholders—which are NR and RP —are consumed domestically and exported through a network of product distribution enterprises. For exports, businesses primarily sell their goods through foreign buyers.

Figure 11 illustrates the key components of the smallholder rubber supply chain in Vietnam.

[7] *Nguyen Vinh Quang et al. (2021).*

Figure 11. Map of the key stakeholders in Vietnam's smallholder rubber supply chain in 2025



Source: Direct survey (January 2025).

In Vietnam, following the EU's promulgation of the EUDR, some private companies purchasing raw materials from smallholders have initiated efforts to restructure their supply chains. They are collaborating with their supplying households and intermediatend iagents, adjusting supply chain activities to meet EUDR requirements, and so on. In this report, this type of supply chain is temporarily referred to as the "EUDR-compliant smallholder supply chain." However, most remaining supply chains involving smallholders have not yet undergone such adjustments. In this report, the unadjusted supply chain is termed the "conventional smallholder rubber supply chain."

Currently, the conventional smallholder rubber supply chain remains prevalent, encompassing over 97.7% of all smallholdersinvolved in production. The area managed by approximately 6,000 households participating in EUDR-compliant supply chains accounts for only 3.6% of the total smallholder cultivation area.

There are fundamental differences between the EUDR-compliant smallholder supply chain and the conventional smallholder supply chain, particularly concerning the operations and execution methods of participating parties, as well as the information and evidence related to household land access and transactions between households and relevant stakeholders. The following section provides basic information on the current status of these two supply chains.

3.2. Smallholder rubber supply chains in the context of EUDR

3.2.1. Conventional smallholder rubber supply chains

Smallholders

Most smallholders currently operate within this conventional supply chain. The land used by these households for rubber cultivation is primarily land allocated to them by the state for production purposes. Many households have been issued Land Use Rights Certificates (also known as "red books"), which serve as crucial evidence of their legal ownership of the allocated plots. Some households have not yet received these certificates, despite being allocated the land and having cultivated it for a long time, due to local authorities not yet completing the issuance process.

Furthermore, some of the rubber cultivation areas managed by households are situated on land currently under dispute. Examples include land zoned for forestry purposes, land allocated by the state for management by commune People's Committees (PCs), or land managed by forestry companies. For these areas, households lack legal evidence of their right to use the plots they are cultivating. There is currently no information available regarding the actual status or scale of these disputed rubber cultivation plots.

Latex harvested by households is sold to intermediate agents. During transactions between these two parties, the types of information collected include: (1) Name of the buyer/seller entity, (2) Transaction date, (3) Latex quantity, (4) Latex type (liquid, coagulated/scrap), (5) Latex quality (dry rubber content), (6) Latex price (per degree of dry rubber content), and (7) Total transaction value. These transactions do not include information regarding (1) the specific plot of land where the latex was harvested, or (2) the volume of latex harvested from each individual plot (as one household often owns several rubber cultivation plots).

Transactions between households and agents become more complex for coagulated latex. Households collect latex from various different plots, including any latex gleaned from other rubber gardens,[8] is

[8] *The gleaning of residual latex from rubber gardens is not officially sanctioned by the garden owners. Nevertheless, these owners generally do not object to the practice.*

collected over 5-7 days before the household sells it to an agent. Households do not keep specific records of how much latex is collected from which area or on which harvesting date. Latex from a household might be sold to a fixed agent or various different agents. Households do not record specific details about the quantity, the garden plot it was collected from, the collection date, or the volume sold to each agent. Therefore, traceability in these cases is impossible.

A household may sell latex to multiple agents for various reasons, such as dissatisfaction with how the latex content is measured, unappealing prices or other benefits, a new collection point opening closer to their rubber garden, owning multiple rubber plots each near different intermediate agents , or simply no longer feeling comfortable transacting with a particular agent. This can occur at any time. When it does, it means rubber latex from one household, harvested from several of its plots, is supplied to more than one agent.

Households generally do not have the habit of storing information about latex sales transactions. After receiving payment from agents, they discard all evidence related to the transaction between the household and the agent.

Surveys in local areas indicate that most smallholdershire labor for certain tasks, most commonly for daily latex tapping and collection. This hiring is typically done through verbal agreements between the two parties.

Some smallholdersdo not directly manage their rubber cultivation areas but instead contract these areas out to other households. The contracting household assumes full responsibility for tree care and latex harvesting. The profits from the latex are shared between the garden owner and the contracting party, with the percentage varying based on their agreement, often around 50-50. Contract periods can range from a few years to even decades. Accessing information about the garden owner in these cases is very difficult; in many instances, it's impossible. This leads to a lack of input information necessary to assess the legality of land use.

Some smallholdersare reluctant to provide personal information and legal land documentation to intermediate agents , fearing that disclosure could harm them.

Most households surveyed currently have no information about the EUDR. Some have heard of the EUDR but have not paid attention or do not understand what it specifically entails.

Intermediate agents

The network of intermediate agents collecting latex from smallholders is diverse and boasts extensive coverage. The operations of these agents are complex and largely spontaneous. An agent might operate multiple collection points across various localities, with input sourced from numerous smallholder households. Except for large agents who are officially registered as businesses and typically have fixed premises, many medium-sized and especially small agents operate without business registration. An agent can initiate or cease purchasing activities, relocate, or open new collection points with relative freedom. Generally, local management authorities do not effectively manage and oversee this group's activities.

When smallholder latex is transacted through an agent, it is commonly bought and resold through one to three tiers of intermediate agents before reaching the processing factory. The information collected during transactions between different agent tiers is limited to data required for purchase and payment between the two parties. This information is insufficient for comprehensive traceability.

An intermediate agent typically does not engage in fixed transactions with a single buyer. They can sell to any party, depending on various factors, including the payment method (immediate or deferred payment). Particularly in regions where agents primarily trade in coagulated latex (such as Gia Lai), a batch collected from multiple sources might be sold to several processing factories.

At the agent level, mixing latex from multiple sources and storing it together in a common area (tanks, drums, yard corners, etc.) is quite prevalent. The lack of input information from the initial supplying households effectively breaks the chain of traceability, leading to an increasingly severe "loss of origin" status. An intermediate agent collects latex from various households and other agents, then mixes it into a single storage area, often a cement tank or container (for liquid latex) or a corner of the yard (for coagulated latex). This practice of commingling latex from multiple sources, followed by trading among intermediate agents without precise origin information from all collected sources, exacerbates the "loss of origin" issue.

All surveyed intermediate agents employ laborers to assist with collecting and transporting latex from household gardens to collection/consolidation points, or to manage transaction tasks at collection points. However, none of these agents have formal labor contracts with their workers, relying solely on verbal agreements.

Each agent usually has a certain number of smallholdersthat regularly supply them with latex (daily supply). Nevertheless, there are also "transient" households that occasionally sell latex to agents (often coagulated/scrap latex). Agents typically do not record information regarding these transient supply flows.

Agents do not share purchase and sales information with each other, making it impossible to control and verify the supply source. Agents are also reluctant to share information due to concerns about business secrets and competition in raw latex procurement. Consequently, it's impossible to determine the total supply from a single household or whether it exceeds the household's potential production capacity for a tapping season.

Some agents reported that they have never been required to provide information about the origin of latex to the buyer. Therefore, agents have also never asked their sellers—i.e., smallholdersor other agents reselling latex to them—to provide any additional documents or information beyond what is necessary for payment.

Although smallholdersare a crucial source of raw rubber for many export processing enterprises , especially private ones, the majority of these enterprises do not/have never worked directly with households (except for a few households that sell latex directly to enterprises). All matters concerning households have historically been handled by intermediate agents.

Processing enterprises

Processing enterprises, particularly private firms sourcing raw materials from smallholders, acquire their inputs through the agent system. Most rubber processing enterprises, including those with their own rubber plantations, maintain diversified supply sources, which may include inputs from other processing enterprises or imported supplies. Regarding raw materials originating from smallholders, a processing enterprise might procure latex directly from dozens, or even up to 200, large and small agents. The greater the volume and diversity of a firm's supply sources, the higher the difficulty in tracing the origin

of raw materials.[9] A processing enterprise in Binh Duong confirmed, *"We cannot definitively control where or from whom each consignment from an agent is purchased."*

Recently, information regarding EUDR requirements has been widely disseminated to most processing enterprises in the industry through channels like the Ministry of Agriculture and Rural Development and the VRA. Some industry enterprises have shown interest and a desire to adjust their supply chains to meet these requirements. These enterprises have requested their agents to collect household information, including copies of their land use right certificate and Citizen Identity Cards, as a basis for subsequent steps (e.g., obtaining geographical coordinates of plots, completing documentation for each household, digitizing this information).

However, this process faces numerous challenges. Some agents are uncooperative, and many households are particularly reluctant to share this information. The main reason for household reluctance is a lack of trust in agents and enterprises, and uncertainty regarding the purpose of collecting their information. They fear their information might be misused, shared with malicious parties, or lead to scams (which have been prevalent recently), causing financial harm to the households. Progress in collecting information from households remains slow, partly because enterprises are wary of straining relationships with agents—a key party in the supply chain. Meanwhile, since enterprises lack direct relationships with households, they cannot access this information independently.

Information shared by a processing enterprises indicates, "A tank truck containing 5 tons of liquid latex currently purchased from households would come from approximately 100 households, with up to 70% of those households lacking land use right certificate information." Accessing data on land boundaries, plot coordinates, or the accuracy of daily latex transaction records related to households is even more challenging, and most processing enterprises have not yet accessed this information.

Some processing enterprises also guide and support their agents in accessing and using database forms and software directly linked to the enterprise's online system to update daily transaction information between the two parties. Agents capable of direct data entry actively input information into the system. Other agents might record details on forms and then send photos to the enterprise, which then assists in updating the information. However, currently, this database system only collects information for monitoring transaction volumes and payments between the enterprise and the agents directly supplying latex to them. The system is not yet used for other agent tiers. This indicates that the enterprises' ability to trace back to individual rubber cultivation plots is unfeasible.

Some enterprises interested in EUDR compliance have also conducted outreach, guiding and supporting their raw material agents to arrange separate storage tanks and areas for latex from different origins at collection points, with the aim of facilitating traceability. However, field observations show that most agent collection points lack adequate equipment and space to accommodate the segregation of input sources.

Furthermore, some EUDR-focused processing enterprises have planned to establish EUDR-compliant latex reception systems and dedicated production lines for EUDR-compliant latex. However, these enterprises also share that, given the prevalent proportion of non-EUDR compliant smallholder latex they procure daily, setting up a separate, traceable production line is not cost-optimal.

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[9] *A survey titled "Rubber Industry enterprises Preparing for EUDR Adaptation" was conducted in August-September 2024, involving 30 enterprises directly exporting to the EU market, comprising 15 state-owned enterprises and 15 private enterprises. (Source: https://mkresourcesgovernance.org/2024/10/01/phien-hop-ky-thuat-ve-nganh-go-va-cao-su-chuan-bi-thich-ung-eudr-thuc-trang-va-kien-nghi-tu-cong-dong-doanh-nghiep/)*

Processing enterprises must fulfill their tax obligations to the state. To do this, they require information regarding their raw material inputs. A list of households supplying raw latex to the enterprise is one of the crucial documents needed, especially when the enterprise procures raw latex from agents who cannot provide or issue financial invoices. This list should ideally accompany each consignment supplied by the agent, serving as a basis for determining the origin of the raw material. However, this is not being properly implemented in practice. Some enterprises "legalize" this supply by pre-preparing lists of households and then attaching them to daily purchase orders. This method of "legalization" indicates that the enterprises are not fully complying with Vietnamese legal regulations.

Overall, in the conventional smallholder supply chain currently operating, participants—including processing enterprises—are uncertain about what exactly needs to be done to comply with the EUDR. Many participants are either not ready or not yet interested in how to meet EUDR requirements. This is a widespread characteristic of this supply chain at present.

3.2.2. EUDR-compliant smallholder rubber supply chain

Surveys conducted in Binh Duong and Binh Phuoc regarding supply chains involving private enterprises and smallholder households, which are considered to have met the EUDR requirements, indicate that the implementation activities of the chain participants only began in 2024. In this model, processing enterprises, driven by the demands of EU buyers, have pioneered the reorganization of their supply chains. Most of the smallholder rubber cultivation areas that comply with EUDR are those that have achieved FSC-FM (Forest Stewardship Council - Forest Management) sustainable forest management certification. To ensure traceability throughout the entire chain, processing enterprises also apply FSC-CoC certification.[10] From the FSC-certified supply chain, enterprises , along with other chain participants, adjust and supplement information. This includes forest map data proving that the household's production land is not linked to deforestation, and defining the boundaries of the cultivated plots. enterprises also supplement the supply chain due diligence report, which is then provided to the importer. All these activities typically receive financial and technical support from the importer.

The EUDR compliance process is executed as follows: First, the enterprise discusses and agrees with its agents and the smallholderssupplying latex through these agents to establish a smallholder latex supply chain with FSC-FM certified smallholder gardens. This chain defines the additional activities required to meet EUDR demands. This initial implementation step often involves local authorities (commune officials, hamlet chiefs) who facilitate connections among the processing enterprises, agents, and households, and organize meetings between the parties. By participating in this chain, the enterprise commits to providing financial, technical, and human resources to prepare and collect the necessary documentation and information for certification, conduct field surveys to delineate and determine the coordinates of household rubber plots, provide technical training to agents and local residents, and cover the costs of FSC-FM group certification for households. The enterprise also commits to supporting agents and households participating in the chain to meet FSC and EUDR requirements, and to purchase EUDR-compliant rubber latex at a premium price compared to conventional latex market rates.

Eligible agents must be those who have supplied latex to the enterprise for many years, possess a strong transaction reputation, and demonstrate business acumen/understanding. Agents must sign a commitment with the enterprise agreeing to participate in the supply chain and adhere to related

[10] *Certification systems (e.g., FSC, PEFC) have been, and continue to be, actively working to adjust and update their standards to achieve EUDR-alignment. This is also how they persuade clients to utilize their certification systems.*

regulations as required by the enterprise. One of the most critical commitments is that the agent must ensure no mixing of latex from unverified sources into the supply chain.

To join the supply chain, households must voluntarily agree to participate, submit an application, and sign a commitment not to mix latex from unverified sources. Households are not required to exclusively supply latex to the participating agent or enterprise within the chain. This means households can sell their products to other agents or enterprises if higher prices are offered. Simultaneously, households must provide comprehensive personal information, such as identification documents (citizen ID cards), legal proof of ownership or use rights for their rubber plots, contact addresses, and information **related to their rubber gardens (such as planting year, harvesting year, yield, chemical use, hired labor, etc.)** to the agent and enterprise. Households that fail to provide this information are ineligible and cannot participate in the chain.

As of January 2025, four private enterprises have successfully established EUDR-compliant supply chains with the participation of smallholder households. The total area encompassed within these models is approximately 17,500 hectares, owned by 6,000 households.[11] [12] According to information from the enterprises, a total of approximately 4,600 tons of EUDR-compliant NR from these models have been exported. This volume commanded a price premium of $150 to $300 per ton compared to the same product type that was not EUDR-compliant.[13] The customers importing these products are not only European importers but also those from China and India. It's possible that customers from China and India are importing these products from Vietnam to process them into RP for export to Europe.

Several positive aspects of this supply chain, observed through direct surveys with stakeholders, include:

- The enterprises have fully subsidized all costs associated with gathering boundary and geographical coordinate data (100% multi-point/polygon capture) for participating household plots that possess land use right certificate. Coupled with personal identification details provided by the households, the enterprises now hold comprehensive and legally robust records for these rubber cultivation plots. This forms a critical database, enabling the enterprises to fulfill product origin accountability/traceability and to furnish information to relevant stakeholders in the future.
- The enterprise covered all costs for organizing meetings, training sessions, and technical guidance related to EUDR, as well as the expenses for FSC-FM group certification for households.

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[11] *Mai Vinh Company manages nearly 5,000 ha of smallholder rubber from over 3,000 households (over 1,000 ha FSC-FM certified for ~200 households) in Binh Duong, Binh Phuoc, and Binh Thuan meeting EUDR; Viet Sing Company possesses nearly 7,000 ha from ~400 households (nearly 1,000 ha FSC-FM certified for ~100 households) in Binh Phuoc and Tay Ninh; Thien Hung Company manages over 1,000 ha from >40 households (likely large areas); and Thuan Loi Company holds ~4,500 ha from 1,500 households (1,600 ha FSC-FM certified for 640 households) primarily in Binh Phuoc (CMO interview, Dec 2024; direct enterprise interviews, Jan 2025; Forest Trends, VRA, Oxfam Cambodia workshop, Mar 27, 2025, Phnom Penh).*

[12] *Binh Duong Forestry Company has also successfully supported a group of 673 households in obtaining FSC-FM certification for 1,818 hectares of smallholder rubber in Binh Phuoc. (Source: "FSC FM public report_BINH DUONG Forestry Business MA 2024 VN.") https://fscglobal.my.salesforce-sites.com/servlet/servlet.FileDownload?file=00PUV00000KlgJr2AL); Hoa Phat Forestry Company also simultaneously achieved FSC-FM and PEFC-FM certification for a group of 590 households, covering 2,219 hectares in Binh Phuoc. (However, the FSC-FM certificate for this area was suspended on September 10, 2024, due to "discovery of multiple serious non-conformities." Source: "PS1_FM evaluation report_FSC C191244_20240910_VI_BINH PHUOC_Hon Quan Group_M1_2024"). However, there is currently no information regarding the EUDR compliance of these areas.*

[13] *As of mid-December 2024, Viet Sing Company had exported nearly 1,000 metric tons of EUDR-compliant Natural Rubber (CSTN), Mai Vinh Company over 600 metric tons, and Thien Hung Company over 1,000 metric tons of EUDR-compliant NR to their clients (Interview with a CMO representative in Vietnam, December 2024). By January 2025, Thuan Loi Company had sold approximately 2,000 metric tons of EUDR-compliant rubber products (Direct enterprise interview, January 2025).*

- The enterprise paid an additional 4 to 5 VND per kilogram of latex per degree of dry rubber content (equivalent to 120,000 to 150,000 VND per ton for latex with 30% dry rubber content) for "EUDR-compliant" latex. The enterprise was then able to sell this to customers at an "EUDR-compliant" price.
- One enterprise provided an additional 30,000 VND to each household that agreed to join the supply chain and furnish complete information regarding their land use right certificate and personal data (Citizen ID Card, address, phone number, etc.).[14]
- The enterprise guided and supported the installation of signs at agent collection points, designating two separate areas: "EUDR-compliant" and "non-EUDR-compliant."
- This supply chain model eliminates inefficient agents and reduces supply chain complexity. Instead of latex being bought and resold through multiple intermediate tiers, transactions in this linked chain now only involve a single intermediary, the agent connecting households and the enterprise.
- Some linked agents have been able to utilize software provided by the enterprise (replacing traditional hardcopy ledgers) to update daily transaction information, allowing all parties to quickly complete transaction-related documentation.

However, direct surveys with stakeholders also revealed several key limitations of the EUDR-compliant supply chain, as follows:

Smallholder Households

According to current legal regulations, a household's land plot is considered legitimate if the household possesses one of the following documents: a land use right certificate, a lease contract, a contracting agreement, a land allocation decision, or a land use rights transfer contract certified by a competent authority. A land plot for which the household lacks any official documents but has been used stably, long-term, and without dispute, is also deemed legitimate. However, the current eligibility criteria for a household to participate in an EUDR-compliant supply chain only accept households with an land use right certificate, excluding other types of valid documentation.

Surveys conducted with some households and agents currently involved in the chain reveal a common practice of combining latex from various household plots into a single bag, can, or drum before supplying it to the agent. Furthermore, the agents in the linked chain still only record the total volume of latex transacted with the household, without capturing the specific quantity harvested from each individual plot. This commingling of harvested latex from different plots and different households mirrors the practices in "non-EUDR compliant" supply chains, leading to inaccurate product origin information. Additionally, the blending of "EUDR-compliant" and "non-EUDR compliant" supplies continues to occur.

The proportion of households and the area of smallholder rubber participating in EUDR-compliant models are currently too small compared to the total number of smallholdersand the nearly 490,000 hectares of smallholder land. As of January 2025, as previously stated, the total number of smallholdersparticipating in EUDR-compliant linked models is approximately 6,000 households (equivalent to less than 2.3% of the total 264,000 smallholder households), with a participating area of 17,500 hectares (equivalent to 3.6% of the total 488,000 hectares of smallholder land).

Intermediate agents

Direct observation by the research team at several collection points of agents participating in the supply chain revealed that these agents procure latex from both participating and non-participating households.

[14] *The company representative referred to this as the cost of securing an "EUDR-compliant dossier."*

While agents displayed "EUDR" and "Non-EUDR" signs in different locations, they still lacked separate storage areas for "EUDR-compliant" and conventional latex. Latex from these two distinct sources was consistently commingled into a single tank (for liquid latex) or storage area (for coagulated latex).

Agents were instructed and provided with distinct labels for "EUDR-compliant" and conventional latex to affix to containers during transport from the household's garden to the collection point. However, the team's observations indicated that agents transporting latex on behalf of households from the gardens to the collection points did not implement this labeling to differentiate the latex sources. This reality suggests that agents cannot accurately determine the precise origin of the latex, nor can they effectively segregate EUDR-compliant from conventional sources.

Processing enterprises

Processing enterprises in the supply chain only pay the premium for EUDR-compliant products to agents and participating households when they, in turn, receive a higher price from customers purchasing those EUDR-compliant products. If there are no buyers for EUDR-compliant products, or if such products do not command a higher price compared to conventional ones, the enterprise will not pay the additional amount to agents and households, even while continuing to source from the supply chain.

Currently, there is no mechanism for monitoring or sharing information regarding whether the enterprise actually sells its output products at an "EUDR-compliant" price. This could lead to risks where the enterprise might misrepresent or underreport actual transaction volumes, thereby reducing the payments to agents and households and disadvantaging them.

A common issue within this EUDR-compliant supply chain is that the relationship among smallholders, agents, and enterprises—despite showing increased connectivity, mutual support, and more specific commitments—remains relatively loose and lacks concrete sanctions. Even though the enterprise bears the majority of the costs associated with maintaining the supply chain and fulfilling EUDR requirements, it cannot compel agents or households to maintain the chain, supply latex exclusively to them, or impose specific penalties if agents or households violate commitments. Agents or smallholders remain free to sell their latex to other buyers whenever they choose.

Table 2. Key characteristics of conventional smallholder rubber supply chains and "EUDR-compliant" smallholder rubber supply chains

Key relevant EUDR requirements	Conventional smallholder rubber supply chain	EUDR-compliant" smallholder rubber supply chain
Forest Boundary Map as of December 31, 2020	• No official map has been issued by regulatory authorities.	• Some companies use Google Maps or purchase maps as of December 31, 2020, from map-providing companies.
Geographic Coordinates of Rubber Plantation Areas (multiple points for plots over 4 hectares, single point for smaller plots)	• Most coordinates have not yet been collected.	• For plots with land use right certificate held by households participating in the supply chain, boundary and coordinate data have been collected, with 100% of cases using multi-point coordinates.
Legal Land Use Rights for Cultivated Plots	• Most plots have land use right certificate or other valid legal documents, such as land allocation contracts or land lease agreements. • A small proportion of the area lacks legal documentation proving land use rights, faces disputes, has unclear boundaries, or has boundaries on paper that differ from actual boundaries. Some land areas are under dispute. • Households are not required to provide such documentation.	• Households participating in linkages must provide land use right certificate for their plots. • Only plots with land use right certificate are eligible to participate. • Households unwilling to provide this information are excluded from linkages.
Personal Identification Documents	• Households are not required to provide personal identification documents.	• Households provide information as requested by agents or enterprises. • Households unwilling to provide this information are excluded from linkages.
Information and Evidence in Supply Chain Transactions	• Households do not collect or record information on latex volume, quality, or harvest date specific to individual plots. A household may sell to one or multiple agents. • Transactions through multiple agent tiers lack shared information on the origin of raw latex or evidence of prior transactions.	• A smallholder household may have multiple rubber plots, some with land use right certificate or other legal documents and some without, but agents purchase all latex harvested by the household. Many agents lack systems to separate different supply streams to ensure traceability. • Households do not collect or record plot-specific information.

	• Some agents lack specific information about their latex supply sources. • Agents provide enterprises with a fixed list of supplying households, but daily traded latex volumes are not fully linked to this list. • enterprises use multiple supply sources (smallholder, imported, large-scale plantations), some of which have unclear origins, are mixed, and may include stolen latex.	• Agents are guided and supported to separate EUDR-compliant and non-compliant latex sources. • Agents purchase latex from both participating and non-participating households. Some agents fail to fully ensure separation of EUDR-compliant and non-compliant latex. • Enterprises have boundary, coordinate, household identification, and agent information but may not have sufficient data to accurately trace the origin of smallholder latex.
Information Retention for at Least 5 Years	• Households and agents do not meet this requirement. • Processing enterprises meet the requirement.	• Uncertain whether households and agents can comply with EUDR. • Processing enterprises comply with EUDR.
Compliance with Relevant Laws:		
• *Labor Contracts, Underage Labor, Child Labor*	• Households and intermediary agents do not have labor contracts with workers. • Processing enterprises comply well with labor regulations.	• Smallholders and intermediary agents do not have labor contracts with workers. • Processing enterprises comply well with labor regulations.
• *Business Registration*	• Many small-scale agents (traders) do not register their businesses	Agents participating in chain models are fully registered businesses.
• *Tax and Environmental Protection Regulations*	• Unregistered agents do not meet these requirements. • "Legalized" agents provide a fixed list of supplying households to buyers.	(No information available)
Risk Control Measures in the Supply Chain	No measures in place.	Agents and households in the supply chain must commit to not mixing latex from unclear origins, but this commitment is not effectively implemented.

Market differentiation and the trend toward sustainable production

The rubber industry is increasingly integrating with international markets. Currently, the product output market is differentiated, with a significant volume of rubber products exported to countries such as China and India, where stringent traceability requirements are not yet imposed, and a smaller volume exported to markets like the EU, which enforce strict supply chain control and deforestation-free requirements. This market differentiation in product standards has led to the formation of three main supply chains in Vietnam, based on the source of raw material inputs.

First, the large-scale plantation supply chain involves large enterprises, primarily state-owned and mostly part of the VRG, which have direct access to their own rubber plantation land. These enterprises utilize raw materials from their own plantations. The land used for these plantations has clear legal status, with many areas certified for sustainable forest management (as of May 9, 2025, approximately 11,400 hectares of rubber plantations, mostly large-scale, are FSC-certified, and 145,000 hectares, entirely large-scale, are PEFC-certified). These enterprises maintain clear supply chains and are fully capable of meeting traceability requirements. Most have been or are actively complying with EUDR requirements, with some already exporting **"EUDR-compliant"** products to the EU.

Second, the EUDR-compliant smallholder supply chain sources raw materials from smallholdersand involves private enterprises. This chain emerges as private enterprises, lacking direct access to cultivation land, collaborate with smallholdersto secure raw material inputs. In these partnerships, enterprises work with farmers and agents to organize the supply chain to achieve sustainability certifications (e.g., FSC) and meet EUDR requirements. enterprises provide technical and financial support to farmers and intermediate agents to comply with sustainability and EUDR standards. The enterprises, agents, and smallholdersin these partnerships produce certified, EUDR-compliant products driven by market demand and higher profit margins. Currently, products from these partnerships are considered EUDR-compliant, though the scale remains limited: the total linked area nationwide is approximately 17,500 hectares, involving 6,000 households—small figures compared to the industry's overall scale.

Third, the conventional smallholder supply chain is the most prevalent, involving private enterprises (and some state-owned enterprises) sourcing raw materials from smallholdersthrough a network of multi-tiered intermediate agents . Activities in this chain are largely informal, particularly in transactions between farmers and agents and among agents. The output products from this chain do not meet traceability or sustainability requirements.

The complexity of these supply chains stems primarily from differences in access to output markets. Most enterprises in the first supply chain also source raw materials from conventional smallholders, with some using imported sources. All enterprises in the second supply chain, in addition to sourcing from EUDR-compliant smallholders, also procure from conventional smallholders, and some rely on imported materials. Certain private enterprises in the second and third supply chains purchase raw rubber from enterprises in the first supply chain. At the agent level—the critical link between processing enterprises and domestic smallholders—a single agent may supply multiple processing enterprises across different supply chains. Cross-trading among agents is also common. The diversity of supply sources (EUDR-compliant smallholders, conventional smallholders, large-scale plantations, and imports) and cross-trading practices (one farmer selling to multiple agents, one agent selling to multiple other agents, or a processing company sourcing from multiple agents) reflect the flexibility of supply chain actors in accessing market opportunities. However, this also creates significant complexity in traceability, particularly for supply chains involving enterprises that have not established reliable traceability systems or cannot ensure the separation of different supply sources, including those from smallholders.

The differentiation in output markets reflects inconsistencies in market requirements. However, sustainable product standards are becoming a global trend. The EUDR exemplifies how consuming countries use trade and import tools to drive changes in resource management and utilization in producing countries to achieve sustainable product goals. The efforts of actors in the first and second supply chains, particularly enterprises leading these chains, demonstrate their commitment to meeting market requirements and trends. Although actors in the third supply chain have not yet prioritized sustainability, global market trends indicate the necessity for these actors to comply with future requirements to maintain access to output markets.

Interactions among the three supply chains are currently limited, reducing opportunities to drive industry-wide changes toward traceability. Cross-sharing, information exchange, and learning from experiences among actors in different supply chains, particularly among enterprises, hold significant potential for adopting and scaling models that ensure traceability and promote sustainable production. Such interactions cannot occur spontaneously and require external support from associations, government agencies, and development organizations. As the industry's representative, the Vietnam Rubber Association should encourage its member enterprises in these supply chains to share information and support development. The government needs to establish new mechanisms and policies to promote such interactions, including documenting lessons on traceability and sustainable production from pioneering enterprises, recognizing and promoting their efforts, and sharing these lessons within the industry community. Development organizations should collaborate with the association, regulatory agencies, and supply chain actors to facilitate information exchange, pilot sustainable and traceable chain models, and seek opportunities to scale these models.

Challenges in the conventional smallholder supply chain

The conventional smallholder supply chain, or the "non-EUDR-compliant" smallholder supply chain, is currently the most prevalent and exhibits systemic challenges that hinder traceability, pose risks of non-compliance with legal requirements at certain stages, and present obstacles to meeting sustainability standards. At the first stage of the chain—smallholders, who are numerous—lenient market requirements from countries like India and China, combined with traditional farming practices that do not prioritize traceability (e.g., not sharing personal information, lack of record-keeping for harvests and transactions specific to individual plots, and mixing of different supply sources), result in informal activities. Some farmers also lack information or evidence regarding the legal status of their land plots. Market demands, farmers' cultivation habits, and the absence of baseline data and evidence proving the legality of their activities are fundamental challenges in the conventional smallholder supply chain.

The operations of intermediate agents — the critical link between processing enterprises and smallholders—are highly complex, and their current practices make chain-wide traceability unfeasible. Additionally, some activities at this stage pose risks of legal non-compliance. Most agents do not control input material information from farmers to enable traceability. Many operate informally, without business registration or complete transaction records. Cross-trading among agents at the same or different levels results in the mixing of various material sources (e.g., coagulated latex, liquid latex, domestic, or imported), making it impossible to separate latex by farmer or plot, completely disrupting traceability. Transactions among agents lack transparency, with limited sharing of input material information and insufficient legal evidence, rendering traceability unachievable. Local government oversight and monitoring of the agent network and their activities are currently weak and inadequate, further hindering agent compliance.

Processing enterprises, particularly private ones, rely almost entirely on smallholders(and some on imported sources) through the agent network. Many enterprises have not prioritized traceability or sustainable production, primarily because output markets have not yet demanded these standards. Most enterprises lack direct connections with farmers, relying on agents. Transactions between enterprises and agents generally comply with legal requirements. However, risks to legality arise when the raw materials sourced from smallholdersvia agents fail to meet legal standards at the farmer level or in farmer-agent transactions.

Some enterprises aim to reorganize their supply chains to enable traceability and meet export market demands for sustainable products. However, achieving this requires significant human, financial, and technical resources. Small and medium-sized enterprises often lack these resources, while some larger enterprises with resources are unsure where to begin. This highlights a gap in information sharing and experience exchange between enterprises that have established traceable and sustainable supply chains and those aspiring to do so. Additionally, some enterprises face challenges due to limited cooperation from other supply chain actors when implementing sustainable supply chain changes.

The role of local authorities in monitoring and promoting the conventional smallholder supply chain is currently limited. The prevalence of informal activities, particularly in transactions between farmers and agents and among agents, is partly a consequence of this. Strengthening the role of local regulatory agencies, including supporting enterprises and farmers in forming legal and sustainable production chains (see below), is critical. This will help align the current supply chain with legal requirements and promote restructuring toward traceability and sustainable production.

Initiative for EUDR-compliant smallholder supply chains and essential factors for model replication

Despite its limited scale, the EUDR-compliant smallholder supply chain currently being implemented by several private enterprises demonstrates significant effort and commitment from these businesses and other chain participants in meeting the stringent requirements of export markets for legal and sustainable products. In this model, the enterprise plays a pioneering role, collaborating with households and agents to reorganize the supply chain towards legality, traceability, and compliance with export market demands. Within this chain, the supply chain is considerably simpler (shorter) than conventional supply chains, providing a foundation for implementing traceability. Support from the enterprise, often coupled with support from the importer, for capacity building for participating households and agents, covering data collection costs, and controlling transactions within the chain, plays the most crucial role in forming and operating this linked model.

Key factors related to the sustainability of this model are:

(i) The processing enterprise's readiness to participate and take a leading role in forming the model.

(ii) A stable product output market with profits that at least compensate for all associated financial and material costs (time, effort).

(iii) Households and agents meeting the criteria for chain participation and demonstrating goodwill to join (e.g., sufficiently large "clean" land areas, willingness to voluntarily participate, and readiness to adapt activities to ensure traceability).

(iv) The engagement of local authorities in connecting households with processing enterprises and providing support with household land information and foundational data systems.

(v) Fair sharing of responsibilities and benefits among all chain participants.

A model lacking the convergence of all these factors will inherently face sustainability risks. The lessons learned from these models, including both their advantages and difficulties, are critically important as a foundation for future replication.

Strengthening traceability and promoting sustainable smallholder rubber production

The aforementioned issues, particularly in the conventional smallholder rubber supply chain, need to be thoroughly addressed to ensure traceability, legal compliance at all stages, and foster sustainable industry development. This is crucial for all chain participants, especially as product markets increasingly impose stricter regulations on traceability, legal provenance, and preventing deforestation. Achieving this requires the participation and accountability of all relevant parties. The lessons learned from EUDR-compliant smallholder rubber models are extremely important, serving as a reference for conventional smallholder rubber models to change how they organize and conduct supply chain activities to enable traceability and enhance compliance.

At the household level, the State should implement more specific mechanisms and policies to support smallholder households. This support needs to focus on providing clear and precise information about the legal status of cultivated land plots. New policy mechanisms also need to require producing households to accurately document their product output, along with information and evidence from their transactions with agents. Information technology systems can help achieve this. Such systems need to be appropriate for the households' skill levels, capabilities, and resources. Policies should also include mechanisms to encourage enterprises to link with households, thereby mobilizing external resources from outside the State to support them. These mechanisms could encompass tax incentives, access to land for factory construction, and priority in accessing public procurement projects that use rubber products.

At the agent level, mechanisms for inspecting and monitoring agents' compliance with State requirements for their operations need to be strengthened to ensure adherence. Sanctions for non-compliant activities are essential. The State should review existing policy mechanisms governing agent activities to ensure these regulations are high-quality, practical, and appropriate for the actual capacities of agents. Adjusted policies should also consider creating mechanisms that incentivize compliance, for example, tax exemptions or reductions for small and micro-scale agents, policy communication campaigns, and capacity building for agents to meet requirements. The State should also consider supporting agents in information technology and digital transformation toward traceability, including collecting and controlling information in transactions between agents and households, between agents and processing factories, and among agents themselves.

Enterprises are among the most important participants in the supply chain. The development or decline of an enterprise dictates the activities of the agent system and smallholder households, and vice versa. enterprises, especially private enterprises dependent on raw material supply from smallholders, need to strongly demonstrate their responsibility towards agents and, particularly, towards households. enterprises can achieve this through direct support to households and agents, similar to the EUDR-compliant smallholder supply chain chain model mentioned above. enterprises should consider these supports as a fundamental component of their business model, aiming to build a long-term raw material supply area and a controlled, sustainable supply chain.

The lessons learned, particularly from rubber models that have complete traceability systems and meet sustainable criteria, are crucial for participants in the conventional smallholder rubber supply chain to learn from. Doing this requires that supply chain participants who already have traceability systems share their experiences, including both the advantages and difficulties encountered in activities that ensure traceability. With encouragement from the VRA and the goodwill of enterprises, some association member enterprises, including both State-owned and private enterprises, that have traceability systems and meet sustainable criteria are continuing to share these lessons with relevant stakeholders. The State and the community need to honor these enterprises. The lessons from these pioneering enterprises need to be widely disseminated throughout the industry, through information-sharing mechanisms from the Association, regulatory bodies, and other relevant parties such as the press and development organizations.

Given the many shortcomings still present in the conventional smallholder supply chain, which does not allow for traceability and carries numerous legal risks, all stages in the chain need to be restructured to ensure traceability. This requires all informal activities, especially in transactions between households and agents and among agents themselves, to be formalized. Socializing resources to transform informal activities into formal ones plays a crucial role, including mobilizing resources from industry enterprises and development organizations. These resources should prioritize vulnerable groups participating in the supply chain, including medium, small, and micro-scale agents, and especially smallholders.

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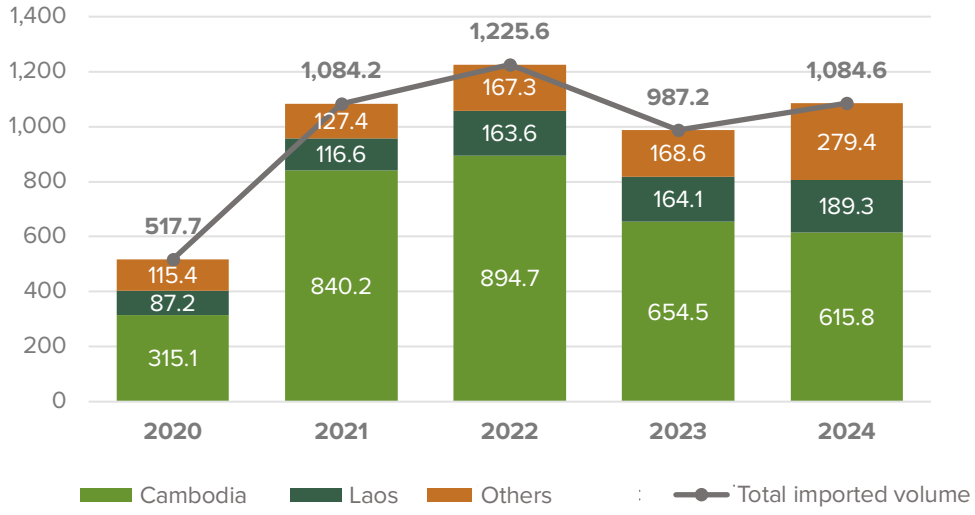
Appendix

Appendix 1. Area and production of smallholder rubber in Vietnam, 2023

Region/Area/Province	Area (ha)	Output (tons)	Output (tons)
Northern Region	**624,2**	**585,6**	**738,7**
Lao Cai	62,4	56,5	10,0
Dien Bien	115,4	84,4	152,6
Lai Chau	446,4	444,6	576,1
North Central Coast and Central Coast	**69.163,1**	**62.984,7**	**95.238,7**
Thanh Hoa	1.939,3	1.444,8	391,8
Nghe An	727,5	482,1	912,0
Ha Tinh	578,1	205,0	167,0
Quang Binh	4.982,6	4.807,1	3.443,7
Quang Tri	14.285,7	13.359,2	20.337,6
Thua Thien Hue	5.133,5	4.982,0	6.403,0
Quang Nam	710,0	689,0	765,0
Quang Ngai	15,4	15,4	10,8
Binh Dinh	13,0	13,0	18,2
Phu Yen	4.100,5	3.221,5	5.750,2
Khanh Hoa	286,0	67,6	50,0
Ninh Thuan	5,5	0,0	0,0
Binh Thuan	36.386,0	33.698,0	56.989,4
Central Highlands	**72.546,5**	**58.926,2**	**82.712,1**
Kon Tum	38.585,6	29.384,2	37.162,1
Gia Lai	13.897,0	12.443,8	17.523,2
Dak Lak	5.701,5	3.975,1	4.275,3
Dak Nong	12.041,4	12.009,1	20.475,6
Lam Dong	2.321,0	1.114,0	3.276,0
Southeast Region	**347.095,7**	**307.783,1**	**621.070,8**
Binh Phuoc	156.813,8	144.452,8	279.817,6
Tay Ninh	78.469,8	66.922,0	146.559,1
Binh Duong	93.126,2	79.154,4	171.449,2
Dong Nai	14.636,2	13.363,9	16.063,4
Ba Ria – Vung Tau	3.168,3	3.125,2	5.969,8
Ho Chi Minh City	881,4	764,8	1.211,8
Mekong Delta	**93,9**	**87,2**	**104,6**
Long An	93,9	87,2	104,6
TOTAL	**489.523**	**430.367**	**799.865**

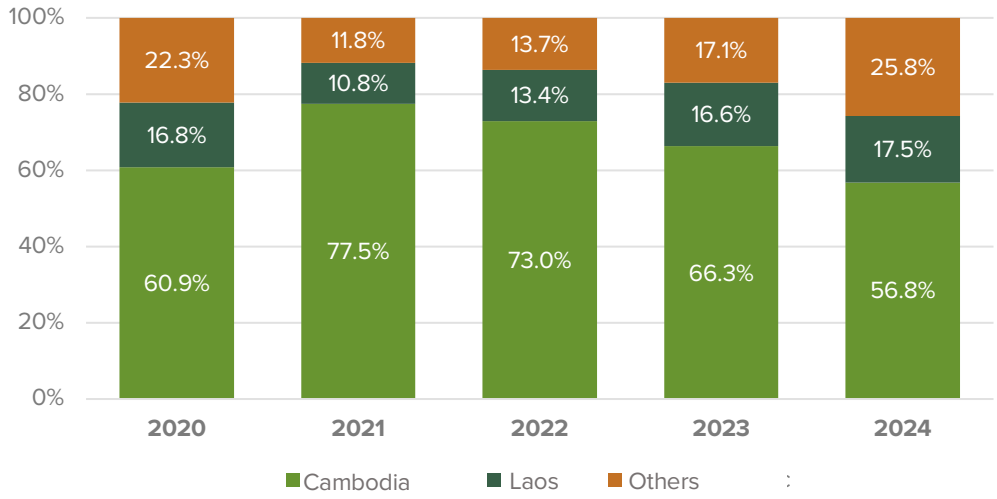
Source: VRA compiled from data of the Statistics Office and Provincial Departments of Agriculture and Environment.

Appendix 2.1. Volume of NR imported by Vietnam by source, during 2020–2024 (thousand tons)



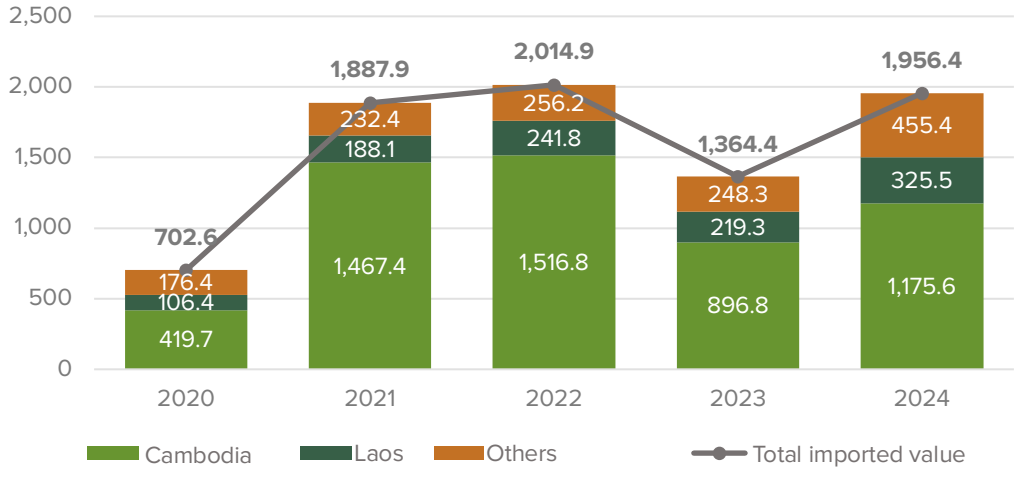
Source: VRA compiled from data of the GDC

Appendix 2.2. Proportion of NR importedby Vietnam by source, during 2020–2024 (thousand tons)



Source: VRA compiled from data of the GDC

Appendix 2.3. Import value NR imported by Vietnam by source, during 2020–2024 (million USD)



Source: VRA compiled from data of the GDC

Appendix 3. Volume and export value of Vietnam's NR by type, during 2020–2024

No.	Category	HS code	2020		2021		2022		2023		2024	
			Quantity (thousand tons)	Value (million USD)	Quantity (thousand tons)	Value (million USD)	Quantity (thousand tons)	Value (million USD)	Quantity (thousand tons)	Value (million USD)	Quantity (thousand tons)	Value (million USD)
1	**Mixture rubber**	400280	1.147,1	1.569,9	1.223,4	2.036,4	1.317,7	2.035,0	1.440,6	1.982,4	1.182,8	2.065,0
2	**Natural rubber**	4001	517,5	679,4	619,6	1.021,7	677,5	989,1	619,0	779,7	763,3	1.225,3
2.1	**-LATEX (60% DRC)**	400110	197,3	206,3	198,4	248,0	284,6	323,4	247,7	240,1	312,6	418,1
2.2	**-SVR 10**	40012210	121,3	165,6	155,4	264,4	161,7	260,2	176,4	240,4	228,6	384,1
2.3	**-SVR 3L**	40012230	132,8	202,7	184,7	347,9	161,5	282,0	122,6	186,4	143,2	268,5
2.4	**-SVR CV60**	40012240	66,1	104,9	81,0	161,3	69,7	123,6	72,3	112,8	78,8	154,6
3	**Others**		85,1	134,8	112,3	220,2	149,7	291,9	83,3	130,6	64,1	129,2
	Total		**1.749,7**	**2.384,1**	**1.955,3**	**3.278,3**	**2.144,9**	**3.316,0**	**2.143,0**	**2.892,6**	**2.010,2**	**3.419,5**

Source: VRA compiled from data of the GDC

Appendix 4. Export value of Vietnam's RP by type, 2020–2024 (million USD)

No.	Category	HS Code	2020	2021	2022	2023	2024
1	**Tires**	4011	1.411,4	1.799,1	2.207,8	2.543,1	2.935,1
2	**Shoe soles**	6406	334,1	438,6	591,5	500,6	629,7
3	**Components and Technical Rubber**	4016	536,1	541,8	640,2	614,9	619,0
4	**Rubber gloves and rubber clothing products**	4015	355,7	439,1	230,4	200,0	277,9
5	**Rubber sports equipment**	9506	115,7	117,3	178,3	188,4	176,2
6	**Rubber hoses**	4009	39,7	54,6	54,3	73,5	102,6
7	**Inner tubes**	4013	96,6	103,1	112,2	61,6	81,2
8	**Retreaded tires**	4012	91,0	58,5	63,8	60,5	66,0
9	**Rubber sheets**	4008	58,5	52,4	56,1	43,8	54,2
10	**Conveyor belts**	4010	29,7	36,3	40,7	33,5	36,0
11	**Elastic threads covered with textile material**	5604	7,7	18,8	26,2	25,4	32,7
12	**Hard rubber**	4017	1,1	1,5	2,4	11,1	17,4
13	**Mattresses and pillows**	9404	20,0	10,6	9,8	9,0	10,6
14	**Rubber medical products**	4014	9,4	7,2	6,2	7,1	6,3
15	**Plain elastic threads**	4007	9,0	13,4	9,3	5,1	5,2
	Total		**3.115,6**	**3.692,3**	**4.229,2**	**4.377,5**	**5.050,0**

Source: VRA compiled from data of the GDC