I. INTRODUCTION

1.1 Background

Indonesia is a nation whose economy has traditionally relied on agriculture, maintaining a long-standing reliance on farming and plantation industries. As noted by Kusumaningrum (2019), the agricultural industry in Indonesia is vital for fostering national economic advancement amid globalization. This is because agriculture, forestry, and fisheries significantly enhance the Gross Domestic Product (GDP).

The sectors of agriculture, forestry, and fisheries comprise various sub-divisions, including Agriculture, Livestock, Hunting, and Agricultural Services; Forestry and Logging; and Fisheries. The Agriculture, Livestock, Hunting, and Agricultural Services division can be further categorized into food crops, horticultural products, plantations, livestock activities, agricultural support services, and hunting practices. Notably, the segment focused on plantation crops is one of the areas that markedly impacts the country's economy. The input of plantation crops to Indonesia's GDP is illustrated in the following manner:

Table 1. 1 Gross Domestic Product of Indonesia at Current Price, 2005–2024

Year	Indonesia GDP (Rp Miliar)	Indonesia's Agriculture, Forestry, and Fisheries Sector GDP (Rp Miliar)	Indonesia's Plantation GDP (Rp Miliar)
2005	2,774,281.1	364,169.3	56,433.7
2006	3,339,216.8	433,223.4	63,401.4
2007	3,949,321.4	541,592.6	81,595.5
2008	4,954,028.9	713,291.4	106,186.4
2009	5,606,203.4	857,196.8	111,378.5
2010	6,446,851.9	985,470.5	136,048.5
2011	7,422,781.0	1,091,447.0	153,709.0
2012	8,241,864.0	1,190,412.0	159,754.0
2013	9,308,331.6	1,275,048.4	358,172.4
2014	10,306,232.4	1,409,655.7	398,260.7
2015	11,169,265.1	1,555,746.9	405,291.5

Continuation of Table 1.1

Year	Indonesia GDP (Rp Miliar)	Indonesia's Agriculture, Forestry, and Fisheries Sector GDP (Rp Miliar)	Indonesia's Plantation GDP (Rp Miliar)
2016	11,963,776.1	1,668,997.8	429,682.0
2017	13,063,868.7	1,787,285.2	471,307.8
2018	14,236,476.8	1,900,348.5	489,248.8
2019	15,181,161.8	2,012,742.8	517,507.8
2020	14,879,709.1	2,115,494.5	560,225.6
2021	16,288,760.5	2,254,541.3	668,379.8
2022	18,730,454.0	2,428,900.5	735,907.4
2023	19,978,194.5	2,617,690.4	811,234.5
2024	21,186,782.3	2,791,428.0	922,239.0

Source: BPS, 2025

Table 1.1 shows that the plantation sub-sector makes a substantial contribution to GDP. One plantation crop that accounts for a particularly large share is palm oil. Palm oil is one of Indonesia's major plantation commodities and plays a dominant role in national production as well as in non-oil and gas exports compared to other plantation crops. This commodity serves as a key driver of rural economic development, generates significant foreign exchange earnings, and represents the success of Indonesia's agricultural sector transformation toward international markets over the past three decades.

Palm oil offers more significant advantages compared to other agricultural commodities such as coffee, cocoa, and tobacco, particularly in terms of export value, cultivated area, and yield levels. The differences among these four commodities are clearly observable when comparing the magnitude of Indonesia's export values. The table below illustrates the position of palm oil relative to the three major commodities based on export data from the International Trade Centre (ITC).

Table 1. 2 Export Value of Indonesian Plantation Commodities 2005-2024 (Thousand USD)

Year	Palm oil	Coffee	Cocoa	Tobacco
2005	3,756,284	504,407	667,993	107,282
2006	4,817,642	588,502	855,047	102,549

Continuation of Table 1.2

Year	Palm oil	Coffee	Cocoa	Tobacco
2007	7,868,639	636,417	924,159	120,270
2008	12,375,570	991,458	1,268,947	133,196
2009	10,367,621	824,015	1,413,441	172,629
2010	13,468,966	814,311	1,643,649	195,633
2011	17,261,247	1,036,671	1,345,278	146,698
2012	17,602,168	1,249,519	1,053,447	159,564
2013	15,838,850	1,174,044	1,151,481	199,589
2014	17,464,905	1,039,609	1,244,530	181,323
2015	15,385,275	1,197,733	1,307,771	156,784
2016	14,365,422	1,008,549	1,239,621	128,550
2017	18,513,121	1,187,157	1,120,764	132,388
2018	16,527,848	817,789	1,245,521	169,066
2019	14,716,275	883,123	1,198,734	201,976
2020	17,364,812	821,937	1,244,208	196,007
2021	26,755,136	858,558	1,206,775	213,408
2022	27,765,830	1,149,168	1,262,059	266,026
2023	22,685,413	929,135	1,198,259	219,200
2024	20,012,617	1,638,116	2,618,592	227,479

Source: ITC, 2025

Table 1.2 shows that palm oil has consistently dominated Indonesia's agricultural exports, even during periods of sharp fluctuations in global commodity prices. Other commodities such as coffee and cocoa do possess certain comparative advantages and maintain stable demand in premium market segments; however, their export volumes and overall contributions to national exports remain significantly lower than those of palm oil. This dominance has led palm oil to be widely referred to as the flagship commodity of Indonesia's plantation sector.

The superiority of palm oil lies in its high-value downstream products, such as crude palm oil (CPO) and palm kernel oil. This positions palm oil not only as a raw material for industrial use but also as a strategic commodity that shapes Indonesia's standing in international trade. The substantial export value indicates that the palm oil sector plays a vital role in maintaining the balance of trade and serves as a strategic instrument for mitigating current account deficits. The following table presents Indonesia's palm oil export values from 2005 to 2024.

Table 1. 3 Indonesian Palm Oil Exports

Tahun	**HS 151190** ***Palm oil and its fractions, whether or not refined (excl. chemically modified and crude)*** **(US Dollar *thousand*)**	**HS 151110** ***Crude palm oil*** ***(*****US Dollar *thousand*****)**
2005	2,162,988	1,593,295
2006	2,823,975	1,993,667
2007	4,129,988	3,738,652
2008	5,814,239	6,561,330
2009	4,665,495	5,702,126
2010	5,819,000	7,649,966
2011	8,484,232	8,777,016
2012	10,925,664	6,676,504
2013	10,860,317	4,978,533
2014	13,258,163	4,206,741
2015	10,997,181	4,388,094
2016	11,059,847	3,305,575
2017	13,814,896	4,698,225
2018	12,951,023	3,576,825
2019	11,074,588	3,641,687
2020	12,621,245	4,743,567
2021	24,017,213	2,737,923
2022	24,355,703	3,410,127
2023	19,630,279	3,055,134
2024	17,302,215	2,710,402

Source: ITC, 2025

Table 1.3 presents the development of Indonesia's palm oil export values for HS 151190 and HS 151110 from 2005 to 2024, showing a generally stable growth pattern despite fluctuations in certain years. Exports under HS 151190 increased significantly from USD 2.16 billion in 2005 to USD 17.30 billion in 2024. This reflects the expansion of processing industry capacity and the growing share of downstream palm oil products in international trade. Meanwhile, exports in the HS 151110 category also rose from USD 1.59 billion to USD 2.71 billion over the same period. Overall, the upward trend in both categories indicates that palm oil remains a key commodity in Indonesia's economy, with its contribution evident not only in the growth of export values but also in the stability it provides to the country's foreign trade performance over nearly two decades.

Indonesia's palm oil export performance can be considered strong in the international market. The country is widely recognized as the world's largest producer and exporter of palm oil, followed by Malaysia. This dominance positions palm oil as a highly strategic commodity in the national economy. The following table presents palm oil export data for the top three exporting countries worldwide.

Table 1. 4 Palm Oil Exports of the Top Three Countries (Thousand USD)

Year	Indonesia	Malaysia	Netherlands	World
2005	3,756,284	4,294,501	381,531	9,605,077
2006	4,817,642	5,203,260	642,117	11,992,716
2007	7,868,639	8,248,125	1,020,182	19,370,434
2008	12,375,570	12,743,444	1,667,892	30,304,422
2009	10,367,621	9,262,838	1,156,199	23,309,895
2010	13,468,966	12,405,402	1,160,111	29,891,677
2011	17,261,247	17,446,908	1,732,263	40,852,148
2012	17,602,168	15,410,938	1,537,312	38,488,152
2013	15,838,850	12,288,946	1,529,656	33,563,005
2014	17,464,905	11,994,813	1,391,471	34,708,949
2015	15,385,275	9,533,403	1,075,425	29,346,660
2016	14,365,422	9,085,773	1,089,602	27,963,274
2017	18,513,121	9,717,007	1,203,606	33,622,117
2018	16,527,848	8,675,170	977,761	30,449,509
2019	14,716,275	8,332,324	926,622	27,864,679
2020	17,364,812	9,785,074	966,725	32,639,127
2021	26,755,136	14,212,037	1,227,933	49,931,428
2022	27,765,830	17,006,286	1,277,571	56,340,141
2023	22,685,413	11,914,807	1,136,639	44,107,425
2024	20,012,617	13,568,010	1,172,950	41,538,092

Source: ITC, 2025

Table 1.4 presents the development of palm oil export values from Indonesia, Malaysia, and the Netherlands over the period 2005–2024. This table provides initial insight into global palm oil trade dynamics. The data show that these three countries play different roles in international palm oil export flows, either as major producing countries or as participants in global distribution networks. Indonesia and Malaysia consistently reported higher export values throughout the period, while the Netherlands recorded lower but relatively stable values, reflecting its role within European trade routes. Year to year fluctuations in export values indicate that palm oil trade is dynamic and influenced by changing conditions such as market demand, shifts in global trade policies, and developments in the world economy.

As the world's leading producer and exporter of palm oil, export performance plays a crucial role in maintaining the stability of Indonesia's agricultural sector and national processing industries. The contribution of palm oil to GDP tends to fluctuate annually. These fluctuations are influenced by various factors, including international price dynamics, national production capacity, changes in global demand structures, and domestic macroeconomic conditions. Palm oil production has continued to increase over the past decades (2005–2024), reflecting Indonesia's substantial capacity to meet global demand while reinforcing its position as the world's leading palm oil producer. The following table presents Indonesia's palm oil production volumes.

Table 1. 5 Indonesian Palm Oil Production

Year	**Palm Oil Production (Thousand Tons)**
2005	14,619.8
2006	16,569.9
2007	16,890.5
2008	19,400.8
2009	21,390.5
2010	22,496.9
2011	23,975.7
2012	26,015.5
2013	27,782.0
2014	29,278.2
2015	31,070.0
2016	31,731.0
2017	34,940.3
2018	42,883.5
2019	47,120.2
2020	48,296.9
2021	46,223.3
2022	46,819.7
2023	47,084.3
2024	47,474.6

Source: BPS, 2025

Table 1.5 shows that Indonesia's palm oil production has continued to increase consistently from 2005 to 2024. Production in 2005 was approximately 14.6 million tons and expanded significantly to more than 47 million tons by 2024. This increase appears relatively stable from year to year. Overall, the data presented in the table indicate a continuous upward trend in Indonesia's palm oil production over the observed period.

This development requires further examination to understand how production dynamics influence plantation land expansion and international policy responses to sustainability issues. The growth of palm oil production over recent decades has frequently been associated with land conversion, which has contributed to deforestation and environmental degradation. The expansion of oil palm plantations across various regions of Indonesia has generated criticism and pressure from the international community, particularly in relation to sustainability concerns. The following table presents data on deforestation areas converted into oil palm plantations.

Table 1. 6 Conversion of Deforested Areas to Oil Palm Plantations 2005-2024 (Ha)

Year	Conversion of deforested land into oil palm plantations in the archipelago (Hectares)					Total
	Kalimantan	Sumatera	Sulawesi	Papua	Maluku	
2005	51,098.22	77,960.67	1,086.12	3,098.69	0.00	133,243.69
2006	85,909.66	55,356.13	1,320.28	5,346.86	0.00	147,932.93
2007	78,641.57	48,984.74	2,004.46	4,105.46	0.00	133,736.23
2008	122,559.39	54,923.54	4,159.19	3,091.38	0.00	184,733.50
2009	129,660.79	44,582.19	7,869.79	2,568.56	811.89	185,493.22
2010	97,982.97	27,718.91	3,288.49	4,280.34	569.70	133,840.40
2011	126,282.35	30,002.15	2,131.53	15,866.55	1,605.33	175,887.92
2012	162,402.17	39,085.16	5,825.27	17,902.17	902.97	226,117.73
2013	103,528.83	22,669.10	8,268.50	26,110.75	602.10	161,179.28
2014	99,777.56	19,201.84	4,301.81	25,255.53	2,458.48	150,995.22
2015	66,265.72	8,732.72	1,979.82	33,433.93	1,188.59	111,600.77
2016	47,191.97	4,841.09	800.34	19,910.62	1,582.54	74,326.56
2017	43,568.64	5,974.80	444.49	17,074.12	22.86	67,084.90
2018	42,032.48	4,277.36	150.30	8,745.94	2.52	55,208.60
2019	32,157.82	3,511.38	84.06	5,516.93	0.00	41,270.19
2020	24,962.05	991.31	196.47	2,619.27	0.00	28,769.10

Continuation of Table 1.6

Year	Conversion of deforested land into oil palm plantations in the archipelago (Hectares)					Total
	Kalimantan	Sumatera	Sulawesi	Papua	Maluku	
2021	12,735.98	2,796.99	289.35	1,072.42	0.00	16,894.73
2022	13,742.94	3,619.78	251.91	2,274.78	0.00	19,889.41
2023	-	-	-	-	-	34,353.00*
2024	-	-	-	-	-	31,314.00*
Total	1,340,501.11	9,746.98	198,274.28	44,452.17	455,229.86	2,113,871.39

Source: Trase; Nusantara Atlas, 2024
Note: *The published data is only national data.

The Government of East Kalimantan (2012) stated that deforestation and forest and land degradation in East Kalimantan are driven by several sectors, including forestry, plantations, agriculture, mining, and other activities such as infrastructure development and land encroachment. This is supported by a study conducted by the Government of Mahakam Ulu (2014), which identified the direct drivers of deforestation in Mahakam Ulu as oil palm plantations, other land-use areas including community cultivation land, unsustainable forest concession rights (Hak Pengusahaan Hutan or HPH), illegal logging (forest encroachment), coal mining, and industrial forest plantations (Hutan Tanaman Industri or HTI). Furthermore, a study by Maryani and Astana (2016) reported that oil palm expansion through forest conversion is driven by the need for land for development, access to capital, and legal certainty of land tenure. This is further supported by Angi et al. (2017), who highlighted the high demand for palm oil in local, national, and global markets.

These conditions place Indonesia in a position that requires balancing economic interests with environmental sustainability demands. This challenge has become increasingly prominent as trading partner countries implement stricter regulations on products perceived to be linked to deforestation. Developed countries, particularly those within the European Union, have begun enforcing more stringent environment-focused trade regulations. The European Union has introduced several new policies to ensure that products entering its market are not associated with deforestation practices or human rights violations. One of the most significant policies is the European Union Deforestation Regulation (EUDR), which was approved in 2020.

"The four statements aim to confirm that the relevant products are: compliant with Articles 3 and 4 of the EUDR, including alignment with the definition of deforestation-free and the cut-off date of 31 December 2020, as stipulated in Articles 2 and 3 of the EUDR."

"Article 3(a) requires that the relevant products are 'deforestation-free', meaning that they were produced on land that has not been subject to deforestation after 31 December 2020, as defined in Article 2(2)."

This regulation stipulates that all products derived from commodities such as palm oil, cocoa, coffee, soybeans, and timber must have deforestation-free supply chains. After 31 December 2020, exporters are required to provide evidence that their products do not originate from areas affected by deforestation. Failure to comply with these requirements may result in the exclusion of the products from the European Union market. This policy poses a significant challenge for Indonesia, considering that a large proportion of oil palm plantations were established during the rapid expansion period of the early 2000s, when environmental oversight was not as stringent as it is today.

The implementation of the EUDR by the European Union in 2020 marked a new phase in global commodity trade dynamics, particularly for palm oil–producing countries such as Indonesia. This regulation emerged from environmental political pressures in Europe that emphasize sustainable consumption and climate change mitigation. The impact of the EUDR cannot be assessed solely in terms of trade volumes, but also through its broader effects on market perceptions, price formation, and the policy direction of other countries that may adopt similar measures. The EUDR contains complex regulatory requirements. Exporting companies are obligated to implement geolocation tracking systems for all palm oil raw material sources, along with evidence that the land has not undergone deforestation after the specified cut-off date. Compliance is required across the entire supply chain, from smallholders to large corporations. According to GAPKI (2023), approximately 40% of Indonesia's fresh fruit bunch supply originates from smallholder farmers who continue to face constraints related to land legality and access to digital verification technologies. The primary risk faced under this regulation is not only a decline in export volumes to the European Union, but also the potential structural exclusion of smallholder farmers from global supply chains.

This situation presents a significant policy dilemma for Indonesia. On the one hand, the government seeks to maintain export continuity by meeting sustainability standards; on the other hand, overly stringent regulations may reduce price competitiveness and compress profit margins for exporters. Furthermore, pressure arising from the EUDR may compel domestic industries to undergo restructuring, potentially redirecting export flows toward non-European markets.

The EUDR potentially generates dual impacts for Indonesia. On one hand, the regulation may restrict access to the European Union market due to additional costs associated with certification, land-origin traceability, and environmental audits. On the other hand, it may encourage the adoption of improved sustainability practices within Indonesia’s palm oil industry, which in the long term could strengthen the global image of Indonesian palm oil products. Nevertheless, in the short term, this issue raises concerns as it may reduce export values and force Indonesia to seek alternative markets outside the European Union.

The Indonesian government has demonstrated a relatively swift response to the challenges posed by the EUDR. Through diplomatic channels, Indonesia has submitted formal objections and pursued negotiations with the European Union involving coordinated efforts among the Coordinating Ministry for Economic Affairs, the Ministry of Foreign Affairs, the Ministry of Trade, and the Ministry of Agriculture. Indonesia has emphasized its commitment to sustainable practices while rejecting discriminatory non-tariff measures within the Joint Task Force on Palm Oil forum. In addition, the government has accelerated the implementation of the Indonesian Sustainable Palm Oil (ISPO) certification, which is now mandatory for all actors involved in the palm oil industry. This initiative aims not only to meet global standards but also to strengthen Indonesia’s bargaining position in the international arena.

These changes in the global trade landscape raise a critical question regarding whether the EUDR will significantly alter the direction of Indonesia’s palm oil trade. Although the European Union is not Indonesia’s primary export market, the loss of access could negatively affect the reputation of Indonesian palm oil, as European Union standards often serve as benchmarks for import regulations in other countries. The following table provides an overview of trade direction patterns.

Table 1. 7 Indonesia's Main Palm Oil Export Destinations (Thousand USD)

Year	European Union	India	Pakistan	China
2005	650,909	901,288	319,889	493,392
2006	755,887	972,561	337,025	707,459
2007	1,161,293	2,180,345	543,710	957,157
2008	2,108,794	4,109,140	387,727	1,519,260
2009	1,854,978	3,339,967	139,938	1,628,648
2010	2,162,505	4,340,215	81,160	1,866,513
2011	2,154,473	5,256,449	296,846	2,109,518
2012	2,372,817	4,838,414	714,274	2,599,993
2013	2,577,549	4,281,590	814,450	1,794,127
2014	2,809,963	3,635,345	1,353,945	1,789,786
2015	2,135,257	3,217,043	1,313,460	2,046,931
2016	2,005,278	3,438,611	1,289,448	1,641,622
2017	2,656,681	4,895,198	1,459,775	2,068,936
2018	2,240,914	3,559,813	1,433,046	2,086,220
2019	1,822,910	2,246,756	1,164,832	2,642,940
2020	2,199,397	2,985,377	1,661,180	2,492,119
2021	2,864,978	3,335,978	2,785,494	4,250,720
2022	2,413,086	5,321,082	3,127,214	3,567,713
2023	1,735,373	4,516,048	2,173,255	3,607,866
2024	1,663,294	3,898,167	2,771,889	2,131,241

Source: ITC, 2025

The column labeled European Union in Table 1.7 depicts an aggregation of various member nations, which include Belgium, Bulgaria, Croatia, Cyprus, the Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Italy, Latvia, Lithuania, Malta, the Netherlands, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, and Sweden. The statistics show that while the European Union's portion of Indonesia's overall palm oil exports is notably less than that of India or China, its importance persists due to issues regarding branding and sustainability. A reduction in exports to the European Union after the introduction of the EUDR could be paired with strategies to broaden market outreach towards South Asia and the Middle East; however, such market expansion does not automatically replace the image and influence of the European market as a global price reference. This shift in export orientation illustrates how Indonesia's palm oil industry adapts to global policy pressures, which ultimately also affect changes in Indonesia's palm oil market share at the international level.

Market share reflects how well Indonesian palm oil is able to maintain its position among the world's leading exporting countries. This situation does not necessarily represent positive news for Indonesia, as its dominance has begun to face challenges arising from trade policies and sustainability issues that influence consumer preferences worldwide. Changes in market share structure serve as an early signal for evaluating the export competitiveness of Indonesian palm oil amid shifts in international trade conditions.

In this context the competitiveness of Indonesian palm oil must be carefully assessed. Export competitiveness measures how well a country can maintain its advantages in international markets. The Revealed Comparative Advantage (RCA) method, introduced by Balassa in 1965, is commonly used to assess the extent to which a commodity's exports exhibit a relative advantage compared to the global average.

Previous studies such as Rahmawati et al. (2022), indicate that deforestation-related policies implemented by the European Union may reduce Indonesia's palm oil exports by approximately 10–15 percent in the short term. This decline is attributed to increased certification costs and supply chain adjustments. However, this study focused only on the 2020–2022 period and did not incorporate data beyond 2023, when the European Union's policy declaration was expected to be fully implemented. In contrast, Santoso and Wijaya (2023) employed the RCA method to evaluate Indonesia’s palm oil market position from 2010 to 2020 and found that Indonesia’s RCA value remained above 1, indicating a comparative advantage, although it showed a downward trend due to rising competition from Malaysia and Thailand. To date, relatively few studies have explored how the EUDR affects palm oil exports and its implications for the national economy, and no in-depth empirical analysis is currently available.

A research gap emerges because most previous studies have examined these aspects in isolation. Lubis and Sipayung (2021) focused on the contribution of palm oil to national exports without considering global policy factors. Conversely, Rahmawati et al. (2022) analyzed the EUDR from a normative perspective without empirically assessing its impact on export performance. Meanwhile, competitiveness studies by Santoso and Wijaya (2023) measured Indonesia’s palm oil RCA but did not link it to policy dynamics or macroeconomic contributions. Therefore, this study seeks to bridge these gaps by integrating all three dimensions within a unified analytical framework.

Research on palm oil in Indonesia generally concentrates on its economic contribution, export dynamics, or environmental issues separately, resulting in fragmented discussions. Many studies emphasize the relationship between palm oil production and deforestation, while others focus on the impact of international trade policies on exports. However, there remains limited research that comprehensively links national GDP fluctuations with environmental issues, particularly deforestation, directly connects these factors to sustainability-driven regulations such as the EUDR, and subsequently evaluates how these conditions affect Indonesia’s export competitiveness in global markets. This gap highlights the need for research that integrates economic, environmental, and trade policy dimensions into a single analytical framework to provide a more comprehensive understanding of the prospects for Indonesia’s palm oil export performance amid sustainability pressures and evolving international regulations.

These conditions form the basis for the formulation of the research problems. The first research problem concerns the need to understand the extent to which palm oil exports contribute to GDP during the 2005–2024 period, particularly amid global price fluctuations and external trade policy pressures. The second research problem involves evaluating whether the EUDR has a significant impact on Indonesia’s export performance to the European Union, given the complexity of trade developments during this period. The third research problem relates to the need for a concrete assessment of Indonesia’s palm oil export competitiveness in international markets, particularly through the Revealed Comparative Advantage (RCA) approach, to determine whether Indonesia’s position remains competitive amid global policy changes.

This study holds substantial scientific urgency. Although numerous studies on palm oil exports exist, most prior research has focused primarily on production trend analysis. Few studies have connected global policy issues such as the EUDR with export performance dynamics and competitiveness within a macroeconomic framework. In fact, understanding the relationship between international trade policies and national competitiveness is essential for shaping Indonesia’s future economic policy.

The global shift toward a green economy further amplifies the urgency of this research. Commodities that fail to meet sustainability standards face the risk of permanently losing market access. This risk is not only commercial but also reputational in the context of palm oil. Countries such as Germany, France, and the Netherlands have announced intentions to gradually reduce the use of palm oil–based fuels. If this trend continues, the position of palm oil within Indonesia's economy may face significant structural challenges. Therefore, an in-depth analysis is critically needed to understand global policy dynamics and their implications for Indonesia's export direction in a sustainable manner. Ultimately, this background leads to a central understanding that palm oil is not merely an export commodity, but a reflection of how Indonesia navigates its economic future amid global competition and mounting policy pressures.

1.2 Research Questions

Based on the background described above, this study formulates the following research questions:

1. How does palm oil export performance contribute to Indonesia's Gross Domestic Product (GDP) during the period 2005–2024?
2. What is the impact of the European Union's deforestation-related policy (EUDR) on Indonesia's palm oil exports to European Union?
3. What is the level of competitiveness of Indonesia's palm oil exports in the global market?

1.3 Research Objectives

Based on the formulated research questions, the objectives of this study are as follows:

1. To analyze the contribution of palm oil exports to Indonesia's GDP during the period 2005–2024.

2. To analyze the impact of the EUDR policy on Indonesia's palm oil exports to the European Union.
3. To analyze the level of competitiveness of Indonesia's palm oil exports using the Revealed Comparative Advantage (RCA) method.

1.4 Research Significance

This study provides several benefits that collectively reflect its contribution in offering relevant information, understanding, and analytical foundations for stakeholders, as outlined below:

1. The findings of this study are expected to provide a clearer overview of the development of Indonesia's palm oil exports, the influence of the EUDR on export performance, and Indonesia's position within international trade policy dynamics shaped by sustainability regulations such as the EUDR.
2. This study is expected to serve as a reference for the government in formulating trade policies, economic diplomacy strategies, and measures to strengthen the competitiveness of the palm oil industry in adapting to international regulations without undermining domestic economic stability.
3. This study may serve as a reference for industry stakeholders in understanding export market trends, regulatory risks, and opportunities for export destination diversification, thereby strengthening sustainable business strategies and supply chain management.
4. This study contributes to the academic literature on the relationship between international environmental policies, agricultural commodity trade, and export competitiveness, and may serve as a foundation for future research by scholars and academic institutions.

1.5 Scope and Limitations of the Study

The scope and limitations are defined to ensure that the study remains focused on relevant analytical boundaries and does not extend beyond the intended research objectives. The limitations of this study are as follows:

1. This study employs a quantitative analysis approach to examine the influence of GDP, the EUDR policy, and competitiveness (RCA) on palm oil export performance.
2. The data used are entirely derived from official secondary sources (BPS, ITC Trade, and Trase), with no primary data collection conducted.
3. The research period covers the years 2005 to 2024, which serve as the basis for analysis.
4. The measurement of contribution in this study utilizes the Export Share in GDP analytical approach.
5. The analysis of the EUDR policy is limited to its implementation period and its potential impact on palm oil exports, assuming that effects on export performance have emerged since the policy's publication in 2020 through 2024.
6. Export competitiveness is measured solely using the RCA index and does not incorporate other competitiveness indicators.
7. The study focuses exclusively on palm oil exports classified under Harmonized System codes 151190 and 151110.
8. Environmental discussion is limited to the relationship between deforestation and palm oil production, without examining ecological or social impact dimensions.

9. The findings of this study apply specifically to Indonesia and do not include comparisons with other palm oil–producing countries.
10. Plantation conditions are assumed to be stable, with no significant internal or external structural changes affecting palm oil production.