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Navigating The 2026 Global Palm Oil Landscape: A Pestel Analysis of Structural Market Shifts, Trade Policy Dynamics, And the Rise of Eco-Protectionism

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ABSTRACT

As the global palm oil industry approaches the strategic horizon of 2026, it confronts a critical juncture defined by the escalating tension between a fragile post-El Niño supply recovery and the institutionalization of non-tariff trade barriers. This study employs a rigorous Qualitative Literature Review (QLR) utilizing the PESTEL framework to dissect the industry's outlook for 2025–2026. Synthesizing primary data from the 2026 Palm Oil Outlook Report provided by IPOSS with recent academic literature (2020–2025), the research identifies a fundamental structural shift from land-expansion-based growth to a productivity-driven paradigm, necessitated by a pervasive yield gap where Indonesian productivity (3.68 tons/ha) lags significantly behind Malaysia (4.56 tons/ha). While global production is forecasted to rebound to 83 million tons in 2026, the market is bifurcating. On one side, domestic absorption in Indonesia driven by the B40/B50 bioenergy mandates—provides a price floor but threatens to crowd out export volumes, potentially reducing foreign exchange earnings by displacing up to 2.2 million tons of exportable supply. On the other hand, the European Union Deforestation Regulation (EUDR) represents the apex of “eco-protectionism,” imposing geolocation requirements that threaten to exclude 40% of smallholders who lack formal land tenure. The analysis concludes that 2026 will be a year of “forced adaptation,” where the industry must navigate a “standards war” between Western sustainability hegemony and Global South development sovereignty. Policy recommendations emphasize the urgent need for a “One Data” policy to bridge the traceability gap and a diplomatic pivot to utilize the recent WTO DS593 victory as a lever for mutual recognition of national standards.

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Received: December 27, 2025; **Accepted:** January 01, 2026; **Published:** January 10, 2026

Keywords: Palm Oil Outlook, PESTEL Analysis, EU Deforestation Regulation (EUDR), Eco-Protectionism, Biodiesel B40/B50, WTO Dispute DS593, Sustainable Agriculture, Global Supply Chain, Smallholder Inclusion, Yield Gap Analysis

JEL Classification: F13, Q13, Q17, F51, Q56, K33

Introduction
Background: A Structural Transition Amidst Geopolitical Friction

The global vegetable oil complex is currently navigating a period of profound structural transformation that extends well beyond simple supply-and-demand mechanics [1,2]. As the world's most consumed vegetable oil, palm oil sits at the epicenter of this shift, balancing its role as a critical engine for economic development in the Global South against its portrayal as a primary driver of anthropogenic climate change by the Global North. Entering the 2025–2026 period, the industry is transitioning from a volatile recovery phase following the severe El Niño of 2023–2024 toward a new equilibrium defined by productivity-driven growth rather than area expansion. This transition is not merely agronomic but deeply geopolitical; the era of rapid land expansion in Southeast Asia has largely concluded, halted by strict moratoriums and intensified sustainability standards like the ISPO (Indonesian Sustainable Palm Oil) and MSPO (Malaysian Sustainable Palm Oil). Consequently, the primary driver of future supply growth has shifted to yield improvement and replanting efficiency, a change

that fundamentally alters the industry's long-term supply curve. This shift is critical given the persistent yield gap; recent data highlights that Indonesia's average productivity hovers around 3.68 tons/hectare compared to Malaysia's 4.56 tons/hectare, indicating that future growth must come from agronomic intensification rather than deforestation [3,4].

Concurrently, the international trade environment has evolved from tariff-based protectionism to a more sophisticated and exclusionary regime of Non-Tariff Measures (NTMs) [5]. The implementation of the European Union Deforestation Regulation (EUDR), despite its delayed transitional periods and fierce diplomatic pushback, represents a watershed moment in international trade law. It marks the institutionalization of “eco-protectionism,” in which domestic environmental standards are extraterritorially applied to global supply chains, creating significant barriers for producers in developing nations [6]. This regulatory imperialism fundamentally reshapes market access; it is no longer sufficient to produce high-quality, affordable oil—producers must now provide “grain-to-gate” geolocation data for every fresh fruit bunch. For Indonesia, the world's largest producer, 2026 is not just another fiscal year but a strategic horizon where domestic bioenergy ambitions (the B40 mandate transitioning to B50) collide with tightening global market access requirements, forcing a recalibration of national export strategies [7].

Urgency of the Study: The Convergence of Three Crises

The urgency of this research stems from three converging crises expected to mature in 2026, creating a “perfect storm” for the industry. First is the regulatory uncertainty crisis. The oscillating timelines for EUDR implementation have created a “compliance limbo,” forcing producers to invest in expensive traceability infrastructure without clear technical guidance or guaranteed price premiums to offset these costs. This uncertainty is compounded by the “bureaucratic friction” of proving land legality in Indonesia, where overlapping maps between ministries often render smallholders technically illegal despite decades of cultivation [8].

Second Is the Market Bifurcation Crisis

As the West erects higher sustainability barriers, the global market is increasingly splitting into two distinct spheres: a high-standard, low-growth, and premium-demanding market in Europe, and a price-sensitive, high-growth market in Asia and Africa (India, China, Pakistan). Understanding the implications of this split is vital for national export strategy; leaning too heavily on the “leakage market” (selling non-compliant oil to lax markets) could undermine long-term sustainability goals, while focusing solely on Europe could erode profit margins due to high compliance costs. Third is the **smallholder exclusion crisis**. There is a growing body of evidence suggesting that rigorous sustainability requirements, while well-intentioned, disproportionately penalize smallholder farmers who lack the capital and legal documentation to prove compliance. Without targeted intervention, the 2026 regulatory landscape threatens to drive millions of independent smallholders who manage 40% of plantations out of the formal supply chain, undermining the socio-economic foundations of the rural economy [9].

Research Objectives

This study aims to bridge the critical gap between market forecasting and policy analysis, providing a holistic roadmap for stakeholders. Specifically, the objectives are:

Strategic Outlook Analysis: To analyze the global palm oil industry’s strategic outlook for 2026 through the lens of the PESTEL framework (Political, Economic, Social, Technological, Environmental, and Legal), moving beyond generic trends to identify specific structural shifts.

Evaluation of Trade Discrimination: To critically evaluate the nature and impact of discriminatory trade policies, particularly the EUDR and the implications of the Indonesia-EU WTO dispute (DS 593), distinguishing between legitimate environmental concerns and veiled protectionism.

Policy Formulation: To formulate substantive, actionable policy recommendations for government and industry stakeholders to navigate the “eco-protectionism” era, ensuring that the drive for sustainability does not come at the cost of smallholder exclusion or economic sovereignty.

Literature Review

Conceptual Framework: The Political Economy of Vegetable Oils
The global vegetable oil market operates as a complex, interconnected system where substitution effects drive price and policy dynamics, a concept known as the “Vegetable Oil Complex” [10]. This framework posits that palm, soybean, rapeseed, and sunflower oils are near-perfect substitutes in many industrial applications, meaning that policy interventions in one commodity inevitably create spillover effects in others [11]. For instance, subsidies for soybean oil-based biofuels in the United States (via the Inflation Reduction Act) or rapeseed production support in Europe directly impact the global demand schedule for palm

oil, often suppressing its price relative to its caloric value. Recent literature (2020–2025) highlights a critical paradox: while palm oil is the most land-efficient oilseed crop producing 4–5 tons per hectare compared to less than 1 ton per hectare for soybean and 0.7 tons for sunflower it faces the most significant regulatory scrutiny. This “efficiency paradox” suggests that market forces are distorted by non-market factors, primarily political narratives surrounding deforestation that often ignore the significantly larger land footprint required to replace palm oil with less efficient alternatives [12]. Furthermore, the industry’s reliance on emerging markets (India, China, Pakistan) for volume, while depending on Western markets (EU, USA) for reputational legitimacy, creates a strategic dilemma that defines the current literature on palm oil economics; producers are forced to adhere to the standards of their smallest buyers to maintain global legitimacy [13].

Trade Discrimination and Eco-Protectionism

The theory of “eco-protectionism” argues that developed nations utilize environmental standards as de facto trade barriers to protect domestic industries that would otherwise be uncompetitive against cheaper imports [14–15]. Scholarly analysis of the EU’s Renewable Energy Directive (RED II) and the subsequent EUDR supports this view, characterizing these measures as discriminatory because they disproportionately target tropical commodities while exempting temperate crops with similar carbon footprints or different environmental impacts. For example, Life Cycle Assessments (LCA) have shown that when indirect land-use change (iLUC) is excluded, palm oil often has a lower carbon footprint than European rapeseed oil due to lower fertilizer requirements and higher yields [16]. Legal analyses of the recent WTO dispute (DS 593) between Indonesia and the European Union reveal that while international trade law theoretically prohibits discrimination, the “general exceptions” clauses related to environmental conservation (Article XX of GATT) are increasingly being interpreted to justify unilateral trade restrictions [15]. However, the WTO Panel’s recent finding that the EU’s implementation of high-iLUC risk criteria was inconsistent with trade rules validates the argument that these policies were designed with a protectionist intent, lacking a scientific basis for the specific discrimination applied to palm oil versus other biofuels [17–18].

The PESTEL Framework in Commodity Analysis

The PESTEL framework provides a structured approach to analyzing the macro-environmental factors affecting an industry, which is essential for disentangling the complex web of geopolitical, climatic, and regulatory forces shaping the 2026 outlook [19].

- **Political:** Factors include trade wars, “Palm Oil Diplomacy” via the CPOPC, and domestic mandates like B40/B50, which serve as tools for energy sovereignty [20].
- **Economic:** Critical elements are global inflation, exchange rate volatility affecting import demand in price-sensitive markets like India, and the rising cost of production inputs [21].
- **Social:** Issues center on labor rights compliance (ILO conventions), smallholder welfare, and the risk of agrarian conflict due to exclusion from supply chains [22].
- **Technological:** The focus is on Agritech for yield improvement (clonal seeds), genetic markers, and blockchain-based traceability systems required for EUDR compliance [3].
- **Environmental:** Dominant factors are climate change resilience (El Niño/La Niña cycles), biodiversity conservation, and the management of GHG emissions from peatlands [23].
- **Legal:** This includes international litigation (WTO), land tenure laws (Omnibus Law), and the complex web of compliance regulations across different export jurisdictions [24].

Using this framework enables a holistic assessment that goes beyond simple supply-and-demand models to capture the sector's systemic risks and opportunities.

Methodology

Research Design: Qualitative Literature Review (QLR)

This study adopts a Qualitative Literature Review (QLR) approach to synthesize diverse data streams into a coherent strategic narrative. Unlike a Systematic Literature Review (SLR), which focuses on statistical meta-analysis and rigid inclusion criteria to quantify trends, a QLR prioritizes interpretative depth and thematic synthesis [25]. This design is particularly appropriate for analyzing complex, multifaceted policy issues and future-oriented outlooks where quantitative data is often projective and uncertain. The QLR enables triangulating complex data (production forecasts, yield statistics) with soft data (policy rhetoric, legal arguments, diplomatic statements) to construct a nuanced narrative of the industry's future trajectory. It allows the research to capture the "why" and "how" behind the numbers—explaining why production is stagnating despite high prices, or how trade barriers are evolving from tariffs to technical regulations [26,27].

Data Collection

Data for this review were meticulously sourced from two primary categories to ensure both depth and breadth.

Primary Document Analysis: The core dataset is derived from the 2026 Palm Oil Outlook prepared by IPOSS, a comprehensive industry report containing detailed projections on production, consumption, and price dynamics for the 2020–2030 period. This was supplemented by recent situational reports from GAPKI (Indonesian Palm Oil Association) and official WTO panel reports regarding dispute DS593 [28].

Academic and Institutional Literature: A targeted search of reputable journals and reports from authoritative bodies (USDA, WTO, World Bank, GAPKI, CIFOR) published between 2020 and 2025 was conducted. Key search terms included "EUDR impact smallholders," "palm oil trade discrimination," "WTO DS 593 legal analysis," "biofuel mandate B40 Indonesia," and "vegetable oil life cycle assessment." This ensured the analysis reflects the most current academic consensus and empirical findings.

Data Analysis

The analysis followed a rigorous three-step thematic synthesis process.

Extraction: Key quantitative data points regarding 2026 projections (e.g., production targets of 57 million tons for Indonesia, B40 volume requirements) were extracted from the 2026 Palm Oil Outlook and GAPKI reports [29].

Categorization: Findings were systematically mapped onto the six dimensions of the PESTEL framework to identify cross-cutting trends. For instance, the "Political" push for B40 was linked to the "Economic" impact on export availability.

Synthesis: Internal data was cross-referenced with external academic literature to validate trends and identify contradictions. Specifically, industry optimism regarding yield improvements was critically assessed against academic studies showing persistent yield gaps and slow replanting rates. This triangulation ensured a balanced view that avoids industry bias [30].

Results: Thematic Findings on the 2026 Outlook

Global Market Dynamics: Production and Consumption Recovery

The analysis of the 2026 Palm Oil Outlook and recent GAPKI data indicates that 2026 will mark a definitive, albeit moderate,

recovery in global palm oil production. Following the stagnations caused by the 2023–2024 El Niño, global output is projected to reach 83 million tons, representing a 2.7% year-on-year increase. Indonesia alone targets a production of 56–57 million tons in 2025, a 10% rise supported by favorable weather conditions. However, this growth is qualitatively different from previous cycles; it is driven by yield recovery and improved agronomy rather than significant land expansion, as moratoriums in Indonesia and Malaysia have effectively capped new acreage. The yield gap remains a critical issue. At the same time, corporate plantations achieve high productivity, while smallholder yields stagnate due to aging trees and limited access to high-quality inputs, creating a "two-speed" production system [31].

On the consumption side, the market is buoyed by robust demand from the "Global South" [32, 33]. India and China remain the anchor markets, but domestic consumption in producing countries is becoming the dominant growth driver [34]. Indonesia's escalation of its biodiesel mandate to B40—and potentially B50 by late 2026 is projected to absorb an additional 1.7 to 2.2 million tons of Crude Palm Oil (CPO) annually [18]. This "domestic absorption" strategy acts as a price floor, insulating the industry from global volatility but simultaneously tightening export availability. Government officials have indicated that export quotas might be adjusted to ensure domestic supply for B40, potentially reducing Indonesia's share of the global export market and opening opportunities for Malaysia [35,36].

Price Volatility and "Structural Tightness"

The findings suggest a bullish outlook for prices in 2026, driven by fundamental scarcity rather than speculative bubbles. The 2026 Palm Oil Outlook forecasts a price range of USD 1,050 – USD 1,150 per ton (CIF Rotterdam) under baseline scenarios [3]. However, this stability is fragile. The market is entering a phase of "structural tightness," with global inventory levels historically low and demand for bioenergy increasingly inelastic due to government mandates [37]. Any supply shock—whether climatic (a sudden return of El Niño) or logistical—is expected to trigger disproportionate price spikes. Furthermore, the price spread between palm oil and its main competitor, soybean oil, is narrowing. Typically, this signals a loss of competitiveness. Still, the unique demand for palm-based biodiesel, which has specific cold-flow properties and energy density, continues to decouple palm oil prices from the broader edible oil complex. The "green premium" for sustainable oil remains elusive; buyers demand sustainability but are often unwilling to pay the extra costs associated with certification, compressing producers' margins [38-39].

The Intensification of Trade Discrimination

The review highlights an apparent intensification and institutionalization of discriminatory trade measures. The EUDR is identified not just as an environmental policy but as a significant non-tariff barrier that imposes asymmetrical costs on tropical producers [40,41]. Unlike previous voluntary certifications (RSPO), EUDR is mandatory and legally binding, requiring precise geolocation coordinates for every plot of land. The findings indicate that while large integrated plantations are well prepared, smallholders face existential risks due to the complexity of land legality in Indonesia (the conflict between Kawasan Hutan and APL) and the high cost of compliance [42-44]. Recent studies show that 86% of smallholders risk exclusion due to these administrative hurdles. Furthermore, the 2026 Palm Oil Outlook notes that while tariff barriers in markets like India fluctuate (recently reduced to 16.5% for CPO to control domestic inflation),

non-tariff barriers in Western markets are becoming permanent structural features of the trade landscape. The WTO Panel's ruling in DS 593 confirmed that the EU's approach under RED II was discriminatory, validating Indonesia's claims [15]. Yet, the EU is expected to adjust its technical criteria rather than abandon the policy, continuing the cycle of regulatory friction [45].

Discussion And Analysis: A PESTEL Synthesis

This section synthesizes the thematic findings into a comprehensive PESTEL analysis to answer the research question regarding the strategic outlook and policy challenges for 2026.

Political Factors: The Geopolitics of Energy and Trade

The political landscape of 2026 is defined by the weaponization of trade and the strategic prioritization of energy security over the efficiency of free trade. Indonesia's decision to push for B50 is a calculated political maneuver as much as an economic one; it reduces reliance on imported fossil fuels (saving an estimated \$9 billion in forex) and strengthens the country's bargaining position by lowering the volume of CPO available for export [46,47]. This "supply shock diplomacy" forces global buyers to compete for limited stocks, theoretically supporting prices. Globally, "Palm Oil Diplomacy" has become a central pillar of the Council of Palm Oil Producing Countries (CPOPC)'s foreign policy. The joint efforts by Indonesia and Malaysia to counter the EU's narrative reflect a deepening North-South divide [48,49]. The political rhetoric has shifted from "sustainability" to "sovereignty," with producing nations arguing that the EUDR infringes on their right to development. The analysis suggests that in 2026, political friction will likely escalate as the EUDR enters its complete implementation phase, potentially leading to retaliatory trade measures or renewed disputes at the WTO if the EU fails to comply with the DS 593 ruling [50].

Furthermore, the 2026 political horizon will be defined by a strategic "South-South" realignment intended to bypass Western regulatory hegemony [16]. As the EUDR erects barriers, Indonesia and Malaysia are aggressively pivoting towards strengthening trade pacts within the BRICS+ framework and the Eurasian Economic Union. This is not merely a diversification of buyers but a political consolidation of a "commodities bloc" that values the "Right to Development" [51]. Recent analyses suggest that this geopolitical pivot aims to establish new trade norms in which palm oil is traded for other strategic resources—such as fertilizer from Russia or technology from China—effectively creating a barter-like resilience against dollar-denominated volatility and Western sanctions. This shift suggests that future trade disputes will move beyond bilateral tariff wars to complex multipolar negotiations, where palm oil serves as a critical diplomatic currency in securing infrastructure investment and energy security from non-Western superpowers [20].

Economic Factors: Inflation, Cost Push, and Market Bifurcation

Economically, the industry faces a "high cost, high price" environment. While CPO prices are projected to remain robust, production costs are escalating due to fertilizer prices and chronic labor shortages, particularly in Malaysia, where the reliance on foreign labor remains a structural weakness. The economic divergence between large integrated firms and independent smallholders is widening into a chasm. Large firms benefit from economies of scale in compliance and logistics. At the same time, smallholders face a "compliance poverty trap"—unable to afford the estimated costs of mapping and certification, they are forced to sell to less-regulated, lower-priced domestic markets,

effectively creating a two-tier market system [52]. Furthermore, the IMF's projected global economic slowdown (3.2% growth in 2026) poses a demand-side risk. However, the inelastic nature of demand for palm oil in food (affordable calories for emerging markets) and energy (mandated biodiesel) provides a buffer against recessionary pressures that other commodities lack. The key economic tension in 2026 will be the trade-off between the BPDP (previously BDPKPS) (Palm Oil Fund) needing to subsidize biodiesel when the CPO-Diesel spread widens, versus using those funds for replanting programs [53].

A critical, yet often overlooked, economic dimension for 2026 is the rising "cost of capital" driven by global ESG (Environmental, Social, and Governance) financial taxonomies [54]. Financial institutions are increasingly integrating strict sustainability criteria such as the EU Sustainable Finance Disclosure Regulation (SFDR) into their lending portfolios, which threatens to cut off affordable working capital for palm oil companies unable to demonstrate complete supply chain transparency [55]. This trend creates a "financial bifurcation" where compliant, large-scale corporations access "green bonds" and low-interest sustainability-linked loans. At the same time, upstream producers and smallholders face a credit crunch or are forced to rely on predatory informal lending. Consequently, 2026 may witness a wave of industry consolidation in which financially constrained mid-sized plantations are acquired by larger conglomerates with the balance sheet strength to self-finance their sustainability transitions, fundamentally altering market concentration [3].

Social Factors: The Smallholder Dilemma and Labor Rights

The social dimension is arguably the most critical vulnerability in the 2026 Palm Oil Outlook. With smallholders managing approximately 40% of Indonesia's palm oil area, their exclusion from the European supply chain due to EUDR non-compliance would have devastating social consequences, potentially reversing decades of poverty alleviation [44]. The requirement for strict legality and traceability ignores the historical reality of agrarian complexity in Indonesia, where land titles are often informal or in the process of being formalized [56]. Recent studies indicate that without "simplified due diligence" or massive government support for STDB (Cultivation Registration Letters), the EUDR could inadvertently spur deforestation by forcing smallholders into the black market. Social pressure regarding labor rights is also evolving. Beyond the traditional focus on wages, international scrutiny is expanding to include forced labor and child labor, with the US Customs and Border Protection (CBP) actively issuing Withhold Release Orders (WROs) against major producers. This trend indicates that social compliance is becoming a prerequisite for market access, on par with environmental compliance [57].

Beyond the risk of market exclusion, a subtle but profound "agrarian gentrification" is underway in the supply chain. To mitigate the liabilities associated with the EUDR's strict traceability requirements, large corporations are increasingly shifting their procurement strategies away from independent smallholders toward "plasma" schemes (tied smallholders) or their own corporate estates, where data governance is absolute [58]. This structural shift threatens to fracture the social contract of the palm oil sector; independent farmers, who historically served as the engine of rural poverty alleviation, are being relegated to residual suppliers in the lower-value domestic market. Recent studies warn that this "corporatization of compliance" could widen the rural inequality gap, incentivizing marginalized farmers to encroach on protected forest areas to offset lower farm-gate prices, ironically exacerbating the very deforestation the regulations aim to prevent [8].

Technological Factors: Digitalization as a Survival Mechanism

By 2026, technology will no longer be a luxury but a condition of market entry. The demand for “grain-to-gate” traceability is driving rapid adoption of satellite monitoring, blockchain for supply chain transparency, and AI-driven yield-prediction models [59]. The 2026 Palm Oil Outlook emphasizes that the success of the national replanting program (PSR) depends heavily on the adoption of superior planting materials (clonal seeds) produced through advanced biotechnology to maximize yield without land expansion. Those actors who fail to digitize their supply chains—specifically the ability to provide polygon maps of production areas—will be effectively locked out of the premium global market. Additionally, technology for methane capture (POME treatment) is becoming standard to lower the carbon intensity of palm oil, which is crucial for meeting the emission-reduction thresholds of RED II and future biofuel regulations. The “digital divide” between big tech-enabled corporations and analog smallholders further exacerbates the inequality discussed in the social section [60].

The technological landscape in 2026 will also be defined by the “mechanization imperative” as a countermeasure to chronic structural labor shortages [2]. With the plantation sector in Malaysia and parts of Indonesia facing a deficit of manual harvesters—exacerbated by urbanization and stricter migration policies—mechanization is shifting from an R&D novelty to an operational necessity [61]. The industry is accelerating the deployment of motorized cutters (cantas) and drone-based fertilizer application systems to decouple production growth from labor availability. While currently constrained by terrain, the integration of these “Industry 4.0” technologies is projected to be a key determinant of competitiveness in 2026. Companies that fail to automate will face ballooning production costs that erode margins, particularly as wage inflation in Southeast Asia outpaces productivity gains [62].

Environmental Factors: Climate Resilience and the Standards War

Environmentally, 2026 benefits from a forecast La Niña, which typically brings higher rainfall conducive to palm fruit production in Southeast Asia, aiding recovery from the 2023 drought. However, the long-term trend of climate instability poses a systemic risk; water stress analysis indicates that southern Borneo and Java are becoming increasingly vulnerable to climate-induced yield losses. The “Standards War” continues to define the environmental landscape. While the EU promotes its deforestation-free standard, Indonesia is aggressively promoting ISPO as the recognized national standard [63]. The discussion reveals a critical gap: ISPO’s acceptance in global markets remains limited compared to the voluntary RSPO standard. Bridging this gap through diplomatic mutual recognition agreements is essential for the environmental legitimacy of Indonesian palm oil. Moreover, recent comparative Life Cycle Assessments (LCAs) confirm that when sustainable practices (such as methane capture and no-peat planting) are employed, palm oil performs better on GHG metrics than European rapeseed, providing a scientific basis to counter the “dirty palm oil” narrative [64].

Additionally, the environmental discourse is expanding beyond the binary “deforestation-free” metric to encompass “regenerative agriculture” and carbon intensity per gigajoule. Global FMCG (Fast-Moving Consumer Goods) companies, under pressure to meet science-based Net Zero targets, are beginning to demand granular data on soil carbon sequestration and emission reductions from methane capture [65,66]. This represents a “moving goalpost” for producers: compliance with land-clearing cut-off dates (NDPE)

will soon be insufficient for the premium market tier. Producers will need to demonstrate active ecological restoration, such as riparian buffer zone rehabilitation and reduced chemical intensity. This evolution presents a unique opportunity for the industry to leverage recent Life Cycle Assessment (LCA) data, which shows that best-in-class palm oil has a lower carbon footprint than European rapeseed, potentially allowing the sector to rebrand itself from a climate villain to a climate solution in the bioeconomy [67].

Legal Factors: Regulatory Fragmentation and Litigation

The legal environment is characterized by fragmentation and flux. Domestically, the overlap between regulations issued by various ministries creates legal uncertainty regarding land status, particularly regarding “Kawasan Hutan” (forest areas). This domestic legal confusion makes international compliance nearly impossible for many producers who find their lands retroactively classified as forest zones. Internationally, the aftermath of the WTO dispute (DS 593) will shape trade relations [15]. The WTO’s ruling that the EU’s measures were inconsistent with trade rules provides Indonesia with significant legal leverage. However, even if Indonesia wins legal battles, the EU is likely to adjust its regulations to achieve the same restrictive outcomes through different legal mechanisms (e.g., due diligence directives), suggesting that legal victories may be symbolic. At the same time, trade barriers persist in practice [15]. The industry must prepare for a legal landscape in which “lawfare”—the use of legal systems to achieve strategic trade goals—is the norm [62].

Domestically, the 2026 outlook is complicated by the impending deadlines of the “Omnibus Law on Job Creation” (UUCK), specifically Articles 110A and 110B, regarding the legalization of plantations inside forest areas [68,69]. The deadline for companies to resolve these administrative discrepancies imposes a strict timeline that could result in massive fines or the revocation of concession rights for non-compliant actors. This creates a “legal paradox” for the 2026 horizon: a plantation might successfully regularize its land status under Indonesian law through penalty payments (making it legally compliant domestically), yet still be classified as “deforested” under the EUDR’s 2020 cut-off date. This disconnect between domestic restorative justice mechanisms and international exclusionary cut-off dates creates a permanent barrier to trade for millions of hectares, potentially triggering a new wave of litigation as companies seek to challenge the interoperability of these conflicting legal regimes [9].

Conclusion And Recommendations

Substantive Conclusion

The outlook for the global palm oil industry in 2026 is one of resilient growth under besieged sovereignty. The sector is economically robust, underpinned by a recovering production cycle (targeting 57 million tons in Indonesia) and strong domestic consumption mandates that set a high floor for prices. However, it is politically and legally besieged by an international trade regime that is increasingly discriminatory and protectionist under the guise of environmentalism. The PESTEL analysis reveals that the primary threats to the industry are no longer just market-based (price/competitors) but institutional (EUDR/WTO). The shift toward “eco-protectionism” threatens to bifurcate the global market, isolating smallholders and pushing trade flows toward less regulated markets in Asia and Africa. The key finding is that traceability is the new currency of trade; without verified geospatial data, the physical commodity loses its value in premium markets, regardless of its quality or price.

- plant growth and water consumption *Int. Arch. Photogramm. Remote Sens XLVIII*: 365-370.
24. Sihotang ED (2022) Analysis of Discriminatory Measures from European Union Renewable Energy Directive II to Indonesia as a Palm Oil Producer Country, *ILREV Indones. Law Rev* 12: 42-53.
 25. Pare G, Kitsiou S (2025) Methods for Literature Reviews,” *Handbook of e-Health Evaluation An Evidence-based Approach* <https://www.ncbi.nlm.nih.gov/books/NBK481583/>.
 26. Snyder H (2019) Literature review as a research methodology: An overview and guidelines 104: 333-339.
 27. Snyder H (2024) Designing the literature review for a strong contribution 33 :551-558.
 28. European Commission, WTO confirms validity of EU climate-based actions in renewable energy dispute brought by Indonesia, *Trade and Economy Security News*.
 29. (2025) The Edge Indonesia’s palm oil production set to rise 10% in 2025, *UkrAgro Consult* <https://ukragroconsult.com/en/news/indonesias-palm-oil-production-set-to-rise-10-in-2025/>.
 30. Pratama MC, Mahananto, Prasetyo A (2025) Analysis of the Competitiveness of Indonesian and Malaysian Palm Oil Exports in the China Market *Proc. Int. Conf. Econ* 3: 1-12.
 31. WWF (2023) Supporting Indonesia’s Biodiesel Policy Do We Need to Expand the Oil Palm Plantation <https://www.wwf.id/sites/default/files/2024-01/Supporting>.
 32. Savarese M, Castellini G, Paleologo M, Graffigna G (2022) Determinants of palm oil consumption in food products A systematic review 96: 1-11.
 33. Sundaraja CS, Hine DW, Lykins AD (2021) Palm oil: Understanding barriers to sustainable consumption *PLoS One* 16: e0254897.
 34. Wang R, Lee KE, Mokhtar M, Goh TL (2022) The Challenges of Palm Oil Sustainable Consumption and Production in China : An Institutional Theory Perspective *Sustainability* 14: 4856.
 35. Surya TA (2025) Mandatory Biodiesel 40% (B40) Prograam to Enhance Energy Resilience *Strateg* 1: 1-4.
 36. Yasinta T, Karuniasa M (2021) Palm oil-based biofuels and sustainability in Indonesia: Assess social, environmental and economic aspects 716: 01-11.
 37. Zhang S, Chen Z, Chen Y, Yang S (2025) The Structure and Influencing Mechanisms of the Global Palm Oil Trade: A Complex Network Perspective 17: 3062.
 38. Kondalamahanty A, Chai D (2025) *COMMODITIES 2025: Biofuel policies seen boosting POME to top of feedstock price charts, S&P Global Agriculture Energy Transitions, Biofuels, Oil Seeds, Renewables* <https://www.spglobal.com/commodity-insights/en/news-research/latest-news/agriculture/122324-commodities-2025-biofuel-policies-seen-boosting-pome-to-top-of-feedstock-price-charts>.
 39. Limaho H, Sugiarto R, Pramono, Christiawan R (2022) The need for global green marketing for the palm oil industry in Indonesia 14: 8621.
 40. Judijanto L (2025) *Légál Challenges and Opportunities in Promoting Sustainable Palm Oil Trade in Europe: A Review from a Social Economy Perspective* 144-150.
 41. Vaccarezza Sevilla M, Pedreira Lucchese G, Krause T, Garcia Alarcon G (2025) From pastures to plates: The thorny path to achieving deforestation-free cattle from Brazil to European consumers, *Ecol. Econ* 230: 108524.
 42. Chrisendo D, Siregar H, Qaim M (2021) Oil palm and structural transformation of agriculture in Indonesia *Agric. Econ* 52: 849-862.
 43. Solidaridad, (2023) Implications of the EU Deforestation Regulation (EUDR) for oil palm smallholders 1 <https://www.solidaridadnetwork.org/wp-content/uploads/2023/04/Briefing-paper-EUDR-and-palm-oil-smallholders.pdf>.
 44. Judijanto L (2025) Who Pays for Climate Action ? The Disproportionate Impact of Deforestation-Free Regulations on Smallholder Farmers *Eur. J Manag Eco* 3: 3-13.
 45. Hartanto A (2025) Measuring the Impact of the EU Deforestation Regulation (EUDR) on Indonesia’s Palm Oil Sector *Erasmus University Rotterdam* <https://thesis.eur.nl/pub/76402/Hartanto-Arief.pdf>.
 46. Redaksi (2025) Fakta Unik: Indonesia Produsen CPO Terbesar Dunia, Mentan Rencanakan Pangkas Ekspor CPO 5,3 Juta Ton untuk B50, *Merdeka..com : Uang, Jakarta* <https://www.merdeka.com/uang/fakta-unik-indonesia-produsen-cpo-terbesar-dunia-mentan-rencanakan-pangkas-ekspor-cpo-53-juta-ton-untuk-b50-479093-mvk.html?page=2>.
 47. Pantelis V (2025) The geoeconomics and geopolitics of biofuels,” *University of Piraeus* <https://dione.lib.unipi.gr/xmlui/handle/unipi/18695>.
 48. Judijanto L (2025) Bridging the Gap - The Role of Palm Oil in Shaping Global Trade and International Relations: A Review *J. Polit. Sci. Int. Relations* 1-13.
 49. Ahmad AH, Khalid A, Daud SNM, Arsad Z, Mobin MA (2023) Energy Futures Price Bubbles and Asset Co-movements with Crude Palm Oil Futures: Through the Lenses of Geopolitical Events and Speculation *JPengur* 68.
 50. Simbolon MM, Sitorus YF (2025) Penyelesaian Sengketa Minyak Kelapa Mentah Indonesia dengan Uni Eropa Melalui Dispute Settlement Body World Trade Organization, *Rewang Rencang J. Huk. Lex Gen* 6: 1-30.
 51. Siegel KM and Varkkey H (2025) Prospects for a Just Transition Across Global Agrifood Chains: A Comparison of South American Soybean and Southeast Asian Palm Oil,” *Glob. Environ. Polit* 25: 151-162.
 52. Judijanto L (2025) Smallholders at the Crossroads: Barriers to EUDR Compliance and Equity in Palm Oil Supply Chains *ARACÊ* 7: 38202-38223.
 53. Stellar (2025) Sustainable Palm Oil Market - Industry Analysis and Forecast <https://www.stellararmr.com/report/Sustainable-Palm-Oil-Market/1492>.
 54. Chong T, Loh L (2023) Innovating ESG Integration as Sustainable Strategy: ESG Transparency and Firm Valuation in the Palm Oil Sector, *Sustainability* 15:15943.
 55. Busch D (2025) Sustainable investment management in the European Union *Cap. Mark. Law* 20.
 56. Abideen AZ, Sundram VPK, Sorooshian S (2023) Scope for Sustainable Development of Small Holder Farmers in the Palm Oil Supply Chain A Systematic Literature Review and Thematic Scientific Mapping *Logistics* 7: 6.
 57. EFI (2025) Inclusion of Indonesian smallholders in European Union supply chains under the EU Deforestation Regulation: Challenges and potential mitigation measures https://efi.int/sites/default/files/files/flegtredd/KAMI/Resources/Smallholder_challenges.pdf.
 58. Johnston C, Guo J, Prestemon JP (2025) The European Union Deforestation Regulation: Implications for the global forest sector, *For. Policy Econ* 173: 103462.
 59. Falgenti K, Arkeman Y, Hambali E, Syamsu K (2022) The design of blockchain network of palm oil FFB supply from certified farms and traceability system of CPO from independent smallholders in IOP Conference Series: Earth and Environmental Science 12001.
 60. Schmidt J, Serena L, Varandas M (2025) Life Cycle

- Assessment of Palm Oil at United Plantations Berhad 2025, Results for 2004-2024. Summary report 2.0-LCA. 25 <https://2-0-lca.com/publications/show/life-cycle-assessment-of-palm-oil-at-united-plantations-berhad-2025-results-for-2004-2024-summary-report/>.
61. Abubakar A, Ishak MY (2024) Exploring the intersection of digitalization and sustainability in oil palm production challenges, opportunities, and future research agenda.” *Environ. Sci. Pollut* 31: 50036-50055.
 62. Varqa S (2025) Palm oil price forecast and production outlook 2026, Fastmarkets. <https://www.fastmarkets.com/insights/palm-oil-price-forecast-and-production-outlook-2026/>.
 63. Judijanto L (2025) From Voluntary to Mandatory: A Review of Prospects and Challenges in Implementing Palm Oil Sustainability Certifications in Indonesia 10: 232-254.
 64. (2025-2029) TechNavio Plus Sustainable Palm Oil Market Analysis, Size, and Forecast North America (US), Europe (France, Germany, and UK), APAC (China, India, Indonesia, Malaysia, and Pakistan), and Rest of World (ROW) TechNavio Plus <https://www.technavio.com/report/sustainable-palm-oil-market-industry-analysis>.
 65. Das A, Bocken N (2024) Regenerative business strategies: A database and typology to inspire business experimentation towards sustainability *Sustain* 49: 529-544.
 66. Grabs J, Garrett, RD (2023) Goa-Based Private Sustainability Governance and Its Paradoxes in the Indonesian Palm Oil Sector *J. Bus. Ethics* doi: 10.1007/s10551-023-05377-1.
 67. RSPO (2025) Impact Report 2024 https://rspo.org/wp-content/uploads/RSPO_ImpactReport_2024.pdf.
 68. Indradjaja N, Chamdani (2023) Analysis of Changes in Environmental Law after the Enactment of the Job Creation Law Awang Long Law 5: 579-586.
 69. Sadono B, Rahmaji LR (2021) Pro Kontra Terhadap Prosedur Dan Substansi Omnibus Law Rancangan Undang-Undang Cipta Kerja *J Huk Pembang* 51: 601-620.

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