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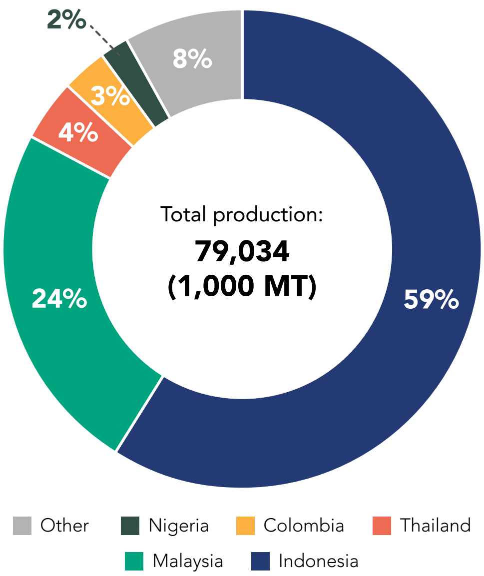
Palm Oil Briefing Note

Overview of the Global Palm Oil Supply Chain

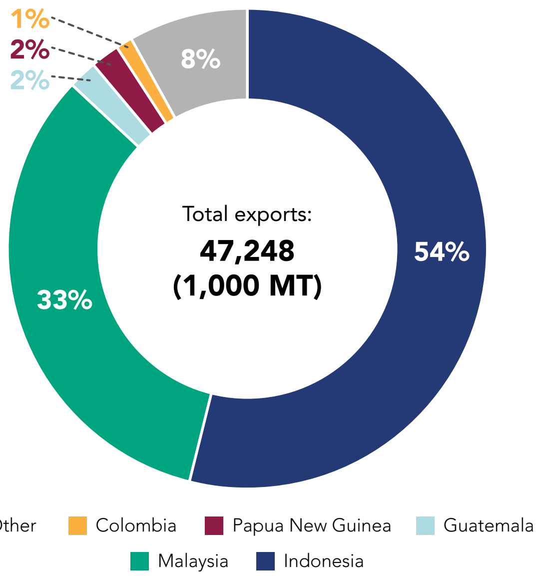
Palm oil is a versatile ingredient, widely used across the food, health and beauty, and energy sectors. Although Southeast Asia is currently the dominant region for global palm oil production, future expansion is anticipated in other tropical regions, particularly West Africa and northern South America (Murphy et al., 2021). In 2023, Indonesia and Malaysia led the global market, jointly contributing 83% of global production and 87% of global exports. The top importers of palm oil were India (20%), China (12%), the EU (9%), and Pakistan (8%). This sector provides substantial economic benefits, generating livelihoods, creating jobs, and contributing to GDP growth, particularly for smallholders and agro-industries in producing countries.

FIGURE 1 • **Global Palm Oil Production in 2023**



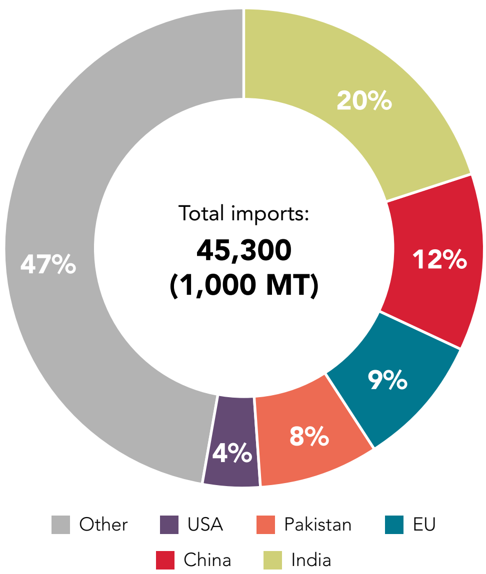
Source: USDA, 2024.

FIGURE 2 • **Global Palm Oil Exports in 2023**



Source: USDA, 2024.

FIGURE 3 • **Global Palm Oil Imports in 2023**



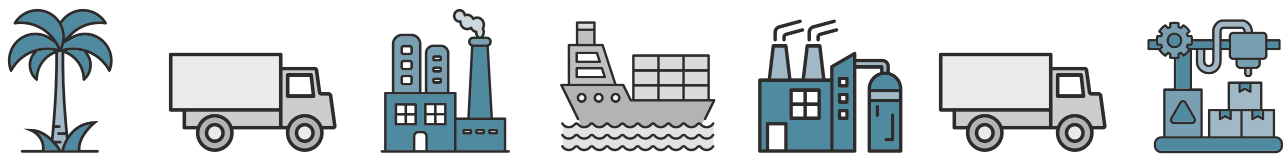
Source: USDA, 2024.

The global palm oil supply chain is complex, involving five main stages: production, processing, distribution, manufacturing, and consumption. Palm oil is produced mainly in Southeast Asia and is then exported to other countries around the world. While early palm oil expansion primarily occurred through large-scale plantations, smallholder farmers have increasingly adopted palm oil as a primary source of income in recent years (Pacheco et al., 2017). Today, smallholders represent approximately 40% of the total palm oil production area (RSPO, 2023).

The palm oil industry is highly concentrated at the processing and distribution stages, with many companies operating vertically integrated operations. This means that major conglomerates, such as Cargill, Wilmar, and Sinar Mas, often control multiple stages of the value chain, from sourcing directly from their own plantations or mills to distribution. After distribution, consumer goods manufacturers and energy companies use palm oil to produce personal care products, food items, and biodiesel (Ryoo et al., 2023).

Photo: Aul Rah

FIGURE 4 • **Example of the Palm Oil Supply Chain**



Plantations Fresh Fruit Bunches (FFBs) are picked every 10-12 days.	FFBs are transported to the mills within 24 hours of picking.	**Mills** FFBs are sterilized and pressed to extract crude palm oil (CPO).	CPO is shipped to refineries.	**Refineries** CPO is refined and separated at the refineries.	Palm oil is transported from the refineries to manufacturing facilities.	**Manufacturing** Palm oil is used to manufacture from food product, soap, to biofuel.

Source: WRI Indonesia.

Existing Theories of Change Regarding Halting Deforestation in the Palm Oil Supply Chain

Various initiatives have emerged to combat deforestation in the palm oil supply chain (Appendix I). These initiatives are led by a range of stakeholders with different approaches. Some have developed comprehensive Theories of Change (TOCs), while others have outlined objectives and activities to address deforestation.

Multi-stakeholder initiatives

Multi-stakeholder initiatives often bring together businesses, governments, smallholders, local communities, and civil society organizations under a shared agenda for deforestation-free supply chains. In the palm oil sector, examples include the African Palm Oil Initiative (APOI), Tropical Forest Alliance (TFA), Good Growth Partnership (GGP), and UNDP Green Commodities Programme. The Roundtable on Sustainable Palm Oil (RSPO) provides certification and establishes standards for sustainable palm oil production that prevent deforestation, conversion, and exploitation. Additionally, jurisdictional approaches—where stakeholders agree on sustainability standards across entire regions—are emerging. In 2015, Sabah state in Malaysia piloted a jurisdictional certification for sustainable palm oil (JCSPO), with the government committing to 100% RSPO certification by 2025 (Mongabay, 2023).

Producer country policies and initiatives

Producer countries like Indonesia and Malaysia have implemented policies to strengthen forest governance, enforce stricter land-use regulations, and promote sustainable agricultural practices. Indonesia developed its own mandatory national sustainability certification, the Indonesia Sustainable Palm Oil (ISPO), for all palm oil growers. Similarly, Malaysia's government mandates sustainability practices through the Malaysian Sustainable Palm Oil (MSPO) certification system.

Consumer country policies and initiatives

Consumer countries also play a role in regulating imports of deforestation-linked commodities. The Amsterdam Declarations Partnership, comprising several European nations, has committed to supporting deforestation-free agricultural value chains, including palm oil, by 2025. France's National Strategy to Combat Imported Deforestation aims to eliminate deforestation caused by the import of unsustainable agricultural goods, including palm oil, by 2030. The European Union Deforestation Regulation (EUDR) came into effect in June 2023 to prevent commodities and products linked to deforestation and forest degradation, including palm oil, from being sold in the EU market. Similar legislative processes focusing on illegal deforestation are also underway in the UK and the U.S. is considering regulatory and policy options as well.

Private sector commitments and initiatives

Many companies and financial institutions have made voluntary commitments to eliminate deforestation from their palm oil supply chains. For example, Unilever committed to deforestation-free supply chains for key commodities, including palm oil, by 2020 (Unilever, 2024). Nestlé has pledged to use only responsibly sourced palm oil by 2025 (Nestlé, 2023). Members of the Consumer Goods Forum pledged to achieve zero net deforestation by 2020 in key commodity supply chains, including palm oil. Financial institutions like Barclays and Deutsche Bank, through the Banking Environment Initiative, have also pledged not to finance palm oil linked to deforestation (WWF, 2014).

Civil society tools and resources

Civil society initiatives play a crucial role in monitoring deforestation and trade flows as well as developing resources for companies and governments to implement deforestation-free actions. Platforms like Trase and Global Forest Watch Pro offer data on global palm oil production, trade flows, and potential deforestation risk. ZSL SPOTT and CDP Forests Questionnaire promote transparency by assessing producers' ESG policies and disclosing information on how organizations produce, source, and use palm oil. The Accountability Framework Initiative offers principles and guidelines for companies to set, implement, monitor, and report on ethical supply chain commitments. Additionally, the Palm Oil Toolkit provides guidance for downstream companies to implement "No Deforestation, No Peat and No Exploitation" (NDPE) commitments.

Photo: Craig Morey

Gaps in TOCs

Limited consideration of global demand for palm oil

Existing TOCs often prioritize the supply side of the palm oil industry, while overlooking the critical role of global demand. Engaging large palm oil markets, such as China and India, which lack demand-side policies to eliminate deforestation in palm oil imports, is crucial. Similarly, domestic markets in producing countries need more focus. Effective interventions must address the broader political and market dynamics that shape global demand for palm oil, including trade policies and consumer awareness campaigns.

Insufficient attention to social and cultural factors in independent smallholders

While TOCs increasingly incorporate smallholder engagement, they often neglect the social and cultural factors influencing smallholder decisions. Independent smallholders, who typically rely on intermediaries rather than direct relationships with mills (Bakhtary et al., 2021), face unique challenges. Although economic incentives are being addressed, the lack of consideration for social and cultural contexts across different regions limits the potential for improving smallholders' productivity and environmental practices.

Limited engagement with intermediaries in the supply chain

Although TOCs recognize the need to engage beyond direct suppliers, pathways to effectively engage intermediaries remain limited. In producer countries like Indonesia, the palm oil sector is often informal, with intermediaries such as agents and traders playing a vital role in linking smallholders to mills. However, these intermediaries are not well-documented, hindering traceability and creating little incentive for their participation in deforestation-related initiatives.

Lack of coordination between consumer and producer countries

Current policy measures in consumer countries often do not align with those in producer countries, creating a gap in TOCs. Coordination and collaboration between actors in consumer and producer countries are often hindered by mistrust and conflicting interests. For example, Indonesia and Malaysia have engaged in debates with the European Union regarding the impact and requirements of the EUDR. As more consumer markets are in the process of developing deforestation-free palm oil measures, addressing this disconnect is critical for effective TOCs.

Inadequate governance structures around land legality and tenure rights

Weak and fragmented governance structures around land legality and tenure rights create barriers for smallholders in palm oil supply chains. The lack of clear tenurial rights often prevents smallholders from complying with certification schemes such as the Indonesian Sustainable Palm Oil (ISPO) and the Malaysian Sustainable Palm Oil (MSPO) (Peteru and Komarudin, 2022). Strengthening governance structures to clarify land legality and tenure rights is essential for more inclusive and effective TOCs.

Slow uptake among small and medium producers (SMEs)

Many TOCs lack clear strategies to accelerate the transition of SMEs to sustainable palm oil production. While larger producers have adopted NDPE commitments, SMEs often lack the resources and incentives to implement these practices. Market pressure to eliminate deforestation in the palm oil supply chain remains insufficient to drive widespread adoption among SMEs. As regulations like the EUDR strengthen demand-side signals, TOCs need to better address SME engagement in NDPE implementation.

Assumptions in TOCs

The following assumptions highlight the need for a nuanced understanding of the complexities within palm oil supply chains and their impact on deforestation. To be effective, TOCs must consider these complexities and develop strategies that address them.

Photo: WRI

Power dynamics

TOCs often assume that actors can make voluntary, informed decisions, without considering the power dynamics that influence supply chains and land-use decisions. For example, SMEs may face coercion or exploitation by more powerful actors in the supply chain, or they may lack access to critical information and resources. Smallholders, who account for a significant portion of global palm oil production, are often under pressure from land scarcity, limited market access, and inadequate financial support—factors that can drive deforestation. A deeper understanding of these power dynamics is necessary to ensure that interventions are both equitable and inclusive.

Reliance on market-based solutions

Many TOCs assume that market-based solutions will effectively drive the adoption of sustainable palm oil practices. However, this assumption can be problematic if the market for certified sustainable palm oil is limited or if the price premiums do not sufficiently cover the costs of implementing and maintaining these practices. Market-based solutions alone may be insufficient to reach all producers, particularly SMEs, in the supply chain. Broader interventions may be required to ensure that NDPE practices are widely adopted.

Uniformity among smallholders

TOCs often assume that independent smallholders are a uniform group, leading to a one-size-fits-all approach to smallholder engagement. In reality, independent smallholders have diverse social characteristics, such as migration status and education levels (Schoneveld et al., 2019). Additionally, the business models between palm oil companies and smallholders can vary significantly across regions. A more tailored approach that accounts for these variations is essential to effectively support smallholders in adopting sustainable practices.

Recommendations

Strengthen demand-side measures

Greater emphasis should be placed on reducing demand for unsustainably produced palm oil. Stronger demand-side signals can support deforestation-free supply chains by encouraging compliance on the supply side. This can be achieved by advocating for stricter regulations in consumer countries, ensuring the effective implementation of corporate deforestation-free commitments, and raising consumer awareness about deforestation-free palm oil. As various markets begin to regulate imports of forest-risk commodities, including palm oil, future TOCs should build on these regulatory efforts and work towards aligning requirements across different markets.

Address social and cultural factors in smallholder engagement

Many TOCs acknowledge the importance of smallholder engagement in implementing deforestation-free supply chains. While activities have focused on mapping smallholders, providing technical solutions, and offering financial incentives, it is equally important to address the underlying social and cultural factors. TOCs can be improved by incorporating measures that support alternative livelihoods, ensure fair benefit-sharing, and respect the rights of indigenous and local communities.

Prioritize engagement with SMEs and intermediaries

TOCs should place greater emphasis on supporting SMEs and intermediaries in their transition to sustainable palm oil production. Strategies should focus on private sector supply chain engagement and be reinforced by producer country policies. These strategies must account for power dynamics within the supply chain and leverage public policies and financial measures to accelerate the adoption of NDPE commitments among SMEs and intermediaries.

Improve coordination between consumer and producer countries

Aligning and coordinating demand- and supply-side measures is essential to eliminating deforestation in palm oil supply chains and improving the effectiveness of TOCs. For example, the EU, Indonesia, and Malaysia have established a Joint Task Force to strengthen cooperation for the implementation of the European Union Deforestation Regulation (EUDR) (European Union, 2023). A recent study highlighted key gaps between EUDR and the Indonesian Sustainable Palm Oil (ISPO) certification regarding definitions of forest and deforestation, geolocation information, legality, and traceability (ISPO and EFI, 2024). Future palm oil supply chain initiatives should address these gaps and enhance coordination in systems and standards between producer and consumer countries.

Photo: Lian Pin Koh

Looking Ahead

In recent years, various actors in the palm oil sector are increasingly adopting landscape and jurisdictional approaches to eliminate deforestation in the supply chain. For example, the Siak Pelalawan Landscape Programme (SPLP) is a private sector-driven initiative to achieve sustainable palm oil production in Siak and Pelalawan districts in Riau, Indonesia (SPLP, 2023). RSPO has also developed a Jurisdictional Approach Pilot Framework to guide the certification of sustainable palm oil at the jurisdictional level (RSPO, 2023). Meanwhile, the EU REDD Facility, in collaboration with WRI Indonesia and the district government of Banyuasin in South Sumatra, is piloting a jurisdictional approach to improve the sustainability and legality of land use and related palm oil production (EU REDD Facility, 2023). Additionally, CDP has integrated a company's involvement in landscape and jurisdictional approaches into its Forests Questionnaire, further emphasizing the importance of these strategies.

The success of landscape and jurisdictional approaches hinges on the creation of external incentives, effective implementation in specific jurisdictions, and strong connections across jurisdictions and levels (Seymour et al., 2020). As these approaches continue to evolve, they hold significant potential for promoting sustainable palm oil production and eliminating deforestation.

The EUDR came into effect on June 29, 2023, requiring companies to conduct due diligence to ensure that commodities, including palm oil, placed on the EU market are deforestation- and degradation-free after December 31, 2020. With the EU being the world's third-largest palm oil importer, behind India and China, stakeholders across the palm oil supply chain are working to understand and meet the EUDR requirements. In response, the governments of Indonesia and Malaysia have established a joint task force with the EU to address concerns and requirements related to the regulation (Jong, 2023). Future TOCs should account for the implications of the EUDR and work to align measures between consumer and producer countries to eliminate deforestation in the palm oil supply chain. By integrating these emerging trends and regulatory developments, TOCs can better support sustainable and deforestation-free palm oil production on a global scale.

Photo: WRI

Appendix I

Examples of initiatives halting deforestation in the palm oil supply chain

Types of Initiatives	Examples
Multi-stakeholder	• Good Growth Partnership • UNDP Green Commodities Programme (GCP) • Tropical Forest Alliance • Africa Palm Oil Initiative • The Roundtable on Sustainable Palm Oil (RSPO) • Sabah Jurisdictional Certified Sustainable Palm Oil • The New York Declaration on Forests (NYDF)
Private Sector	• CGF Forest Positive Coalition of Action Palm Oil Roadmap • Agriculture Sector Roadmap to 1.5°C • The Palm Oil Collaboration Group (POCG) • Siak Pelalawan Landscape Programme (SPLP) • Individual Company Commitments • Banking Environment Initiative
Producer Country	• Indonesian Sustainable Palm Oil (ISPO) • Malaysian Sustainable Palm Oil (MSPO) • The Indonesia National Action Plan on Sustainable Palm Oil • The Terpercaya Initiative • National Initiatives for Sustainable & Climate Smart Oil Palm Smallholders (NISCOPS)
Consumer Country	• EU Deforestation Regulation (EUDR) • UK Environment Act • US FOREST Act • The Amsterdam Declaration on Sustainable Palm Oil • European Sustainable Palm Oil (ESPO)
Civil Society	• The Accountability Framework • CDP Forests Questionnaire • Global Forest Watch Pro • Proforest Palm Oil Toolkit • Trase • ZSL SPOTT

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