



Understanding the Supply Chain: Main Environmental and Social Risks

The Palm Oil Toolkit supports companies in the responsible sourcing of palm oil, highlighting a wide range of tools and initiatives which aim to decouple palm oil production and trading from deforestation, development on peat and human rights violations. This document summarises the key environmental and social risks in the supply chain.

01 Oil palm production regions

Global palm oil production is concentrated in Southeast Asia, with Malaysia and Indonesia accounting for 85% of the world's total production. The tropical forests of Malaysia and Indonesia contain some of the richest and most threatened rainforests in the world.

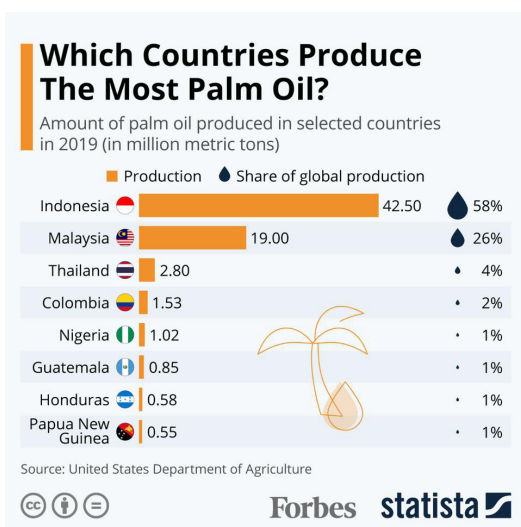


Figure 1: Amount of palm oil produced in selected countries in 2019 (Graph source: [Statista 2020](#)).

02 Environmental threats at production level

Land use change



Deforestation

- Oil palm expansion accounted for about 50% of deforestation in Malaysia, more than 15% in Indonesia, about 10% in other parts of Southeast Asia.
- Deforestation has fragmented forested landscapes by isolating forests into patches, impacting their usability as a refuge for already threatened species, such as tigers, orangutans, elephants and sun bears. These species play vital roles in the forest ecosystem and their loss affects trophic regulation, nutrient cycling, seed dispersal and ultimately, the maintenance of the forest itself.
- As scrutiny from global stakeholders grows, palm oil companies have been under increasing pressure to ensure that the land used to cultivate oil palm is not converted from forests.
- Indonesia has implemented a moratorium on new oil palm plantation expansion.
- Malaysia has pledged to cap the country's total oil palm planted area to 6.5 million hectares.

Conversion of peatlands

Peatlands are biodiverse, carbon-rich wetland ecosystems with cumulative layers of organic matter that are important carbon sinks. Draining and clearing peat swamps releases a huge amount of carbon in a short period of time and threatens unique endemic species, such as the orangutan in the tropical peatlands of Southeast Asia.

Fire use for land clearing

The rapid expansion of oil palm growing areas has led to an increase in destructive land clearing practices such as slash and burn, often by smallholders. Habitat loss also increases human-wildlife conflicts and the transmission of zoonotic diseases, as animals move out of cleared forest and interact more with humans in the areas converted for agriculture.

Oil palm cultivation impacts



Chemical use and scheduled waste management

Oil palm production is associated with the excessive use of chemical fertilisers, pesticides, and herbicides, relied upon to increase yields. The impacts of excessive application of pesticides (such as Paraquat and Glyphosate) range from nutrient inhibition to poisoning.

Mill effluent discharge

- Mills that process oil palm fruits into crude palm oil (CPO) also produce waste product such as Palm Oil Mill Effluent (POME): An estimated 2.5 – 3.5 tonnes of POME are generated for every tonne of CPO produced.
- Untreated POME released into water bodies harms aquatic biodiversity and ecosystems, as it has a high biochemical oxygen demand (BOD) and chemical oxygen demand (COD).
- While most mills at present treat POME prior to discharging it, treated POME also negatively affects the environment as it contains a significant amount of organic matter.

Other environmental impacts



Greenhouse gas (GHG) emissions

- The clearing and burning of peat and forests for palm oil cultivation has resulted in extensive, repeated transboundary haze pollution events across Southeast Asia, with thick smog covering large areas for several months a year. These haze events have resulted in deaths, long-term detrimental health effects, economic losses, and biodiversity losses.
- In 2015, the fires in Indonesia were estimated to have cost at least \$16.1 billion.
- The continued annual release of large amounts of carbon, compounded with untreated mill effluents releasing methane into the atmosphere, contribute to global warming and climate change, leading us away from reaching the climate commitments set out in the Paris Agreement in 2016.

Soil erosion and water pollution

- As land is cleared and prepared for cultivation, soil is left exposed, causing erosion and landslides (especially on slopes or riverbanks), reducing soil quality, increasing flood risk and increasing pollution from chemical fertilisers and pesticides washing into waterways.
- These pollutants, compounded by the addition of waste products like POME lead to algal blooms, acidification, and nitrification, which negatively affect riverine and marine ecosystems downstream, as well as the communities who depend on them.

03 Social issues at production level

The palm oil sector, specifically in the upstream production sector in plantations and farms, is mired with various human rights challenges, including risks in labour (child labour included), land rights (i.e. rights of indigenous peoples and local communities) and threats to human rights defenders. These are due to many underlying root causes such as poor governance, and lack of compliance with good labour practices by businesses. Figure 2 provides an overview of human rights issues that are prevalent in the palm oil supply chain, as well as the groups of people most at risk.

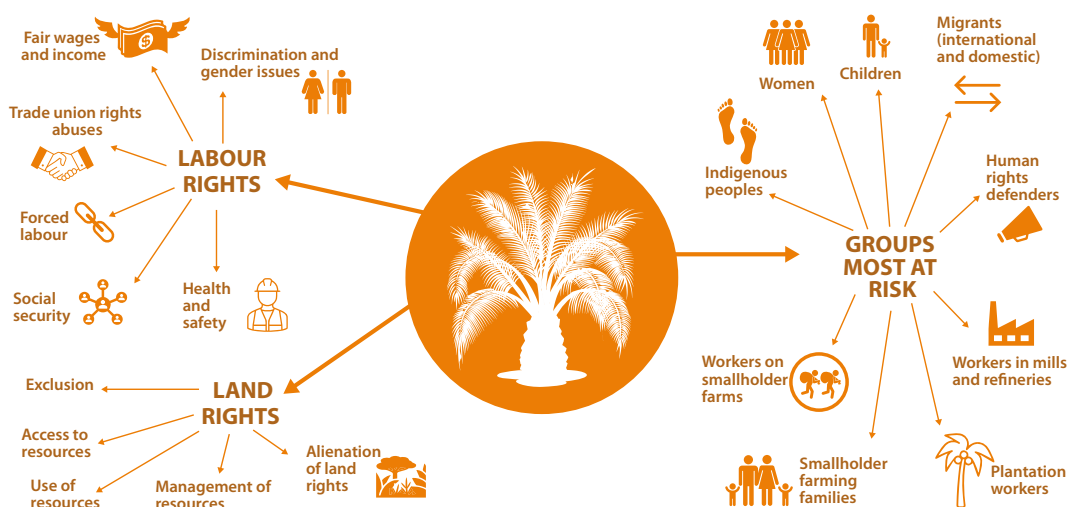


Figure 2: Overview of human rights issues in the palm oil supply chain. (Image source: [Dutch Banking Agreement \(DBA\) analysis of severe human rights issues in the palm oil value chain \(2019\)](#)).

04 Emerging risks

Environmental

The existing environmental threats and impacts will lead to further threats and exacerbated impacts, such as the increasing effects of climate change, including those affecting oil palm cultivation itself. Other issues such as water pollution, water scarcity and waste management are emerging. With water already polluted and streams drying up due to deforestation and climate change, many areas are starting to experience water scarcity. While the oil palm industry may not be the sole source of all these issues, it should be acknowledged that the activities from palm oil development at such a massive scale across the tropics have contributed to these effects at a local, national, and global scale. These issues will be further expanded in [Briefing Note 05](#).

Social

Emerging social risks, such as the breach of human rights due to environmental degradation leading to negative impacts on the livelihoods of indigenous peoples and local communities, lack of opportunities for smallholder or worker livelihoods, food security issues, political instability, pandemic-related issues and others will be discussed further in [Briefing Note 05](#).

- Assessing direct suppliers' performance and the risk they are exposing the company to.
- Support suppliers in making progress by providing capacity building, sharing responsibilities and co-financing projects in production base.

- Developing clear grievance processes and mechanisms for managing and remediating social and environmental non-compliances;
- Developing monitoring and reporting systems for measuring progress.

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