Overview of Palm Oil Strategic Policies Now and in the Future

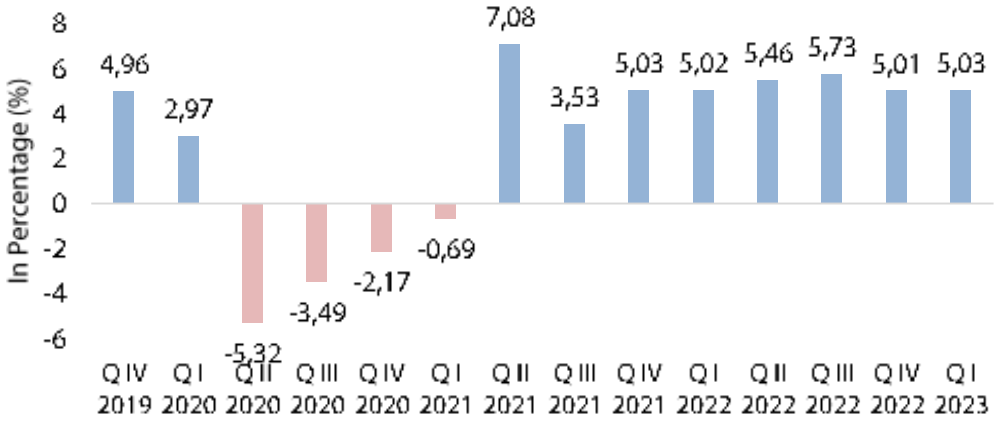
Partnership Directorate

Palm Oil Plantation Fund Management Agency

Palm Oil Sector Performance: On The Economy

GDP Growth in Agriculture, Forestry and Plantation Sector 2019 - TW I 2023

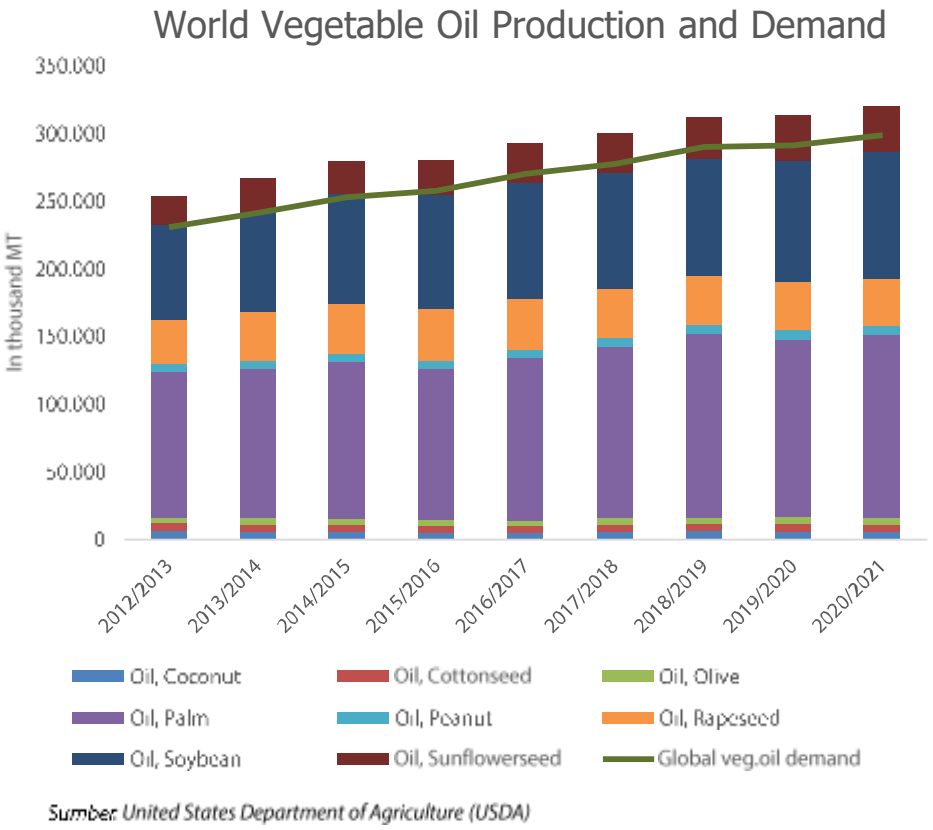
BRUTO DOMESTIC GROWTH up to TW I 2023



Source: BPDPKS internal analysis, BPS Statistical News Quarter 1 year 2023

The palm oil sector in Indonesia, which involves 2.4 million independent smallholders and 16 million workers, can continue to drive GDP in the plantation sector at a positive rate, so that Indonesia's GDP in the first quarter of 2023 grew positively at 5.03%.

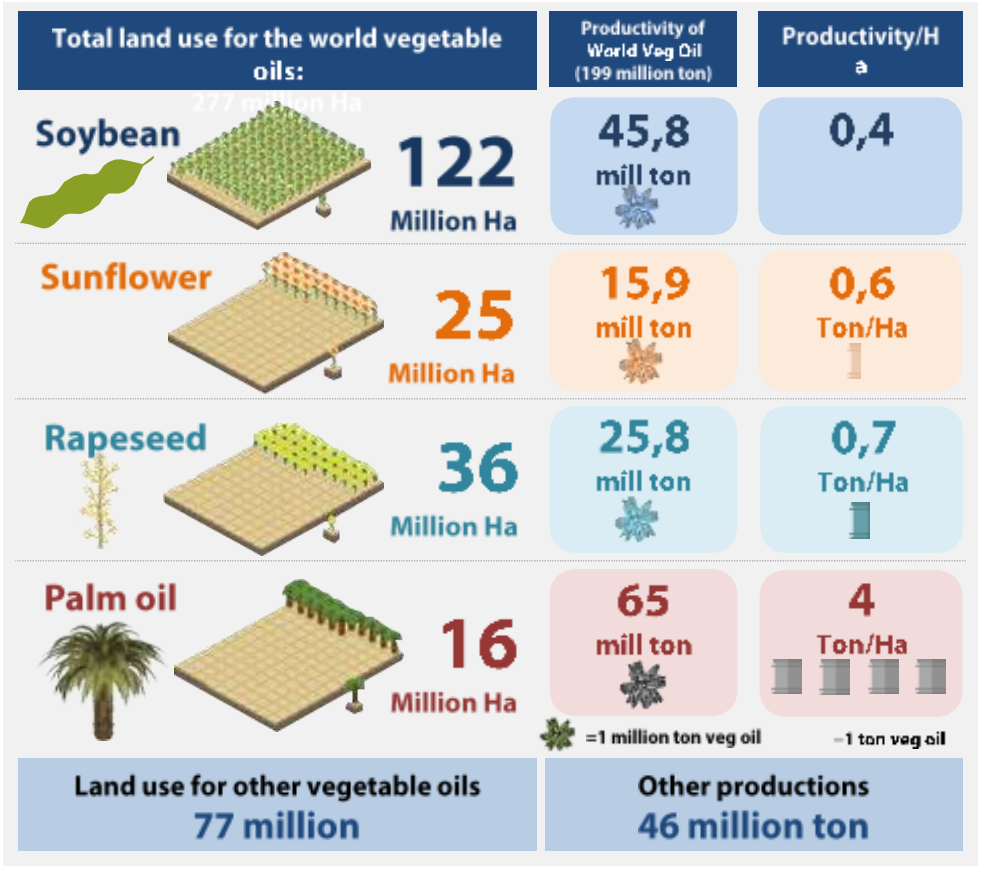
Palm Oil's Position in the World Vegetable Oil Competition



Sumber: *United States Department of Agriculture (USDA)*

1. Every year, global vegetable oil demand and supply grow at an average of 8.5 million MT and 8.2 million MT, respectively.
2. As the most productive commodity, palm oil contributes on average 42% of the world's total vegetable oil supply

Palm Oil is a global oil commodity with the best land productivity compared to other vegetable oils. Therefore, palm oil is a sustainable choice in meeting the world's growing demand for vegetable oil.



Source: indexmundi, Palmoilanalytics, dan Neste

CHALLENGES:
Palm Oil Industry Development

Low Productivity

Average CPO productivity is 3.6 tons/ha/yr. Potential 6-8 tons/ha/yr

Black Campaign

Deforestation issues, environmental damage (biodiversity loss, peat)

Indicated Forest Area

Indicated 3 million ha of oil palm located in forest area

Legality and Licensing

There are still oil palm plantations that do not have legality (SHM, HGU, STDB)

Business Disruption and Conflict

Harmonization of PBS/PBN with smallholder plantations reduces provitas

Market Access Barriers in Some Export Destination Countries

High import duty rates, anti-dumping policies, food safety

Downstream

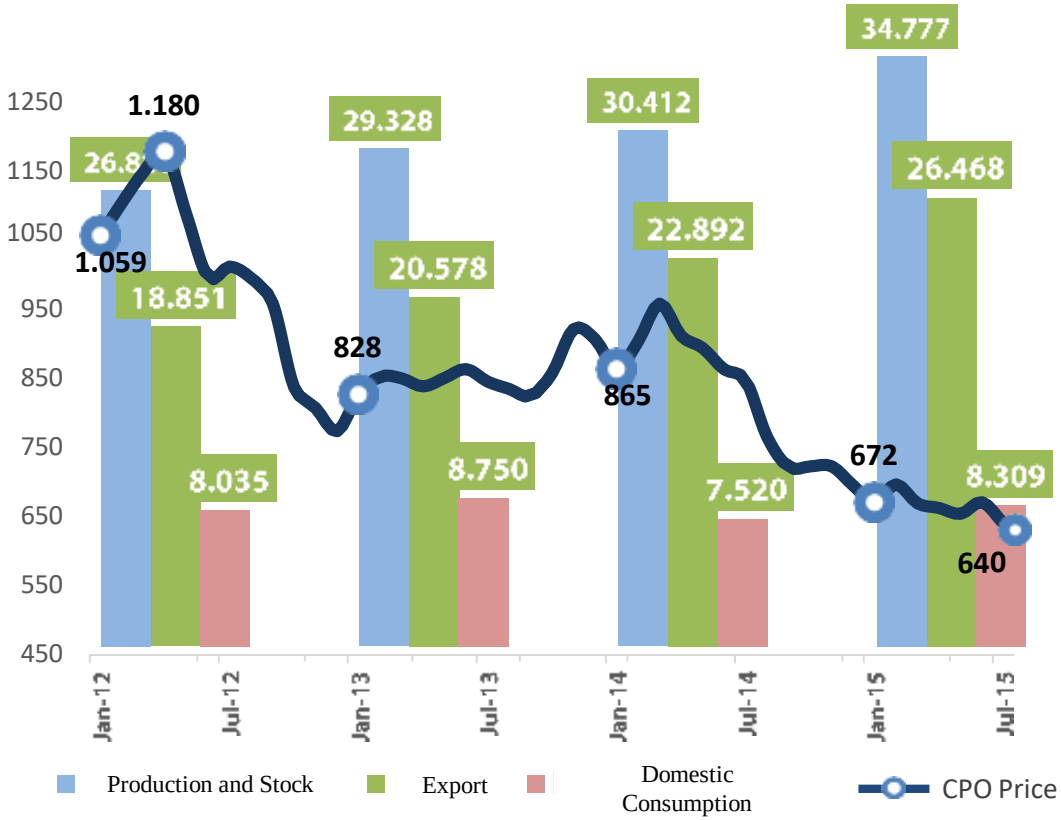
CPO derivative product development is not yet optimal

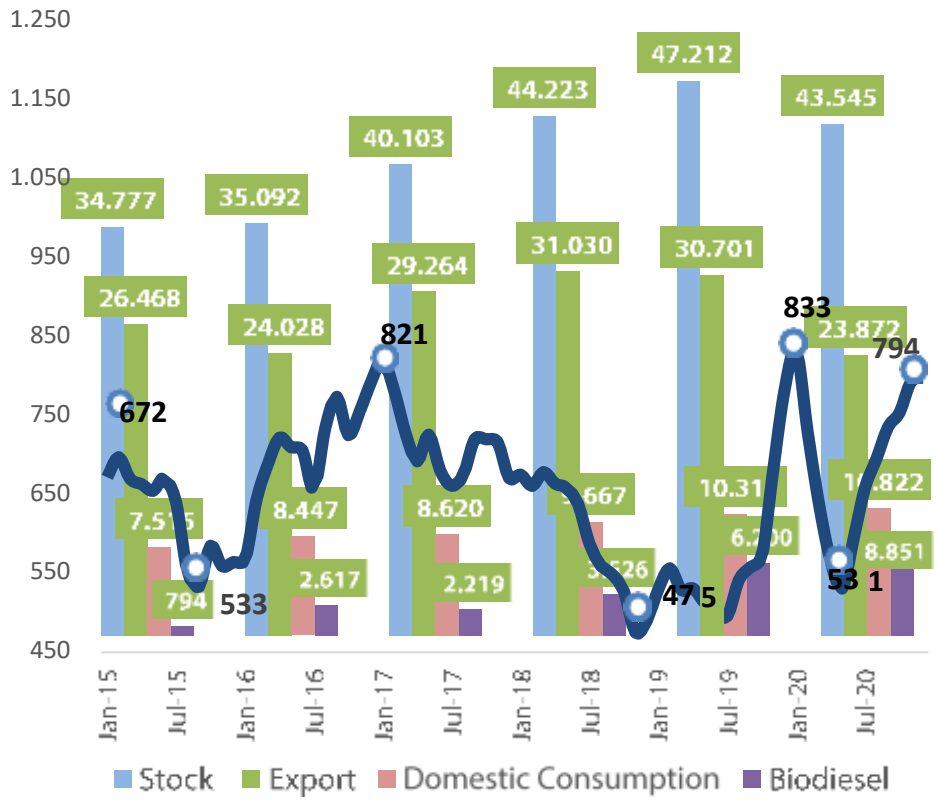
Energy

Resource potential has not been maximized for energy

Scenario of Biofuel Management and Financial Support

Balancing Supply and Demand
The creation of a domestic market through the 2015 Biodiesel Program to absorb CPO production is key to stabilizing CPO prices with the establishment of BPDPKS.





Balancing Supply and Demand
Biodiesel program is possible to be implemented by placing the palm oil export levy policy as a funding support.

Source: Production and Export data from Ministry of Agriculture's Oil Palm Plantation Statistics.
Domestic consumption data from GIMNI

Integration of Upstream and Downstream Sector Programs

As a result of the various challenges faced by the palm oil industry, CPO prices have experienced a continuous decline and consequently impacted the welfare of the palm oil industry. Farmers. To improve this condition and enhance the performance of the Indonesian palm oil sector, several strategic efforts were made.

Improving Farmer Welfare

#Community Oil Palm Replanting Programme

#Upstream Sector Research

Indonesian palm oil data improvement, seed quality improvement and plantation technology innovation

#Facilities and Infrastructure

Production and transportation cost efficiency and support for ISPO

#Farmer and HR Training for the Palm Oil Industry

In order to increase productivity and the use of environmentally friendly oil palm plantation techniques

CPO Price Stabilization

#Biodiesel Funding Support

In order to increase market absorption & control overstock of palm products

#Positive Palm Oil Promotion and Advocacy

Maintain and expand Domestic and Overseas Markets

#Market and Product Research

In order to formulate policies related to strengthening the palm oil market, price stability and the development of derivative products with high added value.

Strengthening Downstream Industry

#Research and Development Program for Palm Oil Conversion to Bio-hydrocarbon fuel

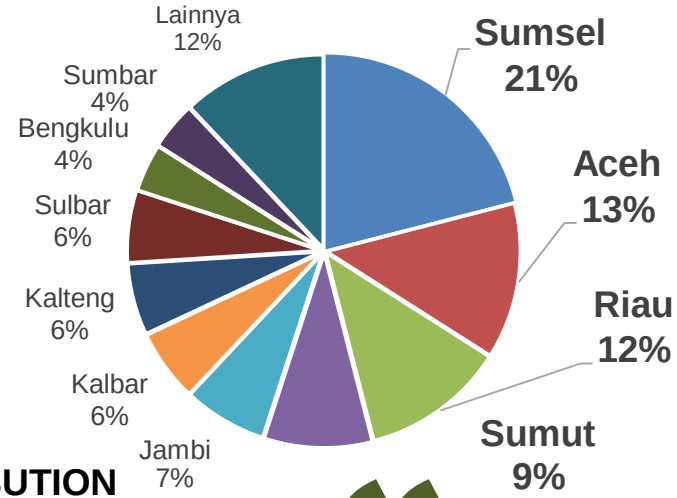
Research Support for catalyst manufacturing, Incentives for bio-hydrocarbon fuel producers

#Support to Other Downstream Programs

Research Support, Incentives for oleochemical Industry

Performance of People's Palm Oil Replanting Program (2016-MAY 2023)

REALIZATION OF PSR LAND AREA PER PROVINCE NUMBER OF PLANTERS



FUNDS DISTRIBUTED

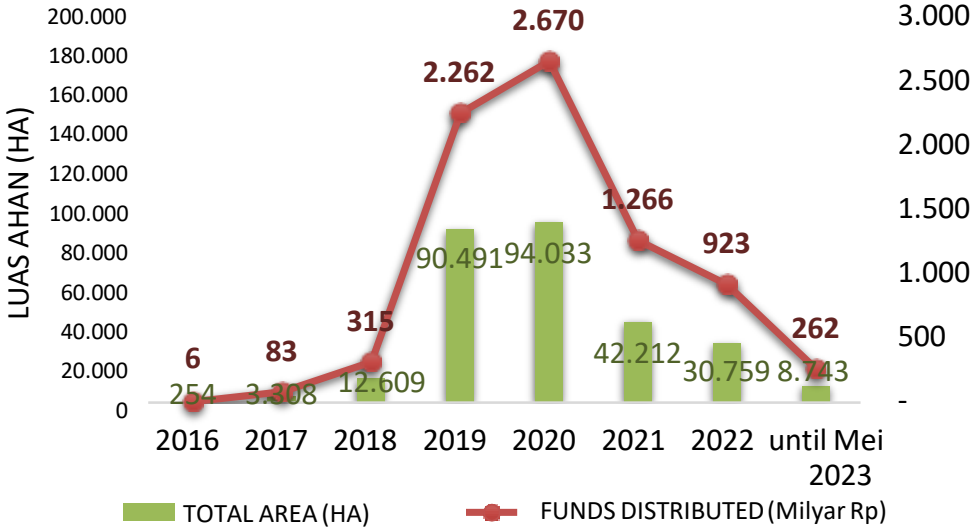
Rp7,52Triliun

124.152

TOTAL AREA

282.409 Ha

TOTAL LAND AREA OF PSR DISTRIBUTION



> **The decline in performance achievement of the PSR program was mainly due to constraints on the fulfillment of requirements: Statement of not being in forest areas, and peat protected areas, as well as statement of not being on HGU land.**

Performance of Facilities and Infrastructure Program (until MEI 2023)

Palm Oil Plantation Facilities and Infrastructure

Seeds, Fertilizers & Pesticides (Extensification)

Fertilizer & Pesticide (Intensification)

Post-harvest tools & Processing Unit

Road Improvement & Water Management

Transportation Equipment

Agricultural Machinery

Market Infrastructure

Technical verification (ISPO)

FACILITIES AND INFRASTRUCTURE PROGRAM ACHIEVEMENTS until May 2023

26

The Planters' Institution has been designated as the recipient of Plantation Facilities and Infrastructure

Rp72,3m

Total value of Plantation Facilities and Infrastructure that has been determined

The performance achievements of the Facilities and Infrastructure program up to May 2023 include extensification, intensification, agricultural machinery and road improvement activities as projects that have been funded.

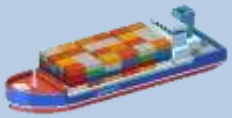
Significant Role of Palm Oil Industry to the Economy

As a labor-intensive industry, the Palm Oil Sector contributes significantly to the economy. It drives economic growth, increases exports and trade balance, reduces inflation and replaces fossil fuels with renewable energy to strengthen national energy security.

Industry Profile

Labor Intensive

Export value



The biggest export (Bigger than Oil & Gas)

Energy Security

Replaces the use of Diesel Fossil Fuel

23 Million KL

Through biodiesel mandatory program

Economic Share

3.5%

of National GDP

Trade Balance *)

0.63%

Positive impact

Inflation *)

1.75%

Reducing

Government Expenditure *)

1.74%

Reducing

Real Capital Return *)

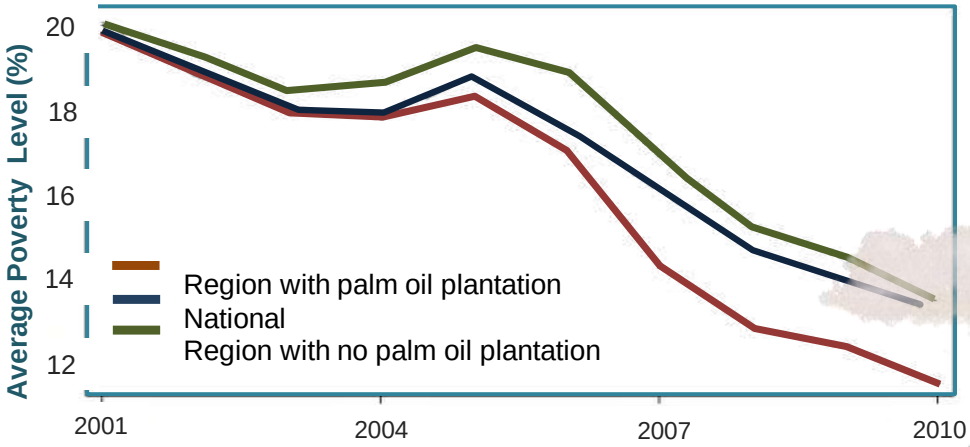
0.62%

Positive Impact

*) Source: Stanford University & The National Team For The Acceleration of Poverty Reduction (TNP2K), 2016

Indonesia's Palm Oil Sector Supports Poverty and Inequality Reduction

Since 2000, the Indonesian Palm Oil Sector has helped 10 million people escape poverty due to factors related to oil palm plantations and at least 1.3 million people in rural areas were lifted directly out of poverty due to the palm oil industry..



Regions with oil palm plantations have a more significant reduction in poverty rates compared to other regions and the national level.

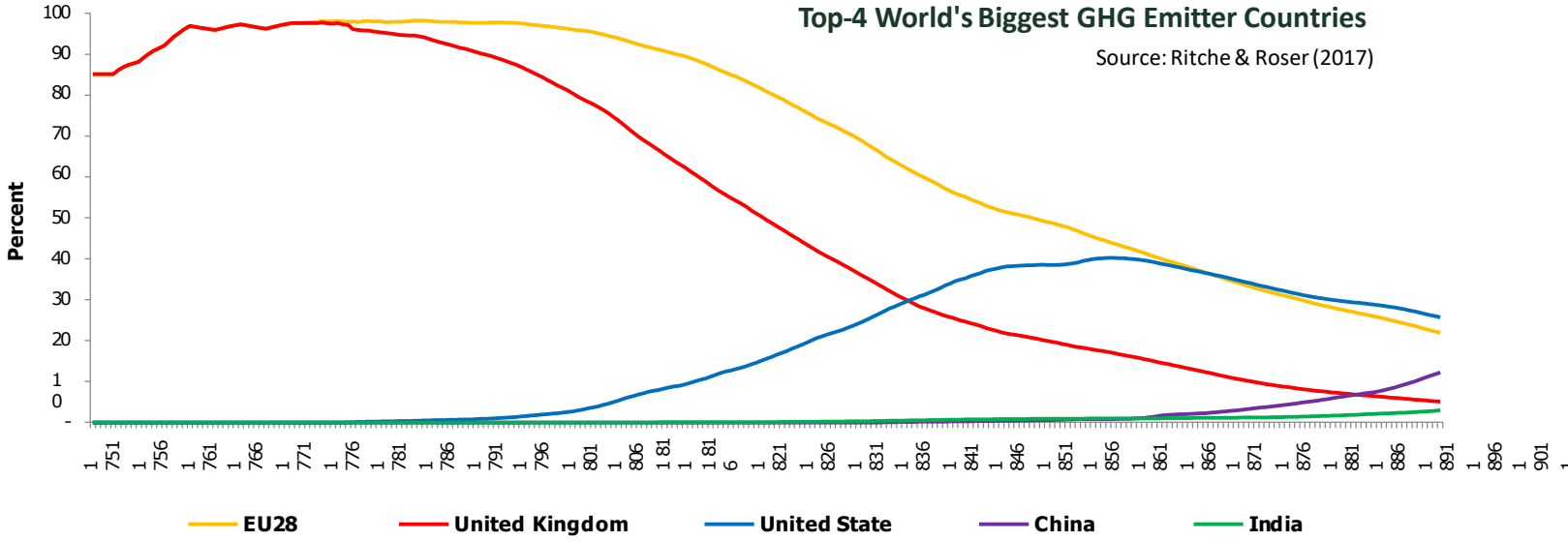
10 Million People

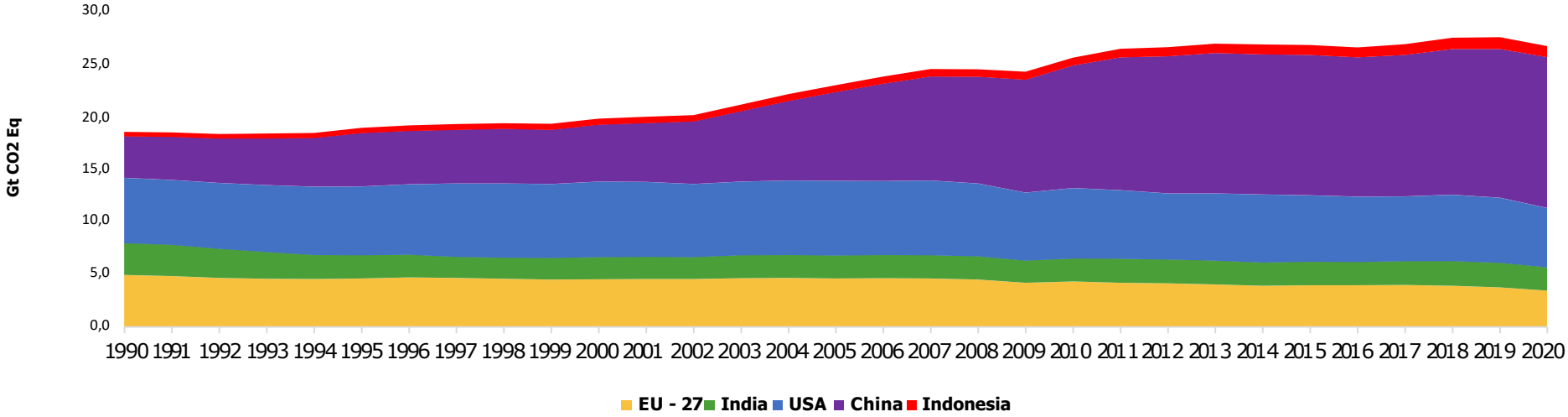
Out of poverty Helped by Palm Oil Industry

Source : Ryan B. Edwards, Center on Food Security and the Environment, Stanford University

Environmental Issues in Palm Oil

Indonesia is not one of the world's largest GHG emitters, and its share is only 2.1 percent of the world's GHG emissions in 2020.

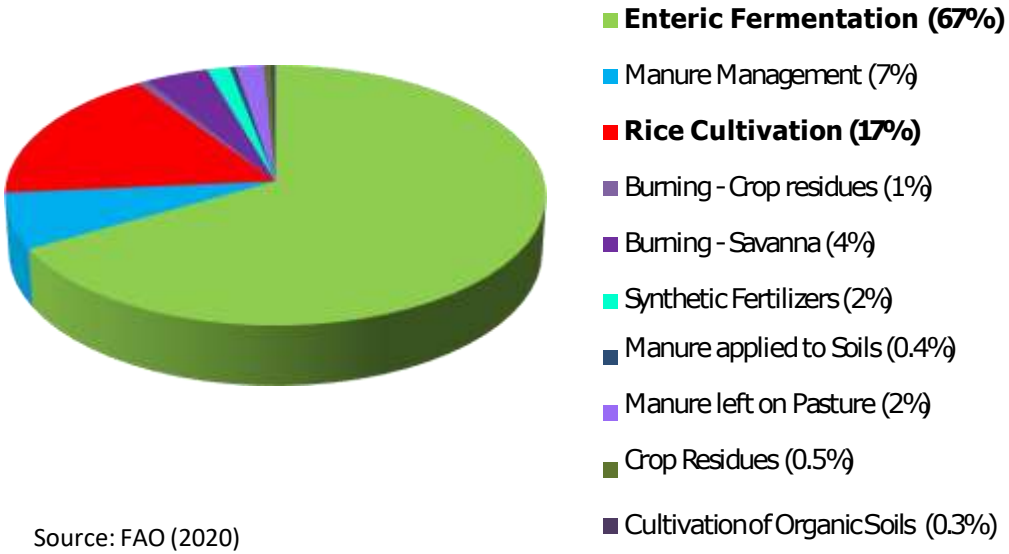




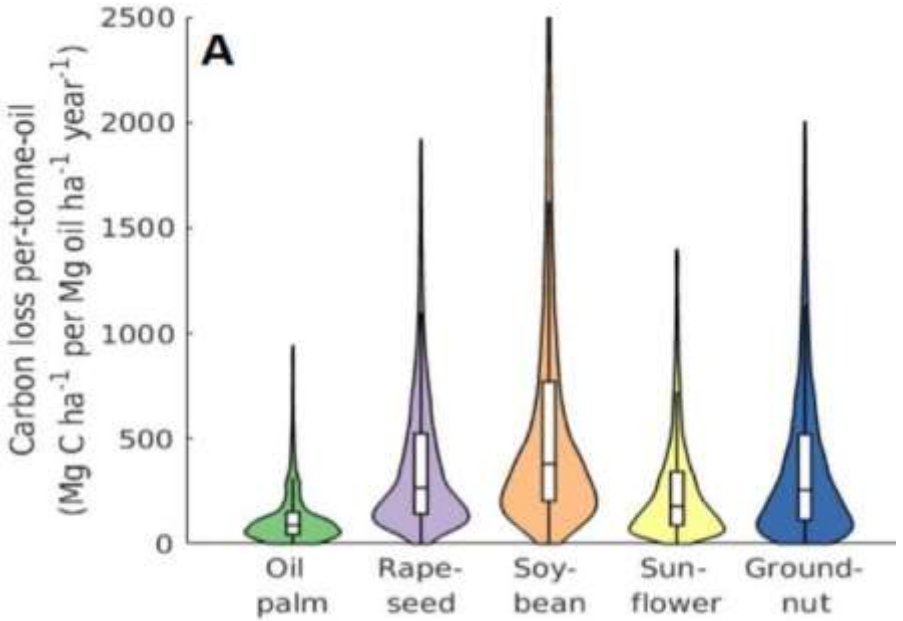
Source: Olivier *et al.,* (2022)

Environmental Issues in Palm Oil

The main contributors to GHGs from the world's agricultural sector are livestock (enteric fermentation, manure management, residual fertilizer on pasture, fertilizer applied to soil) and rice cultivation, **not Palm Oil Plantations**.



Source: FAO (2020)



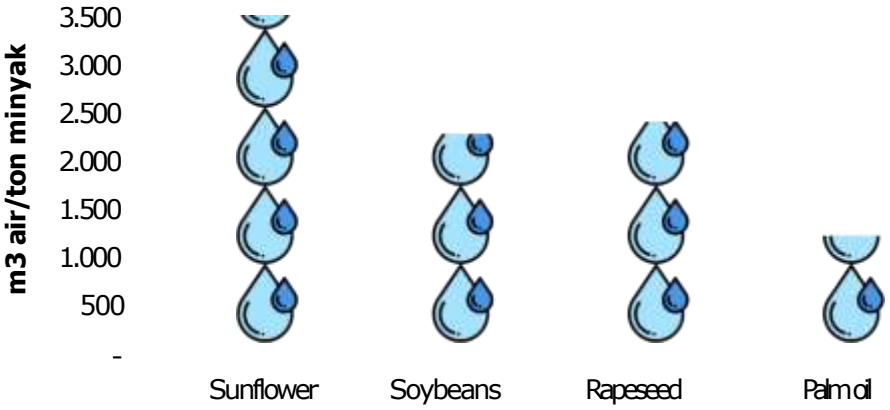
Palm oil is the most efficient in terms of carbon reduction because its production results in the lowest emissions compared to other vegetable oils

Source: Beyer et al. (2020); Beyer dan Rademacher (2021)

Environmental Issues in Palm Oil

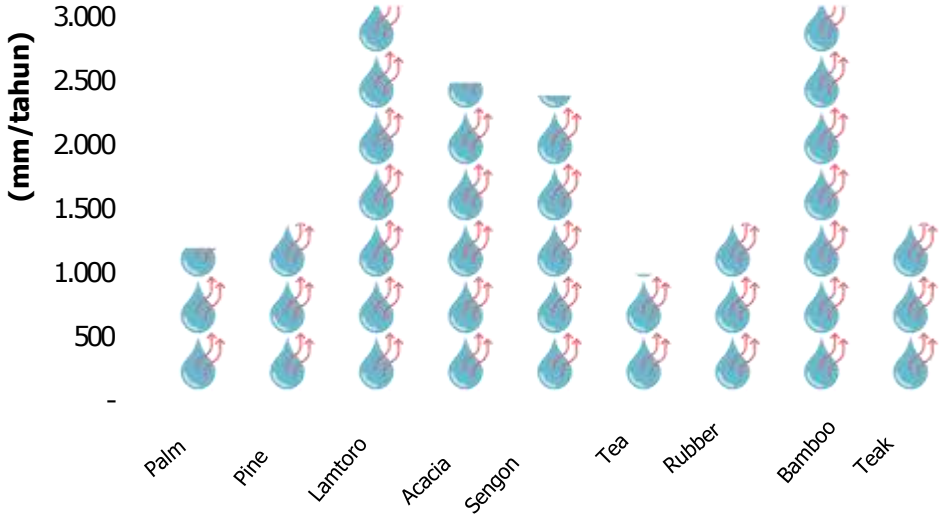
Is it true that oil palm is a **water-intensive crop that causes drought**?

Water footprint: palm oil uses the least amount of water to produce vegetable oil



Source: FAO (2013)

Evaporation rate: palm oil consumes relatively low water



Sumber: Coster (1938)

Palm oil is a water-efficient crop and has a soil and water conservation function that plays an important role in preserving the hydrological cycle so as to prevent drought.

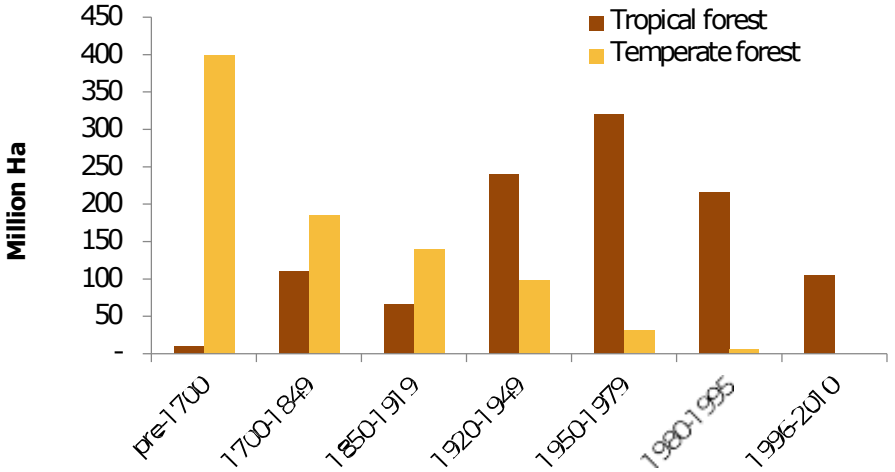
Palm Oil and Deforestation Issues

There are hundreds of definitions of forests and deforestation in the world and each country/international organization adopts a different definition, creating uncertainty and polemics in the implementation of policies that link deforestation to commodity trade.

Definition of forest and deforestation

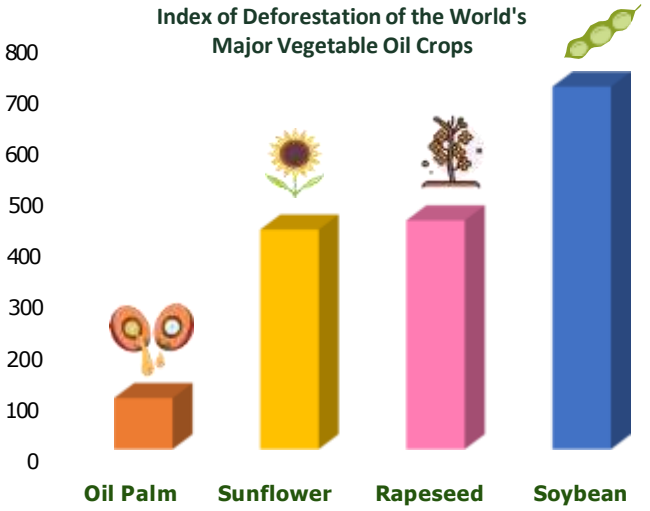
EU = A | UK=B | USA=C | World Organization=D | Tropical Countries=E

Deforestation is a normal phenomenon of the development process that occurs in every country and period, and is not specifically linked to any particular commodity.



Source: FAO (2012)

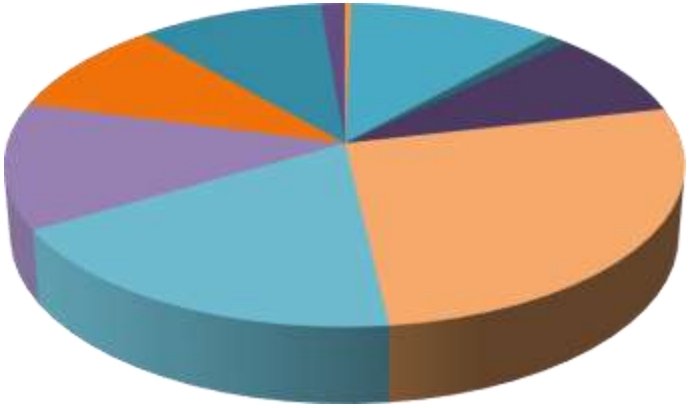
Palm oil has the lowest deforestation rate because it has the highest productivity of all vegetable oil crops.



Source: PASPI, 2023

Palm Oil and Deforestation Issues

Indonesia's palm oil plantations did not originate from primary forest conversion or deforestation but **from conversion of degraded land and agricultural/plantation land.**

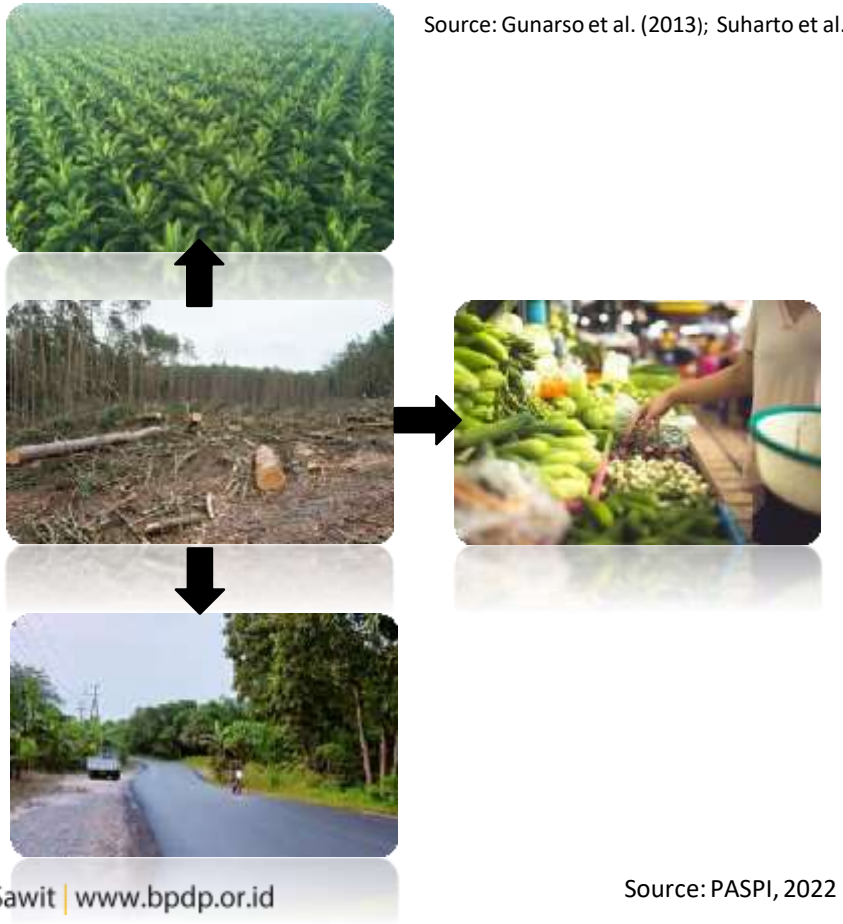


- Undisturbed Upland Forest (0.4 persen)
- Undisturbed Mangrove (0.005persen)
- UndisturbedSwampForest (1 persen)
- **Agroforest & Plantation (27 persen)**
- **Swamp Shrub & Grasslands (13 persen)**
- **Bare Soil (10 persen)**
- **Disturbed Upland Forest (11 persen)**
- Disturbed Mangrove (0.1 persen)
- **Disturbed Swamp Forest (9 persen)**
- **Upland Shrub & Grasslands (18 persen)**
- Intensive Agriculture (10 persen)
- Others (1.3 persen)

Source: Beyer et al. (2020); Beyer dan Rademacher (2021)

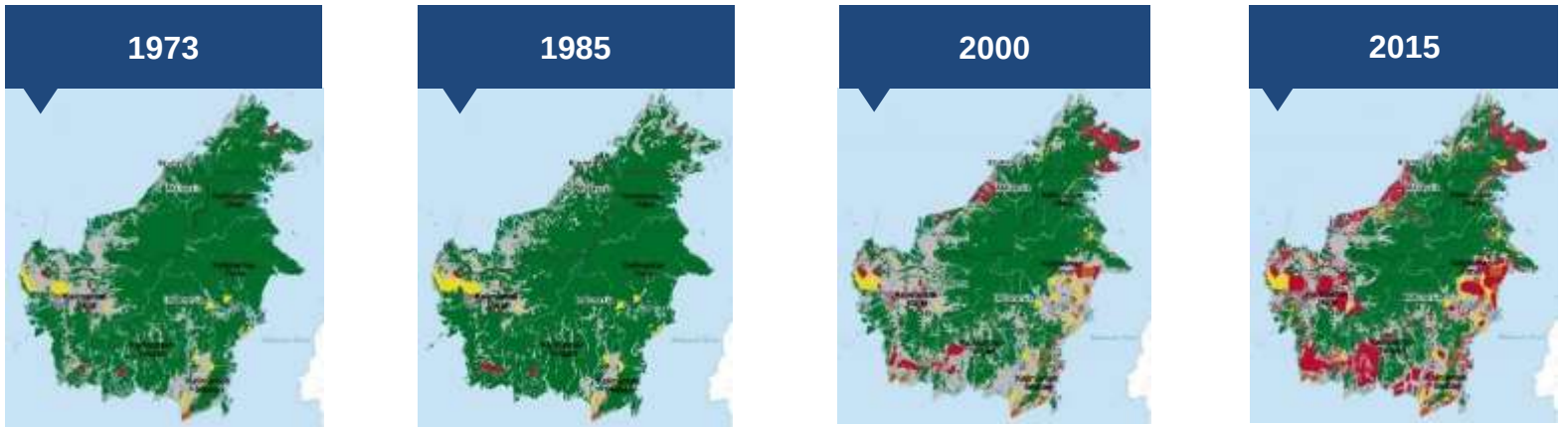
The presence of palm oil plantations can restore logged-over land in remote, underdeveloped, isolated, and economically, socially, and ecologically degraded areas so that these areas develop into new economic growth centers that are more socially prosperous and more sustainable.

Source: Gunarso et al. (2013); Suharto et al. (2019)



Source: PASPI, 2022

Effect of Palm Oil on Air Temperature



Forest as reference

Bare soil

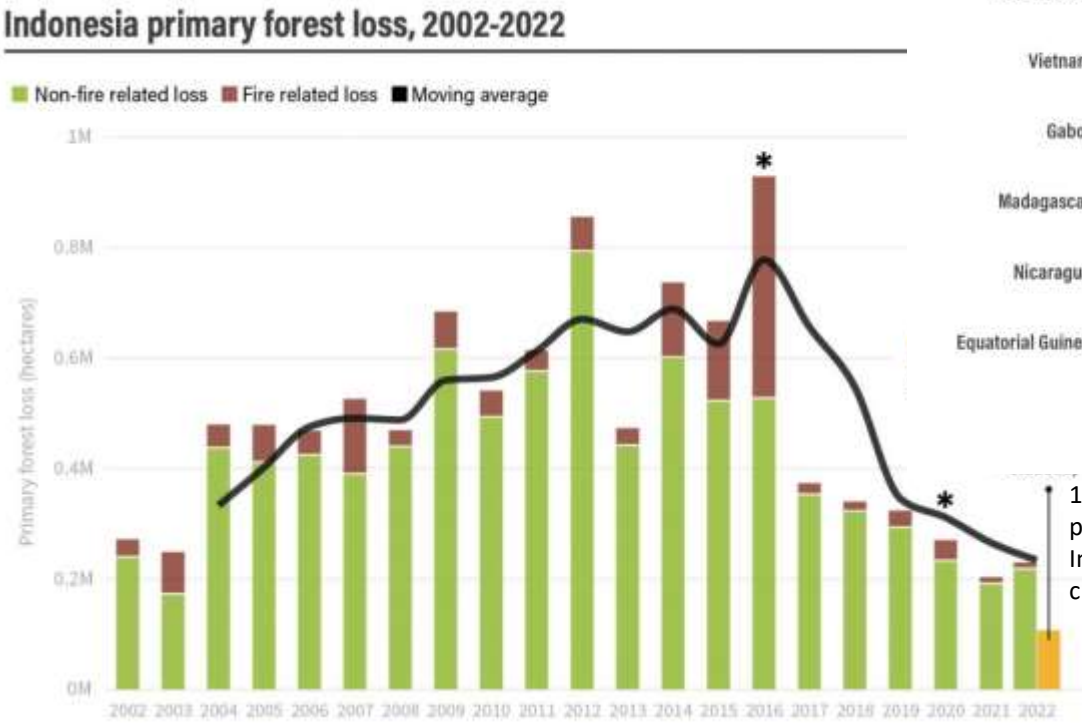
Young oil palm plantation

Mature oil palm plantation

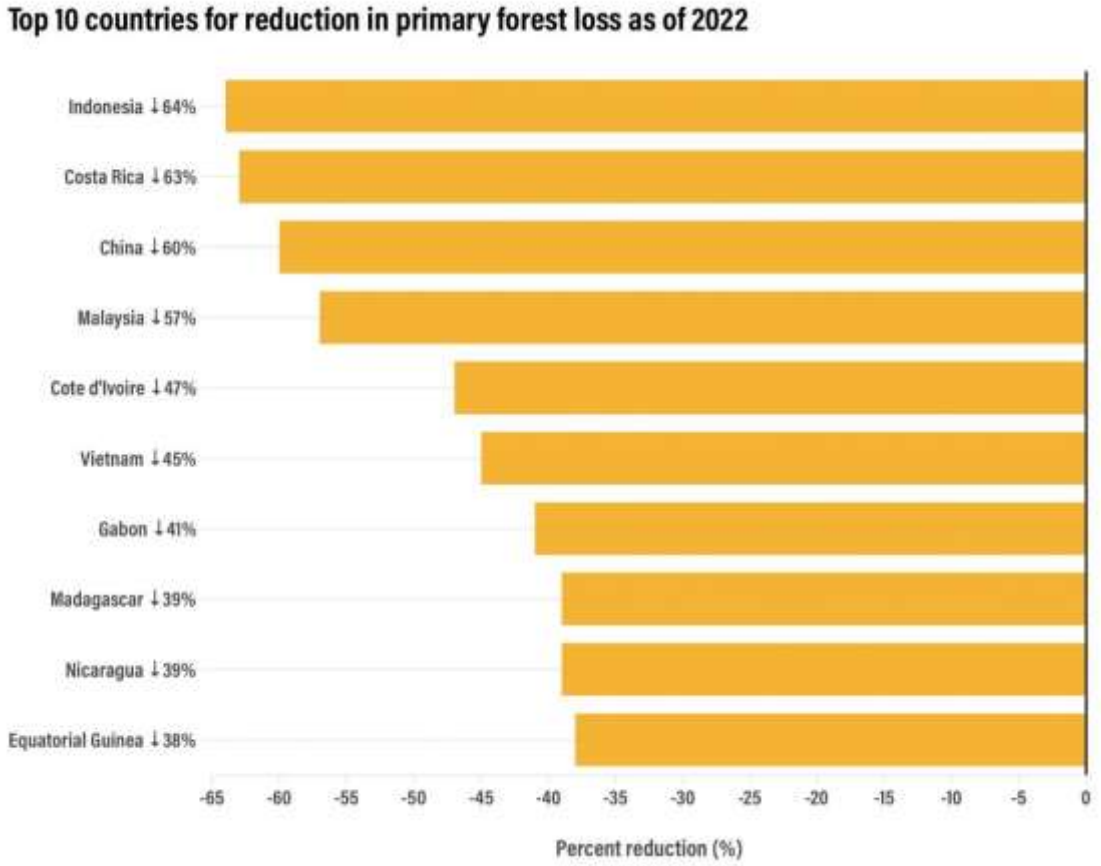
Source: Sabajo et al. 2017

Decreased Deforestation Rate

Based on new data published recently from the World Research Institute (WRI), it has been revealed that Indonesia - the largest palm oil producer facing significant - scrutiny and pressure to reduce forest loss, as evidenced by the implementation of the EUDR - has been able to maintain the lowest rate of deforestation. Indonesia's primary forest loss to fall 64% by 2022.



107 thousand ha (patches of primary forest loss over 2ha and in Indonesia's forest land cover classes)



Source: Competere, Data from World Research Institute, 2023

A World Without Palm Oil?

Palm oil plantations are superior to tropical forests in generating energy more efficiently, absorbing more carbon dioxide, and producing more oxygen.

Movements and policies aimed at reducing or even eliminating palm oil or creating a **"World Without Palm Oil" are causing greater global environmental damage with increased deforestation, biodiversity loss, emissions, and soil/water pollution**.

Indicator	Tropical forest	Palm oil plantation
Leaf area index	7.3	5.6
Photosynthetic efficiency (%)	**1.73**	**3.18**
Radiation conversion efficiency (g/mj)	**0.86**	**1.68**
Total biomass in area (tons/ha)	431	100
Incremental biomass (tons/ha/year)	5.8	8.3
Dry matter productivity (tons/ha/year)	25.7	36.5

Description	World with Palm Oil (S0)	World Without Palm Oil (S1)	Additional World Deforestation
Plant (million ha)			
Soybean	130.0	218.3	**88.3**
Rapeseed	37.8	63.4	**25.7**
Sunflower	28.4	47.7	**19.3**
Oil Palm	25.1	-	**-**
Total	221.3	329.4	**133.2**
Vegetable oil production (Million tons)	186.8	186.8	

Source: Beyer et al. (2020), Beyer dan Rademacher (2021)

Source: PASPI, 2022

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