



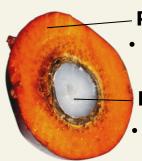


AINA NATASHA BINTI MAHMOOD | NUR ALIAH SYAFIQAH BINTI AHMAD FAUZI

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MALAYSIAN PALM OIL (MPO) AND THE UNITED NATIONS (UN) SUSTAINABLE DEVELOPMENT GOALS (SDGS)

Today, **5.9 million hectares** of land in Malaysia is under oil palm cultivation; producing:



Palm oil:

 19.86 million tonnes of palm oil.

Palm kernel oil:

• 2.32 tonnes of palm kernel oil (1).

Malaysia is the second-largest producer of Palm Oil, and a major exporter (2).



MPO INDUSTRY CONTRIBUTION TOWARDS MALAYSIA'S SDGS



MPO industry provide employment and income that contribute to the eradication of poverty.

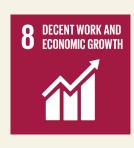
MPO industry
directly employs
more than 570,000
people, with
another 290,000
people employed
downstream
farmers (3).



Smallholders participate in Persatuan Kebangsaan Pekebun-Pekebun Kecil Malaysia (PKPKM) and PKPKM Sarawak Land Consolidation and Rehabilitation Authority (SALCRA):

- Organizations help them to receive a fair and sustainable income.
- Also help to secure legal landownership rights.

"Being the largest producer of Certified Sustainable Palm Oil (CSPO) in the world, accounting more than 50% of all CSPO to date, Malaysia is certainly deserving of recognition on the world stage with regards to sustainable practices" (4)



Demand from China and India increase stimulated the rapid growth. Malaysia supply 44% of globally exported PO (5)



MSPO supports the SDG 2030





13 CLIMATE WITH THE CONTROL OF THE C

Zero Burning Policy

"A practice of land clearing without burning to remove the palm tree residue to conserve environment and sustainability"



Replant palm tree on palm tree



Net Zero Policy

When the amount of carbon dioxide added is no more than the amount taken away.

GAP - mill using its biomass and biogas for energy generation.

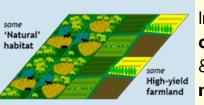








Incorporation of the Malaysian Palm Oil Council with Sabah State Government, Felda Global Venture (FGV), Perhilitan etc to support conservation projects such as:



Intercropping palm oil with other crops; cacao- provide high land sparing effects & replenishing more ground water and reducing carbon footprint (6)

GHG emissions in Malaysia can be reduced by **4.1 t CO2-eq ha-1 pa** simply by banning the establishment of new OP plantations on peat soil (7)



Use of **life cycle assessments** can better estimate the impact of human activities on the environment, specifically for a commodity chain (7)



Endangered
Species - Sun Bear
Asian Elephant,
Pygmy Elephant,
Orangutan and
Malayan tiger.

Good Agriculture
Practice



17 PARTNERSHIPS FOR THE GOALS

the buffer zones and riparian areas



Conserving the rich Malaysian biodiversity

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Palm oil only accounts

for 10% of the tree

palm l

oil

2

Malaysian UN Sustainable Development Goals Palm Oil

Ee Suan, Ho Jun Yue (Faculty of Law), Ee Yan (Faculty of Science)











the remaining 90%

Oil Palm Trunk (OPT)

Oil Palm Fronds (OPF)

Empty Fruit Bunch (EFB)

Palm Kernel Shells (PKS)

Mesocarp Fibre (MF)

Palm Oil Mill Effluent (POME)

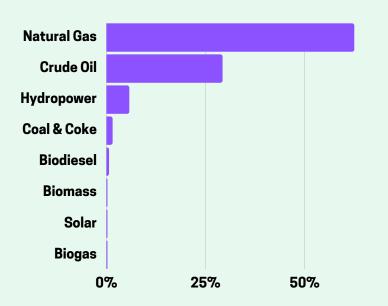
Methods

Biochemical

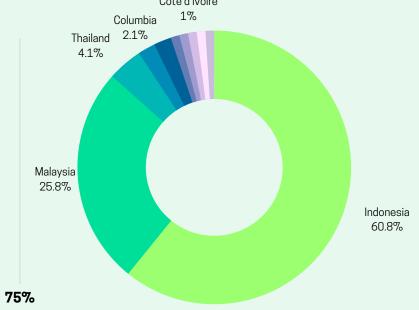
Thermochemical

Physical

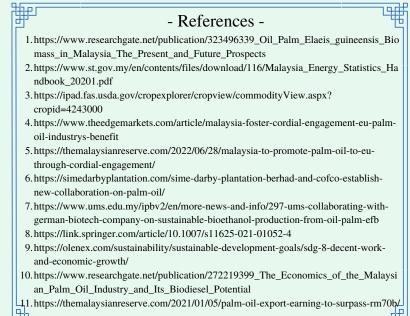
Chemical







*World Palm Oil Production 2022







Malaysia & Indonesia had joint missions to manage palm oil-related problems in Europe under the Council of Palm Oil Producing Countries (CPOPC).

Sime Darby Plantation Berhad & COFCO collaborate to develop healthy palm oils & specialty fats in Malaysia.

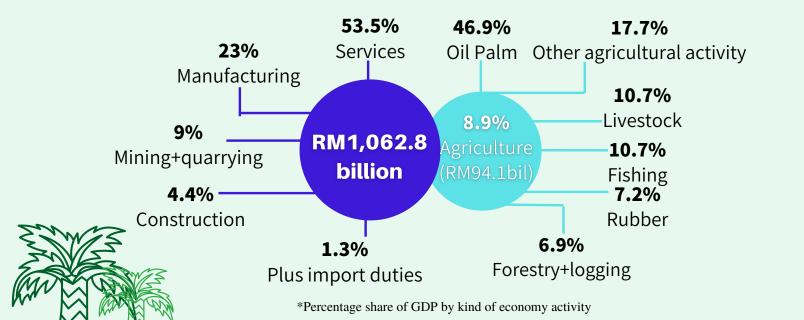
Sabah (UMS) University Malaysia with **German** biotech collaborating on sustainable bioethanol production from oil palm EFB to reduce agricultural waste.

Contribution

Increase the income of people within the palm oil industry

Improve Malaysia's foreign exchange rate

Production of food, biofuels, biomass and biomaterials









HOW THE MALAYSIAN PALM OIL INDUSTRY BENEFITS OUR LIVES

PLANTATION

Standards

MSPO CERTIFICATION SCHEME [3]

Development of Certification

Peer reviewing of audit reports

INTRODUCTION

- Palm oil is an edible vegetable oil, sourced from while oil palm, a tropical West African palm
- Oil palm was first introduced to Peninsular Malaysia and then Malaya in the early 1870s but the first commercial planting of the oil palm took place in Selangor in 1917. [2]
- Oil palm produces: (A) crude palm oil (CPO) from the fibrous mesocarp/flesh (B) crude palm kernel oil (CPKO) from the



 In Malaysia, the oil palm species commonly planted is tenera. It gives a good ratio of palm oil and palm kernel oil yields.

kernels/seed

CONTRIBUTIONS



[18] Minimize the usage of chemical pesticides and replace it by biological



More advanced technology may help to achieve zerowaste industru

WASTE

the primary biomass available at the mills after oil recovery is mesocarp fibre (MF), palm kernel (PK) shell, and empty fruit bunch (EFB)

Bioplastics

- biopolymers can be used in food
- biocomposites can be used for furniture

methane from Palm oil mill effluents could provide green energy

Biochar [10]

- from excess EFB and PK shell
- used as a bio-adsorbent to remove residual pollutants

Fertilisers

Did you know?

the EFB, fronds and trunks of the tree make for good organic fertilisers [11].

about 5.9 million hectares of land are under oil palm cultivation in

PRODUCTS

a) Cosmetics [6] Soaps, shampoo, conditioner, makeup, skincare, fragrance

b) Food Ice cream, cookies, quick meals, cakes,

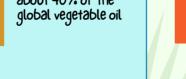


c) Cleaning products Detergents, dishwashing, laundry products





Palm oil supplies about 40% of the global vegetable oil





- Industrialization increases productivity
- All these processes require specific machines and manpower to complete

REDUCTION OF GREENHOUSE GASES

reduce carbon dioxide emissions

Palm tree absorb carbon dioxide

zero-burning initiative can

Can minimize global warming

WILDLIFE CONSERVATION [4]

Malayan tiger conservation

Elephant Grass Planting Project

Forestation provides habitat for

programs

animals on land

PROCESSING

Crude Palm Oil (CPO)

[5] Bunch reception > Sterilization > Threshing > Fruit

digestion > Pulp pressing > Oil clarification > Oil drying

Crude Palm Kernel Oil (CPKO)

[5] Bunch reception > Sterilization > threshing > Fruit

digestion > Pulp pressing > Nut recovery > Nut drying > Nut

cracking > Kernel separation > Kernel drying

- Generate job opportunities and provide
- Increase product demand
- Contribute to Malaysia's overall economy







-- FUN FACTS --

It is used in food dating back [12] **5.000 years**

13 CLIMATE ACTION

Indonesia and Malausia of the world's 85% production

In 2017, palm oil made up about 1/3 of all vegetable oil consumed worldwide

> Palm oil contains the highest amount of

vitamin E compared to other vegetable oils [14] [14] Roughly

of packaged goods sold in grocery stores contain palm oil

It grows best around the equator. [15]

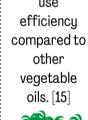
[16] Palm oil trees can

live up to 200 years!









AMPINDO

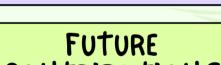
It has the

highest land







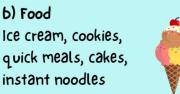




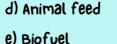
Plantation of oil palm can restore degraded land, and increase land efficiency in Malaysia

control agents













No hydrogenation is needed since palm oil olein is a saturated fat







INTRODUCTION

IMALAYSIA exports of palm oil cultivates oil palm <u>°</u> 3.31 million hectares of land.

Malaysian Palm Oil (MPO) is widely used in various criticized PRODUCTION

ENVIRONMENTAL

IMPACT due to its cultivation.

MPO 😻 United Nation Sustainable Development Goals (SDG) & how it can further be improved in combat

ENVIRONMENTAL ISSUES.

HOW MPO SUPPORT UN SDGs



Support SDG 3: Good Health And Well-being

Support SDG 8: **Decent Work** And



Create INCOME [3]

OPPORTUNITY

Support **SDG 12**: Responsible Consumption **And Production**



Palm Oil is HEALTHY to us!

% polyunsaturated fatty acids

50% saturated fatty acids

40% monounsaturated fatty acids

BENEFITS:



Lower [6] Cholesterol Level



Suppress [7] Inflammation

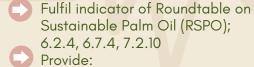


Act as **antioxidants** and [5] Enhance **immune system** activity and protection against **oxidation** by free



Malaysia Palm Oil Council (MPOC) protects PO











Accident Insurance



Housing



MPOC

Sanitation

Economic Growth Palm Oil Industry









Create **FAIR-TRADE** environment between growers and millers



ACHIEVEMENTS:

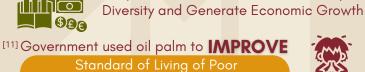


Globally Exported Palm Oil [10] Supplied by Malaysia Stimulates the Rapid Growth of PO industry

Fostered Domestic PO [10] Refining Businesses, Achieving A Refining Capacity of



26.5 million





Rate of Poverty of Agriculture Sector DECREASED by 21.2%



Malaysian Sustainable Palm Oil (MSPO) produce Certified Sustainable PO

First introduced in 2015 Implement penalties

CONTRIBUTIONS:



Transparency about PO Footprints Industry [12]

Reduce Carbon

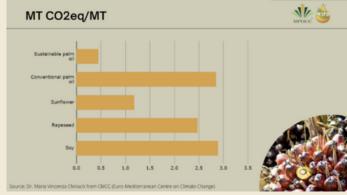
Eradicates Deforestation & Reconnects Fragmented Forests [13]



PROOFS:

Sustainable Palm Oil emits LESSER CO² EQUIVALENT

PER TONNE compared to soy, rapeseed and sunflower!



MPO CAN SUPPORT UN SDGs IN FUTURE

Create Riparian Buffer Zones

To preserve forest patches within and around PO plantations To stabilize riverbanks and lessen crop water pollution

Implement the Soil Cover Crops Method

To prevent soil erosion and lessen the necessity for using herbicides to control weeds

To increase groundwater replenishment

13 CLIMATE ACTION





Practise Biological Pest Control

To reduce the use of pesticides and increase plantation biodiversity

Stress on Waste **Management and Recovery**

Combined with EFBs, processed residues can be composted and neutralized to create biofertilizer



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Celine Choo Kai Ying

Liew Wei Jian



1 NO POVERTY



OTHER UN SDGs THAT MPO HAS SUPPORTED:



17 PARTNERSHIPS FOR THE GOALS





Palm Oil Processing Special Interest Group



School of Pharmaceutical Sciences Kam Sin Jie

School of Biological Sciences



5 GENDER EQUALITY







Malaysia's palm oil industry started when Frenchman Henri Fauconnier commercially planted the oil palm in Batang Berjuntai (Bestari Jaya), Selangor.¹

2000 - 2010

The Malaysia Palm Oil Board (MPOB) was creat- 14 life below water ed to overlook all oil palm research & production.3 In the following decade, the Malaysian Oil Palm Wildlife Conservation Fund would be initiated to assists conservation efforts.4

2020 - present

Malaysia launches B20 biodiesel mandate.7 The MPOB has also partnered with multiple Chinese institutions to produce biodiesel and biojet fuel in Malaysia.8



Significance of Palm Oil:



1970 - 2000

Malaysia begin export of palm oil and started research on the potential use of palm oil as feedstock.2

Mesocarp (Flesh)10

Produce crude

palm oil (deep

red oil)10



2010 - 2020

2015, Malaysia signed the Paris Agreement, targeting a reduction in GHG emissions intensity by 45%, by 20305, and implemented the Malaysia Sustainable Palm Oil (MSPO) certification to increase sustainability of palm oil.6



2030

Targets 100% Biodiesel sourced from certified sustainable palm oil, B30 (transport) and B10 (in- 17 PARTINERSHIPS FOR THE GOALS dustry).7



Palm Oil Species: Tenera⁹

Requires the

Found in a variety

of foods¹⁰







Sustainability of Palm Oil:

agrochemical & fossil fuels inputs for cultivation.11







of oil palm planted⁷

5.9 MILLION ha



Malaysia's **Agricultural** Output¹²

cleaning products¹⁰ yellow oil)10

Produce palm

kernel oil (dark

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Commonly used to

produce cosmetics and

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Kernel¹⁰

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ēΤ 2.47 **GHG Emissions** among other oil crops¹¹ 1.18

LOWEST

Palm Oil Export⁷:

RM 73.3 BILLION

26.7 million tonnes

Malaysia's Road to achieve UN Sustainable Development Goals via Palm Oil





of Malaysia's land covered with palm oil plantation



~ 1,000,000 people employed (directly & indirectly)

people employed



ensures that plantation worker is paid by the

minimum WAGE law



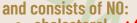
helps contribute to

> 5x higher & soy oil



Palm oil is RICH in:

- pro-vitamin A carotenoids



- cholesterol
- trans fats

the essential nutrients available in cheap palm oil will/help eradicate



in Malaysian Children

Created by:

CHANG MUN YUEN LOH JUN MANN SITI HANIFAH ADIIBA

Monash University Malaysia Monash Industry Palm Oil Research Platform

increase in Malaysia's food security index from 2012 to 2021

decrease in Malaysia's hunger index from 2000 to 2021

- 2.6 %

Population using at least basic drinking water

Population using at least



+4.6%

Adult literacy Rate in 2019 is 96.8%



Pre-primary school Enrolment rate **Tertiary** Secondary **Primary**



Palm oil industry contributed

2.7% to Malaysia's GDP

and 37.7% of agricultural output



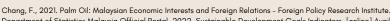
RM60 million allocated for **MECHANISATION** & AUTOMATION



The growth of the palm oil industry has made Malaysian cities more

inclusive, safe, resilient sustainable





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