

How does Malaysia Palm Oil support

Sustainability Development Goals

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End Poverty

Since the 60s, palm oil industry has been playing a major part in the **development in rural area** of Malaysia, which is directly associated to the decline of both the national poverty and unemployment rates to **less than 5% today**.

Industry Employment Opportunities ^{[1] [2]}

2.3 Million People rely on MPO



40% who benefit from MPO are **small farmers**

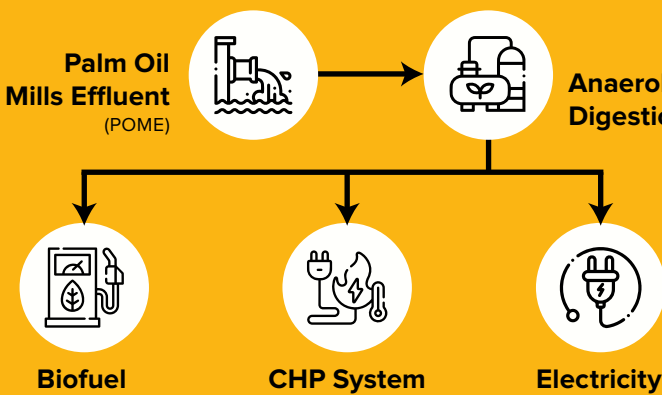
7 AFFORDABLE AND CLEAN ENERGY



Besides being capable to **power own nation with green energy**, abundance of palm biomass in Malaysia also allows many R&D, thus accelerating the biomass industry as well as our nation's goal of **achieving carbon neutral** by 2050.

Going Green

Utilizing Palm Biomass as Green Energy Source ^[5]



Malaysia Palm Biomass ^[6]

95 Million Tonne generated across 2021
converted to
195 MW

13 CLIMATE ACTION



Replacing fossil based methanol with biomethanol from biogas ^[9]

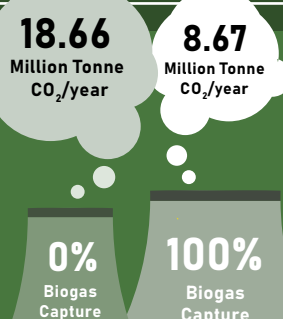
Up to

63% & **22%**
Fossil Resources Saved Climate Impact Reduction

Implementing biogas capture technology ^[10]

Reduce up to

53.5%
Greenhouse Gas Emissions



2 ZERO HUNGER



Food 4 All

Being the largest agricultural commodity in Malaysia, palm oil provides an **affordable and healthy alternative** to achieve food security locally and globally.

Palm Oil in Food

Key food ingredient in

Dough

Baked Good

Palm Oil Benefit ^[3]

rich in

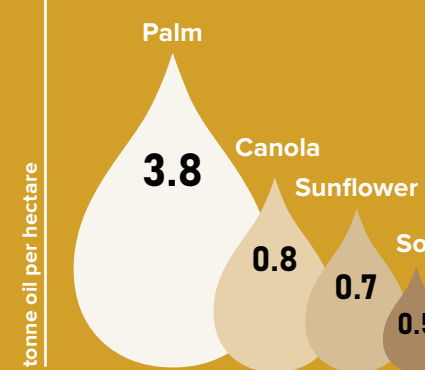
Vitamin A
Prevention of blindness

Vitamin E
Prevention of bone loss

Providing food security worldwide, efficiently ^[4]

Most Efficient
Vegetable Oil

Smallest cultivated land
Highest oil production



8 DECENT WORK AND ECONOMIC GROWTH



Evergrowing Industry

With enforcement of **proper governance and certification**, decent work within palm oil industry in Malaysia is well maintained and the nation economic upswing ensues.

Significance of MPO to Malaysia Economy ^[7]

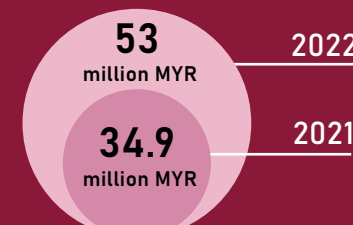
Contribute up to

4.2%

of Malaysia GDP by 2015

MPO Market ^[8]

51.6%
Export Revenue Increase since 2021



Towards Net Zero

By incorporating latest green technology and sustainability concepts into the palm oil industry, Malaysia shows commitment to the **Paris Agreement** to help combat climate change.

15 LIFE ON LAND



Conservation

Through collaboration and partnership, Malaysia has proved that palm oil production do not need to always **sacrifice the forests for the industry's growth and profitability**.

Minimal Land Used ^[11]

Contribute to

50%
Forest Conservation Commitment

Malaysia Palm Oil Green Conservation Foundation ^[11]



launched in **2006**

20 Million MYR for Wildlife, biodiversity & environmental studies

Addressing concerns with

Sustainable Palm Oil



In response of the sustainability criticisms by EU, Malaysia made mandatory the Sustainable Palm Oil (MSPO) certification in 2019, which since then has helped **advance the industry towards green growth**. ^[12]

SDG 8: Decent Work and Economic Growth

Social



8 DECENT WORK AND ECONOMIC GROWTH
Employment & Labour Condition
Child & Forced Labour

SDG 13: Climate Action

Climate change



13 CLIMATE ACTION
Fire & Haze
Greenhouse Gas Emissions

SDG 15: Life on Land

Deforestation



15 LIFE ON LAND
Biodiversity Loss
Conservation Commitment

Composting (SDG12) ^[13]

Turning organic waste from palm oil into **compost**

Substituting up to

20-30%
mineral fertilizers (estimated)

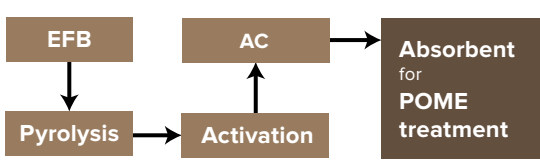


Waste Treatment (SDG6) ^[14]

Renewable and low cost

AC Activated Carbon from

EFB Oil Palm Empty Fruit Bunch



Increase Revenues from Palm Oil Cultivation (SDG8) ^[15]

Replanting

0.36 Million Hectares of old, low-yielding oil palm trees



Improve

25% FFB Yield (Fresh Fruit Bunch)

by assisting collaboration between **smallholders with producers**

Moving Forward

With advancement of new technology comes countless opportunities Malaysia can explore to further drive UN's Sustainability Development Goals within its palm oil industry.

Reference

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What **has** the MPO industry **contributed** towards Malaysia's SDGs?

What **can** the MPO industry **contribute** towards Malaysia's SDGs?

3

GOOD HEALTH AND WELL-BEING

- Palm oil is rich in **tocotrienols** (a form of vitamin E) & **beta-carotene** (vitamin A) [1].



- The **vitamins** in palm oil serve as **antioxidants** that scavenge free radicals for the prevention of pathologies & boost in body's immune system.



- Consumption of an appropriate amount of palm oil **positively** aids in:

1. Prevention of **bone loss** by strengthening the brittle bones



2. Amelioration of **Alzheimer's** related behaviour & dementia



3. Preventable **blindness**



- MPO industry acts as a **catalyst** in poverty alleviation & economic growth.



8

DECENT WORK AND ECONOMIC GROWTH

- Malaysia is the **2nd largest global palm oil producer** (with 25% of global palm oil production) [2], after Indonesia.



- Before the pandemic, the MPO industry employs **about 2.3 million people**, resulting in Malaysia's **low unemployment rate** of ca. 3.4%.



- More than **300,000 small farmers in Malaysia** cultivating oil palm plantations produce over **18 million tonnes of palm oil** annually, leading to a decrease in the poverty rate among indigenous farmers [3].



7

AFFORDABLE AND CLEAN ENERGY

- **Palm oil mill effluent (POME)** captures effluent and traps methane emissions, limiting **its GHG emissions** which are used to power mills.



- **Palm oil** as raw stock is used for **biodiesel production** [4], it

1. has **high** production yield,



2. uses **low** fertilizer, water and pesticide



3. takes less **sunlight** in terms of energy balance to produce oil



- **Biodiesel** from palm oil is biodegradable, non-toxic and free from sulfur.



- It has great potential to replace **petroleum fuel**.

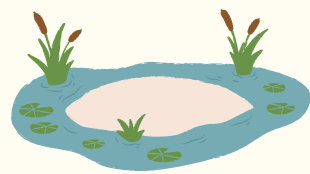


- MPO companies can conserve and retain important **biodiversity** if forest set-asides are sufficient [5].

13

CLIMATE ACTION

- **Sedimentation ponds** of palm oil mills can offer **artificial habitats** used by local waterbirds and migratory waders.



- MPO estates can enhance species habitat value by increasing the **connectivity** between forest patches and maintaining forest corridors between them.



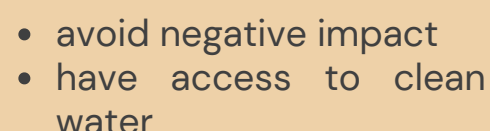
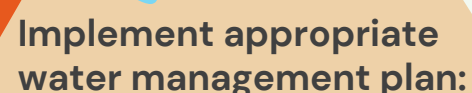
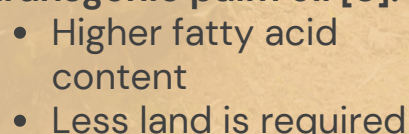
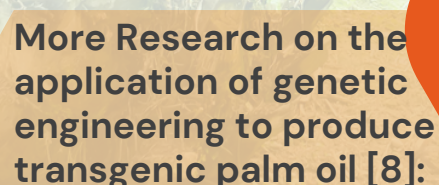
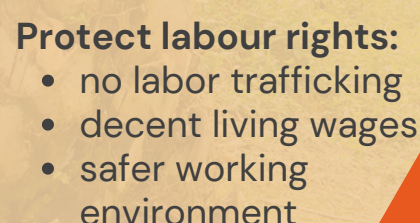
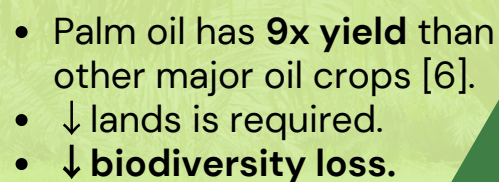
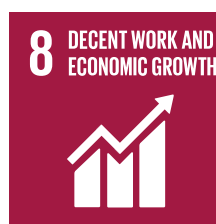
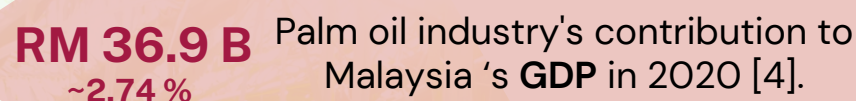
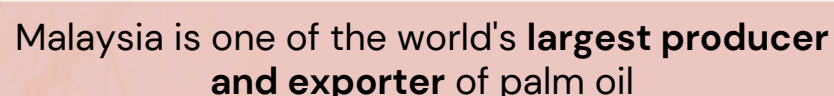
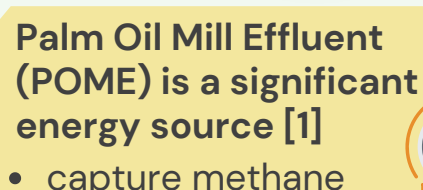
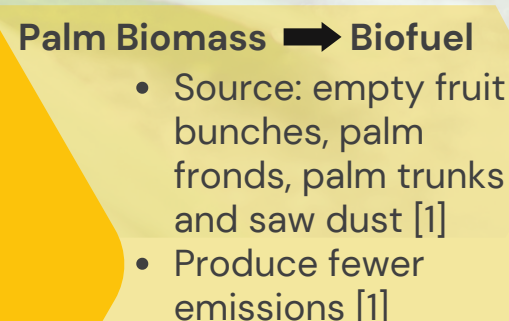
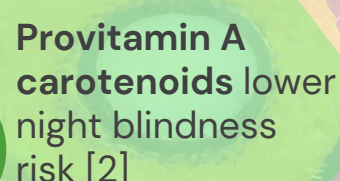
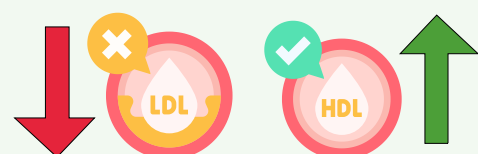
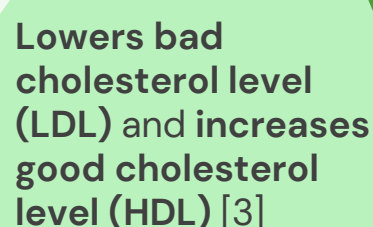
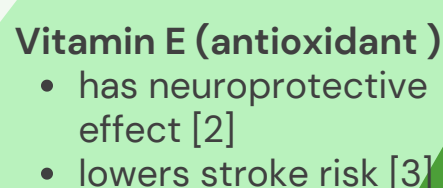
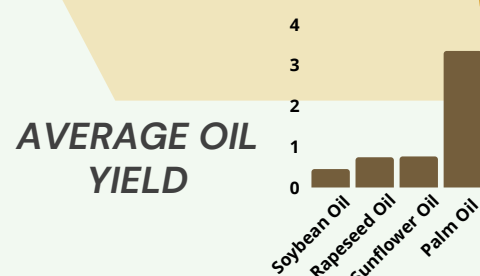
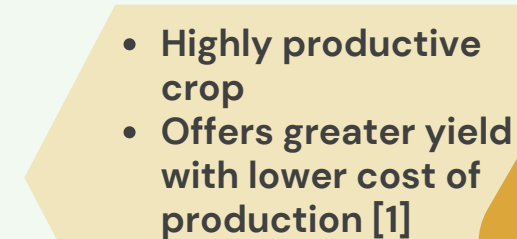
- Increasing the **heterogeneity of vegetation** within oil palm blocks can increase the ecological value of these areas [6].



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REFERENCES



IN THE **PALM** OF YOUR HAND

Wow, Malaysia is the
2nd-largest producer &
exporter of palm oil!

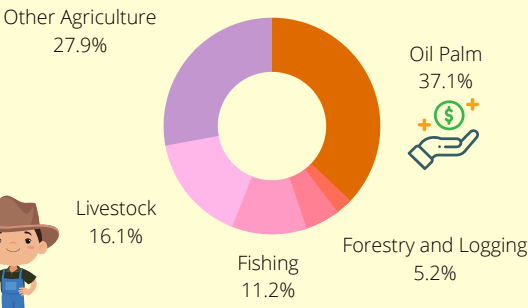
26% of global production
44% of global export [1]

WE ARE ABLE TO PROSPER!

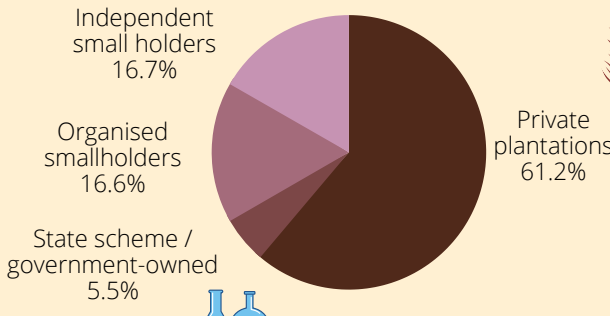
Poverty among smallholders
1960s **50%** Today **5%**
Land settlement schemes for oil palm
cultivation under FELDA [2]

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Gross Value Added (GVA) of Agricultural Sector by Types of Economic Activity, 2020 (Based on 2015 Prices) [3]



Malaysian Oil Palm Producers (as of December 2019) [2]



Smallholders comprise farmers who own
100 acres of land or less (40.46ha). [2]

Organised smallholders
(FELDA, FELCRA, RISDA)
Gain technical, processing, marketing
and financial support from umbrella
organisations.

Independent smallholders
Gain assistance through TUNAS, an
assistance centre under Malaysian
Palm Oil Board (MPOB).



UPSTREAM → OIL PALM GROWER, FRUIT PICKER → **MIDSTREAM** → SCIENTIST → **DOWNSTREAM** → PALM OIL REFINER, PALM OIL-BASED PRODUCTS MANUFACTURER → [4]

DO YOU KNOW **CRUDE PALM OIL** CAN BE **REFINED** INTO >10 FRACTIONS?

PALM OIL APPLICATION WITH ITS RESPECTIVE FRACTION [5]

MARGARINE



RBD PALM STEARIN, MID STEARIN

PHARMACEUTICALS [6]



RED PALM OIL (RPO)

ANIMAL FEED



PALM KERNEL EXPELLER (PKE), PALM FATTY ACID DISTILLATE (PFAD)

SOAP



PALM KERNEL OIL, RBD PALM STEARIN

BAKERY FAT



RBD PALM OIL, RBD MID FRACTION

BIOFUEL



PALM OIL, PALM OLEIN, PALM STEARIN

and many more...

COOKING OIL



RBD PALM OLEIN, SUPER OLEIN

COATING BINDER [7]



PALM FATTY ACID DISTILLATE (PFAD)

CONCRETE [8]



PALM OIL CLINKER

COSMETICS



PALM OLEOCHEMICALS

BIO-LUBRICANT [9]



PALM KERNEL OIL

SOCIAL



UHHM... IS PALM OIL HEALTHY? [6]

RED PALM OIL = 15X [Carrot] = 300X [Watermelon]

VITAMIN E TOCOTRIENOLS
Powerful antioxidants
~ aging
~ cancers
~ liver diseases
~ cardiovascular diseases
~ neurodegenerative diseases

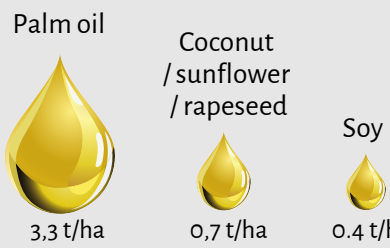
PROVITAMIN A CAROTENOIDS
Antioxidants (cancer-fighting
& anti-inflammatory)
Vitamin A (better vision &
immune system)

ESSENTIAL FATTY ACIDS
Source of linoleic acid (C18:2) &
linolenic acid (C18:3)
~ Omega 3 & 6 fatty acids ~

CALORIES
Excellent energy source

OIL PALM: AN INCREDIBLY EFFICIENT CROP [10]

Oil Yield in Tonnes/Hectare (t/ha)



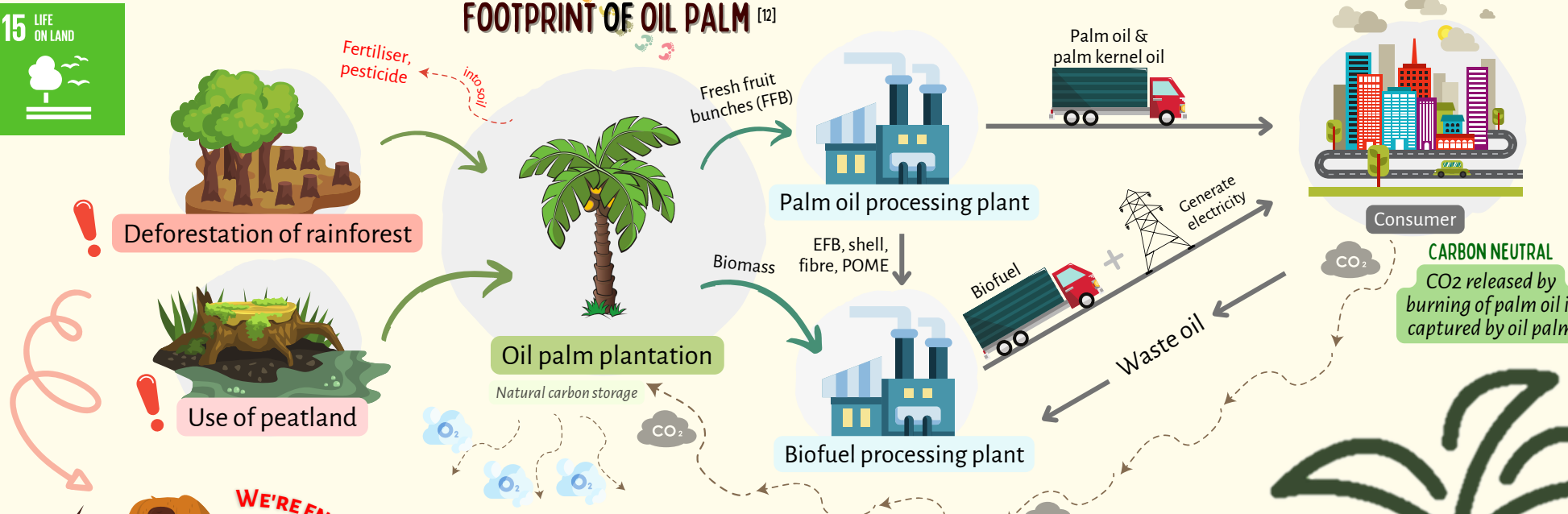
6% land used for oil palm plantation
→ 40% supply of global vegetable oil

THE MOST SUSTAINABLE & ECONOMIC WAY TO PRODUCE **SOLID FAT** WHICH IS FREE OF TRANS-FATTY ACID! [11]

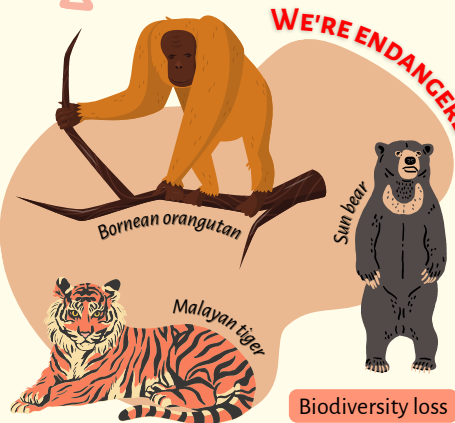


POo is saturated fat (solid fat)
No hydrogenation is needed
Conduct fractionation for separating them! That's it!

FOOTPRINT OF OIL PALM [12]



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**HOW
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GOOD AGRICULTURAL PRACTICE (GAP)

4.14.2 WILDLIFE & BIODIVERSITY CONSERVATION [14]

~ Minimise damage to wildlife habitat ~
Biological pest control
Multicropping & soil cover crops [1]

Forest corridor
Allow fauna to travel from one forest
to another without crossing the oil
palm plantation [1]

Riparian buffer zone
Reduce water contamination from
plantation, stabilise riverbank [15]

FUTURE PRACTICE

- Sustainable Aviation Fuel (SAF) from palm oil [16]
- Standard framework for
assessing impact of land
use change (LUC) [1]



SUSTAINABLE DEVELOPMENT GOALS (SDGs) :

'A BRIGHT FUTURE FOR MALAYSIA'S OIL PALM'



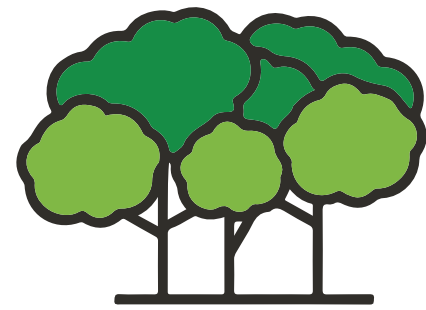
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LIFE
ON LAND



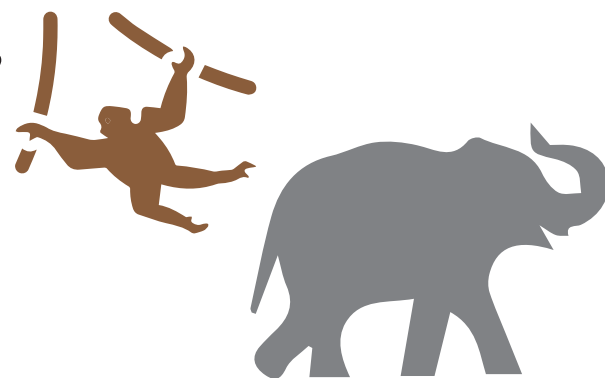
Aims to stop biodiversity loss, manage forests sustainably, prevent desertification, and conserve, restore, and promote sustainable use of terrestrial ecosystems.

Halting expansion of oil palm plantation by maintaining 50% of its forest [1] and remain 6.5 M/ha until 2023 [2].



High conservation value (HCV) strategies conserve very important biological, ecological, social, or cultural resources that are monitored and maintained by land developers and other stakeholders [3].

The Orangutan Population Census, the Pygmy Elephants Program, and other **conservation efforts** that emphasise the need to protect these species [4].



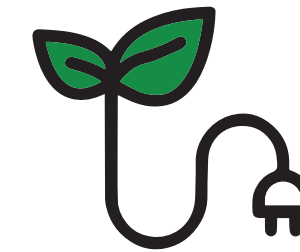
Establishment of **Malaysian Palm Oil Wildlife Conservation Fund** (MPOWCF) [5].

Integration of livestock as an alternative to weed control improve the sustainability of agriculture [6].



The use of **biodiesel** made from palm oil as a sustainable energy source has increased palm oil exports to Europe, where biodiesel production accounts for 87% of palm oil imports [7,8] and increased by 9.5% from 2018 to 2019 [9,10].

Utilization of methane generated by palm oil mill effluent (POME) as **biogas** in mills to generate power (electricity) [11].



7

AFFORDABLE AND
CLEAN ENERGY

Ensuring access towards affordable, reliable, sustainable and modern energy for all.

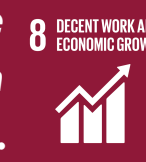


3

GOOD HEALTH
AND WELL-BEING

Guarantees healthy lives and fosters wellbeing for all at all ages.

Calls for full and productive employment along with decent work for all.



8

DECENT WORK AND
ECONOMIC GROWTH

Regulations of Occupational Safety and Health Act of 1994, the Employment Act of 1990, the Factories and Machinery Act of 1989, and the Children and Young Persons (Employment) Act of 1966 [12].



13

CLIMATE
ACTION

Reducing emissions that might contribute in worsen climatic conditions.



Zero-burning replanting technique is implemented which ultimately increases soil fertility and reduces GHG emissions and unintentional forest fires [13].

2

ZERO
HUNGER



Enhance the food security, and promotes healthy diet for consumers.



Red palm oil is excellent at boosting vitamin A and antioxidant status, protecting against cancer, inhibiting atherosclerosis, and having a positive impact on immune system performance.

In the aim of sustainable food production and nutritious diets, the diversification of palm oil as a **food additive** has considerably improved the food security, health, and well-being of millions of people worldwide [14].



4

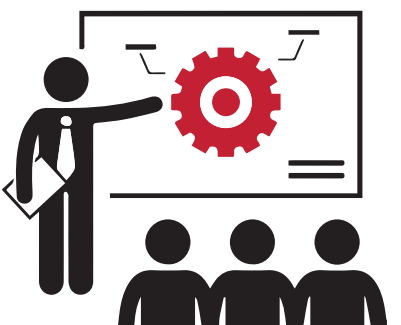
QUALITY
EDUCATION



Aims to provide inclusive and equitable quality education and to encourage possibilities for lifelong learning for everyone.

MPOB's TUNAS officers assisted smallholders on **adopting oil palm-related technologies** [15].

MPOB also employed seminars, online research journal libraries with e-books, journals, and newsletters, and bulletins [16].



Provide **health and educational facilities** as part of Company Social Responsibilities (CSR).