

PalmSphere

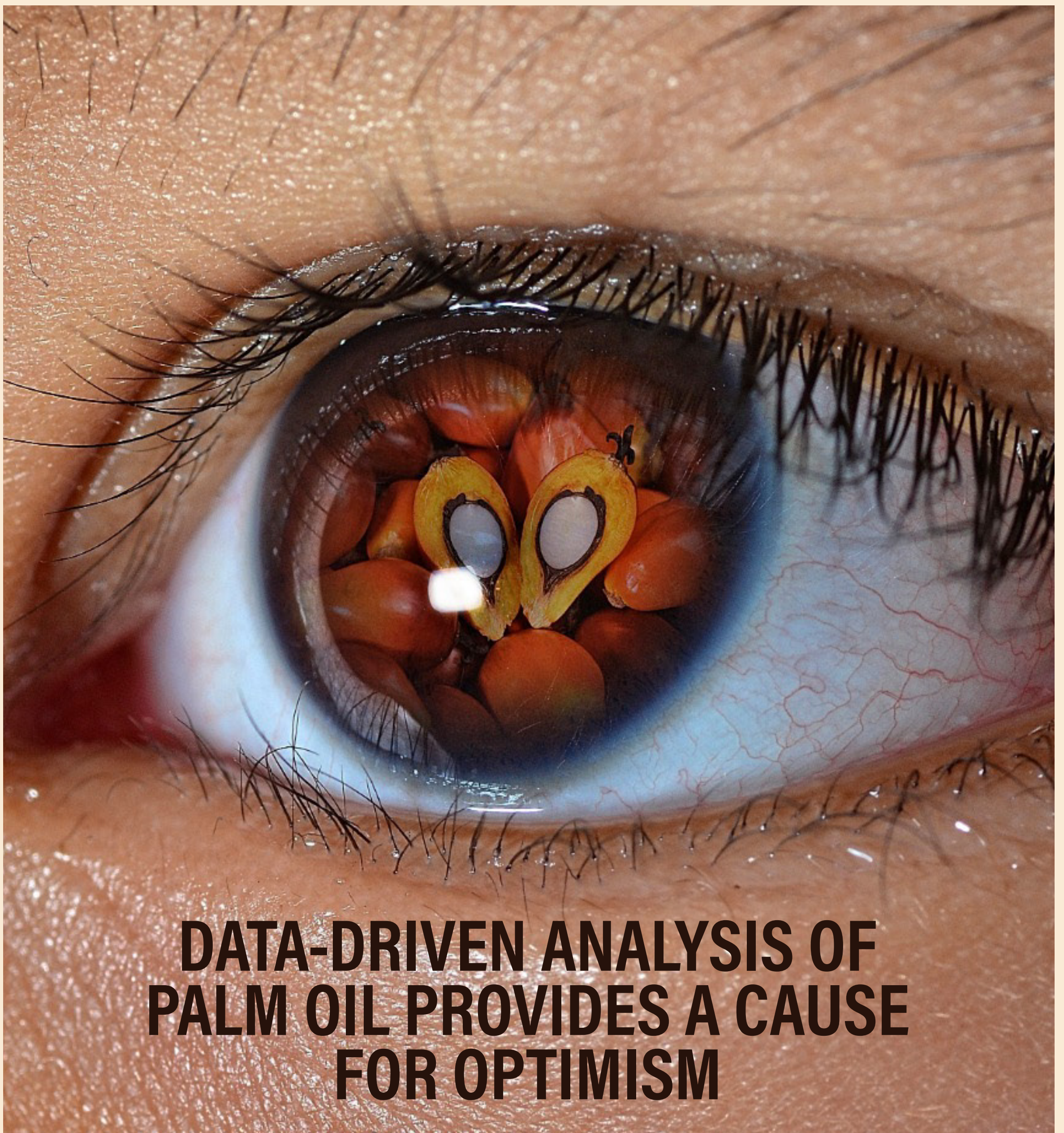


M P O C

APRIL 2024 VOL:03

A SMALLHOLDER'S SUSTAINABLE
FARMING CHRONICLE: FROM CERTIFICATION
TO NATURE-POSITIVE FARMING

THE PATH TO ENHANCED SUSTAINABILITY:
REGENERATIVE AGRICULTURE AND THE MALAYSIAN
PALM OIL INDUSTRY



DATA-DRIVEN ANALYSIS OF
PALM OIL PROVIDES A CAUSE
FOR OPTIMISM

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MESSAGE FROM THE CEO



Belvinder Sron
CEO of MPOC

Dear Readers,

Welcome to the third edition of “PalmSphere”, the Malaysian Palm Oil Council’s (MPOC) sustainability newsletter. As CEO, I am honoured to continue this sustainability journey with you, our partners, and stakeholders. This edition unfolds narratives that further cement our commitment to uphold and innovate within sustainability. Our cover story, inspired by Dr Hannah Ritchie’s analysis in “Not the End of the World,” offers a cause for optimism. Dr Ritchie’s work dispels prevalent myths about palm oil, emphasising the potential for sustainable growth and responsible production within our industry.

In this edition, we highlight the inspiring story of Chai Kon Chin, an independent smallholder who transformed his conventional oil palm farm into a nature-positive model. We also explore the relevance of regenerative agriculture in oil palm plantations and SALCRA’s tree planting programme in collaboration with WWF-Malaysia and Malesiana Tropicals at Lemanak Oil Palm Estate, Sri Aman.

These stories, dear readers, are your stories. They are the narrative of a community unwavering in its commitment to sustainability, integrity, and innovation. As we move forward, let us remember that every action counts, every initiative matters, and every voice can make a difference. Your feedback, engagement, and partnership are invaluable as we stride towards a future where Malaysian palm oil is synonymous with sustainability and ethical excellence.

Together, let us continue to shape an industry that is not only a model for global sustainability but also a custodian of the earth for future generations.

DATA-DRIVEN ANALYSIS OF PALM OIL PROVIDES A CAUSE FOR OPTIMISM

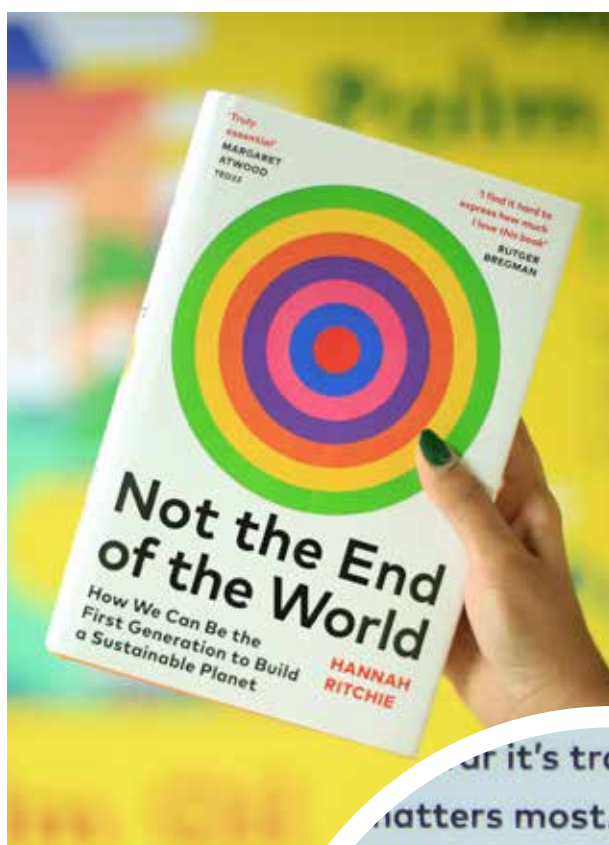
MPOC welcomes the insightful analysis in Dr Hannah Ritchie's ground-breaking book, "Not the End of the World," which challenges widespread misinformation surrounding palm oil and offers a refreshing perspective.



AFTER decades of unrelenting bad news about the worsening state of the planet, renowned data scientist Dr Hannah Ritchie has written a book about why there is cause for optimism and how organisations such as MPOC have started turning the tide against, amongst other things, deforestation.

The Malaysian Palm Oil Council (MPOC) welcomes the insightful analysis in Dr Hannah Ritchie's ground-breaking book, "Not the End of the World." This meticulously researched volume challenges widespread misinformation surrounding palm oil, offering a refreshing perspective grounded in data and nuance.

For decades, palm oil has been unfairly vilified as the single biggest cause of deforestation and for the environmental harm it does. Dr Ritchie, a leading researcher and Deputy Editor at the University of Oxford's The World in Data website, meticulously dismantles this simplistic portrayal of this crucial crop. Her evidence-based approach reveals a truth that will come as a surprise to many.



“Not The End of The World” does not entirely exonerate palm oil of its historical role in deforestation or infer that the industry gets everything right. However, it demonstrates that oil palms are not the worst culprit for deforestation; deforestation in oil palm-growing areas is falling, and oil palms are remarkably efficient in growing compared to alternative oils.

As demand for vegetable oils grows, oil palm’s high yield per hectare potentially means less land needs to be used, offering hope for further forest conservation.

As Dr Ritchie points out, we use 322 million hectares (an area the size of India) to grow oil crops, but if we were to source all of it from oil palm, we would need just 77 million hectares - or four times less land. Yet if we got it all from soybean oil, we’d need more land: 490 million hectares; from olive oil, we’d need 660 million hectares, or the equivalent landmass of two Indias.

Beyond this, the book fosters a comprehensive discussion on how to deal with deforestation globally, looking at beef and soy in South America, crop yields in Sub-Saharan Africa and, of course, palm in Southeast Asia. There needs to be a broader conversation, moving beyond the singular focus on palm. The initiatives employed by the Malaysian government and palm oil corporations are bearing fruit, with many operating under a commitment to No Deforestation, Peat and Exploitation (NDPE).

The book also debunks the dangers of knee-jerk reactions like boycotting palm oil. Replacing it with other oils would necessitate significantly more land, potentially exacerbating deforestation further. Instead, Dr Ritchie advocates for embracing certified sustainable palm oil (CSPO) to ensure responsible practices are embedded throughout the supply chain.

The truth is that the rate of deforestation in Malaysia has been trending lower for some time, with Global Forest Watch reporting in June 2023 a sharp reduction in forest loss, showing that reversing deforestation is achievable.

We applaud the release of Dr Ritchie's data-driven analysis, whose findings resonate deeply with our values. This book quashes the misleading narratives that palm oil is the pantomime villain of global agriculture. While there is still much work to be done, we have long championed transparency and sustainability, and we welcome this book as an opportunity for informed dialogue and collaboration to ensure a truly sustainable future for palm oil.

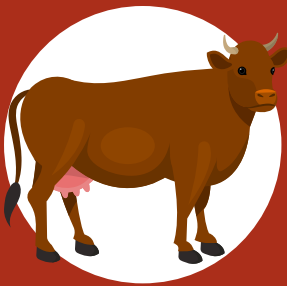
SO, WHO ARE THE REAL VILLAINS WHEN IT COMES TO DEFORESTATION?

Three-quarters of deforestation is driven by converting primary forests for agriculture or plantations. **The single biggest driver, by far, is beef; forest clearance to make room for cows to graze on is responsible for more than 40% of global deforestation**, with South America being home to most of this destruction. Brazilian beef production alone is responsible for one-quarter of global deforestation.

The solution is to eat less beef and, where possible, grain-fed rather than grass-fed beef. Eating less meat means the world would need less cropland than we currently use, as many crops are fed to animals. By reducing our meat consumption, we could use this land to grow crops for humans instead and leave more land to nature.



WE COMMEND “NOT THE END OF THE WORLD” FOR MOVING BEYOND THE PALM OIL NARRATIVE BY:



Encouraging a holistic approach to deforestation by tackling broader issues like responsible beef consumption and crop yields.



Championing data-driven dialogue: Fostering informed decision-making based on accurate information and encouraging constructive dialogue rather than emotional responses.



Embracing solutions: Offering practical solutions like supporting certified sustainable palm oil and making informed dietary choices.

By fostering a deeper understanding of complex issues and advocating for responsible practices, “Not the End of the World” empowers stakeholders to contribute to a more sustainable future. MPOC and the palm oil industry remain committed to working with all stakeholders to ensure a responsible and sustainable palm oil industry that benefits both people and the planet.

By Belvinder Sron
CEO, Malaysian Palm Oil Council (MPOC)





Photo Credit @ Wild Asia 2024

A SMALLHOLDER'S SUSTAINABLE FARMING CHRONICLE: FROM CERTIFICATION TO NATURE-POSITIVE FARMING

Independent smallholder Chai Kon Chin shares how he transformed his conventional oil palm farm into a nature-positive farm.

IT'S a scorching afternoon, typical of the tropical Malaysian climate, as Chai Kon Chin putters in his oil palm farm. He weeds out straggly shrubs and collects loose fruits scattered around the palm trees. Nearby, a flutter of butterflies hovers over a coral vine (*Antigonon leptopus*) bush with pretty pink flowers. Occasionally, two to three butterflies would land on Chai's arm momentarily.

"It's as if they're chatting with me and keeping me company," Chai chuckles. "Despite the midday sun, I'm comfortable because the lush greenery 'cools' my farm." We had dropped in to visit the independent smallholder's 5.2ha farm located in the former mining town of Kampar, a two-hour drive north of Kuala Lumpur. In recent years, Chai has seen a surge of butterflies on his farm. His palm trees are healthy, with large, vibrant green fronds. His soil is rich, dark brown with crumbly textures, and teeming with worms. More importantly, the trees are disease- and pest-free. Chai's secret? He decided to let nature thrive, reduce chemicals, and adopt DIY organic fertilisers.

Early Years

Born and raised in Malim Nawar, Kampar District, Chai worked as a tractor driver in Kuala Lumpur after dropping out of school at 14. “Life was hard! I was always on the road and barely making ends meet with a young family to support,” the 63-year-old reminisces. After his first child was born, Chai switched jobs to work for FELDA (The Federal Land Development Authority) in Kelantan as an oil palm estate *mandor* (foreman). His first exposure to conventional farming practices involved the liberal use of chemical fertilisers and pesticides. By the time he hit his mid-forties, Chai was burned out and suffering from health issues.

“I returned to Kampar in 2009 and decided to plant oil palm,” says Chai, who still had to support his eldest daughter in university and two younger children in high school. “At least I can manage my time and stress levels and earn a stable income from oil palm.”

In the mid-80s, Chai’s father had leased this piece of land close to Kampar town and planted 40 rambutan trees (*Nephelium lappaceum*) for commercial production. Chai planted oil palm seedlings on the rest of the vacant land. Chai could apply the planting know-how he gained from working at FELDA, so it wasn’t a steep learning curve. Yet, the early years were tough. Chai was spending money on chemical fertilisers and herbicides every three to four months, and his farm operating costs were adding up fast. He tried selling his fresh fruit bunches (FFB) to different dealers but couldn’t get a decent price or was sometimes short-changed.

Shift to Nature

The turning point arrived when Chai’s relative introduced him to Sg Kroh-based fruit dealer Teik Joo Chan (TJC). Not only did Chai finally get a fair price from TJC, but he also learned about Wild Asia through TJC. A progressive dealer who grasps the importance of embracing international certification standards, TJC has been working with Kuala Lumpur-based Wild Asia since 2013 to support the **Wild Asia Group Scheme** (WAGS) for its network of smallholders.

WAGS offers free technical advice, training, and capacity building to help independent smallholder farmers meet certification standards and improve their farm management practices.

In order to meet sustainability standards, Chai had to learn and adopt standard oil palm **good management practices**, such as switching from blanket spraying to circle or selective spray and controlling weeds manually through slashing or grass cutting.

One of the Integrated Pest Management (IPM) strategies, also a sustainability certification requirement, is for farmers to reduce their dependence on chemicals for pest control. With guidance from the WAGS field staff, Chai planted beneficial flowering plants like coral vine (*Antigonon leptopus*) and senna (*Cassia cobanensis*). These plants become a food source and host plants for parasitoids like *Sycanus*, predators of bagworms - one of the most common and destructive pests of oil palm trees. The 'conventional' method to get rid of bagworms is to inject the trees with pesticides.

However, long-term use of chemical pesticides can damage the tree roots and soil. Chai also kept grass as a ground cover to maintain moisture and deter the bagworms, which prefer dry conditions. For other pests, like rhinoceros beetles, he adopts strategies like using pheromone traps. Since reducing his pesticide use, Chai has shaved his production costs by 40%.

Reaping the Rewards of Sustainable Farming

Today, Chai's smallholding earns an average of RM5,000 a month, with an annual production of about 101 metric tonnes of FFB. Palm oil has helped Chai's three children through university, build their family home, and improve their living standards.

"When I started, I didn't have a specific goal in my farming journey other than providing for my family," says Chai. "Working to achieve sustainable certification has given me the direction and purpose to move forward."

In line with the national policy, Chai's farm has met the Malaysian Sustainable Palm Oil (**MSPO**) standard for oil palm production since 2019 and international sustainable certification criteria. For Chai, it means moving towards nature-friendly farming, connecting with the land and letting nature take its course, literally and figuratively.

It all began to come together for him when he took part in Wild Asia's **WAGS BIO** awareness workshop. He learnt about WAGS BIO, an approach that helps farmers adopt nature-friendly agriculture practices. Farmers learn to restore or reinvigorate soil using organic matter from the farm or converting kitchen wastes into enzyme fertilisers. Healthy, microbe-rich soils lead to healthier palms resistant to pests and diseases and, ultimately, higher yields. Farmers are also taught the benefits of intercropping to improve soil and farm biodiversity.

Applying what he learned from the workshop, Chai made *BIO juice* (liquid enzyme fertiliser) using fruit peels that he collected from fruit sellers. He then sprayed the BIO juice on his palm trees, frond stacks, and soil.

“

Working to achieve sustainable certification has given me the direction and purpose to move forward. In line with the national policy, my farm met the Malaysian Sustainable Palm Oil (MSPO) standard for oil palm production in 2019.”

Chai Kon Chin



“I usually apply chemical fertiliser after every third harvest. By replacing the commercial fertiliser with BIO juice, I saved up to RM3,000 for each application,” says Chai. “It took at least four months to see the effects (of the enzyme fertiliser), which is a modest yield increase. My trees and soil look healthier too.” He also applies the BIO juice to his rambutan, jackfruit, and *ciku* (*sapodilla*) trees. Chai earns up to RM10,000 from rambutan sales on a good harvest year. He also sells sweet potatoes, which he grows on a separate 2-acre (0.8ha) plot, to supplement his income.

In a 2022 environmental survey conducted by Wild Asia on Chai’s farm, the data reveals a healthy insect population, notably butterfly species that include common palmfly (*Elymnias hypermnestra*), blue glassy tiger (*Ideopsis vulgaris*), peacock pansy (*Junonia almana*) and Psyche (*Leptosia nina*). Cutting back on chemical inputs has enhanced the biodiversity on his farm. “I think the butterflies love being in an organic environment with no chemicals and dense vegetation,” Chai quips as he shows us a collection of butterfly images taken on the farm on his smartphone. Chai has yet to commit to 100% chemical-free farming but is not ruling out the possibility. “It’s too labour intensive. For now, I just enjoy farming at my own pace and rhythm,” he says, smiling. I’m happy to be surrounded by butterflies in this serene ‘forest.’” With that, he sent us on our way with a parting gift of two freshly harvested gigantic jackfruits and a bunch of cloyingly sweet *ciku*.

In Malaysia, 5.65 million hectares of land have been cultivated with oil palm (MPOB 2023). Independent smallholder farms like Chai Kon Chin’s (40.46ha of land or less) account for 14.5% (0.82Mha) of this planted area. As of 2023, there are 214,980 independent smallholders in Malaysia.



Malaysian Sustainable Farmer Chronicles is a collaboration between Wild Asia and MPOC that shares the innovations and best practices of MSPO-certified smallholder farmers in Malaysia.

THE PATH TO ENHANCED SUSTAINABILITY: REGENERATIVE AGRICULTURE AND THE MALAYSIAN PALM OIL INDUSTRY

Journey through the evolution of sustainability in the Malaysian palm oil industry as regenerative agriculture emerges as a transformative force.



Intercropping in immature oil palm, an important regenerative agriculture practice in smallholdings.

A recent paper by C.H. Teoh found that the global agricultural landscape is experiencing a paradigm shift, transitioning from conventional practices to more sustainable and regenerative approaches. This move addresses the pressing issues of soil degradation, biodiversity loss, and climate change.

The global market, especially in Europe, has been demanding that food production be done sustainably. With regard to palm oil, it is widely recognised as Certified Sustainable Palm Oil (CSPO). However, there is a rising trend towards embracing regenerative agriculture, which is considered to be an even more sustainable method.






Major Fast-Moving Consumer Goods (FMCG) companies have embraced regenerative agriculture and have made public commitments to source only regeneratively produced raw materials. As palm oil is a key raw material for many FMCGs, companies could require palm oil to be produced using regenerative agriculture methods as part of their sourcing policy.

This article explores the relevance of regenerative agriculture to oil palm, its potential impacts and benefits on oil palm plantations, and how it intertwines with existing sustainable practices such as the Malaysian Sustainable Palm Oil (MSPO) standard.

A Holistic Approach

Over the past two decades, the palm oil industry has faced increasing demands for sustainability and traceability from “farm to fork”. In response, certification schemes like the MSPO national scheme have emerged. Regenerative agriculture is not a new concept, and it has been associated with organic farming since the 1980s. Although there is no universal definition of regenerative agriculture, the core principles commonly adopted by FMCGs include soil and soil health, water, biodiversity, climate resilience, and integration with livestock.

A REVIEW OF 229 JOURNAL ARTICLES CITED IN THE ARTICLE IDENTIFIED THE FOLLOWING EXPECTED KEY OUTCOMES FROM REGENERATIVE AGRICULTURE

 <p>To improve soil health (e.g. structure, soil organic matter, fertility)</p>	 <p>To increase biodiversity</p>	 <p>To increase carbon sequestration</p>	 <p>To improve ecosystem health and ecosystem services</p>	 <p>To improve water health (e.g. hydrology, storage, pollution reduction)</p>
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Relevance to Oil Palm

Over the years, the oil palm industry has developed and implemented many best management practices (BMPs) for sustainable production, which have been incorporated into certification requirements, such as the MSPO standard. The article assessed the impact of various BMPs against the core principles for regenerative agriculture regarding soil and soil health, water, biodiversity, and climate mitigation. Overall, there is a strong alignment between sustainable agriculture and regenerative agriculture practices.

THE BMPs THAT HAVE HIGH POSITIVE IMPACTS ON ALL FOUR DIMENSIONS OF REGENERATIVE AGRICULTURE INCLUDE:

- ▶ No planting of oil palm on forest land
- ▶ No planting on peat land of any depth
- ▶ Maintenance of High Conservation Value (HCV) and High Carbon Stock (HCS) areas as set aside conservation areas in or around plantations

Key Focus Areas: Aligning Regenerative Agriculture in the Palm Oil Industry

1. Soil and soil health

The importance of maintaining soil health cannot be overemphasised, especially in perennial crops like oil palm, which has an economic life cycle of about 25 years and are usually replanted with the same crop. Among soil management practices, the planting of leguminous cover crops and the application of empty fruit bunches (EFB) as organic mulch must be perpetuated.

2. Leguminous cover crops

Planting legume cover crops protects exposed soil surfaces during the oil palm establishment phase. Legumes also return considerable amounts of organic matter from the leaf litter, sequester carbon dioxide, and fix atmospheric nitrogen through the symbiotic relationship between nitrogen-fixing soil rhizobial bacteria and the roots of the legumes. Considering the potentially significant agronomic and environmental benefits, planters must endeavour to establish and maintain good, thick, well-grown leguminous cover crops in immature oil palms.



Well-established legume cover crop in immature oil palm to improve soil fertility.

3. Application of EFB as mulch

Applying EFB in immature and mature oil palms is standard practice to conserve soil and increase soil organic matter. As EFBs are rich in plant nutrients, the application would minimise using inorganic fertilisers. However, there is a risk that EFB may not be readily available to plantations and smallholders if it is used as a feedstock for generating renewable energy and biomaterials. MPOC estimated that the 416 palm oil mills in Malaysia could produce about 19.8 million tonnes (based on fresh weight) of EFB annually as feedstock for biofuel and renewable energy generation. Based on the nutrient content of EFB, 19.8 million tonnes of EFB could supply an equivalent of 138,600 tonnes of urea, 55,440 tonnes of rock phosphate, 382,140 tonnes of muriate of potash and 87,120 tonnes of kieserite per year.

These fertilisers would be lost if the available EFB is used as biomass feedstock to generate renewable energy. In the long run, it may be more prudent and beneficial to keep using EFB within the oil palm circular economy rather than burning it to produce renewable energy.



Empty fruit bunches (EFB) can be used as organic fertiliser and mulch.

4. Integration with livestock

Integration with livestock in cropping systems is one of the tenets of regenerative agriculture, and it is a recommended practice wherever feasible or possible. Rearing of livestock, especially cattle, is not a new concept and has been promoted for smallholders in Malaysia since the 1980s. Supported by MPOB, this practice controls weeds, enhances soil fertility through organic inputs, and contributes to the diversification of smallholders' incomes. The synergy between oil palm cultivation and livestock rearing represents a holistic approach towards agricultural sustainability, addressing multiple United Nations Sustainable Development Goals (SDGs) when implemented as a silvopastoral practice.



Planting beneficial plants to augment the population of natural predators of oil palm leaf-eating pests – a regenerative agriculture practice.

Adopting regenerative agriculture practices may be complex and require collaboration among all stakeholders, but the potential rewards for the environment, the community, and the industry are significant. Considering the overlap in agricultural management practices, sustainable and regenerative agriculture should be taken as complementary systems, not mutually exclusive.

References:

- C.H. Teoh (2024). The Planter, Kuala Lumpur, 100 (1175): 75-88 (Retrieved from <https://doi.org/10.56333/tp/2024,002>)
- C.H. Teoh (2024). My Say, The Edge Malaysia- Week of March-March 31, 2024 (page 46) <https://www.theedgemaalaysia.com/node/705825>
- Author: C.H. Teoh was the Senior Advisor of Solidaridad Network Asia.



SALCRA RESTORES RIVERSIDE FORESTS THROUGH TREE PLANTING PROGRAMME

Collaborating for environmental stewardship, SALCRA, WWF-Malaysia, and Malesiana Tropicals initiated a Tree-Planting Programme in Lemanak Oil Palm Estate, Sri Aman, to restore critical riparian buffer zones with native species and engage local communities.

Under this initiative, various native fruit trees (*Durian, Nangka, Cempedak, Petai*) and timber trees (*Nyatoh, Engkabang, Selunsur Merah*) were carefully planted to restore biodiversity and ecological services and significantly support the local communities.

OIL palm plantations have been associated with significant environmental degradation, including soil erosion and the loss of crucial carbon sinks. These impacts highlight the urgent need for sustainable land management practices to mitigate ecological damage.

Sarawak Land Consolidation and Rehabilitation Authority (SALCRA), in partnership with WWF-Malaysia and Malesiana Tropicals, initiated a Tree Planting Programme project in the Lemanak Oil Palm Estate, Sri Aman Region. This initiative aims to safeguard against soil erosion in critical riparian buffer zones by planting a diverse array of native fruit and timber tree species. The project commenced in October 2022 with the planting of 43 seedlings, and it gathered momentum as an additional 110 seedlings took root in May 2023.



Community consultation – JKKK Meeting at Rh. Stengin with WWF Malaysia.

The project's objectives particularly align with principle 5 of the Malaysian Sustainable Palm Oil (MSPO) standard MS 2530:2022, focusing on responsible management, biodiversity conservation, and minimising negative ecosystem impacts, all while conserving forests and meeting the demand for sustainable palm oil.

Local communities from the Rumah Stengin in Lubok Antu, Sri Aman, have warmly welcomed and embraced the initiative. They are not just watching from the sidelines but are actively involved in Free Prior Informed Consent (FPIC), awareness talks, and dialogues. They have also set up mini greenhouses to store tree seedlings provided by the Forest Department of Sarawak (FDS) and seedlings collected from the forest. This empowers the community to become stewards of their environment.



Dr Tim Hatch from Malesiana Tropicals and Mr Sugai Intan, the estate manager, unloading the tree seedlings.



Transportation of tree seedlings from FDS Sabal to Lemanak Oil Palm Estate.

The goal of this project goes beyond tree planting. It is about sowing the seeds of transformation within communities. Through active social participation and regular monitoring, the project drives a culture of environmental stewardship that transcends generations.

The vision extends far beyond this initiative, with the current project serving as a catalyst for a broader impact. Plans are in place to extend these efforts to other estates and collaborate with a broader network of agencies, further strengthening a collective movement towards a more sustainable future for all.

FREQUENTLY ASKED QUESTIONS (FAQ)

Your go-to guide for understanding the palm oil industry and gaining insights into sustainability, environmental impact, and industry practices.

QUESTION:

How does Malaysian palm oil set a global standard for sustainable and economic agricultural practices?

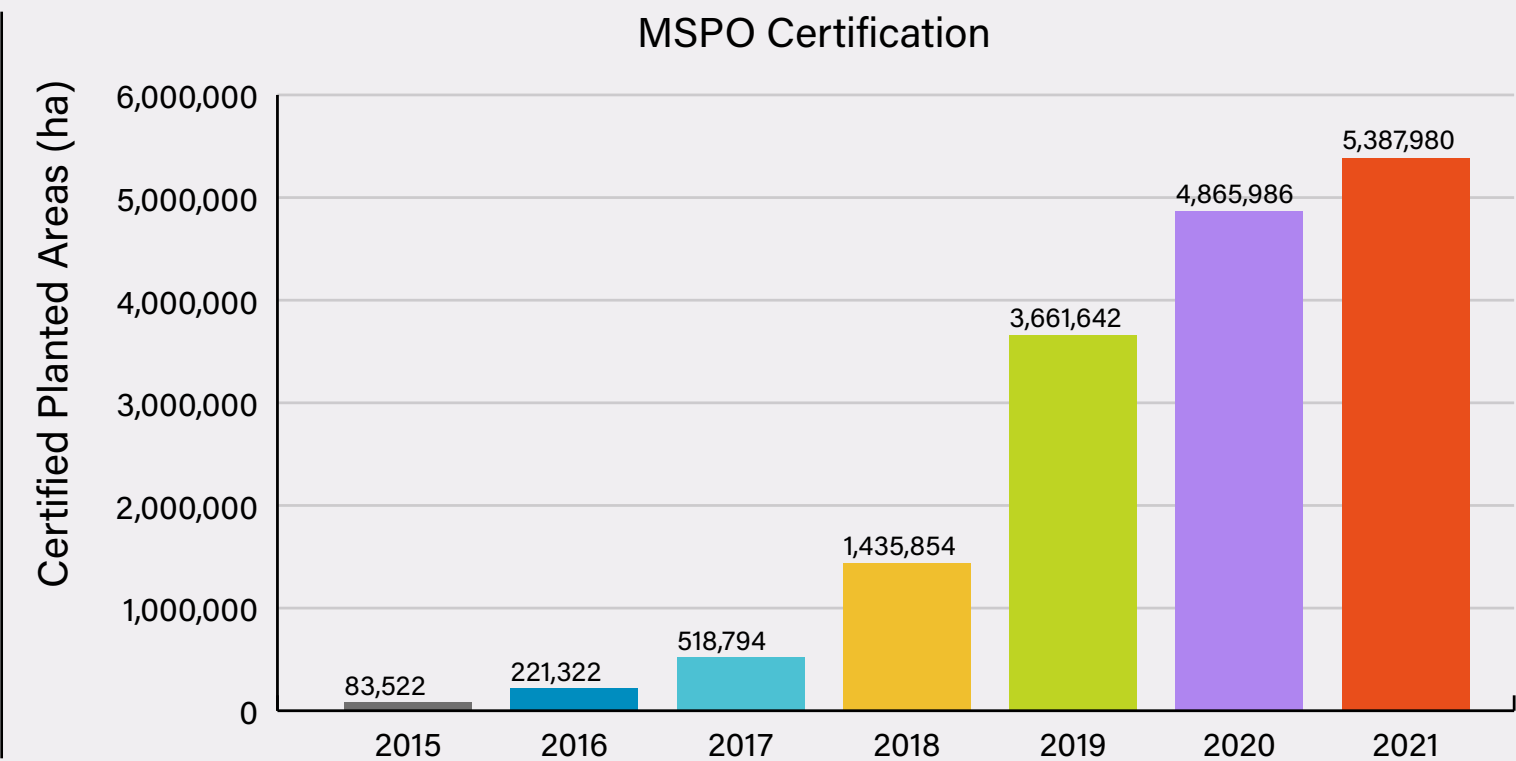
AS the world grapples with balancing **economic development with environmental imperatives**, Malaysian palm oil stands out as a case study of how a major global commodity can align economic success with sustainability. Assessing the industry's progress over the last decade reveals FIVE key areas where it sets a benchmark for other commodities.

1. SUSTAINABLE PRODUCTION PRACTICES

Malaysia is the global leader in promoting sustainable palm oil production, and it has also shown a path for other commodities worldwide. The **Malaysian Sustainable Palm Oil** (MSPO) certification, mandatory for all Malaysian palm oil producers, ensures that palm oil is produced in an ecologically, economically, and socially responsible manner. This certification scheme demonstrates how governments, industry, and farmers can collaborate to build a successful, internationally-recognised sustainability system.

MSPO STATISTICS FROM 2015 TO 2021

- 2015 - Voluntary implementation of MSPO certification started
- February 2017 - Announcement of MSPO mandatory implementation by 2022
- 1 January 2020 - Mandatory implementation of MSPO started

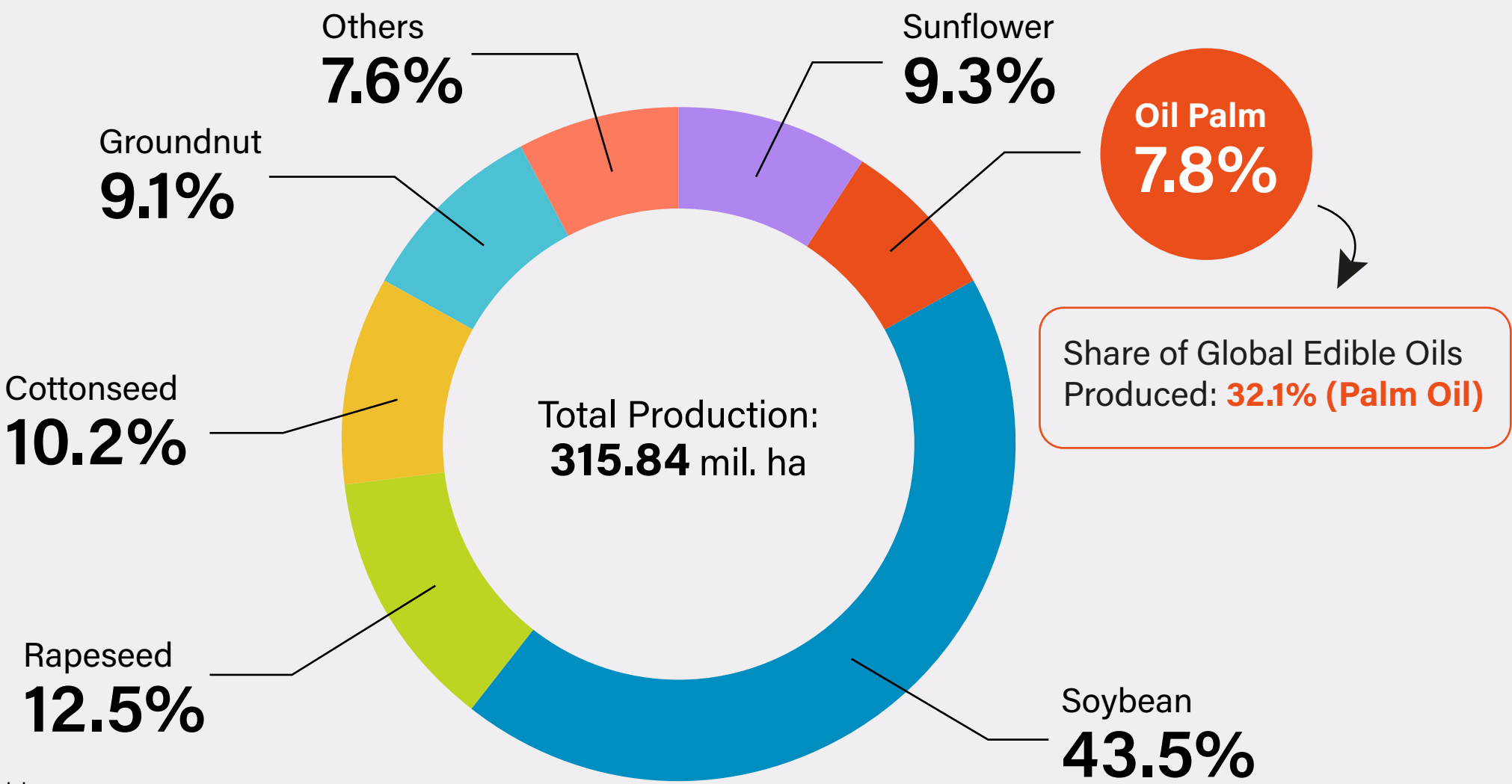


Source: Malaysian Sustainable Palm Oil (MSPO) Council

2. EFFICIENT LAND USE

Palm oil is known for its high yield per hectare compared to other oilseed crops. This means less land is required to produce the same amount of oil, reducing the impact on forests and biodiversity. This model of high-yield crop production is significant for global commodities, especially in the context of increasing demand for agricultural land and the urgency of preserving natural carbon sinks. Malaysia has prioritised **research and development**, cross-breeding, **replanting support** for small farmers, and other policy tools to continue increasing yields.

HARVESTED AREA OF WORLD’S 10 MAJOR OILSEEDS 2023

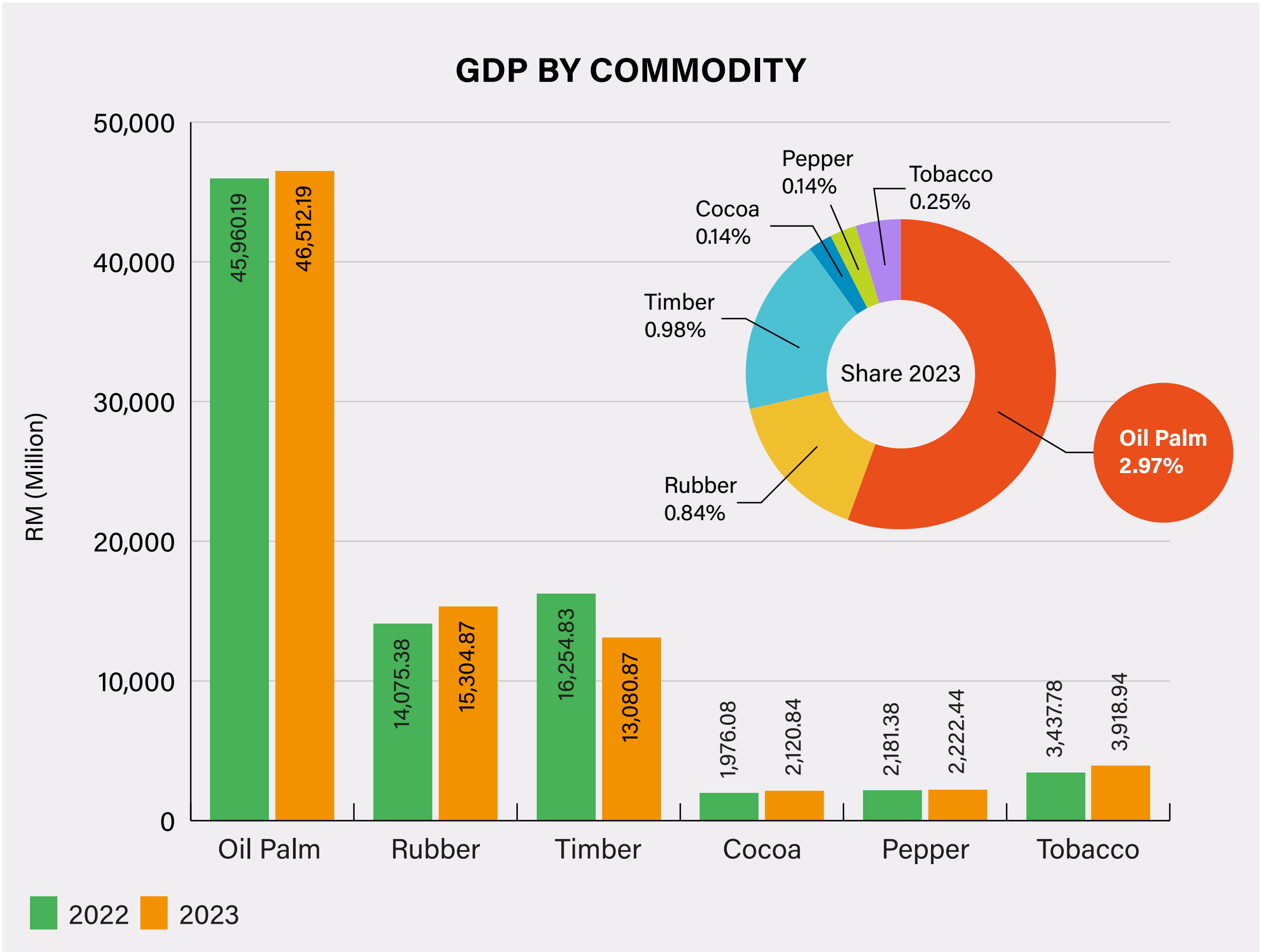


Source: Oil World

3. ECONOMIC DEVELOPMENT

The palm oil industry is a **key driver of the Malaysian economy** and has been instrumental in poverty alleviation and rural development. This demonstrates how a well-managed commodity sector can have a far-reaching, positive economic impact, serving as a template for other countries looking to develop their agricultural sectors.

CONTRIBUTION OF THE COMMODITY SECTOR TO MALAYSIA'S ECONOMIC GROWTH				
No	Sector	RM Million		Share (2023)
		2022	2023	
01	National GDP	1,510,939,00	1,566,545.82	100%
02	Commodity GDP & commodity-based industry	83,885.64	83,160.01	5.31%



Note: Share is GDP share to National GDP

Source:
1. DOSM
2. https://www.kpk.gov.my/kpk/images/mpi_statistik/Pocket_Stats/2023/poket-stats-2023-full/index.html#page/15

4. INNOVATION AND VALUE ADDITION

Malaysia invests heavily in **research and development** in the palm oil sector. This has led to innovations in cultivation, harvesting and processing techniques, and the development of value-added products such as speciality **fats and biofuels**. This focus on innovation and diversification can serve as a model for other commodity sectors seeking to enhance value while promoting sustainability.

DRIVING INNOVATION
IN THE MALAYSIAN
PALM OIL INDUSTRY
VIA IR 4.0

Cyber-Physical Revolution

- Industrial Revolution 4.0 (IR 4.0) has revolutionised countless industries, seamlessly merging physical and digital technologies and improving efficiency and productivity.

Enhancing the Palm Oil Industry

- IR 4.0 technologies, such as Big Data and the Internet of Things (IoT), are poised to drive greater innovations in the Malaysian palm oil industry.

Accelerating R&D Efforts

- IR 4.0 accelerates R&D efforts in oil palm genomics and designer oil palm planting materials (e.g. Ganoderma resistance, drought tolerance) to enhance oil palm’s yield and productivity.

Upgrading the Upstream Sector

- Internet of Things (IoT), among others, enables the integration of technologies (e.g. remote sensing, drones) to make precise and rapid plantation decisions for optimised fertiliser, water and labour use.
- Big Data applications, among other things, enable plantations to optimise revenue by synergising their productions with the global oilseeds supply-demand forecast.

Digitalised Downstream Sector

- Industry 4.0-based fully digitalised and automated mills and refineries enhance efficiency and processing capabilities.
- Blockchain technology enables better supply chain traceability and transparency.

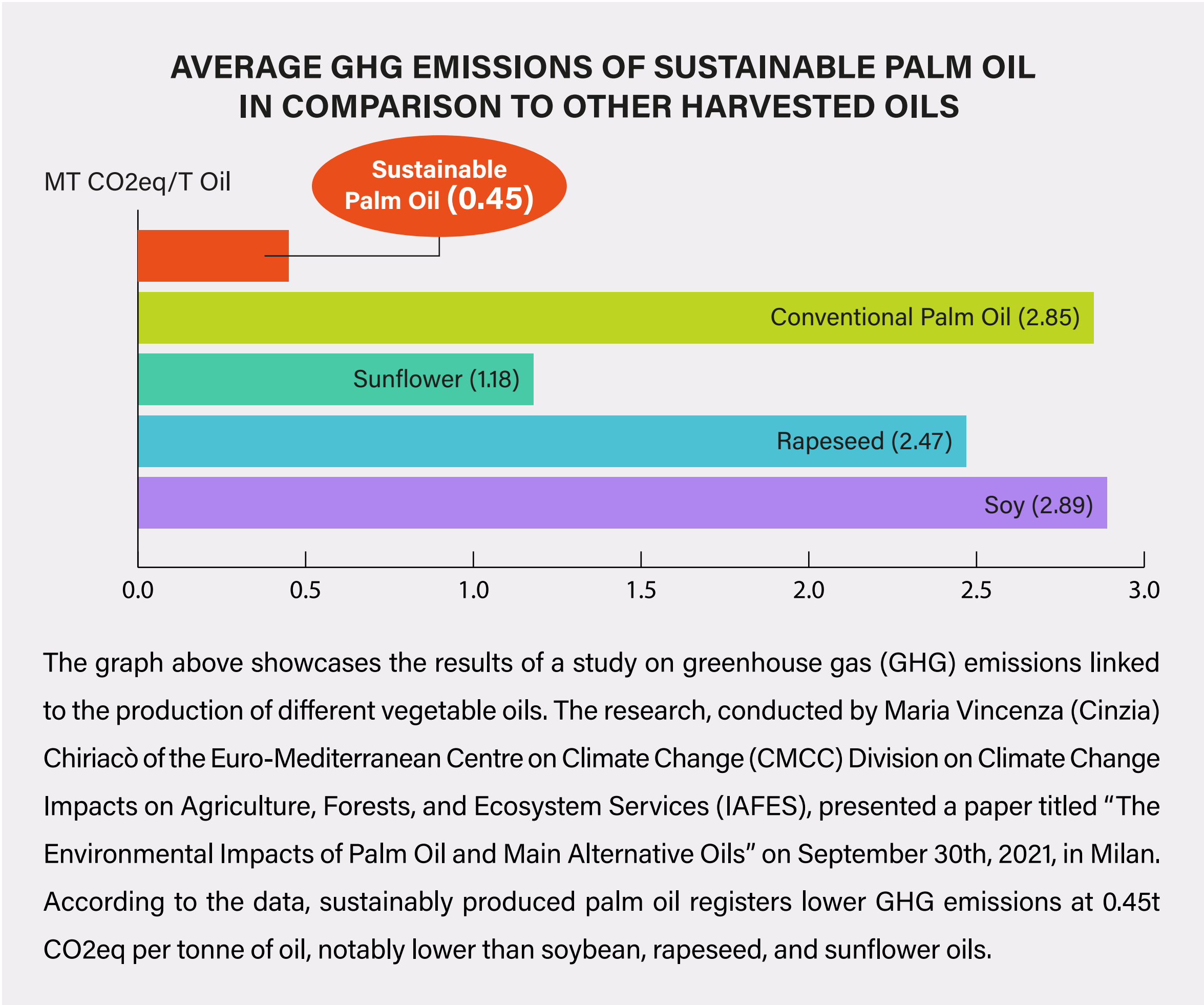


Source:
<https://www.mpoc.org.my/driving-innovation-in-the-malaysian-palm-oil-industry-via-ir-4-0/>

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5. COMMITMENT TO REDUCING ENVIRONMENTAL IMPACT

The Malaysian palm oil industry has proactively adopted practices to **reduce its environmental footprint**. This includes efforts to preserve wildlife habitats, reduce the use of pesticides and fertilisers, limit greenhouse gas emissions, and recycle and use waste byproducts. Such environmental stewardship is essential for the sustainability of global commodities.



Source:

1. Dr Maria Vincenza (Cinzia) Chiriaco of CMCC (Euro-Mediterranean Centre on Climate Change
2. <https://mspo.org.my/mspo-blogs/sustainable-palm-oil-an-important-example-of-climate-change-mitigation>
3. <https://theedgemalaysia.com/article/my-say-palm-oil-industry-can-be-netzero-carbon-2040>
4. Qua, K. S., & Tamahrajah, J. (2021). The Palm Oil Industry can be Net-Zero Carbon by 2040. Monash-Industry Palm Oil Education and Research (MIPO) Platform, KL-Kepong Oleomas Sdn. Bhd

These successes of the Malaysian palm oil industry - reducing inputs, increasing outputs, and promoting recycling and reuse - offer valuable lessons for other global commodities that can and should be replicated.

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