



BUSINESS CASE FOR CERTIFIED SUSTAINABLE PALM OIL

2022

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WWF commissioned KPMG to conduct this research. KPMG conducted this study during the pandemic and before the war in Ukraine impacted vegetable oil prices. The report is based on a desk-based review of information available in the public domain and in-depth interviews with stakeholders operating across the palm oil value chain in major producing and consuming geographies. The views expressed are independent views of the authors.

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ABOUT WWF: WWF is one of the world's largest and most respected independent conservation organisations. WWF's mission is to stop the degradation of the earth's natural environment and to build a future in which humans live in harmony with nature.

More information on www.panda.org

ABOUT WWF'S WORK ON PALM OIL: WWF's vision is to halt the conversion of natural ecosystems by ensuring that palm oil production, trade and consumption is responsible; protects, restores and connects landscapes; and benefits both people and nature. WWF believes that creating a sustainable and responsible palm oil industry that guarantees the wellbeing of people, wildlife and habitats requires a multi-faceted approach that is inclusive of, but not limited to certification. Only through the use of a variety of tools and strategies involving all actors along the palm oil supply chain can the adverse environmental and social impacts of unsustainable palm oil production be addressed. To support both public and private efforts to improve the governance of palm oil production, WWF works in close collaboration with local governments, companies, communities and multi-stakeholder initiatives. WWF interventions focus on implementing integrated, landscape level solutions that aim to halt deforestation and conversion, ensure palm oil production is sustainable, restore degraded ecosystems, and support social equity. More information can be found [here](#).

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TABLE OF ABBREVIATIONS

ABBREVIATION	EXPANSION
ACOP	ANNUAL COMMUNICATION OF PROGRESS
B&C	BOOK AND CLAIM
CAGR	COMPOUND ANNUAL GROWTH RATE
CBP	CUSTOMS AND BORDER PROTECTION
CDP	CARBON DISCLOSURE PROJECT
CPKO	CRUDE PALM KERNEL OIL
CPO	CRUDE PALM OIL
CRB	CENTRE FOR RESPONSIBLE BUSINESS
CSO	CIVIL SOCIETY ORGANIZATION
CSPO	CERTIFIED SUSTAINABLE PALM OIL
CSPKO	CERTIFIED SUSTAINABLE PALM KERNEL OIL
EU	EUROPEAN UNION
ESG	ENVIRONMENTAL SOCIAL GOVERNANCE
FFB	FRESH FRUIT BUNCHES
FMCG	FAST MOVING CONSUMER GOODS
FOB	FREE ON BOARD
GAPKI	GABUNGAN PENGUSAHA KELAPA SAWIT INDONESIA (TRANSLATED TO: THE INDONESIAN PALM OIL ASSOCIATION)
HCS	HIGH CARBON STOCK
HCV	HIGH CONSERVATION VALUE
HORECA	HOTELS, RESTAURANTS, & CATERING
IP	IDENTITY PRESERVED
ISCC	THE INTERNATIONAL SUSTAINABILITY & CARBON CERTIFICATION (ISCC)
ISH	INDEPENDENT SMALLHOLDER
ISPO	INDONESIAN SUSTAINABLE PALM OIL
I-SPOC	INDIAN SUSTAINABLE PALM OIL COALITION
KPI	KEY PERFORMANCE INDICATORS
M&V	MONITORING AND VERIFICATION
MB	MASS BALANCE
MMT	MILLION METRIC TONNES
MPOCC	MALAYSIAN PALM OIL CERTIFICATION COUNCIL
MSPO	MALAYSIAN SUSTAINABLE PALM OIL
NDPE	NO DEFORESTATION, PEAT AND EXPLOITATION
NGO	NON-GOVERNMENTAL ORGANIZATION
P&C	PRINCIPLES AND CRITERIA
P&T	PROCESSORS AND TRADERS
PFAD	PALM FATTY ACID DISTILLATES
PKO	PALM KERNEL OIL
POME	PALM OIL MILL EFFLUENT
RA	THE RAINFOREST ALLIANCE
RBD	REFINED, BLEACHED AND DEODORIZED
RSB	ROUNDTABLE ON SUSTAINABLE BIOMATERIALS
RSPO	THE ROUNDTABLE ON SUSTAINABLE PALM OIL
SAN	SUSTAINABLE AGRICULTURE NETWORK
SG	SEGREGATED
TTM/TTP	TRACEABILITY TO MILL/ TRACEABILITY TO PLANTATION
WRO	WITHHOLD RELEASE ORDER
UK	UNITED KINGDOM
USA	UNITED STATES OF AMERICA

Note that all \$ values in this report are in USD unless otherwise specified.



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EXECUTIVE SUMMARY

In Asia, the market signals for sustainability are not as developed as markets in the west, and therefore the uptake of certified sustainable palm oil (CSPO) is only ~3-4% of overall palm oil consumption in the region¹. Asia consumes 60% of palm oil globally, and it is therefore crucial that there is an increase in the uptake of sustainable palm oil. Palm oil production doesn't have to be destructive and it can be produced responsibly as a part of sustainable development that accrues positive socio-economic impacts. This report aims to elucidate the business case for sustainable palm oil in Asia and to persuade industry players to switch over to sustainable practices.

The report fills the knowledge gap about information on the additional premium paid for CSPO, certified sustainable palm kernel oil (CSPKO), and associated fractions and derivatives in the different RSPO supply chains. In a nutshell, the premium ranges are showcased in the table below.

Table 1: An overview of price premiums as a percentage of base price

TYPE	SUB-TYPE	SUPPLY CHAIN	PERCENTAGE OF BASE PRICE
Fresh Fruit Bunches (FFB)	FFB	From a certified plantation	20% (Can vary between 8-60% based on structure, size, and arrangements of the plantation or plantation group)
Palm Oil	CSPO and RBD CSPO	MB	0.9 – 3.9%
		SG/IP	2.4 – 7.5%
		Credits	0.1 – 0.3%
		ISH Credits – Crude palm oil	1.5 – 3.0%
Palm Kernel Oil	CSPKO and RBD CSPKO (Higher premium due to shortage of CSPKO in the market)	MB	7.3 – 24.3%
		SG/IP	18.4 – 39%
		Credits	7.3 – 11%
		ISH Credits	6.6 – 8.4%
		Traceable (TTM/TTP)	0.4 – 0.7%
Palm Stearin	RBD palm stearin	MB	3.6 – 4.5%
		SG/IP	7.2 – 13.5%
	RBD palm kernel stearin (Higher premium due to shortage of CSPKO in the market)	MB	16.4%
		SG/IP	35.5 – 60.1%
Palm Olein	RBD palm olein	SG/IP	3.8 – 7.6%
Palm Kernel Expeller (PKE)	PKE	Credits	0.1 – 0.3%
		ISH	0.6%

MB- Mass Balance; SG- Segregated; IP- Identity preserved; ISH- Independent smallholder; TTM/TTP- Traceable to mill/ plantation; Credits refer to credits from mill/crusher. Note that these are the buying premiums, and this can vary between stakeholder and geography for all products mentioned.

¹ [sustainable_palm_oil_uptake_in_asia_sept_2021.pdf \(panda.org\)](https://panda.org/sustainable_palm_oil_uptake_in_asia_sept_2021.pdf)



- To gain certification, it costs the grower a minimum of \$1 to \$7 per tonne of fresh fruit bunches (FFB) sold. However, the value typically is around \$2.50 per tonne of FFB (20% of the base price). This is equivalent to \$12.50 per tonne of CSPO (where approximately 5 tonnes of FFBs are needed to produce 1 tonne of CSPO).
- As the palm oil moves down the supply chain, there is an increase in the premiums.
- The premiums for certified sustainable crude palm oil and certified refined bleached deodorised palm oil (RBD PO) were more or less in the same range.
- The premiums for independent smallholder (ISH) credits were considerably higher than those for credits from mills/crushers.
- Beyond RSPO certification, traceability to mill (TTM) and traceability to plantation (TTP) also carries a premium due to the additional costs with traceability.
- The base price and premium for CSPKO is substantially higher than that of CSPO, since the supply of palm kernel oil (PKO) is lower than that of CPO.

Several factors seem to affect the base price of palm oil and the premium which include extreme weather events, market fluctuations, supply chain disruptions, volumes purchased, and regulatory changes. Recent events such as migrant labour shortages due to border closures over the COVID-19 pandemic and the blacklisting of large suppliers in this industry have also substantially impacted these prices. It is important to note that the price premiums are subject to a similar volatility as the base prices move with market conditions.

Stakeholders in the palm supply chain face numerous risks that range from financial to operational and reputational to regulatory with continued use of conventional palm oil². In the second half of the report, these risks and opportunities are explored in further detail and to highlight how they build further on the business case for sustainable palm oil.

² [Palm Oil: A business case for sustainability | SPOTT](#)



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In Asia, an increasing number of companies have obtained RSPO memberships in the past and more companies are shifting to physical RSPO supply chains and even going beyond certification. For companies that actively source sustainable palm oil, there are reduced reputational risks and better relationships with stakeholders. Due to the increased prevalence of these risks, regulatory changes in markets like the European Union (EU) on deforestation free supply chains, UK's due diligence legislation through the Environment Act, the French Corporate Duty of Vigilance Law, proposed FOREST Act of 2021 in the United States etc., pose a threat to non-compliant value chain actors who stand to lose market access.

There are a number of additional costs that come with RSPO compliance including memberships, audits, staffing, training, etc. For the most part, it was found that these costs are not substantial in the bigger picture, and a lot of the resources required for compliance with the RSPO can be found in-house. An overarching point that came across from a financial standpoint through the stakeholder discussions was that the more companies source CSPO, the easier and cheaper it will become for even more to do the same.

The palm oil market valued at \$62.3 billion in 2021 is expected to reach \$75.7 billion by 2028³. However, as noted by the recent events of COVID-19 pandemic coupled with climatic fluctuations, it can be seen that the palm oil supply chain is highly vulnerable. To make the palm oil industry more resilient, it is essential for businesses to switch to more sustainable palm oil. Regulatory provisions, enhanced consumer awareness on sustainable palm oil, higher collaboration between downstream and upstream actors to get more growers certified, innovative business arrangements, and easy access to affordable finance can help facilitate this transition.

³ [By 2028, Global Demand for Palm Oil Market Will Surpass USD \(globenewswire.com\)](https://www.globenewswire.com)

PALM OIL & SUSTAINABILITY

Palm oil – obtained from the oil palm *Elaeis guineensis* – is one of the most widely consumed oils globally. It is the most land efficient among all vegetable oils⁴. The palm oil value chain is vast and spans over multiple countries. It consists of growers, mills, and crushers found upstream in producing geographies (Indonesia, Malaysia, Thailand, etc.), followed by mid and downstream players made up of consumer goods manufacturers and retailers found world over. Palm oil is highly versatile, and its numerous fractions and derivatives find their way into a multitude of products. Derivatives of palm oil and palm kernel oil as showcased in Figure 2, have strong application in both edible and non-edible sectors.

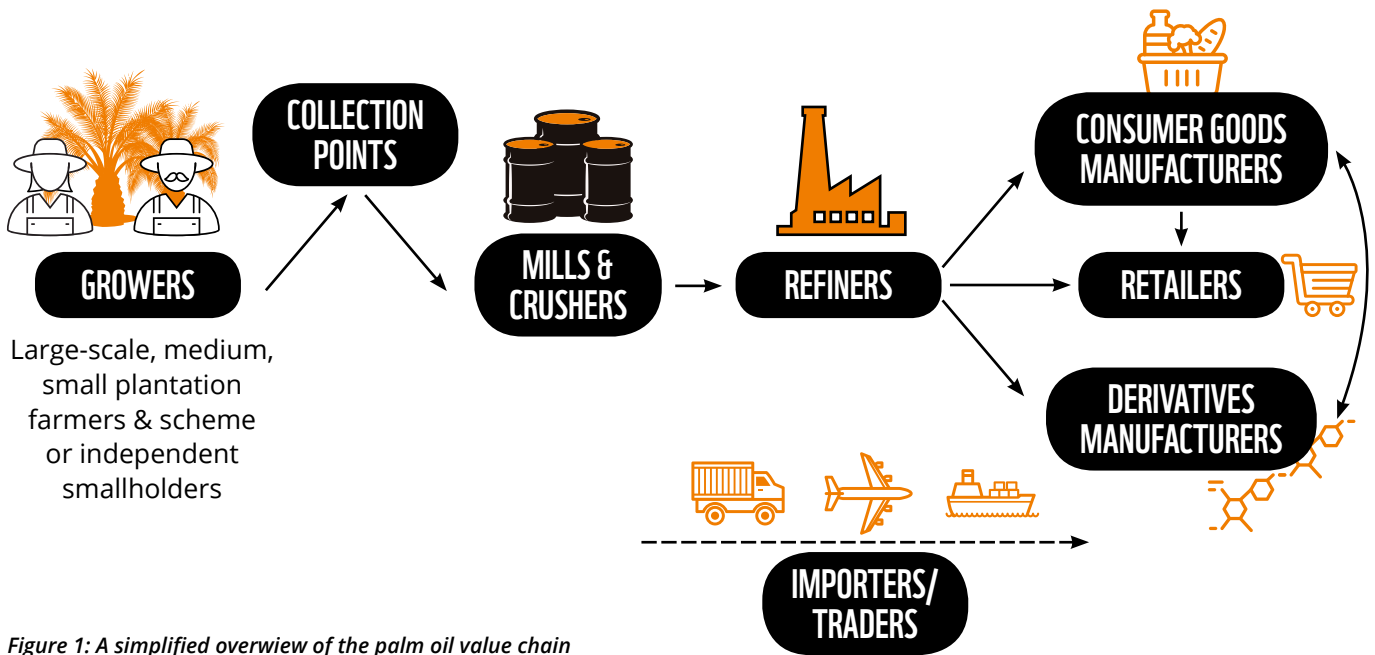


Figure 1: A simplified overview of the palm oil value chain



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⁴ Poore, J., & Nemecek, T. (2018). Reducing food's environmental impacts through producers and consumers. *Science*, 360(6392), 987-992.

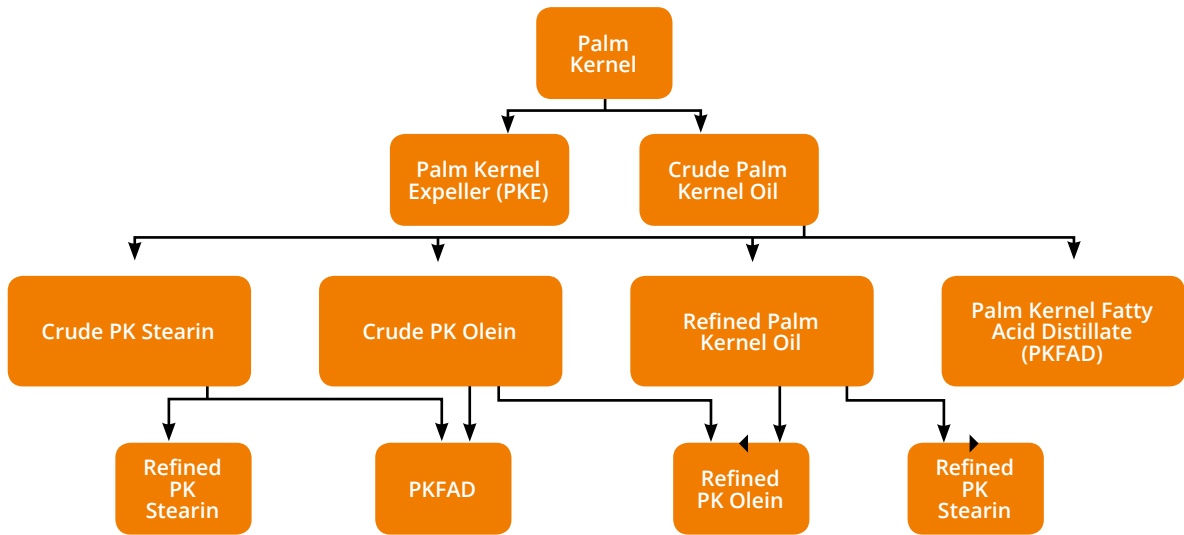
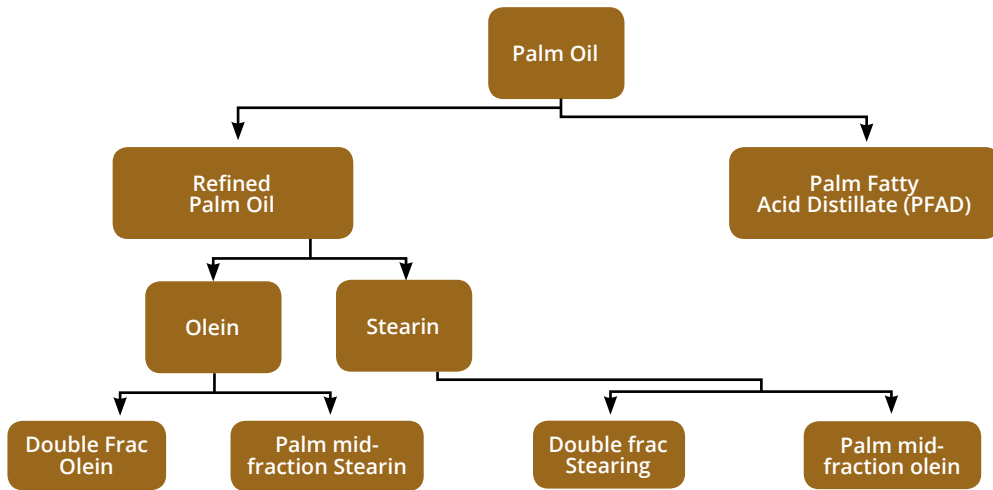


Figure 2: An overview of products derived from crude palm oil and the palm kernel.

Indonesia and Malaysia are the major producers of palm oil globally producing 85% of the total palm oil. Indonesia, India, and China are collectively responsible for 40% of global consumption².

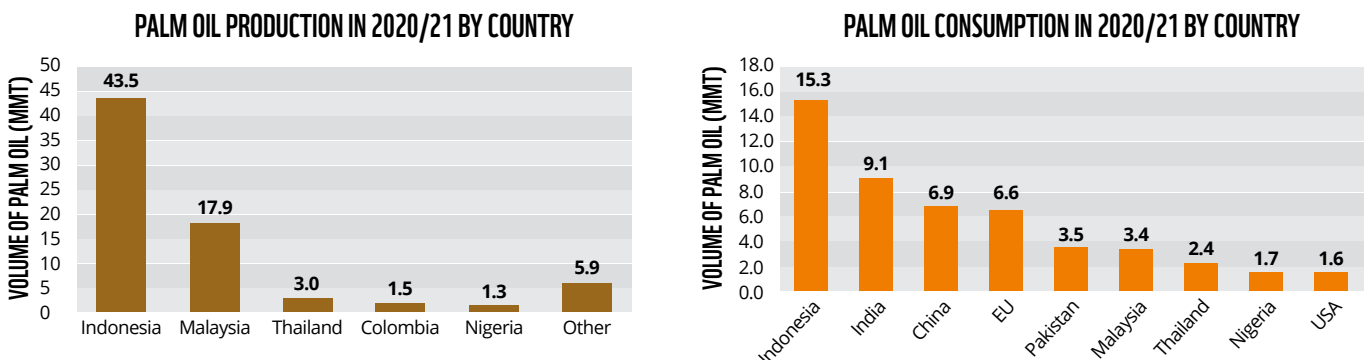


Figure 3: The volume of palm oil produced (L) and consumed (R) by major producing and consuming geographies. Geographies (MMT) in 2020/21.

Source: USDA FAS 2022



Figure 4: Challenges with conventional palm oil production and use.

Despite the production advantage and product versatility, many sustainability issues persist with conventional palm production. Tropical rainforests & peatlands are large carbon sinks, the destruction of which is detrimental to climate change and biodiversity. Establishing plantations can be pollution intensive. Conversion of peatlands and swamp forests for establishing new plantations, result in up to 0.8% of the global greenhouse gas (GHG) emissions from south-east Asia⁵. Activities such as fertiliser use, fuel use for machinery and transport and processing further contribute to emissions⁶. In addition, chemicals used in plantations and the release of palm oil mill effluent (POME) can pollute surrounding areas. POME also releases large amounts of GHGs⁷.

Conventional palm oil production is also rife with social challenges throughout the value chain. At the plantation level, there are incidences of land grabbing and illegal deforestation⁸. There is also conflict with indigenous communities. From the plantation onwards, there are numerous incidences of forced and illegal labour, unfair wages, and unsafe working conditions.

Since palm oil is the most land efficient oil among all vegetable oils, avoiding palm oil is not a practical solution. If palm oil production decreases, then impacts are displaced elsewhere in other value chains that are less efficient at production, resulting in greater overall impacts. Due to the versatility, switching to another oil may not be feasible as well. Therefore, the sustainable production of palm oil needs to be encouraged to address these challenges.



SUSTAINABLE PALM OIL IS PRODUCED WITHOUT CAUSING DEFORESTATION, THE CONVERSION OF NATURAL ECOSYSTEMS, ENVIRONMENTAL DEGRADATION, OR THE HARMING OF WILDLIFE. IT SHOULD ALSO BE PRODUCED IN A MANNER WHICH TREATS WORKERS FAIRLY, RESPECTS THE RIGHTS OF LOCAL COMMUNITIES AND INDIGENOUS PEOPLE, AND INCENTIVISES AND EMPOWERS PRODUCERS INCLUDING SMALLHOLDER “FARMERS”.
WWF 2020

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In order to lay out best practices, provide guidance for, and verify sustainable palm oil production, there are a number of certification bodies. The RSPO has the most comprehensive and robust^{10,11}, widely known, and used standard for sustainable palm oil. Currently, there are over 5000 RSPO members across the world ranging from growers, consumer goods manufacturers, retailers, investors, and NGOs¹².

As of February 2022, the total RSPO certified sustainable production area stands at over 4.54 million hectares. The production of CSPO and CSPKO have consistently increased in past years standing at 19.1 MMT and 4.3 MMT respectively in 2021¹³.

⁵ [Palm oil: research shows that new plantations produce double the emissions of mature ones](#)
⁶ [Greenhouse Gas Emissions from Palm Oil | RSPO, 2009](#)
⁷ Hosseini, S. E., & Abdul Wahid, M. (2015). Pollutant in palm oil production process. Journal of the Air & Waste Management Association, 65(7), 773-781
⁸ Human Rights Watch. (2020, October 28). Indonesia: Indigenous Peoples Losing Their Forests. <https://www.hrw.org/news/2019/09/22/indonesia-indigenous-peoples-losing-their-forests>
⁹ [8 things to know about palm oil | WWF](#)
¹⁰ <https://palmoelnetzwerk.ch/wp-content/uploads/2020/05/benchmarking-of-palm-oil-sustainability-standards-project-report.pdf>
¹¹ http://awsassets.panda.org/downloads/2016_cat_4_fact_sheet.pdf
¹² [About | RSPO - Roundtable on Sustainable Palm Oil](#)
¹³ [Impact | RSPO - Roundtable on Sustainable Palm Oil](#)

GLOBAL ANNUAL CERTIFIED PRODUCTION VOLUMES OF CERTIFIED PALM OIL

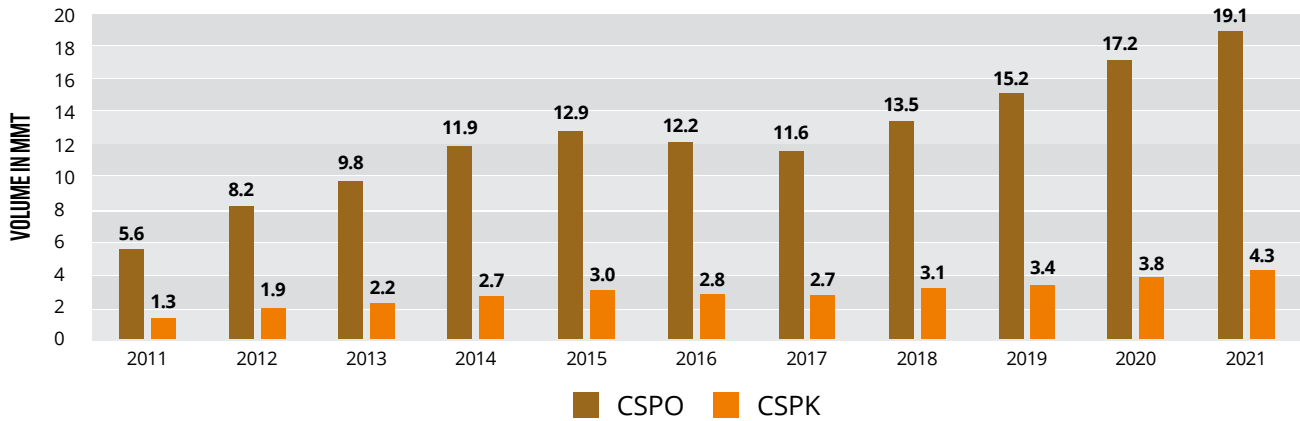


Figure 5: The global rise in the production of CSPO and CSPKO in MMT per year.

Source: RSPO Impact, 2021

Research has shown the most dramatic growth in engaging with and being aware of sustainability issues has been in emerging markets like in Asia. In India, the number of tweets on nature-loss and biodiversity related issues grew by 550% between 2016 and 2020, and 102% in South-East Asia¹⁴. In addition, there is a growing awareness on sustainability issues among millennial and Gen Z consumers in particular^{15,16,17}. With increased access to information and access to tools like the WWF’s Palm Oil Buyers Scorecard (POBS)¹⁸, customers can make more informed choices.

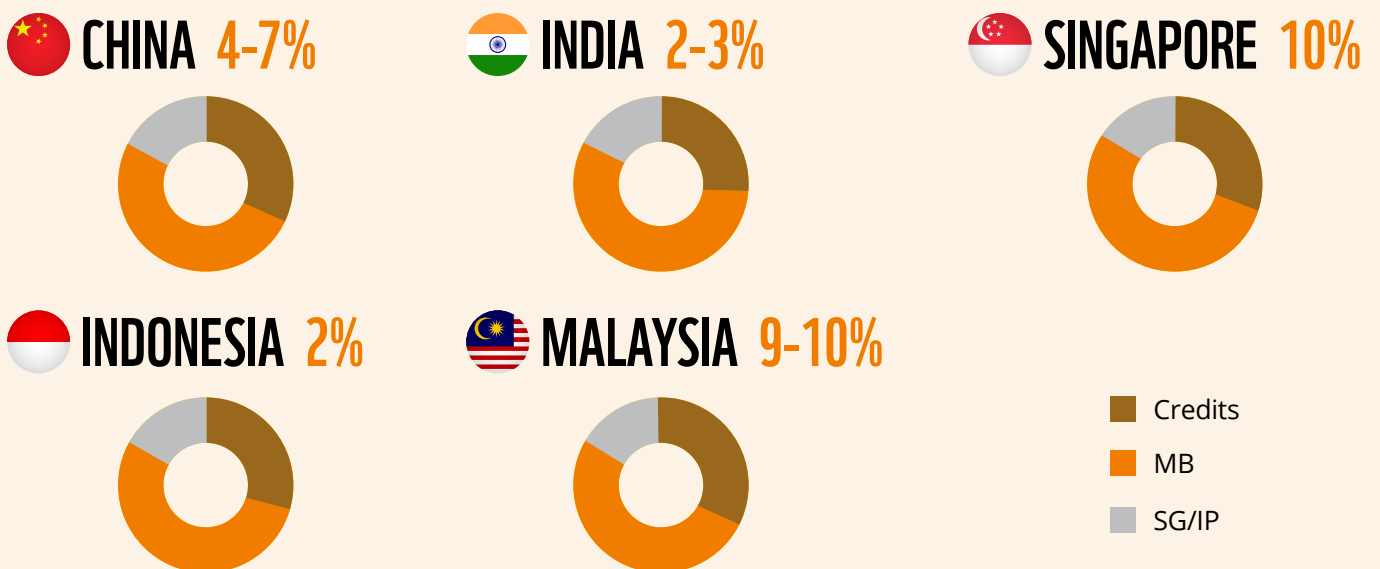
COMPANY & TOTAL PALM OIL VOLUMES REPORTED (MT)	SECTOR	COMMITMENTS OUT OF 4	SUSTAINABLE PALM OIL PURCHASING OUT OF 11	SUPPLIER ACCOUNTABILITY OUT OF 3	SUSTAINABILITY PLATFORMS OUT OF 2	ON THE GROUND ACTION OUT OF 4	TOTAL SCORE OUT OF 24	FULL REPORT
Coop Switzerland 2,033 MT	Retail	3.5	10.64	2.25	2	4	22.39	>
John Lewis Partnership 2,252 MT	Retail	4	9.82	2.5	2	4	22.33	>
Ferrero 220,570 MT	Manufacturing	3	9.96	2.75	2	4	21.71	>
IKEA 29,000 MT	Retail	3	10.07	2.5	2	4	21.57	>
Mars, Inc. 64,416 MT	Manufacturing	4	9.13	2	2	4	21.13	>

*Figure 6: Palm Oil Buyers Scorecard (POBS).



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In Asian markets, the uptake of CSPO is substantially lower. For those that do work with CSPO, mass balance (MB) is the most common supply chain, followed by book & claim (B&C), with segregated/identity preserved (SG/IP) being the least common¹⁷. Currently, the level of RSPO CSPO uptake across key Asian markets stands at 3-4%. If multinational companies operating in the region follow through on existing commitments to source 100% RSPO CSPO, this can increase the overall regional uptake to 8-9%. If regional and domestic companies also increase their uptake of CSPO, this can bring the overall regional uptake of CSPO to 13-14%, which is substantial given the significant volumes of palm oil consumed in Asia¹⁹. In the figure below, it can be seen among China, India, Singapore, Indonesia, and Malaysia, that MB is the most common supply chain, followed by credits, and SG/IP are the least common.



Source: [Sustainable Palm Oil in Asia: Where do we go from here? WWF 2021](#)

Figure 7: An overview of the proportion of CSPO that forms the overall palm oil uptake in the specified Asian geographies, and a ratio of the RSPO supply chains that make up these volumes.

¹⁴ [an_ecowakening_measuring_awareness_engagement_and_action_for_nature_final_may_2021_.pdf \(panda.org\)](#)
¹⁵ Lushan, H. (2021, August 11). What do young people in India think of palm oil? China Dialogue. <https://chinadialogue.net/en/food/what-do-young-people-in-india-think-of-palm-oil/>
¹⁶ <https://www.kantar.com/inspiration/sustainability/what-does-sustainability-mean-to-asian-consumers-and-what-should-brands-do>
¹⁷ Lushan, H. (2021, August 11). What do young people in India think of palm oil? China Dialogue. <https://chinadialogue.net/en/food/what-do-young-people-in-india-think-of-palm-oil/>
¹⁸ [WWF Palm Oil Buyers Scorecard - POBS \(panda.org\)](#)
¹⁹ [WWF research highlights huge potential for five Asian markets to boost sustainable palm oil consumption | WWF \(panda.org\)](#)

THE COST OF SUSTAINABLE PALM OIL

A total of 43 primary supply chain actors were interviewed for the study. Discussions with these stakeholders ranging right from growers to retailers based in Malaysia, Indonesia, Singapore, India, EU, UK, and USA provided premium values from different stages in the palm supply chain. The premiums showed variation depending on the type of palm oil (CPO/PKO), level of refining, and type of palm fraction (stearin). High premiums were especially observed for CSPKO, and its derivative stearin given its low availability in comparison to CPO. Premium dynamics and factors affecting them have been further discussed in the report.

To understand the implications of the premiums associated with sustainable palm oil, the premiums are represented as a percentage of conventional palm oil prices as well. Since the base price of palm oil has fluctuated substantially, the conventional palm oil prices used as a baseline are an average from January to December 2021 as reported by the Malaysia Palm Oil Board²⁰. These include local prices of palm oil products for Fresh Fruit Bunches (FFB), CPO and CPKO and export prices of palm oil products for refined palm oil, palm kernel oil, and associated fractions.

2.1 THE TRANSFER OF PREMIUMS UPSTREAM

In an open market scenario, the large majority of RSPO certified FFBs are grown on an industrial scale in mill estates²¹ with the rest grown by independent plantations and a small portion of smallholders. These smallholders sell their certified FFBs to millers with varying arrangements. In many cases, smallholders also rely on dealers to buy and transport their produce to millers. Through interviews with growers, the premium for FFB's from certified plantations was found to fall between \$1-7. However, the value typically is around \$2.50 per tonne of FFB (20% of the base price). This is equivalent to \$12.50 per tonne of CSPO (where approximately 5 tonnes of FFBs are needed to produce 1 tonne of CSPO).

Table 2: Premiums for FFBs in the open market for FFBs seen in peninsular Malaysia.

	AVG. BASE PRICE IN 2021	PREMIUM IN US\$	PREMIUM AS %	ADDITIONAL INFORMATION
RSPO FFB	\$11.55	\$1- \$7 (\$2.50 more typical)	8-60% (20% more typical)	This translates to \$12.50 per tonne of CSPO (where 5 tonne FFBs).

NB: FFBs do not have a supply chain model such as IP/SG/MB, this only occurs from the mill onwards.

In a captive market scenario, smallholders receive fuller premiums, both from CSPO and CSPKO. Here, it is easier for smallholders to work with certification and better agricultural practices as a whole. Note that this is not the case with all mill-estate groups with captive smallholders as some make deductions in the premiums shared to smallholders based on other associated costs.

In integrated plantation groups, the group's own estates, mills, refineries, and other downstream facilities are found within the same group. Here, an internal sharing mechanism is set in place where the premium earned by them is shared with upstream mill estates. For some downstream suppliers, there is a premium pricing mechanism where 75-85% of the premium is passed to the plantation, as that is where the bulk of costs associated with certification arise.



A PROCESSOR AND TRADER IN MALAYSIA SHARED THAT “THE PREMIUM PAID LARGELY DEPENDS ON THE AGREEMENTS BETWEEN THE MILLS AND SMALLHOLDERS. HOWEVER, THE MILL GENERALLY TAKES THE LARGER SHARE, RELIEVING SMALLHOLDERS OF THE BURDEN FROM PREMIUM”

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2.2 PRICE PREMIUMS FOR RSPO CSPO

Note that CSPO in this section refers to certified sustainable crude palm oil (distinguished from palm kernel oil), whereas elsewhere in the report it refers to certified palm oil as a whole.

2.2.1 PALM OIL AND REFINED PALM OIL (PO – RBD PO)

It is observed that there is a difference in the premiums paid by domestic refiners/processors/traders in Malaysia, Indonesia, and Singapore, and those in India and the west; as the palm oil moves down the supply chain, there is an increase in the premiums. It was seen that the premiums for CSPO and certified RBD PO were more or less in the same range. The premiums for ISH credits were considerably higher than those for credits from mills/crushers. Beyond RSPO certification, traceable palm oil till the mill (TTM) and till the plantation (TTP) also carries a premium due to the additional costs with traceability.

²⁰ https://bepi.mpob.gov.my/index.php/en/?option=com_content&view=article&id=1033&Itemid=136

²¹ These comprise of plantations

Table 3: Overview of premiums and percentage increase against base price for CSPO and refined CSPO segregated by stakeholder and geography (values are the additional premium in \$/tonne).

PALM OIL

PALM OIL	REFINERS/ PROCESSORS/ TRADERS		REFINERS/ PROCESSORS/ TRADERS		CONSUMER GOODS MANUFACTURER		RETAILER/ HORECA	
	Malaysia, Indonesia, Singapore		India		Germany, Italy, UK, USA, Singapore		UK	
Conventional Price (\$/tonne) ²²	CPO (local delivered): \$1056				RBD Palm Oil: \$1143		RBD Palm Olein: \$1146	
	Premium Value (\$)	Premium as % of conventional price	Premium Value (\$)	Premium as % of conventional price	Premium Value (\$)	Premium as % of conventional price	Premium Value (\$)	Premium as % of conventional price
MB – CSPO	\$10 – 30	0.9 – 2.8%	\$15 – 50	1.4 – 4.7%	–	2.4% Goes up to 2-5% as stated by a CGM	–	3 – 5% > conventional (2017)
MB – RBD PO	–	–	–	–	\$25 – 45 Recent price spikes have increased this to \$60-70, going up to \$100 at times.	2.1 – 3.9% Going up to 5.2 – 8.7% with recent price spikes.	–	–
SG/IP – CSPO	\$25 – 55	2.4 – 5.2%	\$35 – 80	3.3 – 7.5%	\$40 – 70	3.5 – 6.1%	–	–
SG/IP – RBD PO	–	–	–	–	\$40	3.5%	–	–
SG/IP – RBD Palm Olein					\$45 – 85	3.9 – 7.4%		
Credits	\$2.5 – 3.5	0.2 – 0.3%	–	–	\$1 – 3	0.09 – 0.26%	–	–
ISH Credits	\$16 – 32	1.5 – 3.0%	–	–	–	–	–	–
Traceable (TTM/ TTP)	\$5 – 10 for TTP info-data	0.4 – 0.9%	\$5 – 15	0.4 – 1.3%	–	–	–	–

2.2.2 PALM KERNEL OIL AND REFINED PALM KERNEL OIL (PKO – RBD PKO)

PKO is a vital source for lauric oil/acid which is used in food products such as candies, spreads, creamers and in the oleochemical industry²³. Similar to the findings for CSPO, it can be seen that the premiums for CSPKO increase as the PKO goes down the supply chain. The base price and premium for CSPKO is substantially higher than that of CSPO, since the supply of PKO is lower than that of CPO as the palm kernel forms about 1/5th of the palm fruits and therefore, lesser PKO is available in the market than CPO. For CSPKO in particular, unless more CSPO is produced, more CSPKO will not be available which contributes to the high premiums.

Table 4: Overview of premiums and percentage increase against base price for CSPKO and refined CSPKO segregated by stakeholder and geography (values are the additional premium in \$/tonne).

PALM KERNEL OIL

PALM KERNEL OIL	REFINERS PROCESSORS/ TRADERS	REFINERS/ PROCESSORS/ TRADERS	DERIVATIVE MANUFACTURER	CONSUMER GOODS MANUFACTURER				
	Malaysia, Indonesia, Singapore	India	EU, UK, USA, Singapore	UK and EU				
Conventional Price (\$/tonne) ²⁴	CPKO (local delivered): \$1362		RBD Palm Kernel Oil: \$1443					
	Premium Value (\$)	Premium as % of conventional price	Premium Value (\$)	Premium as % of conventional price	Premium Value (\$)	Premium as % of conventional price	Premium Value (\$)	Premium as % of conventional price
MB – CSPKO	\$100 – 200	14.7%–18.4%	India: \$200 – 250	14.7–18.4%	\$250 – 300	18.4 – 22%	\$150 – 250	11 – 18.4 %
MB – RBD CSPKO	-	-	-	-	-	-	\$300 – 350	20.8 – 24.3%
SG/IP – CSPKO	\$250 – 400	-	-	-	-	-	\$530	39%
Credits	\$100 – 150	7.3 – 11%	-	-	-	-	\$100 – 150	7.3 – 11%
ISH Credits	\$90 – 115	6.6 – 8.4%	-	-	-	-	-	-
TTM/TTP	\$5 – 10 for TTP info-data	0.4 – 0.7%	-	-	-	-	-	-

HIGH COST FOR CERTIFIED PALM KERNEL OIL (CSPKO)



© Aaron Gekoski / WWF-US

The migrant labour crunch in Malaysia, decreasing yields in Indonesia, and the backlisting of major palm oil suppliers by the U.S. Customs and Border Protection (CBP)²⁵ among overall logistic challenges posed by the COVID-19 pandemic affected the supply of both palm oil and palm kernel oil in the global market²⁶. Lower availability coupled with a supply shortage has resulted in a drastic increase in premiums for CSPKO. Multiple respondents stated that the cost of conventional PKO as well as the premiums for CSPKO increased to the degree of three to five times. The ISH Credits for CSPKO have varied in the range of \$50-95/tonne between mid-2018 to May-2021 with a spike down in late 2019 and then a breakout in mid-2021, to over \$100/tonne now²⁷.

²² https://bepi.mpob.gov.my/index.php/en/?option=com_content&view=article&id=1033&Itemid=136

²³ [Production Systems and Agronomy | Oil Palm and Coconut, B.S. Jalani, A. Kushairi, S.C. Cheah, 2003.](#)

²⁴ https://bepi.mpob.gov.my/index.php/en/?option=com_content&view=article&id=1033&Itemid=136

²⁵ [The Chain: Sime Darby, FGV See Reputational Hits from U.S. Stop Orders](#)

²⁶ [The World's Most Consumed Edible Oil Is Facing a Supply Crunch](#)

²⁷ [The PalmTrace Marketplace](#)



When buying credits on PalmTrace²⁸, the companies do not have control on the origins and grower they purchase their palm oil from. Some sources indicated they prefer buying credits off-market despite the higher prices since they can choose their suppliers.

Although the prices are higher off-market, they are able to choose their supplier. This parallel market mechanism is thought to be present to ensure that the premiums paid by companies are reaching the growers at ground level as many companies are motivated to work with producers and stakeholders in their supply chain to support them directly on their sustainability pathways. The RSPO expects off-market deals to be reported on PalmTrace as well. However, with an increasing number of companies moving to physical supply chains in recent years, off-market buying of credits has somewhat reduced.

Although the Identity Preserved (IP) supply chain has a higher degree of traceability than segregated (SG), a number of buyers stated that the money spent for sourcing IP can be more impactful if spent elsewhere.

Given the many products that come from oil palm, some have higher premiums than others due to high market demand. Stearin and fatty acid distillates are fractions of palm/palm kernel oil and find use in various food and non-food applications such as production of surfactants, raw oleochemicals, bakery shortenings, margarines, cocoa butter alternatives etc²⁹. These products are highly sought after and fetch a considerable premium when certified. Further details on premium values and ranges for certified sustainable palm stearin, and palm kernel expeller can be found in table 1.

2.3 FACTORS AFFECTING THE BASE AND PREMIUM PRICES OF PALM OIL

Discussions with stakeholders suggested palm oil prices to be more volatile than the premium prices for certified palm oil, however, there are a number of factors that also affect the premium price.

A number of recent happenings including global socio-political events have impacted the prices of palm oil. Note that such impacts are temporary, and the changes in palm oil prices are expected to normalise as the events move past their peak. As described below, the prices of certified sustainable palm will be affected by market dynamics of the commodity and does not reflect the costs of implementing sustainable practices.



WEATHER

Impact on Base Price: Weather changes can impact palm oil cultivation, yield, quality of the fruit and frequency of pests and diseases. Lower quality fruit requires additional processing.

Impact on Premium: According to a stakeholder extreme weather events have increased the premium for CPO MB up to \$50 (4.7% increase) at times.



SUPPLY CHAIN DISRUPTIONS

Impact on Base Price: The closing of ports and other blockages reduces the supply of the commodity, increasing its price.

Impact on Premium: For SG material, separate infrastructure is needed, and a disruption can substantially affect the supply, increasing the prices.



MARKET DISRUPTIONS

Impact on Base Price: The increased demand for palm oil following the war in Ukraine, and reduction in sunflower oil supply followed by Indonesia reducing exports for example has increased the prices.

Impact on Premium: Restricted supply in the market for CSPKO has led to higher prices.



VOLUMES PURCHASED & CONTRACTS

Impact on Base Price: Buying in an ad-hoc basis without longer term contracts can be more expensive.

Impact on Premium: A stakeholder consulted stated increased volumes and longer contracts and reduce premiums by \$5 - 10/tonne for CSPO (approximately a 10 - 20% reduction on the premium paid).



ECONOMIES OF SCALE

Impact on Base Price: The per unit cost decreases when costs are spread out over a larger number of goods or larger volumes of a commodity.

Impact on Premium: With SG supply chains, additional infrastructure is needed, and with larger volumes, the premiums can reduce as these costs are spread out over a larger volume of material.



CHANGES IN REGULATIONS

Impact on Base Price: Regulatory changes like policies restricting the export of palm oil or reduced import duties impact the price of the commodity.

Impact on Premium: The drafted EU deforestation-free legislation will increase the demand for CSPO in the region. Increased demand can reduce the premiums.

COVID-19 and CSPO

There was a **shortage in migrant labourers** working in palm plantations due to border closures and travel restrictions during the pandemic. Many operations were structured around migrants due to the different wage structures between migrant and domestic workers. A stakeholder consulted said this increased the CSPO premium by ~ \$10.

COVID-19 caused supply chain disruptions including in the palm oil industry which led to reduced available supply.

SUPPLIER BLACKLISTING

Recently, 2 major suppliers were blacklisted from the RSPO following findings issues by the USCBP due to human rights violations. This reduced the supply of palm oil overall but CSPO in particular, increasing the prices.

THE WAR IN UKRAINE

Ukraine is a key producer of sunflower oil, and the war has led to a **1000% increase in sunflower oil prices**.

Many companies are **increasing their palm oil uptake** because of this. This includes companies that pledged to reduce or eliminate palm oil from their supply chains.

Some of these companies like Iceland Foods have committed to only sourcing CSPO if they need to use palm oil, and thus increased uptake of CSPO overall can bring down the premiums.

²⁸ PalmTrace is the RSPO's traceability system for certified palm oil products. In addition, RSPO certified mills and refineries register physical sales and processing activities under the different supply chain models. PalmTrace also acts as a marketplace to register off market deals for RSPO Credits. Using RSPO PalmTrace is a part of being RSPO certified.

²⁹ <http://www.ijstr.org/final-print/feb2020/The-Recent-Application-Of-Palm-Stearin-In-Food-Industry-A-Review.pdf>

2.4 ADDITIONAL COSTS OF USING RSPO CSPO

As part of complying with the RSPO, there are several additional costs that stakeholders operating across the value chain need to bear. This includes costs associated with RSPO membership, audits, and staffing and training among others. These costs can vary based on position in the supply chain, volumes worked with, type of palm oil used, existing sustainability measures, and upstream supplier network. Note that the costs detailed in this section were derived through stakeholder consultations and this does not represent all the additional costs associated in working with the RSPO. Some of these costs are one-off, others recur annually, or on a per tonne basis. Many stakeholders consulted for this study stated that price premiums were among the largest costs in working with CSPO, and these other additional costs are auxiliary and become negligible in the grand scheme of things.

2.4.1 OVERVIEW OF SOME COMMON ADDITIONAL COSTS

MEMBERSHIP COSTS

Companies can become members at varying capacities based on their role in the supply chain, scale of operations, & company willingness.

ORDINARY \$2,200	SUPPLY CHAIN ASSOCIATE \$110	SMALLHOLDER FARMERS <1000 ha/yr: \$280 1000 – 2000 ha/yr: \$1100 >2000 ha/yr: \$2200	AFFILIATE \$280
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Table 5: Membership costs for different types of RSPO members.

AUDIT AND STAFFING & TRAINING COSTS

As part of complying with RSPO P&C, 3rd party audits are required to maintain certification. Note that all members need to be audited; however, audits are done by 3rd party auditors and the costs can vary based on geography, scale of operations, the number of sites and the mode of audit (physical/virtual) amongst other factors. Compliance to RSPO P&C, requires additional administrative work that needs to be done along with participation in other member groups and industry associations and training costs.

Table 6: Audit and Staffing & Training costs for stakeholders operating in different stages of the palm oil value chain.

STAKEHOLDER	ANNUAL AUDIT COSTS	STAFFING & TRAINING COSTS
Grower/ Mill Estate	\$15,000 (for ~10,000ha)	\$75,000 (for 20,000ha)
		\$250,000 – 350,000 (for 200,000ha)
Refiner/ Processor/ Trader	Site audits: from \$25,000	From \$125,000 for 2 – 4 part- & full-time staff for working with the RSPO.
	Port audits: \$10 – 15/MT	
Derivatives Manufacturer	\$4000	\$3000 (internal training done 1 – 2 times a year)
Consumer Goods Company	Onsite: \$10,000 – 15,000	\$1000 (for a CGM based in Malaysia & Singapore). A lot of these costs done with existing resources. Virtual audits were found to be more cost effective.
	Virtual: \$5000	
Retailer/HORECA	Supplier audits: \$13,500	20% of sustainability manager's time goes into RSPO related work.

Note that the group certification scheme offered to SASPO members covers audit costs.

OTHER STAKEHOLDER SPECIFIC ADDITIONAL COSTS

In addition to the common additional costs incurred by stakeholders working with RSPO CSPO on top of the premium, below are some specific costs applicable to the respective stakeholders:

Table 7: Other stakeholder specific costs associated with RSPO and sustainable palm oil production, procurement, and uptake.

STAKEHOLDER	SOME ANNUAL ADDITIONAL COSTS			
Grower/ Mill Estate	HCV, SIA, LUCA, CSA/GHG, Soil, and Topography Assessments: \$62,000 for 20kha or \$3.1/ha	RACP (corrective action): \$100,000/year (RACP liability at ~\$2500/year).	Establishing a conservation area: In-situ projects \$5 – 6/ha/year, Ex-situ \$20 – 100/ha/year.	
Refiner/ Processor/ Trader	Traceability documentation (non-RSPO, from NDPE pledges): \$5 – 10/tonne.	3 rd party traceability consultants \$35,000 – \$40,000/year or \$1 – 4 cents/	RSPO brokerage fee: CSPO \$1.4/tonne, CSPKO: \$0.63/tonne.	Segregated infrastructure: \$10/tonne on top of normal storage costs.
Derivatives Manufacturer	Marketing: \$2000 – 3000/year for marketing CSPO use & use of RSPO logo.		Documentation: \$1000 – 2000/year	Total annual cost: \$30,000 – 40,000. Can go up to \$50,000.
Consumer Goods Company	Transport: \$48/tonne to transport SG oil in an 80MT tanker within 200km of mill.	Membership in industry body: \$1100 for RSPO group certification.	Supply chain mapping: \$50,000 (through external agency).	Satellite monitoring of suppliers: \$15,000 – 20,000.
Retailer/HORECA	Membership in industry body: \$2700 – 4100/year This is the cost of be a part of the Retailer's Palm Oil Group (RPOG)		Supply chain mapping: \$50,000/year (inclusive of software and technical expertise) for retailer working with ~15,000 tonnes of palm oil and associated fractions.	

Growers/Mill Estate: Large growers consulted as part of this study reported that there was no major increase in the cost of complying with the RSPO in recent years. For RSPO members that have established plantations without prior HCV assessments, remediation & compensative (RACP) action needs to be taken.

Refiner/P&T: While the costs for sustainable palm oil can run high, all the additional costs are transferred to downstream customers.


Consumer Goods Company (CGM): For some companies using a diverse range of palm oil fractions and derivatives, availability of sustainable options becomes a hurdle often resulting in having a bigger supplier base to meet the demands. With an extension of the supplier base, monitoring for each supplier becomes a challenge and often elevates the cost for ensuring compliance. According to another consumer goods company working with around 15,000 tonnes of sustainable palm oil (CSPO and CSPKO), a switch from MB to SG supply chain can increase the additional costs by 10-20%.

Retailer/HORECA: For a large retailer dealing with 100,000 tonnes of palm oil, the transition to a fully segregated supply chain can cost millions of dollars due to the necessary infrastructure, however, with such large volumes, economies of scale can be achieved overtime which can be amortised overtime. One retailer consulted who has an uptake of 2000 – 3000 tonnes of palm oil annually states that the overall cost of sustainability measures ranges from \$50,000 –70,000.

THE BUSINESS CASE FOR SUSTAINABLE PALM OIL IN ASIA

It was found that the premium price for sustainable crude palm oil ranges between 1-7% of the base price and for palm kernel between 6-40% of the base price. This can vary based on the segregation of the supply chain and geography. Processed derivatives and fractions also can carry additional costs.

However, it can be seen below illustrative that the impact of segregated CSPO premiums on the final per unit price of common goods is near negligible:

A photograph of a man with dark hair, wearing a striped polo shirt, looking upwards with a thoughtful expression. The background is a lush green forest with sunlight filtering through the trees, creating a bokeh effect. The image is partially overlaid by a black text box on the left side.

“THE RISK OF NOT SOURCING SUSTAINABLY IS HIGHER THAN THE COST OF SOURCING SUSTAINABLY.”

PALM OIL PROCESSOR

Copyright Credit © Matthieu Paley

Please note the assumptions made: (1) all fat in the product was palm oil if more specific information was not found, (2) for products containing derivatives information was not available for, the closest product in the supply chain information was available for was used (e.g. for monoglyceride emulsifier, the premium value of stearin was used), (3) the price increase is from the impact of the premium and not from the other additional costs associated with CSPO, and (4) The information for the premiums is based on the data we collected for premiums through various stakeholder interviews done as part of this study. Physical supply chain values have been taken from stakeholders, and credit values have been taken from PalmTrace on 6/4/22. (Presented in the table below)

Table 8: Overview of premium values used for product case studies presented below

REFINED PALM COOKING OIL

SUPPLY CHAIN	PREMIUM PER TONNE (\$)
MB	35
SG	65.5
Credits from Mill/Crusher	2
ISH Credits	12

PKO

SUPPLY CHAIN	PREMIUM PER TONNE (\$)
MB	262.5
SG	530
Credits from Mill/Crusher	195
ISH Credits	200

PALM STEARIN

SUPPLY CHAIN	PREMIUM PER TONNE (\$)
MB	40
SG	150

PALM KERNEL STEARIN

SUPPLY CHAIN	PREMIUM PER TONNE (\$)
MB	300
SG	950

AN OVERVIEW OF THE COSTS AND BENEFITS IN WORKING WITH CSPO

COSTS OF WORKING WITH CSPO

The costs associated with transitioning to and working with CSPO include memberships, assessments, audits, documentation, trainings, and the premium price paid for certified palm oil.

THE IMPACT OF CSPO SG PREMIUMS ON THE PER UNIT COST OF SOME COMMON PRODUCTS*, **



70g pack of Instant Noodles
\$0.0009



125g bar of Soap
\$0.006



350g jar of Peanut Butter
\$0.005



1kg box of Laundry Detergent
\$0.08



80g bag of Potato Chips
\$0.002



0.35g pencil of Pencil Eyeliner
\$0.0001

Overall, the total cost of working with CSPO can vary. It can be as little as \$800 a year for those working with credits and can range between \$30,000 - \$70,000 for those working with physical supply chains, having audits conducted, etc. However, stakeholders stated that some of these costs are only incurred in the beginning and become negligible in the grand scheme and that the additional costs are also minimal on a per unit basis.

Note:

* Details on the calculations and the per unit price of these products can be found in annexure 5.3.

** The premium prices used were taken during COVID-19 and are likely higher than those in normal circumstances.

BENEFITS OF SWITCHING TO CSPO



HOW DOES THIS BENEFIT THE WORLD AT LARGE?

- The **10 million ha** of rainforest that is annually converted to palm plantations will be saved from deforestation.
- This is **2.9 billion tonnes of carbon** that will continue to be sequestered.^{***}
- Millions of workers working across the palm oil value chain will have **fair wages and better working conditions**.



HOW DOES THIS BENEFIT GROWERS?

- **Increased revenue** from certified FFB sales and RSPO credits.
- Increased likelihood of FFB **sales** (particularly for smallholder farmers).
- **Increased yield** per hectare from better agricultural practices.
- **Improved health of communities** and better environmental quality in the region.



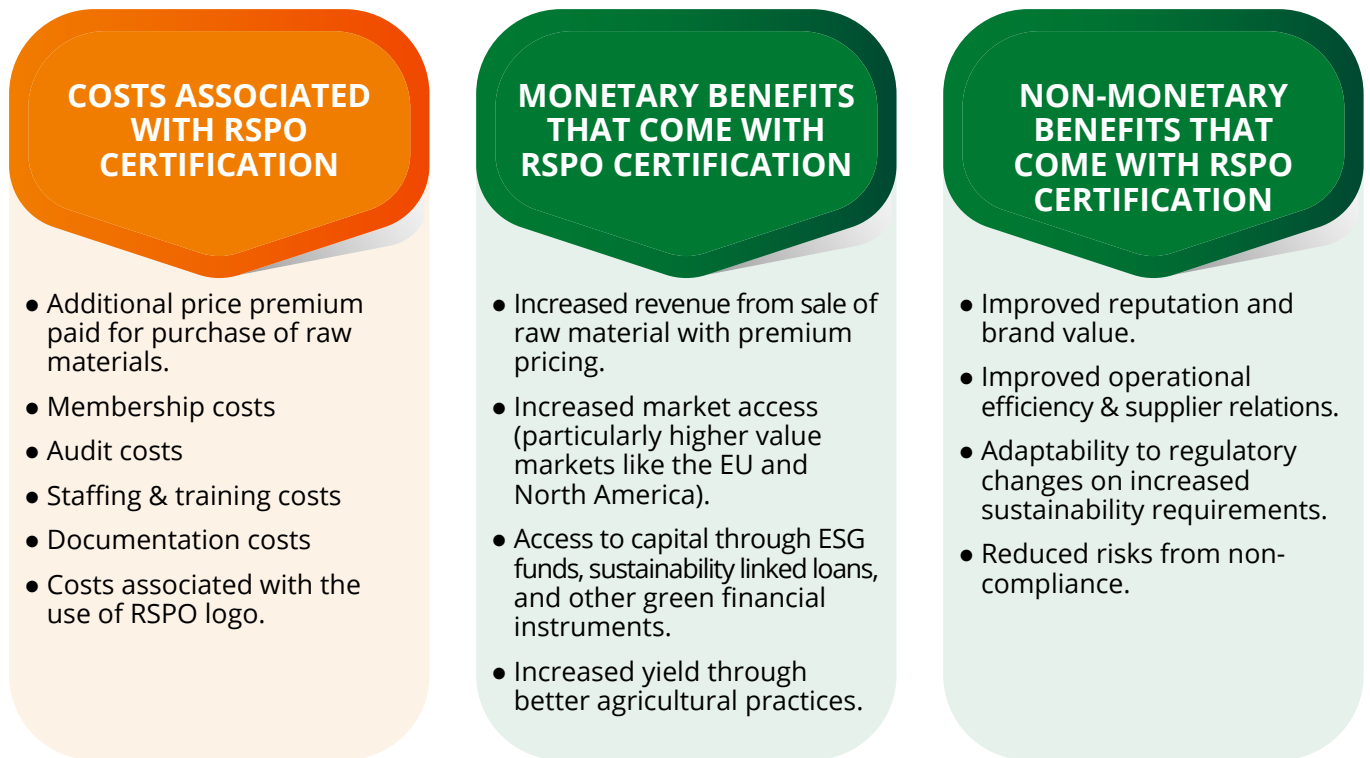
HOW DOES THIS BENEFIT BUSINESSES?

- Business practices cater better to **growing consumer demand for sustainably produced** products.
- **Reduced reputational risks** and better relationships with NGOs.
- **Increased traceability** across supply chain and operational efficiency.
- **Adaptability to regulatory changes** on deforestation and sustainable production.
- **Access to ESG funds** and green finance.

^{***} Besar, N. A., Suardi, H., Phua, M., James, D., Mokhtar, M. B., & Ahmed, M. F. (2020). Carbon Stock and Sequestration Potential of an Agroforestry System in Sabah, Malaysia. *Forests*, 11(2), 210.

Despite the costs associated in complying with RSPO P&C, through secondary research and stakeholder discussions, the importance of implementing sustainable practices came through. This can be attributed to the overwhelming risks associated with conventional practices and the opportunities that come with implementing sustainable business practices. This is increasingly relevant in Asia with an increasing number of companies becoming RSPO members. This section details the business case for stakeholders operating across the palm oil value from growers all the way to consumer goods manufacturers and retailers.

Table 9: An overview of the costs and benefits associated with RSPO certification.



3.1 GROWING AWARENESS ON SUSTAINABILITY

Over the past decade, consumers have had increased access to information and resources, including sustainability issues such as deforestation and human rights violations. There is also an increased awareness on the importance of sustainability and sustainable development, particularly among the new generation of consumers.

GROWING AWARENESS ON SUSTAINABILITY

Deloitte’s 2021 Global Millennial Survey & Trend³⁰ found that 66% of millennials and 68% of Gen Z stated that action was needed to mitigate climate change and its associated impacts.

Following the haze crisis in 2015, it was found that 80% of Singaporean consumers care about sustainability, and 60% are familiar with the deleterious impacts of conventional palm oil production³¹.

EY’s Future Consumer Index survey in 2022 found that 28% of consumers in the Asia-Pacific region are willing to pay a premium for more sustainable goods and services³².

In 2020, 30% more companies operating in the Indonesian palm oil value chain disclosed on CDP Forests³³ in response to the fact consumers and other stakeholders want to see their efforts in this space³⁴.

³⁰ [Global Millennial Survey 2021 - Deloitte India - Millennial Trends 2021](#)

³¹ https://wwfasia.awsassets.panda.org/downloads/wwf_singapore_in_the_palm_of_singapore_s_hand.pdf

³² [How to win Asia-Pacific consumers in the new era \(ey.com\)](#)

³³ [Forests - CDP](#)

³⁴ [CDP Forests analysis report 2020.pdf](#)

These are positive signs that consumers in Asia may be willing to pay more for sustainably produced goods and it can be valuable for companies to meet the needs of consumers. The RSPO P&C (2018) was found to match with nearly every Sustainable Development Goal (SDG) to some extent which depicts that sustainable palm oil production and sourcing fosters sustainable development as a whole³⁵.

Many companies in the west have caught light of this and have implemented strong CSPO sourcing policies. Although this is at a more nascent stage in Asia, more companies are doing this in Asia as well. This includes Japan's biggest retailer Aeon for example which pledged to source CSPO for all its own brand products³⁶.

3.2 REDUCED REPUTATIONAL RISKS

A 2019 study by the Chain Reaction Research concluded that given the increasing awareness of deforestation and its climate change impacts, deforestation driven reputational risks could highly become material for companies³⁷.

Kao Corporation, a Japanese home & personal care goods company estimates financial impact from reputation and market risk from its palm oil supply chain to be approximately \$642.2 million per year, and that such risks were highly likely³⁸.

For Fuji Oil Holding, a Japanese trader, the financial impact from reputational damage is estimated to be \$61.9 million³⁹.

In the past, campaigns by civil society organisations and NGOs have been advocating for companies to clean up their palm supply chains and take responsibility to address the impacts of palm products that they procure. In 2010, Greenpeace highlighted Nestle's practices of using deforestation linked palm oil through their campaign which gained massive consumer support⁴⁰ and many more have followed since. As a response to this public outcry and minimise damages, many companies including Nestle committed to sourcing sustainable palm oil with targets to gradually increase its uptake, implement on ground projects for smallholder and grower benefit, and to encourage and support peers in their sustainable palm oil journey.

KORINDO GROUP AND POSCO INTERNATIONAL

Korindo Group, an Indonesian-South Korean conglomerate controls more land than any other company in the Papua. In 2021, following allegations of forest burning for palm, the company was expelled from the Forest Stewardship Council as the council could not verify the improved environmental and social compliance by the company.

Posco International, another South Korean Conglomerate, and its subsidiaries too have been under scrutiny for unethical practices for establishing palm plantations and causing pollution in areas surrounding its sites. In 2015 and 2018 respectively, The Norwegian Sovereign Wealth Fund and ABP pension fund divested \$207 million and \$300 million respectively from Posco and its subsidiaries over its failure to address deforestation⁴¹. In 2018 Boots, the UK's largest drugstore retailer end its partnership with Posco following NGO campaigns⁴².

Companies that have sustainable sourcing policies as well as on ground projects fared better in assessments like the POBS, ZLS's SPOTT ratings, and the CDP Forests rating among others. In addition, these companies also performed better among different types of ESG ratings, which is becoming increasingly relevant.



© James Morgan / WWF-International

A RETAILER CONSULTED FOR THIS STUDY STATED THAT "IT IS BETTER FOR A COMPANY TO INCUR THE COSTS AND IMPLEMENT SUSTAINABLE PRACTICES THAN LOSE BRAND VALUE"

Recent studies have shown that the incorporation of ESG factors into business principles drives better financial performance as well due to improved risk management and innovation⁴³. As indicated above, there is increased consumer consciousness around sustainability issues, and such ratings help consumers and investors make more informed choices. For companies that already have sustainable palm policies in place, participating in these scorecards and ratings can help demonstrate better practices, increase brand value, and expand sales overall.

In 2016, IOI Corporation was exposed by Greenpeace for their labour violations as well as deforestation and burning of peatlands. Large global brands dropped IOI as a supplier following this and their share prices substantially reduced⁴⁴. More recently, Sime Darby and FGV Holdings were issued findings by the United States Customs & Border Protection (US CBP) due to human rights violations which led to them being blacklisted by the RSPO and loss of downstream buyers⁴⁵.

Sime Darby's inability to address these issues can impact their credit quality in the future. With such controversies surrounding Sime Darby, the company can be categorised as high risk on ESG rating platforms, and this can affect their relationships with customers and stakeholders with a possibility of lenders pulling out funding according to Moody's analytics⁴⁶. As this has happened relatively recently, the actual impact on credit quality is yet to be quantified.

Following Felda's (FGV Holdings) suspension of one of its plantations from the RSPO in 2018, it observed a fall in its stock price by ~60% over the following year⁴⁷. In September 2020, reports of forced labour in their plantations emerged, following which the US CBP blocked any shipments from Felda which resulted in an immediate 10% decline in the company stock price, followed by a further 11% the following month^{48,49}.

³⁵ <https://preferredbynature.org/library/report/sdg-materiality-report-sustainable-palm-oil-rspo>

³⁶ [CDP Indonesia Forest Report 2018.pdf](#)

³⁷ Chain Reaction Research. (2019, May 9). Deforestation-Driven Reputation Risk Could Become Material for FMCGs.

<https://chainreactionresearch.com/report/deforestation-driven-reputation-risk-could-become-material-for-fmcgs>

³⁸ Chain Reaction Research (2021, April). Japan: Major Financier and Buyer of Leakage Palm Oil and Plywood

<https://chainreactionresearch.com/wp-content/uploads/2021/04/Japan-Major-Financier-and-Buyer-of-Leakage-Palm-Oil-and-Plywood.pdf>

³⁹ Chain Reaction Research (2021, April). Japan: Major Financier and Buyer of Leakage Palm Oil and Plywood

<https://chainreactionresearch.com/wp-content/uploads/2021/04/Japan-Major-Financier-and-Buyer-of-Leakage-Palm-Oil-and-Plywood.pdf>

⁴⁰ [2010 - Nestlé stops purchasing rainforest-destroying palm oil](#)

⁴¹ [Blackrock's BIG Deforestation Problem](#)

⁴² [Palm Oil Producer POSCO Daewoo dropped by UK drugstore chain Boots over deforestation, claims to have temporarily suspended forest clearing](#)

⁴³ [NYU-RAM ESG-Paper 2021 Rev 0.pdf](#)

⁴⁴ [IOI: Dropped by world's largest food company and targeted by a score of NGOs, pressure mounts on palm oil giant - Greenpeace Southeast Asia](#)

⁴⁵ [Exclusive: Buyers shun major Malaysian palm oil producers after forced labour allegations | Reuters](#)

⁴⁶ [Forced labour issues can hurt Sime Darby Plantations credit quality](#)

⁴⁷ [WWF DCF report 2021](#)

⁴⁸ (Bloomberg. (2020, September 30). US Blocks Palm Oil Imports From Malaysia's FGV On of World's Top Producers) [US Blocks Palm Oil Imports From Malaysia's FGV On of World's Top Producers - Bloomberg](#)

⁴⁹ [Felda Global Ventures Holdings Berhad \(5222.KL\) Interactive Stock Chart - Yahoo Finance](#)

3.3 ADAPTABILITY TO REGULATORY CHANGES

The latest IPCC report⁵⁰ depicted the pressing need for climate action and the increasingly dire consequences of inaction. As a response to a rising awareness on these risks, more and more governments are implementing regulations relating to deforestation and sustainable sourcing.

Agriculture is a key driver of deforestation globally⁵¹, therefore, at COP26 in November 2021, 141 countries endorsed the Glasgow Declaration of Forests & Land Use with an overarching aim of committing to sustainable land use and protecting terrestrial ecosystems⁵². In Asia, this included China, Indonesia, Malaysia, Singapore, Japan, and South Korea among others. It is likely that regulatory measures will be introduced in countries that endorsed this declaration to work towards their commitments in this space and their nationally determined contributions (NDCs) as a whole.

Indonesia has set a target to create the forest and land-use sector as a net sink by 2030. In addition, the forest and land-use sector in Indonesia is expected to contribute to 60% of Indonesia's GHG emission reduction target. The palm oil industry is a key part of this, and the government's operational plan for this is in line with RSPO P&C for sustainable palm production, this includes no new planting on primary forest and peat lands, increasing land rehabilitation efforts, and conducting HCV assessments among others⁵³.

In November 2021, the EU published a legislative proposal for a regulation on 'deforestation-free products'⁵⁴. This also includes mandatory due diligence obligations for importers and other market players to ensure that the products have not been produced on land that has been deforested or degraded after December 2020⁵⁵. In March 2022, the US Securities and Exchange Commission proposed a regulation for companies to disclose on Scope 1, 2, & 3 emissions as well as climate related risks, which emissions related to palm oil fall under as well⁵⁶. At COP26, the UK passed its Environment Act 2021 into law which includes measures on the import and use of forest-risk commodities⁵⁷. In anticipation of such policies, to ensure compliance and avoid operational disruptions, companies must actively work to transition their supply chains for compliance. This regulation is material for downstream CGMs and retailers operating in this space, as well as for upstream suppliers who risk losing market access if they are unable to meet these standards.

In addition to these, following the 2015 haze in Asia, a roadmap has been developed for a 'haze free ASEAN' which includes cooperation towards transboundary pollutants⁵⁸. In Malaysia's National Agricommodity Policy 2021-2030, DAKN 2030⁵⁹, sustainability standards are one of the focus areas and the MPOB is working to develop strategies to help with implementing a policy specific to sustainable palm oil. The Singapore Green Plan 2030 also works to address transboundary haze and other social and environmental risks that come with the production of agricultural commodities⁶⁰.

Companies that do not anticipate such regulatory changes and implement sustainable sourcing policies for palm and other forest companies face the risk of stranded assets as well as fines and market exclusion from non-compliance.

3.4 IMPROVED OPERATIONAL EFFICIENCY & SUPPLIER RELATIONS

Traceability is a vital part of sustainable sourcing. This refers to tracing upstream suppliers till the mill or plantation to know where the palm oil comes from; this helps in verifying compliance by upstream suppliers. There are many tools and services to map supply chains and monitor areas surrounding oil palm plantations for deforestation related risks. These include Starling⁶¹, a supply chain monitoring tool using satellite imagery to find deforestation risks in plantations and surrounding forest areas and the RADD: Radar for Detecting Deforestation⁶² tool which provides alerts on Global Forest Watch on deforestation and forest disturbances using satellite-based data.

TRUSTPARENT - AN ONLINE MARKETPLACE FOR SUSTAINABLE PALM OIL

Recently, in March 2022, DiBiz, a Malaysian Techfirm launched the Trustparent Marketplace – the first online marketplace for the sale of sustainable palm oil. The platform has measures in place for traceability to ensure NDPE and allows buyers and sellers to connect, discover, find discounted premiums. The platform has also been designed so it is easy for smallholders to use through their phones⁶³. The marketplace can complement the RSPO system to help increase

the reach of sustainable palm oil and bring more stakeholders into the sustainability loop.

As the procurement of sustainable palm oil requires close coordination between buyers and suppliers, particularly for the chain of custody to claim the product as ‘RSPO certified’. In addition, it was seen that buyers try work closely with their suppliers to establish short-, medium-, and long-term contracts to hedge changing market prices.

“SUPPLIERS WITH BETTER TRACEABILITY MECHANISMS ARE PRIORITISED AS IT PROVIDES AN INSIGHT INTO THE ORIGINS OF THE PRODUCT”

A CONSUMER GOODS MANUFACTURER

A stakeholder consulted for this study stated that they work closely with suppliers to reformulate products to adjust to changing market prices and increased premiums (particularly in the market for PKO) and this can be achieved with good supplier relations. Large buyers consulted for this study stated that they invest in their suppliers to help with RSPO certification and compliance as this can guarantee supply, particularly when there are shortages and supply chain disruptions.

“USING SEGREGATED, SUSTAINABLY SOURCED RAW MATERIALS IS CONSIDERED TO BE THE BARE MINIMUM LIKE A HYGIENE FACTOR AND CONSUMERS EXPECT PRODUCTS TO CONTAIN SUSTAINABLY SOURCED INGREDIENTS AS A MINIMUM”

A CONSUMER GOODS MANUFACTURER

⁵⁰ [IPCC_AR6_WGIII_FinalDraft_FullReport.pdf](#)

⁵¹ [Deforestation causes | WWF \(panda.org\)](#)

⁵² [Glasgow Leaders' Declaration on Forests and Land Use - UN Climate Change Conference \(COP26\) at the SEC – Glasgow 2021 \(ukcop26.org\)](#)

⁵³ [OPERATIONAL PLAN INDONESIA'S FOLU NET SINK 2030 - Kementerian LHK \(menlhk.go.id\)](#)

⁵⁴ [Proposal for a regulation on deforestation-free products \(europa.eu\)](#)

⁵⁵ [New rules for deforestation-free products \(europa.eu\)](#)

⁵⁶ [SEC.gov | SEC Proposes Rules to Enhance and Standardize Climate-Related Disclosures for Investors](#)

⁵⁷ [EU and UK: Due Diligence Obligations for Deforestation Risk Products | Covington & Burling LLP](#)

⁵⁸ [Proposal for the Training Workshop on Transboundary Haze Pollution Control \(asean.org\)](#)

⁵⁹ <https://www.nst.com.my/business/2022/03/783857/mpob-developing-strategies-under-dakn-2030-accelerate-growth-domestic-oil>

⁶⁰ [wwf_singapore_in_the_palm_of_singapore_s_hand.pdf \(panda.org\)](#)

⁶¹ [Starling | No Deforestation Monitoring Tool to make an informed decision \(starling-verification.com\)](#)

⁶² [New Radar Alerts Monitor Forests Through the Clouds | Global Forest Watch Blog](#)

⁶³ [Palm Oil - Dibiz Global](#)

3.5 INCREASED FINANCIAL OPPORTUNITIES

The increase in costs from working with RSPO CSPO and the lack of demand to justify this has been cited as a reason by many companies to not increase their uptake of CSPO. In the earlier section, it was shown that there is already a growing awareness among consumers on sustainability issues which can lead to an increase in the demand for sustainably sourced goods.

There is a financial risk from the consequences of continuing with conventional, unsustainable practices. This includes the risk that climate change poses, as well as the financial implications from a loss of brand value, supply chain disruptions, etc. 151 companies reporting on CDP Forests attributed a value of \$53.1 billion to forest-related risks. The cost of taking action against these risks however was estimated at \$6.6 billion, a mere 13% of what companies stand to lose⁶⁴. Implementing sustainable practices is not only beneficial for the greater good as a whole but can safeguard companies and mitigate the risks that unsustainable practices pose.

FINANCIAL RISKS WITH CONVENTIONAL PALM OIL

Grower:

Between 2016 -2018, Korindo group was suspended by multiple traders and MNCs- Nestle, Bunge Loders Croklaan, Wilmar and Cargill with NDPE commitments⁶⁵ due to its association with deforestation and loss of HCV on its concessions.

Buyer:

Lion Corporation, producer of cleaning products in Japan, are aware of the unsustainable practices in the palm supply chain and estimated a loss of \$90 million as a potential loss in sales on continued use of conventional palm oil. To manage these risks, Lion Corporations sources CSPO and publishes a sustainable supplier procurement policy as well⁶⁶.

FINANCIAL OPPORTUNITIES WITH SUSTAINABLE PALM OIL

Shisedo Company, a Japanese cosmetic company, identified an opportunity to increase reputation and subsequently brand value with the use of sustainable palm oil and have certified 17 of their factories under the RSPO Supply Chain Certification (SCC). The value of this opportunity was estimated to be \$275 million⁶⁷.

Unilever established the **Unilever Oleochemicals Indonesia (UOI)**, to shorten their supply chain for sustainable palm oil fractions. Unilever identified increased brand value, improved traceability, cost reduction and enhanced integration of smallholders into its value chain as some of the opportunities for establishment of UOI. The potential financial opportunity from this (in the form of savings and revenue) is estimated at \$179.2 million.

FINANCIAL INSTITUTIONS AND INVESTORS

Higher value markets like the EU and USA have increased consumer awareness on sustainability, and stronger regulations on sustainable sourcing as indicated in the sections above. Companies operating in Asia gain access to such markets when working with CSPO. In addition, early actors in the Asian palm oil space can have a higher return on invested capital as well as positional advantages leading to operational and capital efficiencies⁶⁸. ESG integration provided downside protection to companies during social and economic crises in addition to improved financial performance⁶⁹. The prevalence of ESG funds and other green financial instruments in Asia has been on the rise in recent years⁷⁰. With this, financial instruments like ESG linked loans are gaining prominence.

OPPORTUNITIES WITH SUSTAINABLE FINANCE

Wilmar, ING, and OCBC

In 2017, ING and Wilmar (the largest palm oil trader globally), agreed to convert a portion of Wilmar's existing bilateral, committed Revolving Credit Facility of \$150 million into a sustainability linked loan⁷¹. In April 2021, OCBC extended Wilmar a 3-year sustainability linked loan valued at \$150 million⁷². In April 2022, the Bank of East Asia extended a \$100 million sustainability linked loan to Wilmar as well⁷³. For both these loans, the interest rate will reduce on a tiered basis if Wilmar achieves a set of pre-determined targets that cover various ESG metrics.

COFCO International

In 2019, Chinese agri-trader giant COFCO received a total of \$2.3 billion sustainability-linked loan facilities from 21 international banks. In 2020, under the sustainability-linked loan, COFCO achieved their target of traceability to mills for palm oil. By meeting performance targets on ESG as listed in the loan terms and traceability for palm and soy, the company enjoyed interest discounts⁷⁴.

In 2020, DSNG signed a \$30 million, 10-year loan facility with the & Green Fund, DSNG to work towards its goals of producing sustainable palm oil. The company aims to implement NDPE commitments and certifications throughout its entire supply chain by 2025. The company's heightened awareness and strong commitments towards sustainable and inclusive production of palm oil helped them secure the investment⁷⁵.

At COP26, 30 financial institutions managing over \$8.7 trillion in assets pledged to divest from commodity driven deforestation in the beef, soy, palm oil, pulp, and paper sectors by 2025⁷⁶. Robeco, a Dutch asset management firm, has lending and investment policies on palm oil for growers, traders, and processors⁷⁷. This policy requires all clients operating in the palm oil industry to be RSPO members and they expect growers in particular to have at least 50% of their land bank to be RSPO certified. It can be seen that some Asian financial institutions are also adapting their social and environmental policy frameworks in line with this.

Japan based Mitsubishi UFJ Financial Group (MUFG) revised their Environmental and Social Policy Framework in April 2022⁷⁸ with stricter policies for sectors that negatively impact climate change. With respect to palm oil, the revised framework states, ***"we conduct an assessment of clients to ensure that developments and managements are conducted in an environmentally and socially responsible manner"*** and ***"request clients to have relevant operations certified by the RSPO as well as to publicly commit to NDPE"***.

The longevity of a company's operations and the incorporation of ESG principles are increasingly being considered in investment decisions. A number of companies consulted for this study stated that procuring CSPO and communicating this publicly helped with investor requests.

⁶⁴ https://cdn.cdp.net/cdp-production/cms/reports/documents/000/005/630/original/CDP_Forests_analysis_report_2020.pdf?1616334771

⁶⁵ Chain Reaction Research, (December 2020), *South Korean Companies Have Outsized Impact on Palm Oil Leakage Market*

<https://chainreactionresearch.com/wp-content/uploads/2020/12/South-Korean-Companies-Have-Outsized-Impact-on-Palm-Oil-Leakage-Market-4.pdf>

⁶⁶ *Raising Ambitions towards sustainable palm oil in Indonesia, 2020, CDP*

⁶⁷ *Raising Ambitions towards sustainable palm oil in Indonesia, 2020, CDP*

⁶⁸ Tey, Y. S., Brindal, M., Darham, S., Sidique, S. F. A., & Djama, M. (2020). Early mover advantage in Roundtable on Sustainable Palm Oil certification: A panel evidence of plantation companies. *Journal of Cleaner Production*, 252, 119775.

⁶⁹ *NYU-RAM ESG-Paper_2021_Rev_0.pdf*

⁷⁰ *ESG investments surged in Asia-Pacific in 2020, MSCI survey finds (cnbc.com)*

⁷¹ *ING PressRelease (wilmar-international.com)*

⁷² *OCBC Bank Provides Sustainable Finance for Agribusiness Wilmar*

⁷³ *news_release-bea_and_wil_usd100m_sll.pdf (wilmar-international.com)*

⁷⁴ *Cultivating a better future - Sustainability Report 2020, COFCO International Limited*

⁷⁵ *&Green Fund Makes Palm Oil Sector Investment in DSNG*

⁷⁶ Biodiversity loss: Impossible for investors to ignore, May 2022, accessed from <https://www.abrdn.com/docs?editionId=90ab4897-4587-42ae-a9f6-6738b7617cfa>

⁷⁷ <https://www.robeco.com/docm/docu-2019-03-palm-oil-positioning-paper.pdf>

⁷⁸ *Revision of the MUFG Environmental and Social Policy Framework*

3.6 GROWER SPECIFIC BENEFITS

A substantial part of the costs in complying with RSPO P&C are borne at the grower level, such as land assessments, and replanting. On the whole, RSPO P&C foster better agricultural practices which can improve yield⁷⁹. This in addition to the increased revenue from the sale of certified FFBS can make these costs worthwhile for farmers. MSPO and ISPO are standards that are already mandatory for producers in Malaysia and Indonesia, and there are already overlaps between these standards and the RSPO's, therefore MSPO and ISPO can be a stepping stone for growers to become RSPO certified. There is also improved environmental quality in the community due to proper use and storage of chemicals and no burning practices.

Specific to large growers and mill estates, economies of scale can be achieved, and costs can be better managed across operations. Discussions with some of these stakeholders highlighted that the revenue from the sale of certified goods exceeded the associated opportunity costs. For ISH farmers to get certified, a group with other ISHs need to be formed, and being part of a group can provide ISH with access to larger buyers, more negotiation power, and an increased likelihood of sales during the harvest period. The RSPO has its Independent Smallholder Standard⁸⁰ which was developed in consultation with many relevant stakeholders to make RSPO certification more accessible for smallholders.

DENIS GROUP SINGAPORE

MOTIVATION

Denis Group has multiple reputable brands and is sensitive towards ingredients/ materials they use that do not have pristine reputation. They believe sustainability is a core part of business durability and ensures continuity.

ACTIONS

Member to RSPO and Singapore Alliance for Sustainable Palm Oil (SASPO).

Denis Group have their ESG policy with specific requirements for procuring sustainable palm oil. Denis group has also been working collaboratively with its supplier to procure RSPO certified SG palm oil. In the past, Denis group has taken stringent actions as well and dropped their suppliers owing to their failure to provide RSPO certification and compliance.

They also use the WWF's POBS as benchmark to improve their ESG KPIs.

BENEFITS/OPPORTUNITIES

Denis group believes that sustainability plays a vital role in investor decisions and will attract more investors and talents to the company. They also anticipate customer awareness on sustainability affecting purchasing decisions in younger generations.

European and Australian retail chains are sensitive to palm oil and use of sustainable palm oil provides Denis Group with an additional product edge when presenting new products to these retailers.

Communications of sustainable product use through their product labels and other means have also helped reduce consumer enquiries on the type of palm oil used.



AMOREPACIFIC CORPORATION SOUTH KOREA

MOTIVATION

Amorepacific believes that the cost of integrating sustainability is inevitable and must be accommodated to reflect the current environmental needs as well as the changing customer perception.

Media perspective, NGO pressure and investor opinions also played a major role in Amorepacific taking the step towards integrating sustainable palm oil into their operations.

BENEFITS/ OPPORTUNITIES

In the WWF POBS 2021 evaluation, Amorepacific was rated the highest amongst domestic companies, contributing to the enhancement of their corporate value.

Sustainable sourcing protects the company from reputational risks and help prevent dissatisfaction and distrust amongst its stakeholders particularly customers and distributors in the European and American markets.

For Amorepacific, investors are recommending the Sustainability Accounting Standards Board (SASB) as a transparent ESG performance disclosure framework. The material issues as part of the SASB framework include the use of RSPO-certified palm oil helping Amorepacific improve its reporting performance.

FUTURE PLANS

Amorepacific has publicly announced that more than 90% of palm-derived raw materials they use will be converted to RSPO-certified raw materials by 2023.

⁷⁹ [RSPO - Roundtable on Sustainable Palm Oil](#)

⁸⁰ [RSPO Independent Smallholder Standard](#)

RECOMMENDATIONS & OPPORTUNITIES FOR ACTION



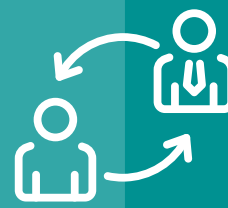
GROWER

CHALLENGES

- Smallholder farmers face issues with accessing finance to meet the certification requirements.
- Maintaining the certification is also a challenge.

RECOMMENDATIONS

- Enhanced collaborations from small and medium companies and continued financial and technical support post-certification can help smallholders to get and stay certified.
- Multiple requirements under the MSPO and ISPO standards are in line with RSPO P&C if not as robust and hence complying with MSPO and ISPO can act as a stepping stone towards RSPO certification.



PROCESSOR AND TRADER

CHALLENGES

- P&Ts struggle with low demand in Asia for sustainable palm oil, high costs of procuring CSPO, and establishing a traceability system. They also tend to prioritise food safety certifications over sustainability given budgetary constraints.
- A sporadic customer base makes it difficult for them to commit to sourcing SG variety and implementing the associated practices.
- Given their large geographic presence, managing multiple certifications becomes expensive.

RECOMMENDATIONS

- Long-term contracts between P&Ts and buyers can help counter this sporadic demand.
- With the upcoming EU regulation on supply chain due diligence, an early switch to sustainable palm operations can help P&Ts be prepared for the upcoming demand.



CONSUMER GOODS MANUFACTURER

CHALLENGES

- Lack of sustainable alternatives, especially of SG variety, for palm fractions and derivatives makes sourcing difficult.
- Supply chain disruptions have created a major squeeze on CSPKO and derivatives resulting in the prices being bid up to exorbitant levels affecting the company budget.

RECOMMENDATIONS

- On-ground support to growers and higher promise for sustainable procurement from CGM companies can help marginal and smallholder growers to opt for sustainable practices. This can close the supply-demand gap and stabilise prices for sustainable palm oil.
- Long-term contracts between CGMs and suppliers can help ensure continuous supply and protect buyers from price fluctuations.



RETAILER

CHALLENGES

- Lack of access to information on supplier networks and arrangements. Last mile traceability is difficult and expensive when working with small suppliers.
- Lack of awareness among suppliers on the presence of palm oil in certain products pushes the accountability onto the retailers for traceability and understanding of different materials.
- Some companies fear losing their competitive edge if they translate the cost of sustainability onto the customer.

RECOMMENDATIONS

- A central database with information on these ingredients and which products contain them can help suppliers trace the palm oil in their supply chain and implement sustainable practices.
- Some coalitions and industry associations are working to bring together stakeholders across the supply chain, and with greater transparency on these arrangements and CSPO prices, more companies can be encouraged to work with it.

ANNEXURES

5.1 OVERVIEW OF STUDY AND APPROACH

AIM AND OBJECTIVE OF THE STUDY

Over the past years, market signals have motivated many large companies to source RSPO certified sustainable palm oil (CSPO), however, such market signals are weaker in Asia. Given that Asia consumes 60% of the world’s palm oil, there is a pressing need for clarity on the business case for sustainable palm oil in Asia, as well as the associated costs and opportunities.

This study is an effort to understand the motivations and opportunities seen in switching to CSPO, gather reliable data on

price premiums and additional costs associated with CSOP, and delineate the distribution of benefits from CSPO across the supply chain.

METHODOLOGY AND STUDY DESIGN

This study consisted of a desk-based review of literature available in the public domain to provide background information and a baseline for interviews. This was followed by interviews with stakeholders operating across the value chain in major palm producing and consuming geographies, namely Indonesia,

Malaysia, Singapore, India, Germany, Italy, the UK, and the USA to gain industry insights and collect data on identified gaps.

STAKEHOLDER INTERVIEWS

For each geography, an initial list of stakeholders was developed based on their use of sustainable palm oil, membership with the RSPO, and existing contacts that were available. A total of 98 stakeholders were approached to participate in the study. 40 stakeholders responded and an overview of the stakeholders consulted for this study is depicted below:

Table 10: Overview of number of interviews segregated by stakeholder type and geography

STAKEHOLDER TYPE	INDONESIA	MALAYSIA	SINGAPORE	INDIA	CHINA	SOUTH KOREA	UK	EU	NORTH AMERICA
Grower/ Miller	5	3							
Refiner/ Processor/ Trader	4	3	7	3					
Derivative Manufacturer				2					
Consumer Goods Manufacturer		1	1	1		1	2	3	1
Retailer/ HORECA			2				2	1	1
NGOs/CSOs		1						1	
Industry Association	1								
RSPO	1	2		1	1				1
Total (52)	11	10	10	7	1		4	6	3



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LIMITATIONS IN THE STUDY

Given the dependence on company representatives for information in this study, some of which was commercially sensitive in nature, there were several limitations encountered. This included limited data points from companies not willing to participate, a lack of uniformity in the type of data (some quantitative, some more qualitative), and partial disclosure of data (unwillingness or ability to share commercially sensitive information). Information obtained from stakeholders through interviews is provided by the interviewed representatives to their best knowledge. KPMG and Segi Enam have not undertaken an assurance or audit exercise for ensuring authenticity of the data disclosed by these representatives.

5.2 LIST OF STAKEHOLDERS CONSULTED FOR THIS STUDY

• Godrej Industries	• Premier Foods
• Cargill	• Saputo Dairy
• Galaxy Surfactants	• Hershey
• Navabharat	• McDonalds
• Denis Group Asia	• Musim Mas
• Mandai Wildlife Group	• IDH Trade Initiative
• LIDL	• The Indonesia Business Council for Sustainable Development (IBCSD)
• Ferrero	• Solidaridad
• Henkel	• RSPO
• Tesco	

Note: Some stakeholders consulted for this study chose to remain anonymous, therefore this is not a comprehensive list of all stakeholders consulted for this study.

5.3 CALCULATION METHODOLOGY FOR IMPACT OF RSPO PREMIUM PRICE ON PER UNIT COST OF PRODUCT

The aim of this exercise was to calculate the impact of RSPO CSPO premiums on the per unit cost of common consumer goods. An average of the RSPO CSPO premiums presented in Table 3 was calculated for the different palm oil products from different supply chains:

Table 11: Average premium values found for different palm oil products in the different RSPO supply chains

SUPPLY CHAIN	PREMIUM IN TONNES (USD/TONNE)	PREMIUM IN GRAMS (USD/GRAM)
REFINED PALM COOKING OIL		
MB	35	0.000035
SG	65.5	0.0000655
Credits from Mill/Crusher	2	0.000002
ISH Credits	12	0.000012
PKO		
MB	262.5	0.0002625
SG	530	0.00053
Credits from Mill/Crusher	195	0.000195
ISH Credits	200	0.0002
PALM STEARIN		
MB	40	0.00004
SG	150	0.00015
PALM KERNEL STEARIN		
MB	300	0.0003
SG	950	0.00095

Note that premiums values for physical supply chains were obtained through stakeholder consultations and credit values were taken from PalmTrace⁸¹ on 6th April 2022.

METHODOLOGY USED TO CALCULATE IMPACT OF RSPO PRICE PREMIUM ON THE PER UNIT PRICE OF GOODS:

The premium price per tonne was converted into premium price per gram as depicted in the Table 19 above. Then, using the sources depicted in Table 20 below, the amount of palm oil product in each good (grams) was multiplied by the premium price per gram for each supply chain to find the impact of the premium on the per unit price of the good.

⁸¹ [Palmtrace | RSPO - Roundtable on Sustainable Palm Oil](#)

ASSUMPTIONS MADE IN THE CALCULATIONS:

1. Unless otherwise specified, the total fat in the product was assumed to be palm oil.
2. For products containing palm oil-based derivatives, if derivative specific premium information was not available, the premium value of the closest palm oil product in the supply chain was used (e.g., for monoglyceride emulsifier in peanut butter, the premium for palm stearin was used).

Table 12: An overview of the calculation methodology and per unit price increase from using RSPO CPSO on common goods

PRODUCT NAME	PER UNIT WEIGHT (GRAMS)	QUANTITY OF PALM OIL IN THE PRODUCT (GRAMS)	TYPE OF PALM OIL IN PRODUCT	SOURCE FOR % PALM OIL (OR FAT) IN PRODUCT	IMPACT ON PREMIUM FOR PER UNIT PRICE OF PRODUCT (USD)			
					MB	SG/IP	CREDITS FROM MILL/ CRUSHER	ISH
Instant Noodles	70g	14g	Refined Palm Oil	WWF	0.00049	0.00092	0.00003	0.00017
Margarine	500g	400g	Refined Palm Oil	FDA margarine regulations	0.01400	0.02620	0.00080	0.00480
Glucose Biscuit (like Parle G, is common across Asia)	55g (Rs. 5 pack)	7g	Refined Palm Oil	Nutritional information on back of packet	0.00025	0.00046	0.00001	0.00008
Bourbon Chocolate Biscuit	150g	30g (20g per100g)	Refined Palm Oil	Nutritional information on back of packet	0.00105	0.00197	0.00006	0.00036
Chocolate Spread	350g	112g	Refined Palm Oil	Guardian article on Nutella	0.00392	0.00734	0.00022	0.00134
Laundry Detergent	1kg	150g (15% of composition is surfactants)	Surfactant is a PKO derivative	Wikipedia on laundry detergent links to another reference on composition	0.03938	0.07950	0.02925	0.03000
Shampoo	400ml	40ml to 100ml (10 - 25%)	Sodium Lauryl Sulphate (PKO based)	How stuff works	0.01838	0.03710	0.01365	0.01400
Peanut Butter	400ml	40ml to 100ml (10 - 25%)	Monoglyceride emulsifier, comes from palm stearin	US regulation <10% non-peanut ingredients like emulsifiers in peanut butter	0.00140	0.00525	-	-
Cooking Oil	360ml	360ml	Refined Palm Oil	Denis Group Deep Dive	0.01260	0.02358	0.00072	0.00432
Frozen Desert	700ml	71.4 ml	Refined Palm Oil	Nutritional information on back of packet	0.00250	0.00468	0.0001428	0.0008568
Chocolate Fudge Frozen dessert	60g	6.8g of fat	Hydrogenated Palm Kernel Oil	Nutritional information on back of packet	0.00179	0.00360	0.001326	0.00136
Kwality Walls Cornetto	110ml	11.2 ml	(10.2 % of edible vegetable oil and vegetable protein product (Soy))	Nutritional information on back of packet	0.00187	0.00377	0.00138645	0.001422
	69.7499	7.11g	Hydrogenated Palm Kernel Oil	https://www.howmany.wiki/vw/-100-ml-of-ice-cream-in-gram%7D				
Snacks (Haldirams aloo Bhujia)	1 kg	381.2g	Refined Palm Oil	Nutritional information on back of packet	0.01334	0.02497	0.0007624	0.0045744
Crisps/Chips (Pringles)	107g	29.8g	Refined Palm Oil	Nutritional information on back of packet	0.00104	0.00195	0.0000596	0.0003576
Calbee Chips	80g	25.8g	Refined Palm Oil	Nutritional information on back of packet	0.00090	0.00169	0.0000516	0.0003096
Soap (Dettol soap)	125g	76g PO + 19g PKO = 95g fats (76% total fatty matter)	80% Refined Palm Oil and 20% PKO	Ingredient list and TFM for Dettol	0.0031255	0.0059964	0.0008626	0.00076
				Ingredients from palm oil and palm kernel oil				
				Typical formulation of soap noodles				
Pencil (kajal) Eyeliner	0.35g	0.23g (2/3rd fat composition)	Hydrogenated Palm Kernel Oil (emolient)	Eyeliner ingredients	0.000060375	0.0001219	0.00004485	0.000046
				How to make eyeliner				



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NATURE AND REDUCE THE
MOST PRESSING THREATS
TO THE DIVERSITY OF
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