

The logo for SASPO, featuring the letters 'SASPO' in a white, sans-serif font. The letter 'O' is replaced by a stylized oil drop icon. The logo is set against a dark green rectangular background.

SASPO

A large, clear plastic bottle of yellow palm oil with a green cap is the central focus. It is surrounded by a large pile of fresh palm oil fruit (bunches) in various stages of ripeness, from red to dark brown. The scene is set on a light brown, textured surface, possibly burlap, with several long, green palm fronds scattered around the bottle and fruit.

**Guide To Sustainable Palm Oil
For Singapore Companies:
Economic Opportunities And
Sourcing Guidelines**

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Southeast Asia Alliance for Sustainable Palm Oil

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Executive Summary

The Guide to Sustainable Palm Oil for Singapore Companies aims to empower businesses to make the first steps to transform their business supply chains and incorporate sustainable sourcing policies - the backbone to corporate sustainability.

It is targeted at business readers and senior management of companies with the following aims:

1. To engage and inform businesses on the importance of sustainable palm oil.
2. To identify the economic benefits companies stand to gain from a sustainable palm oil sourcing policy.
3. To guide businesses through the process of palm oil sourcing conversion.

Palm oil is integral to the global economy.

Palm oil is the world's most produced, consumed and traded vegetable oil, accounting for 38 per cent of global vegetable oil consumption. Half of all consumables in supermarkets contain palm oil. Millions rely on the cultivation of palm oil as their main source of income. For many governments across Southeast Asia, palm oil is a huge economic growth driver. Singapore, geographically situated between the world's top two palm oil producing nations - Indonesia and Malaysia - is a base for the regional operations of major palm oil growers and traders. Singapore is also a financial hub, supplying loans and investments to companies dealing with palm oil.

The business case for sustainable palm oil gets stronger by the day.

With rapidly growing populations and household incomes, Southeast Asia is a prime economic region for businesses. Increasingly, positive economic projections have been threatened by poor sustainability performances in the form of regulatory, financial, operational and reputational risks. With foresight and immediate action, Singapore companies can mitigate sustainability and regulatory threats, transforming them into opportunities.

Unsustainable palm oil leads to significant negative externalities.

To keep up with global demand, the acceleration of palm oil production across Southeast Asia - frequently unsustainable - has given rise to undesirable environmental impacts such as deforestation, displacement of local communities, and loss of wildlife. Land degradation has significantly increased the region's vulnerability to wildfires. This has contributed to several transboundary haze crises. The haze in 2015 was estimated to have cost Indonesia \$44 billion and Singapore \$700 billion.

Certified sustainable palm oil is an economic driver.

Certified sustainable palm oil (CSPO) produced according to RSPO standards provides an alternative path for the industry. Increasing market demand for CSPO would encourage increased production of CSPO through innovation. A shift among businesses towards sustainability and sourcing for CSPO would demonstrate to other regional players that it is a viable collective solution to environmental issues.

Brands need to cater to the rise of ethical consumerism.

Over 56 per cent of Singapore consumers have expressed preference for responsible businesses with environmentally and socially ethical supply chains. Such behaviour was more observed after the region's transboundary haze crisis in 2015. This resulted in industry-led initiatives for sustainable palm oil and the commencement of government green procurement policy requirement. Companies that do not make the effort to adopt a transparent and responsible sourcing policy are likely to be seen as laggards by its consumers, and run the risk of losing market share in the long run.

Businesses can transform reputational risks into branding opportunities.

Consumers are willing to recognise companies with proven sustainability efforts. Globally, the sales of consumer goods from brands that demonstrate this commitment grew more than four per cent between 2015 and 2016, while those without grew less than one per cent. In Singapore, consumers are willing to pay a premium of up to nine per cent for products that did not contribute to deforestation. Companies that recognise this opportunity will stand out from the competitors.

There is a need to safeguard market access in the face of increasing regulatory actions.

Globally, governments are increasingly supportive of stringent palm oil regulations that propel the production of certified sustainable palm oil. The Transboundary Haze Pollution Act was passed in Singapore in 2014, criminalising firms or entities that contribute to haze pollution in Singapore. More than five countries in Europe, including the UK and Germany, have announced private-sector-initiated, government-backed commitments to achieve 100 per cent sustainable palm oil by 2020. Companies that are unable to demonstrate commitments to sustainable palm oil should expect to face heightened regulatory action that restricts market access.

A global move towards sustainable finance could disrupt supply chains.

An increasing number of banks and institutional investors are adopting responsible lending policies for the agricultural sector, which may restrict access to capital for unsustainable palm oil supply chain companies. All listed companies on the Singapore Exchange are required to report their Environment, Social and Governance (ESG) practices. It is expected that such trends may translate into more restrictive and expensive access to capital for unsustainable palm oil supply chain companies, which could affect future supply stability.

How can businesses act?



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Chapter 1: Investigating Palm Oil In Singapore's Supply Chains



Introduction: Risks And Opportunities For Singapore Companies

Booming global populations in the next 10 to 15 years will present major opportunities and challenges for companies. Populations in Southeast Asia (SEA) are expected to reach 100 million by 2030¹. A positive forecast of regional economic growth further points towards growing household incomes. SEA's middle income class is projected to burgeon from 29 per cent in 2010 to 65 per cent in 2030, creating opportunities for consumerism and business expansion.

However, these promising projections are threatened by poor sustainability performances. Companies face regulatory, financial, operational, market access and reputational risks in their operations. Though companies' bottom lines are heavily reliant on natural resources, the sustainability of these resources are not taken into consideration when business decisions are made.



**PALM OIL
CONSUMPTION
IS EXPECTED
TO QUADRUPLE
TO 240 MILLION
TONNES BETWEEN
2015 AND 2050.**



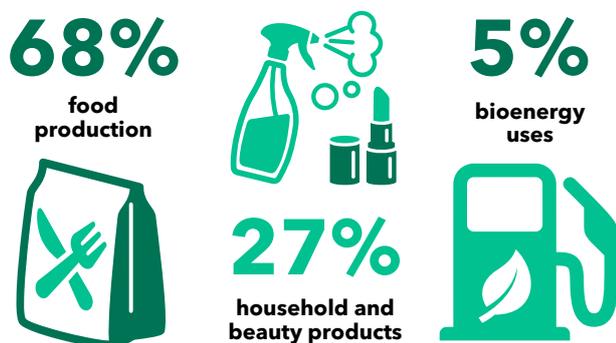
One of such commodities is palm oil. Palm oil consumption is expected to quadruple to 240 million tonnes between 2015 and 2050². Continued expansion of palm oil plantations at current rates will destroy important ecosystems within the next decade. Given the excessive pressures on the world's natural resources, corporate supply chains already and will continue face severe operational risks in the future. In addition, increasing mismatch between consumer and stakeholder expectations and slow progress of business sustainability has resulted in reputational crises that impact companies' bottom lines.

Some global consumer companies have already recognised the need to minimise these risks from their supply chains, and are becoming leaders of responsible sourcing. A comparison of companies in Malaysia and Singapore against their international peers show a significant gap in sustainable palm oil sourcing standards across SEA. With foresight and immediate action, Singapore companies can transform the global move towards sustainability into concrete business opportunities.

Palm Oil And The Singapore Market

Economic Popularity of Palm

Palm oil is the most widely distributed and consumed vegetable oil, making up 38 per cent of the vegetable oil consumed globally in 2016³. Approximately 63 million tonnes of palm oil and palm kernel oil are produced on more than 20 million hectares of land globally. Overall, palm is found in packaged food products (68 per cent), personal care and cosmetics products (27 per cent) and as an energy source (5 per cent). The production of palm oil generates 4 to 10 times more yield per cultivated land than any other vegetable oil crop⁴. The relative ease of production and high demand as an ingredient in the consumer goods industry has led to a massive expansion of the palm oil industry, particularly in Malaysia and Indonesia. In SEA alone, the industry employs 7.5 million people, and has been a way out of poverty for many.



To keep up with global demand, the acceleration of palm oil production has given rise to significant undesirable environmental and social impacts such as the widespread clearing of primary forest, displacement of local communities and loss of wildlife habitats. The industry has also begun moving into virgin forests in Thailand, Papua of Indonesia and parts of Africa. As much as 22 million hectares of land (approximately 300 times the land mass of Singapore) in west and central Africa is expected to be converted to palm plantations within the next five years⁵. Though it has been an important economic driver for palm-producer nations, millions of people throughout the region have been affected by clearing of forests and peatlands through man-made degradation, some of which have led to wild forests fires and subsequently the transboundary haze experienced in Singapore. As consumers understand more about these issues, what Singaporeans put in shopping baskets will start to shape how businesses and regulators in the industry act.

Singapore's Consumption of Palm Oil

In 2016, Singapore imported half a million tonnes of palm oil, approximately 0.92 per cent of the global palm oil production worth S\$285 million. Sixty-seven per cent of this palm oil was imported from Malaysia and the remainder from Indonesia⁶. In addition, Singapore is also one of the largest importer of processed food and beverages products in Asia⁷. Given that palm oil and palm oil derivatives are found in more than half of packaged supermarket products⁸, Singapore's palm oil consumption is likely much greater than trade data suggests.

«.....»
**THOUGH
SINGAPORE IS A
SMALL NATION, ITS
INFLUENCE ON THE
PALM OIL INDUSTRY
IS GLOBAL.**
.....»

In addition, given the city-state's strategic location and status as a financial hub in Asia, regional offices and headquarters of multiple palm oil growers and of multinational consumer goods corporations are located in Singapore. Out of the 30 largest palm oil trading companies in the world, eight are headquartered in Singapore. Of these companies, three (Wilmar International, Musim Mas, and Golden Agri-Resources) control 75 per cent of globally shipped palm oil volumes⁹. Though Singapore is a small nation, its influence on the palm oil industry is global.

ⁱ The eight companies are: Wilmar International, Olam International, Musim Mas Group, Kencana Agri, Indofood Agri Resources, Golden Agri Resources, First Resources and Bumitama Agri.

Sustainability In The Production Of Palm Oil

Socio-Environmental Issues Associated With Unsustainable Palm Oil

Oil palm plantations are highly efficient in the tropics. Annually, Indonesia and Malaysia produce 78 per cent of the global palm oil production⁶. The palm oil industry is an important source of income for these countries. However, rapid agricultural expansion often comes at the expense of the environment and local communities. Oil palm expansion replace ecologically important tropical forests with monoculture crop systems (cultivation of a single type of crop which reduces biodiversity), contributes to hazardous air pollution and results in land conflicts between local indigenous communities and multinational companies.

Oil palm is mainly cultivated in the tropics where climate and soil compositions are most favourable,



such as
Indonesia
and
Malaysia.



When produced **irresponsibly,** it can lead to

indiscriminate deforestation



harm to wildlife though loss of habitat and human-wildlife conflict



disregard for the rights and interests of local communities



water and air pollution and accelerated climate change effects



The following table summarises a few of the many environmental and social impacts of the palm oil industry in SEA. As global populations and consumption of palm oil continue to grow, the socio-environmental issues faced today due to unsustainable oil palm expansion will only progressively worsen.

Rapid rates of deforestation due to agricultural expansion in Indonesia and Malaysia have led to an extensive loss of biodiversity.



Between 2005 and 2015, expansion of oil palm plantations resulted in 1.2 million hectares of deforestation.

Preserving biodiversity maintains ecosystem functions and services which are important for natural resource availability and essential human needs. SEA is home to 20 per cent of the world's animal and plant species and the world's third largest tropical forest¹⁰. A single hectare of tropical rainforest in Indonesia is home to an average of over 200 species of animals¹¹.

However, rapid agricultural expansion in Indonesia and Malaysia has led to the region losing its forests to oil palm more quickly than any other part of the world. Between 2005 and 2015, expansion of oil palm plantations resulted in 1.2 million hectares of deforestation¹². Conversion of pristine forests in Papua, Indonesia has begun in earnest in the last few years, with increasingly more land allotted by the government for agricultural purposes. Since 2014, nearly 20,000 hectares, approximately an area a third of Singapore was deforested for a single particular plantation in Papua¹³.

Some examples of the effects of deforestation on biodiversity:

- Tesso Nilo National Park in Riau, Indonesia is designated by the government as a protected national park. It boasts the greatest plant biodiversity in lowland forests globally and is home to the critically endangered Sumatran tiger and Sumatran elephant. However, since 2001, the park has lost more than 65 per cent of its forest cover¹⁴ due to continued illegal encroachment of oil palm plantations, posing threats of extinction on its wildlife.
- The orangutan's native habitat in the lowland rainforests and peat forests of Borneo and Sumatra are heavily threatened by oil palm expansion, increasing the ape's vulnerability to extinction.

Clearing and burning of peatlands result in an immense carbon footprint of the palm oil industry in SEA.



The 2015 haze crisis burned 2.6 million hectares of land in Indonesia and released 11.3 million tonnes of GHG emissions per day in September and October.

Peatlands store vast amounts of carbon, and when drained and converted to oil palm plantations, release high rates of greenhouse gas (GHG) emissions. Today, Indonesia is one of the world's top five GHG emitters, and a large source of emissions come from deforestation and land conversion of its peatlands.

Between 2000 and 2014, more than a third of the nine million hectares of otherwise undisturbed peatland in Indonesia has been converted to agricultural plantations¹⁵. Expansion in Sumatra and Kalimantan has been so aggressive that there is little to no undisturbed peatland forest remaining. Peatland conversion in SEA approximately contributed to two per cent of global fossil fuel CO₂ emissions¹⁶.

Additionally, the drainage of peat soils increases the area's vulnerability to fire. Huge wildfires on severely degraded peatlands ravage huge areas and release GHG emissions five times greater than fires on mineral soils. Fires during the 2015 crisis burned 2.6 million hectares of land in Indonesia, 33 per cent of which located in peatlands¹⁷, resulting in significant pollutant emissions. Daily carbon dioxide emissions from the fires were estimated to be as much as 11.3 million tonnes¹⁸ in September and October. In comparison, daily emissions of the entire European Union was 8.9 million tonnes during the same period.

Transboundary haze - negative implications for health and economic productivity due to pollution from wildfire smoke.

Slash-and-burn is a cheap and quick method of clearing forests to make way for plantations. Vegetation is cut down and then set on fire instead of being removed by labour. Though it is illegal in Malaysia and Indonesia, it is still a common technique amongst smallholder farmers, many of whom lack the necessary resources to invest in better land clearing methods.

Fire was attributed to 90 per cent of deforestation between 1989 and 2008¹⁹, and 20 per cent of wildfires across Indonesia can be linked directly to oil palm plantation practices²⁰. Wildfire smoke leads to severe air pollution that affects Indonesia and even the rest of the region. Since 1997, there have been at least seven severe transboundary haze crises in SEA²¹.

In 2015, SEA experienced the worst haze crisis recorded in the region due to wildfires in Indonesia. The crisis lasted a span of four months, and affected several countries in the region, including Indonesia, Malaysia, Singapore, Brunei, Thailand, Vietnam and Cambodia.

Implications to health:

- Wildfire smoke on peatlands contains up to 10,000 substances²², including carbon monoxide and nitrogen oxide which are proven to be detrimental to the environment and health.
- The Pollution Standard Index (PSI) during the 2015 haze hit a record high of 2,300 in Central Kalimantan, Indonesia²³, and peaked at 340 in Singapore²⁴. A PSI greater than 300 is considered hazardous.
- A study estimated that 100,000 premature deaths²⁵ by respiratory problems in SEA were a result of the 2015 haze.

Implications to economic productivity within the region:

- The shutdown of businesses, schools and drastic reduction in transportation due to hazardous air pollution levels affects the economic productivity of the region. The haze crisis in 2015 was estimated to have cost Indonesia S\$44 billion, and Singapore S\$700 million²⁷.



The haze crisis in 2015 was estimated to have cost Indonesia S\$44 billion, and Singapore S\$700 million.

Social impact: Labour and human rights in the balance

While the palm oil industry can create jobs and generate growth, its expansion often comes at the expense of local communities and indigenous people. Issues such as land conflict, exploitative working conditions, occupational hazards, forced labour, and the trafficking of migrant workers have been linked to unsustainable palm production²⁸.

Some examples of social risks:

- The exponential expansion of the industry in producer nations has led to widespread land conflict between large-scale oil palm producers and local communities. In 2016, it was estimated that 75 per cent of incidences of land use conflict in mainland Kalimantan were associated with conflicts between communities and oil palm producers. The incidences occurred in 187 villages, 48 per cent of whom strongly opposed the expansion of the oil palm industry²⁹.
- Child labour on oil palm plantations is a common problem in Malaysia and Indonesia, with children facing harsh working conditions and receiving little or no pay. Approximately 70,000 to 200,000 stateless children work on oil palm plantations in Malaysia³⁰.
- The excessive use of pesticides and fertilisers has polluted water sources and threaten the security of drinking water.



75 per cent of incidences of land use conflict in mainland Kalimantan were associated with conflicts between communities and oil palm producers.

²¹ The PSI is an air quality index devised by the United States Environmental Protection Agency. It is used by Singapore to determine the level of pollutants in the air. The PSI reported is a 24 hour average reading of PM_{2.5}.

Sustainable Palm Oil as a Solution

Sustainable palm oil through RSPO standards an alternative path for the industry

Established in 2003, the Roundtable on Sustainable Palm Oil (RSPO) is a not-for-profit organisation that develops global standards for sustainable palm oil. These standards cover environmental, social and economic topics. RSPO is deemed the most credible, independent, international, and transparent multi-stakeholder standard and certification scheme with the capacity to continue the supply of certified sustainable palm oil to the global market.

8 principles for growers to be RSPO certified



1. Commitment to transparency
2. Compliance with applicable laws and regulations
3. Commitment to long-term economic and financial viability
4. Use of appropriate best practices by growers and millers
5. Environmental responsibility and conservation of natural resources and biodiversity
6. Responsible consideration of employees, and of individual and communities affected by growers and mills
7. Responsible development of new plantings
8. Commitment to continuous improvement in key areas of activity

Certified sustainable palm oil (CSPO) produced according to RSPO's standards provides assurance that tropical forests have not been cleared, and environmental and social safeguards have been met during production. When properly applied, these criteria help to minimise the negative impact of oil palm cultivation on the environment and local communities. As RSPO certification is independently verified, companies procuring CSPO through these methods can publicly claim to source sustainable palm oil.

For example, growing oil palm based on RSPO standards should reduce GHG emissions³¹ through the restrictions to the use of fires, restrictions to planting on peat and introduction to better plantation and fire management practices.

RSPO-certified plantations have also benefited from increased operating efficiency, improved relations with the local communities and enhanced working conditions for its staff. More detailed examples of the economic benefits of sustainable palm oil in plantations can be accessed in a [joint study published by WWF, FMO and CDC³²](#).

End-to-end RSPO supply chain certification ensures full integrity of sustainable palm oil

From processing to manufacturing to distribution, palm oil and palm oil derivatives go through a complex supply chain. In order to ensure the full integrity of RSPO-certified palm oil, it is important for every company involved in the manufacturing of these commodities along the supply chain to be audited. This is known as establishing a 'chain of custody', a verification that RSPO-certified palm oil has been identified and separated from non-certified and non-controlled material. This ensures that the CSPO reaches consumers without any tampering.

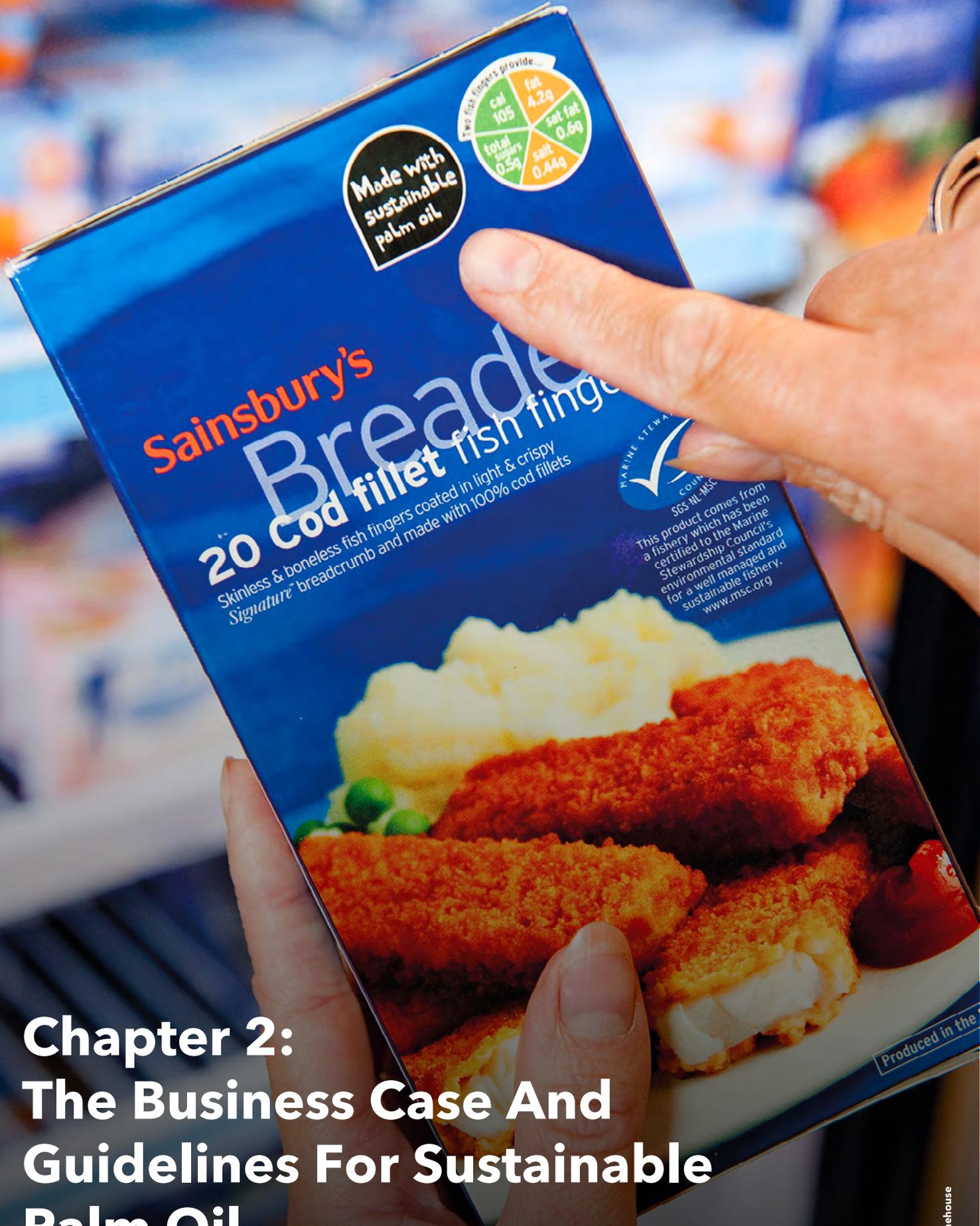


Supply Chain Options

Palm oil can be traded through four supply chain models approved by the RSPO. As RSPO certification is independently verified by third party auditors, companies procuring CSPO through these methods can make public claims to source sustainable palm oil.

Supply Chain Option	Trademark Claim	Corporate Risk
RSPO Identity Preserved (IP) Ensures that the RSPO-certified palm oil and its derivatives delivered to the end user are unique to the mill and its supply base. It is kept physically isolated from other oil palm sources throughout the supply chain, including other segregated RSPO-CSPO sources.		Full traceability of palm oil supplies up to a single certified estate and mill ensures a business has full control and knowledge of its palm oil supply chain. Corporate risk is near negligible.
RSPO Segregated (SG) Ensures that RSPO-certified palm oil and its derivatives come from RSPO-certified sources. It permits the mixing of RSPO-certified palm oil from a variety of sources.		Full traceability of palm oil supplies across different certified mills ensures a business has full control and knowledge of its palm oil supply chain. Corporate risk is near negligible.
RSPO Mass Balance (MB) A mixed model where sustainable palm oil from certified sources is mixed with conventional palm oil. This system is used because palm oil supply chains can be complex, and with large quantities it can be costly to keep certified products separate from non-certified ones.		Partial traceability and certification suggests the palm oil supply is likely to contain some percentage of illegal or conflict palm oil. Businesses are still exposed to corporate risk as a result.
RSPO Book and Claim (B&C) Certificates The model provides tradeable certificates for RSPO-certified palm oil to the palm oil global supply. It does not trace the physical oil throughout the supply chain. Businesses also have the option to purchase certificates directly from independent smallholders, most of which lack the resources to improve their sustainability efforts.		Use of credits to offset conventional palm oil usage displays a business' dedication in supporting sustainable palm oil production. However, it should merely be a first step for businesses transitioning from conventional to certified sustainable palm oil, and used only if no other sustainable options are available.
Conventional (Unsustainable) Conventional palm oil in the global supply does not undergo any tracing mechanism. Its production is unlikely to adhere to socially and environmentally approved practices.		Zero traceability and certification means that the supply chain is highly exposed to illegality. This option exposes a business to the highest level of corporate risk.

[See Appendix 1 for infographics on different palm oil supply chains.](#)



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Chapter 2: The Business Case And Guidelines For Sustainable Palm Oil

The Business Argument

Benefits and Opportunities for Singapore companies:

Demand for CSPO as an economic driver for CSPO production

Between 2008 and 2016, the production of RSPO certified palm oil increased by more than twenty fold and accounts for up to 19 per cent of global production of palm oil today. The European Union currently accounts for 70 per cent of the sales³¹ of physically-traceable certified palm oil. France, Italy, Germany, and the United Kingdom are several countries that have industry-led pledges to source 100 per cent CSPO by 2020.

Global demand for CSPO is unfortunately still lagging behind that of conventional palm oil. On average, 50 per cent of CSPO are purchased on the certified market, with the remaining being sold as biofuel or as conventional palm oil. Hence, there is an urgent need for more demand if growers are going to switch more plantations over to certified sustainable production. A sustained increase in demand for CSPO is an important economic indicator for growers to invest in the sustainable production of palm oil. In the long term, an industry push for CSPO would increase production efficiencies and place a downward pressure on the costs of CSPO production.

Though Singapore houses a relatively small market for palm oil, Singapore's role in the region as a leading economic powerhouse suggests it is in an influential position to set future regional market trends. An uptake of 100 per cent CSPO by Singapore's consumer market would demonstrate to fellow regional players that a full conversion to CSPO is a viable market solution to address environmental issues.

Reducing reputational risks

As markets in SEA mature, brands face heightened vulnerability to the growing trend of ethical consumerism. According to a Nielsen survey in 2016, sustainability continues to be of increasing importance globally³³. SEA consumers in particular displayed the greatest socially-conscious behaviour³⁴. A 2018 regional study has found that 56 per cent of Singapore consumers expressing a preference for responsible companies that ensure their supply chains are environmentally and socially ethical³⁵.

Ethical consumption became a major talking point during the 2015 transboundary haze crisis that hit Singapore and Malaysia. Growing concerns that the annual regional haze was a result of unsustainable supply chains led to multiple significant events occurring within the region in the following years.

- In **2015**, WWF-Singapore in collaboration with People's Movement against the Haze (PM.Haze) and Singapore Institute of International Affairs (SIIA) organised Singapore's first citizen-led initiative, "We Breathe What We Buy", to engage the public in thinking about the direct correlation between their purchasing decisions and the haze.
- Asia Pulp and Paper (APP) was linked to Singapore's worst transboundary haze crisis in **2015**. The company and its four suppliers were implicated for unethical land clearing practices that included slash-and-burn tactics. In response to overwhelming public calls, the Singapore Environment Council revoked APP's green labels, and all paper products sourced from APP were subsequently pulled from four major retailers in Singapore. Additionally, the government announced green procurement standards of pulp and paper products for all public sector agencies.
- Unilever, Mars and Kellogg's, three of the world's top fast-moving consumer goods companies, cancelled supplier agreements with palm oil producer and trader IOI Group in **April 2016**, following evidence of the group's bad environmental practices in Indonesia³⁶. The companies were quick to disengage from IOI in recognition of supply chain risks that would hurt brand reputation. IOI Group's stock price plummeted rapidly in March 2016, and has since yet to recover.
- In **2016**, WWF-Singapore and five founding members (Ayam Brand, IKEA, Wildlife Reserves Singapore, Unilever, and Danone) founded the Southeast Asia Alliance for Sustainable Palm Oil (SASPO). It is a working platform for regional businesses to work together to establish and develop supply chains that are 100 per cent sustainable palm oil.
- In **2017**, WWF-Singapore published the Palm Oil Buyers Scorecard for Singapore and Malaysia and launched the #IBuyICare campaign³⁷. Through the campaign, over 50,000 emails were sent out in three months from Singapore consumers to local companies to voice out their demand for sustainable palm oil. The overwhelming response that companies received from their consumers ignited the local industry to act and initiate sustainable palm oil efforts.

Companies that do not make an effort to adopt a transparent and responsible sourcing policy are likely to be seen as laggards by its consumers, and run the risk of losing market share in the long run. Asian companies should be proactive in improving the social responsibility of their procurement policies, in order to protect themselves against potential market risks.

External crisis and consequences: Asia Pulp and Paper in 2015

During the transboundary haze crisis in 2015, the number of locations found to be on fire (hot spots) in Indonesia set a new record. An analysis of fire alerts in pulpwood concessions by World Resources Institute (WRI) determined the top nine companies responsible, a majority of which supplied to APP. Eyes of the Forest (EoF), a coalition of NGOs that specialises in monitoring oil palm and pulpwood companies in Sumatra, reported that 39 per cent of all high-confidence hotspots in Sumatra and 53 per cent of all high-confidence hot spots on Sumatra's peatlands were on APP pulpwood concessions, covering an area seven times the size of Singapore³⁸.

APP faced intense media scrutiny and prosecution by governments and consumers as a result. Firstly, the Singapore government enforced a green procurement policy of all pulp and paper products sourced by its public sector agencies. Following after, retailers in Singapore acted on consumer demands and by the end of 2015, four retailers had voluntarily pulled APP products off their shelves. In a report by the Straits Times in 2015, APP's bottom line was severely affected. The continued removal of APP's products has cost the company millions in lost revenue in Singapore alone³⁹.

Kimberly-Clark, a prominent supplier of pulp and paper products and one of APP's prominent competitors, was an early adopter of the Forest Stewardship Council (FSC) certificationⁱⁱⁱ and has consistently demonstrated their commitment to sustainability. During the haze crisis, Kimberly-Clark's brand presence and market share increased significantly. As Singapore consumers switched to using their products, Kimberly-Clark enjoyed a spike of 23.9 per cent in its fourth quarter sales⁴⁰. The company's foresight to integrate sustainability within the company in the long-term successfully differentiated its products from its competitors and hence protected itself from external risks.

ⁱⁱⁱ FSC is an international non-profit organization that provides certification for responsibly-produced pulp and paper products.

Branding opportunities

Future market growth and marketing trends largely point towards addressing ethical concerns in products manufactured. Globally, the sales of consumer goods from brands with a demonstrated commitment to sustainability grew more than four per cent globally between 2014 and 2015, while those without grew less than one per cent⁴¹. Ethical labeling products account for S\$1 trillion, which is S\$90 billion more than global sales of health and wellness. Products with sustainable labeling are also likely to experience the fastest growth of 48 per cent between 2015 and 2020, worth approximately S\$7 billion in total. 55 per cent of all US packaged foods already have at least one ethical claim⁴².

«.....»
**GLOBALLY, BETWEEN
2014 AND 2015,
SALES OF BRANDS
WITH SUSTAINABILITY
EFFORTS GREW
4% WHILE THOSE
WITHOUT GREW LESS
THAN 1%.**
.....»

In SEA, there is a growing mismatch between consumer expectations regarding sustainable consumer goods and corporate progress in this area. Consumers, increasingly

frustrated with the lack of stewardship for the environment amongst companies, are willing to recognise and reward companies who make the effort. A study has found that Singapore consumers were willing to pay a premium of up to nine per cent for products that did not contribute to deforestation⁴³. Similar studies have confirmed similar trends in the Philippines, China and Japan.

A quick look at brands with a large market presence in Singapore shows that a majority of multinational companies (MNCs) have committed to a global sustainable palm oil sourcing policy and are already certified in accordance to RSPO principles and criteria. If local brands are looking to directly compete and expand its market share, they must make headways in adopting more sustainable sourcing policies and demonstrate their willingness to take stewardship of the environment.

Safeguarding market access

Without certification, consumer goods companies may be sourcing from palm oil growers that do not comply with the laws of producer nations. An Indonesian government task force found that in 2011, 81 per cent of palm oil plantations were operating without required Forest Relinquishment Permits from the Ministry of Forestry⁴⁴. Sourcing illegally produced palm oil pose multiple risks that include supplier disruption, direct fines and restrictions on market access. All certified responsibly-produced commodity standards have principles and criteria that are compliant with the law. Sourcing RSPO-certified identity preserved or segregated sustainable palm oil would be a relatively simple and immediate step for consumer goods companies to tackle any risk of illegality in their supply chains.

«.....»

GOVERNMENTS ACROSS THE WORLD ARE TIGHTENING ENVIRONMENTAL REGULATIONS TO ADDRESS ILLEGAL AGRICULTURAL PRACTICES.

.....»

The unregulated clearing of forests through slash and burn practices for new palm oil plantations in Indonesia and Malaysia have led to a series of disruptive haze crises in the region since 1997. The most recent crisis in 2015 was deemed the worst in history, and was estimated to have cost Indonesia S\$44 billion and Singapore, S\$700 million. In response, governments have tightened and ramped up on environmental regulations that directly address illegal agricultural practices and help to influence market forces towards sustainable palm oil.

In Singapore, the Ministry of Environment and Water Resources (MEWR) launched the Sustainable Singapore Blueprint in 2015, mapping out the country's future strategies for sustainable development. It is expected that the Singapore government will tighten environmental regulations and increase efforts to encourage the private sector to adopt environmentally sustainable practices in their operations. An integral part of the targets is in line with a regional vision of achieving a haze-free Association of Southeast Asian Nations (ASEAN) by 2020. Some examples of the multiple steps the Singapore government has taken to address the haze are:

- In **2014**, the Parliament of Singapore passed the Transboundary Haze Pollution Act⁴⁵. The law enables Singapore courts to criminalise firms or entities who cause or contribute to haze pollution in Singapore, and legally extends the courts' reach beyond Singapore's territorial limits. It is largely viewed as a deterrence to companies from carrying out unethical environmental practices in the region.
- Since **2015**, all public sector agencies are required to enforce green procurement of paper products⁴⁶ certified with the Singapore Green Label by the Singapore Environment Council (SEC). Shortly after, SEC tightened the criteria for its certified paper products, which must now be FSC-certified.



- Singapore's Minister for the Environment and Water Resources, Mr. Masagos Zulkifli has been a strong proponent of SASPO since the alliance's establishment in **2016**.

Other countries have similarly introduced increasingly stringent palm oil regulations to support the production of CSPO. Some examples of the global regulatory movement are as follows:

- In **2012**, the United Kingdom government committed to sourcing 100 per cent CSPO within three years. By 2015, it was estimated that 87 per cent of all physical palm and palm kernel oil purchased was certified⁴⁷, triple the volume in 2009. Following the success of the UK in the same year, private sector initiated commitments to achieve 100 per cent sustainable palm oil in Europe by 2020 were announced in Denmark, France, Germany and Netherlands⁴⁸.
- In **April 2017**, the European parliament passed a resolution to phase out the use of vegetable oils, including palm oil, that drive deforestation as a component of biofuels by 2020. Though the report is not binding, it is likely to shape future palm oil related legislation in Europe.
- Australia is working on implementing new labeling regulations that would require companies to correctly identify palm oil in ingredient lists on packaging. Europe, UK and US have already implemented similar laws.

With regulations around the world backing sustainable palm oil, markets in Asia can be expected to follow suit and tighten their mandates. Companies that are unable to demonstrate their commitment to sustainable palm oil risk heightened regulatory scrutiny into any illegality in uncertified and untraceable palm oil supply chains.

Addressing financial sector restrictions

Most global banks and a growing number of ASEAN banks are taking steps to integrate Environment, Social & Governance (ESG) safeguards into financial products. Responsible lending policies for sectors such as oil and gas, mining and soft commodities (including agriculture, forestry and seafood) stipulate standards that impact lending decisions.

Agriculture sector policies typically include high level commitments requiring banks' upstream clients to eliminate exploitation and deforestation from their operations, refrain from planting on peat and manage their greenhouse gas emissions. Banks perform due diligence on their clients and require clients to close the gaps in ESG performance within an agreed time frame. Some identified issues may lead to the rejection of a



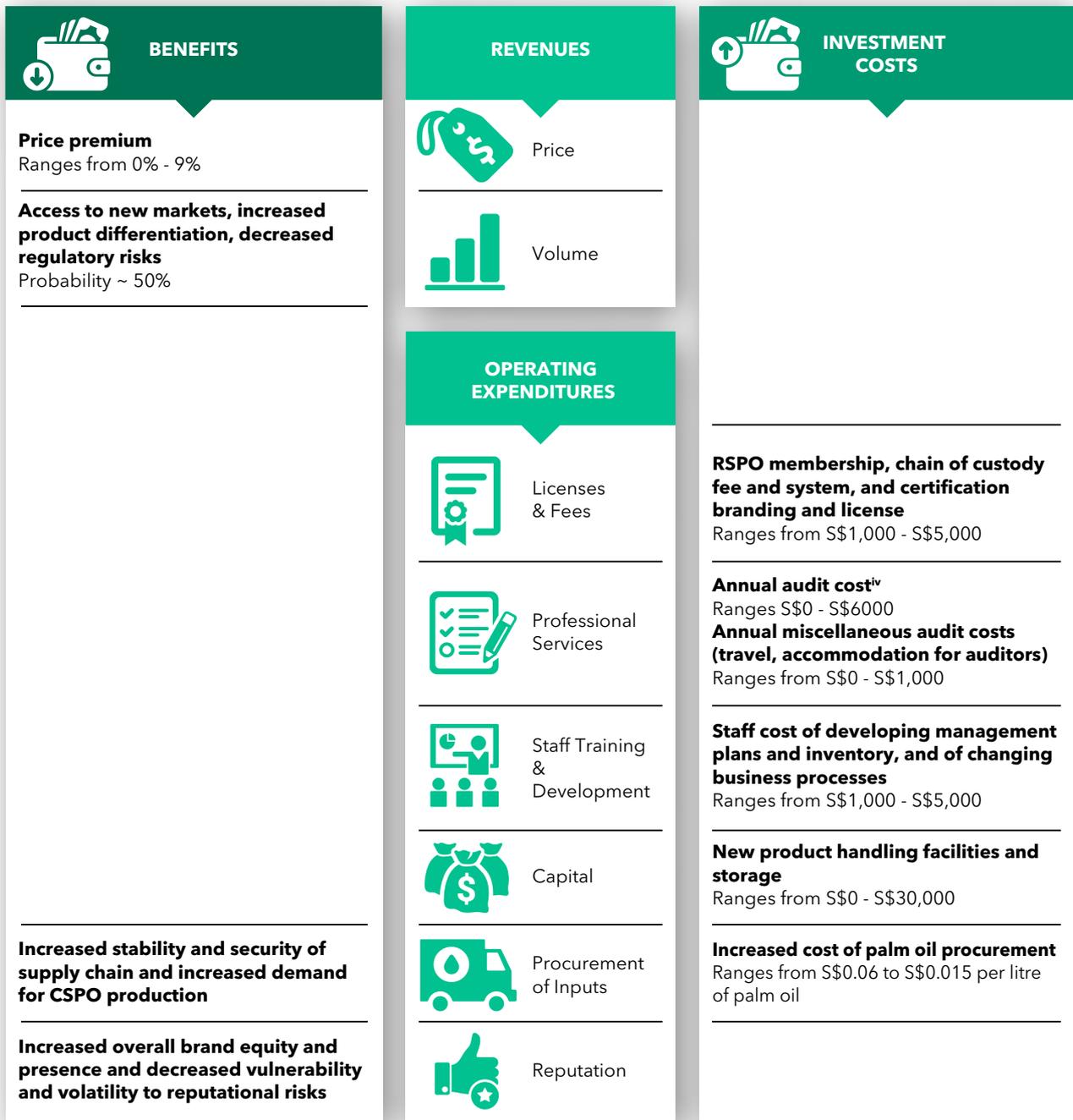
new client or exiting the relationship with an existing one as soon as feasible e.g. planting in World Heritage Sites, deforesting High Conservation Value areas or the use of child labour. Banks regularly review their policies and tighten them to be aligned with internationally recognised practices. For example, some banks set deadlines for their clients to eliminate planting on peat and High Carbon Stock areas.

«.....
**FROM
2018 ONWARDS,
ALL PUBLICLY-LISTED
COMPANIES ON THE
SINGAPORE EXCHANGE
MUST REPORT THEIR
ESG PRACTICES.**
.....»

Similarly, institutional investors are increasingly focused on the environmental and social sustainability of companies in their portfolios. They also engage with businesses along the soft commodities supply chain, including the big buyers of palm oil - consumer goods companies. In recognition of this, the Singapore Exchange has mandated for all component companies to report their ESG practices from the financial year ending December 31, 2017 onwards⁴⁹. Similarly, a number of shareholder resolutions have been filed against US-listed companies⁵⁰ to request disclosure and action plans regarding the exposure of their supply chains to sustainability risks such as deforestation and human rights abuses.

These actions demonstrate that the financial sector is working to address sustainability concerns related to soft commodities production and procurement. It is expected that such trends will soon be translated into more restrictive and costlier access to capital for unsustainable palm oil supply chain companies, resulting in supplier disruption for downstream users of palm oil.

Net economic benefits of RSPO certification



While the total net value of benefits from sourcing CSPO is unquantifiable without extensive economic research, it is expected to outweigh the total costs of investment in the long run. Businesses with the foresight to address their exposure to business risks due to their consumption of palm oil would benefit from greater future economic security.

The quick and continued disengagement of palm oil producer IOI by the world's leading fast and moving consumer goods companies (Unilever, Mars and Kellogg's)

resulted in a crash of IOI's stock prices, demonstrating two discoveries. First, global consumer goods companies have identified the serious need to protect their brand reputation by disassociating themselves from illegal and unsustainable environmental activities. Secondly, a sustainable palm oil procurement policy would help businesses avoid unnecessary sudden disruptions in their supply chains.

^{iv} Depending on the category in the RSPO membership, a business might not have to undergo any auditing.

Guidelines To Action For Sourcing CSPO

Understanding the costs of sourcing CSPO - A case study

Company XY is a fast moving consumer goods company that manufactures a range of processed foods. Its main products include packaged bread, culinary sauces and sandwich cookies. In this case study, we calculate the hypothetical costs of conversion of CSPO for its products.

Prices are in Singapore dollars	Segregated CSPO	Mass Balance CSPO	Book and Claim CSPO Credits
Cost per kg palm oil	\$0.06	\$0.04	\$0.015
1,000 loaves 	\$0.60 (~0.06%)	\$0.40 (~0.04%)	\$0.15 (~0.015%)
1,000 bottles 	\$2.40 (~0.2%)	\$1.60 (~0.16%)	\$0.60 (~0.06%)
1,000 packs 	\$5.40 (~0.54%)	\$3.60 (~0.36%)	\$1.35 (~0.14%)

[Refer to Appendix 2 for detailed explanations about the methodology and main assumptions applied.](#)

According to the estimated costs, across a full product line, sourcing CSPO is not expected to add significant cost to a food manufacturing company. However, products that are price elastic and exceptionally vulnerable to price increases might be impacted.

There are certain caveats regarding the estimations to be considered. Firstly, the total fat content of the products were assumed to be made up entirely of palm oil. Secondly, premium cost estimates of S\$60 per metric ton of segregated CSPO and S\$40 per metric ton of mass balance CSPO were based on prices quoted in industry interviews in the US and may be overestimates⁵¹. Individual quotations were also affected by various factors, such as bundled procurement, scale of purchase, working relationships with upstream supply chain and agent fees.

Understanding palm oil footprint - restaurants, hotels and food manufacturers

Palm oil's prevalence in many consumer food and non-food products indicates that a company is likely to underestimate its exposure to palm oil and its derivatives. A map of a business's complete palm oil footprint may be a complex one, given the huge range of palm oil derivatives present in a diverse range of consumer products.

For companies that use palm oil in their food products, palm oil can exist in liquid oil form, as derivatives in the raw ingredients or in the cleaning agents used in operations. Palm oil and its derivatives have been broken down, according to the ease of conversion to CSPO, into three tiers (as defined below) to facilitate the implementation of a company's CSPO sourcing plan. A food production company (e.g.: a restaurant, hotel, caterer, and food manufacturer) is said to have achieved 100 per cent sustainable palm oil sourcing only after all three tiers have been converted to CSPO.



A checklist guide to sourcing CSPO

1

OBTAIN SENIOR MANAGEMENT COMMITMENT



As with any corporate wide target, senior management buy-in and commitment particularly at the board/CEO level is a prerequisite for a successful sustainable palm oil policy. Obtaining such a commitment necessitates changes in behaviour and decision-making throughout the organisation, and ensures provision of adequate resources to achieve targets. It would be difficult to justify the change in operations and increases in the cost of sourcing without top-down commitment to prioritise sustainability and long-term company equity.

- a. Identify and present the applicable risks and opportunities the company might face to upper management.
 - Refer to sustainable palm oil business resources.
 - i. SASPO's Guide to Sustainable Palm Oil for Singapore Companies
 - Contact palm oil experts based in Singapore.
 - i. SASPO, info@saspo.org

2

DEVELOP A SUSTAINABLE PALM OIL POLICY ACTION PLAN FOR YOUR COMPANY



Successful implementation of a sustainable palm oil policy would require clear action guidelines that facilitate the process.

- a. Identify key personnel in charge of implementing the action plan.
- b. Review and understand sustainable sourcing options, including RSPO supply chain certification systems.
 - Refer to sustainable palm oil sourcing resources.
 - i. Conservation International's Sustainable Sourcing Guide for Palm Oil Users: A practical handbook for US consumer goods and retail companies. https://www.conservation.org/publications/Documents/CI_Palm-Oil-Sourcing-Guide.pdf
 - ii. SPOTT's (Sustainable Policy Transparency Toolkit) online resource library. <https://www.sustainablepalmoil.org/resources/>
- c. Decide on a target boundary.
 - Decide on priority Tiers based on a cost-benefit analysis.
 - Consider your geographical operations and business types. Prioritise the ones that will create the most impact for the company's sustainability profile.
- d. Set the target year of completion.
 - Include conversion timelines for transitioning from conventional to credits, then to mass balance, and then to segregated CSPO.
- e. Prepare data collection processes to facilitate palm oil footprint mapping.

3

RELEASE A PUBLIC COMMITMENT TO SOURCE CSPO



Establish clear, time-bound transition plans, with interim targets and milestones, for sourcing 100 per cent traceable, physical RSPO palm oil for your products. Refer to [Appendix 3](#) for a sample sustainable palm oil policy draft.

- a. A public commitment should include your company's:
 - Target boundary (see 2c);
 - Target completion year (see 2d).

4

IMPLEMENTING YOUR CSPO ACTION PLAN



i) Understanding Your Palm Oil Footprint

- a. Identify products containing palm oil.
 - Refer to [Appendix 4](#) for a complete list of common products containing palm oil, list of common palm oil based ingredients in food products, and a list of common palm-oil based derivatives and oleochemicals.
- b. Identify key suppliers for those products.
- c. Determine data necessary to achieve sustainable palm oil objectives.
- d. Collect data via supplier surveys, questionnaires, etc.
- Refer to Appendix 5 for a sample questionnaire to suppliers.

ii) Support Industry-Wide Sustainability Initiatives

- a. Become a member of RSPO.
- b. Annually report on CSPO targets and progress via Annual Communication of Progress (ACOP).
- c. Actively participate in RSPO processes, including but not limited to P&C review.

Business Case Studies

Case Study: Marks & Spencer

(updated and reposted with permission from SPOTT^v)

Background Information

Marks and Spencer (M&S) is recognised by many as one of the world leaders in business sustainability. Its sustainability program, Plan A, was launched in 2007 with the aims to address three global challenges: increasing pressure on the planet's finite resources, rising social inequality, and the need for healthier, more sustainable lifestyles in the developed world. Plan A is recognised as one of the most comprehensive and enduring sustainability programmes in the sector, winning awards year on year for its leadership.

Successes and Challenges Faced

Today, M&S has been successful in achieving 100 per cent physical CSPO in its food products. It is currently working on achieving the same rate in its non-food products, but face certain barriers in obtaining specific palm oil derivatives that are certified sustainable. M&S has also developed additional criteria that goes beyond RSPO standards, and are continuously working on improving its supply chain sustainability.

It was initially challenging for M&S to transform its physical palm oil supply chains and to procure CSPO derivatives. Its suppliers depend on many other upstream relationships such as with refiners and processors. M&S hence needed to ensure that all indirect and direct stakeholders in its supply chains begin to procure CSPO and also undergo supply chain certification. This initial process was lengthy

and required guidance and support from M&S in order to facilitate the sustainability improvements.

Takeaways and Advice

- a) Make a clear commitment and time bound target:** It is the only way stakeholders will take you seriously. Report progress at least annually.
- b) Know your product use:** Understand and quantify 'hidden' and low volume ingredients as well as simple formulations.
- c) Map your supply chain:** Knowing which major processors and refiners make the ingredients you use will allow you to have direct conversations with them. They may not know that you are a customer of theirs and will often appreciate a direct approach.
- d) Know who the leaders are:** Support those companies who have invested in sustainable palm oil by making sure your direct suppliers know which refiners and processors offer RSPO certified palm oil/ingredients.
- e) Train and engage:** Do not assume your suppliers know about supply chain certification. Make sure they have access to guidance, either produced by your company or from informed partners like certification bodies, industry bodies, or internal experts.
- f) Make your policy clear:** Everyone must understand their role in achieving your public or internal commitments.
- g) Engage with stakeholders:** The decisions your company makes will affect a lot of other people. Engage with industry, producers, NGOs, standard setters, and many others.

^v The Sustainability Policy Transparency Toolkit (SPOTT) by Zoological Society London (ZSL) is an online platform promoting transparency and accountability to drive implementation of environmental and social best practice for the sustainable production and trade of global commodities. See <https://www.spott.org/>

Case Study: Wildlife Reserves Singapore

Background Information

Wildlife Reserves Singapore (WRS) owns and manages four zoological parks in Singapore. As a collective establishment that champions animal conservation, WRS understands the importance of addressing habitat loss and illegal wildlife trade in the region. Hence, despite being a small consumer of palm oil in its business operations compared with manufacturers, it has since embarked on its sustainable palm oil journey.

WRS' Sustainable Palm Oil Journey

- a) A business decision that first needed top management buy-in as it involved introducing a new product which required some investment;
- b) Searching for a team within the organisation that was dedicated and passionate to facilitate procurement of CSPO;
- c) Publicly issuing a time-bound commitment to source 100 per cent CSPO for all food and non-food products sourced by end of 2022.

Takeaways and Advice

- a) **No volume too small:** Despite consuming relatively small amounts of palm oil across its operations, WRS was determined to address the conservation needs through supply chain sustainability. It was initially difficult for WRS to procure cooking oil that was segregated CSPO due to the small scale. Many suppliers provided feedback that WRS would need to find their own oil packers to meet its unique demands. However, through

perseverance and active engagement of current and new suppliers, WRS eventually succeeded despite needing to absorb some initial investment costs.

- b) **Engaging your suppliers and transforming the market:** WRS was willing to lose a vendor in the process of implementing their sustainable palm oil policy if the vendor was not willing to adopt sustainability practices. It is especially rewarding however, when a vendor stays on and decides to adopt the sustainability practices set by WRS. Cumulative efforts across the industry to encourage suppliers to adopt sustainable policies and achieving RSPO certification will eventually push the market towards the right practices. Companies should not simply stop at sourcing for sustainable palm oil. There should also be active engagement between companies and suppliers regarding sustainable palm oil.
- c) **Listen to your consumers:** Many consumers have provided feedback that they are proud that WRS are sustainable and are taking the lead in conservation and responsible business practices.

Case Study: Denis Asia Pacific (Ayam Brand)

Background Information

Denis Asia Pacific is a fast-moving consumer goods business. One of its key brands, Ayam Brand, is based in Singapore and is most known for its canned foods. Since 2011, Ayam has implemented a sustainable palm oil policy. To date, it has achieved 99.5 per cent CSPO by achieving RSPO certification for its manufacturers and only sourcing CSPO. Ayam aims to achieve 100 per cent CSPO by 2019.

Key Efforts by Ayam

a) Realising the importance of palm oil in its products:

In some of Ayam's products, palm oil is an essential ingredient as there are no technical substitutes available. Its importance as an ingredient in many products makes it all the more critical for businesses to support the sustainable production of palm oil.

b) Providing technical expertise and financial support for its manufacturers to achieve RSPO certification:

Ayam recognised that it was not enough to simply source CSPO, but it was also important that its manufacturers achieved RSPO certification. However, its manufacturers may sometimes lack the financial or technical capacity to get themselves certified. As such, Ayam finances up to half the costs of RSPO certification, and its quality assurance team actively provides technical expertise of the certification process.

c) Formation of SASPO: Today, Ayam is a leader in Singapore in sourcing for sustainable palm oil and is enthusiastic to share its learning experiences with companies just starting out on their journey. In

2016, along with WWF-Singapore and four founding companies, it formed SASPO in recognition that a working platform was essential to lower the barriers for companies to begin sourcing CSPO.

Takeaways and Advice

a) Trial and error is important: There is no perfect answer to sourcing sustainable palm oil, as every company has a unique business model. Companies must experiment and find their own pathways to source for sustainable palm oil. SASPO provides the opportunity for companies to learn and experiment together.

b) Business sustainability is a smart business move: Current trends clearly show that both consumers and governments are demanding for businesses to become more sustainable. Though not legally required, Denis Asia Pacific released its first ESG report last year as it recognises the importance to prepare against any reputational risks. Furthermore, the haze is expected to return in the future, and when it does, consumers will ask businesses whether they had done their part to mitigate the problem.

Supporting Platforms

SASPO

The Southeast Asia Alliance for Sustainable Palm Oil (SASPO) was founded in 2016 by WWF-Singapore and five founding companies; Danone, Ayam Brand, Wildlife Reserves Singapore, IKEA and Unilever. SASPO is a voluntary, industry-led platform championing and working for sustainable palm oil in business supply chains, and was prompted by the public outcry and grassroots-led campaigns over 2015's regional haze crisis.

In 2017, SASPO was formally incorporated as a private organisation by Denis Asia Pacific and ASEAN CSR, and has received a public endorsement from Minister Masagos Zulkifli and MEWR. The platform has quickly gained traction with the recent addition of 10 new members. Most of whom are Singapore small and medium enterprises and have joined and pledged to work towards addressing socioenvironmental issues faced in the region through sustainable palm oil.

RSPO NEXT

RSPO NEXT, launched in 2016, is a voluntary add-on to the RSPO's existing Principles and Criteria, defining the next steps companies can take on the journey to palm oil sustainability. It provides a further set of best practices that members can be consistently and independently measured against.

POIG

The Palm Oil Innovation Group (POIG), which Greenpeace, Rainforest Action Network, Forest Peoples Programme, WWF and progressive grower members of the RSPO founded together, works to build on existing RSPO standards, systems and commitments and put innovative best practice into action. POIG has since been joined by progressive global retailers and manufacturers such as L'Oreal, Barry Callebout and Ferrero. It has developed a charter standard and is currently looking to build independent third-party verification into the system in order to demonstrate credible proof of change on the ground.

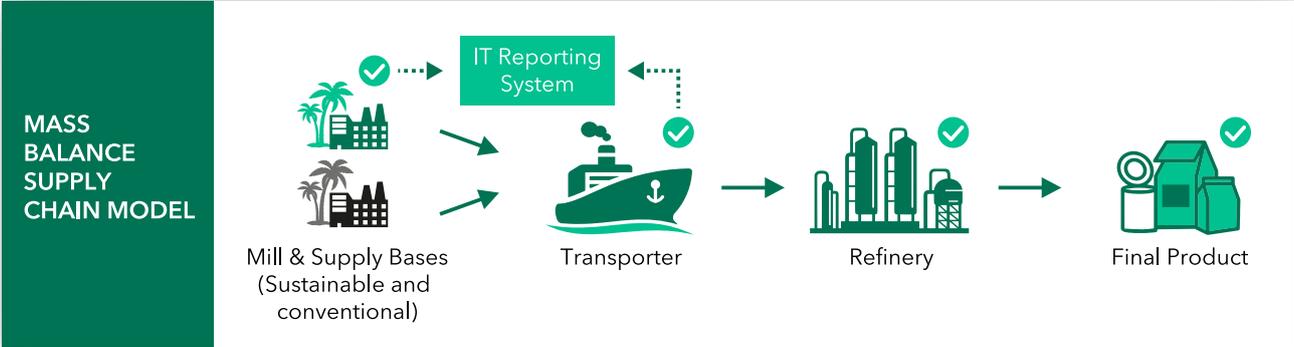
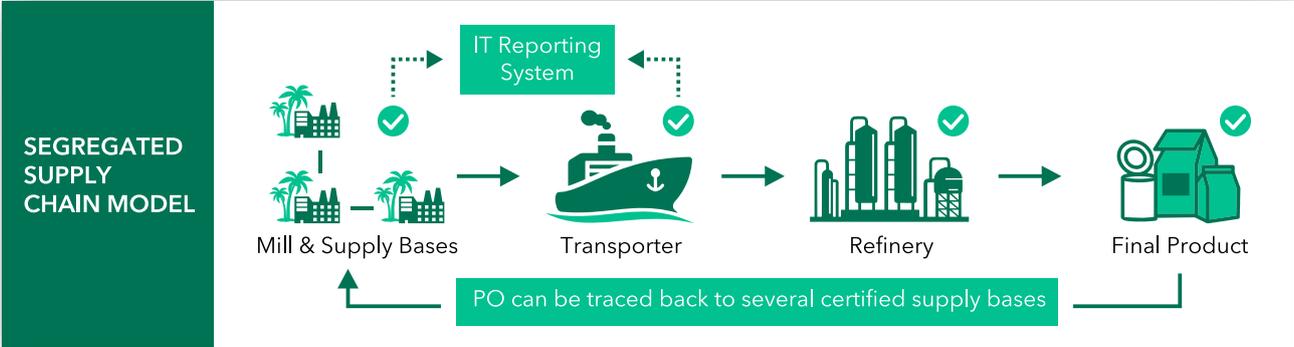
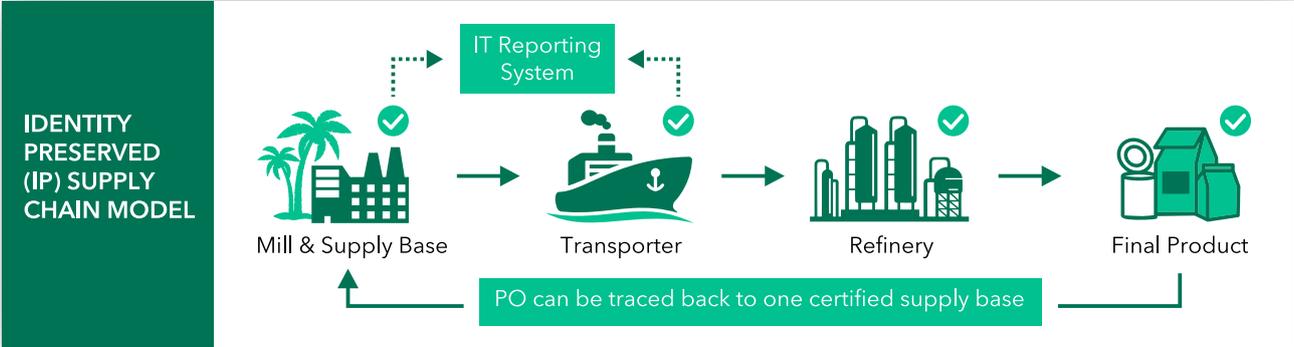
TFA 2020

Tropical Forest Alliance 2020 (TFA 2020) is a global public-private partnership. Its governance serves the needs of partners from three sectors: business, government, and civil society. Specifically, TFA 2020 is committed to reducing tropical deforestation related to key global commodities by 2020, starting with soy, beef, palm oil, and paper and pulp.

Appendix



Appendix 1: RSPO supply chains



✓ = RSPO certified

Appendix 2: Methodology of estimating costs of conversion to CSPO

Methodology and main assumptions

1. To simplify calculations, total fat of product is assumed to be made up entirely of palm oil.
2. US industry interviews conducted by CI and WWF-US in 2015 determined the premium cost of SG and MB palm oil
 - a. Industry estimates of additional premium cost for
 - i. Segregated CSPO = S\$60/mT
 - ii. Mass Balance CSPO = S\$40/mT
3. Price of PalmTrace Book and Claim credits fluctuate according to changes in daily trade patterns.
See: <https://www.rspo.org/palmtrace>
 - a. Price of credit per 1mT of CSPO has displayed a downward decrease, and has stabilized at S\$1.50/CSPO.

4. Premium cost is on palm oil, and not palm oil derivatives, which are likely to cost less (at times more, depending on complexity of derivative).
5. Individual quotations are likely to fluctuate drastically depending on:
 - a. Bundle sales - purchasing other commodities in cohesion
 - b. Scale - wholesale purchases versus separate orders
 - c. Relationship with upstream supply chain, or ownership of upstream supply chain
 - d. Logistics
 - e. Import/export taxes
 - f. Agent fees

Prices are in Singapore dollars	Segregated CSPO	Mass Balance CSPO	Book and Claim CSPO Credits
Cost per kg palm oil	\$0.06	\$0.04	\$0.015
1,000 loaves 	$0.01008\text{kg} \times 0.06$ $\times 1000$ $= \$0.60$	$0.01008\text{kg} \times 0.04$ $\times 1000$ $= \$0.40$	$0.01008\text{kg} \times 0.015$ $\times 1000$ $= \$0.15$
1,000 bottles 	$0.03996\text{kg} \times 0.06$ $\times 1000$ $= \$2.40$	$0.03996\text{kg} \times 0.04$ $\times 1000$ $= \$1.60$	$0.03996\text{kg} \times 0.015$ $\times 1000$ $= \$0.60$
1,000 packs 	$0.09\text{kg} \times 0.06$ $\times 1000$ $= \$5.40$	$0.09\text{kg} \times 0.04$ $\times 1000$ $= \$3.60$	$0.09\text{kg} \times 0.015$ $\times 1000$ $= \$1.35$

Appendix 3: Sample public sustainable palm oil policy commitment

(adapted from Wildlife Reserves Singapore's public commitments)

Company XY is committed to ensuring that the palm oil used is grown and processed in a responsible and sustainable manner, hence assuring the protection of habitat for wildlife threatened by unsustainable palm oil production. Company XY has become a Roundtable on Sustainable Palm Oil (RSPO) member and will strive to ensure that 100 per cent of the palm oil used on our premises are certified sustainable from segregated sources by [year]. Company XY is also a member of the Southeast Asia Alliance for Sustainable Palm Oil (SASPO) and shall work with other SASPO members to advocate for the production, trade and usage of sustainable palm oil through education and awareness activities for businesses and consumers.

In order to achieve our commitment, we shall:

- Document the use of palm oil and palm oil derivatives in all our operations on Company XY premises. This includes:
 - i. quantifying the volume of palm oil used as cooking oil by end of [year],
 - ii. identification of all food products used and sold in our premises that include palm oil derivatives as an ingredient (E.g. mayonnaise, bakery products, etc.) by end of [year],
 - iii. identification of all non-food products used and sold in our premises that contain palm oil derivatives used as an ingredient (E.g. hand wash, cleaning detergents etc.) by end of [year].
- Ensure that 100 per cent of the cooking oil consumed in Company XY will be certified sustainable from segregated sources by [year] and on.
- As part of our green procurement policy, share our palm oil commitment with our suppliers for both food and non-food products that contain palm oil and its derivatives as ingredients, to enquire on their suitability as RSPO members and usage of certified sustainable palm oil in their products by end [year].
- Inform our suppliers (for food and non-food products that contain palm oil and its derivatives as ingredients) who are not certified sustainable, that Company XY intends to source from sustainable sources by [year].
- Continue communicating with our consumers and engage with a broad spectrum of audiences and stakeholder groups, to raise awareness about sustainable palm oil and facilitate change towards certified sustainable palm oil in Singapore.

Appendix 4: Palm oil in its many forms

60 per cent of palm oil consumed globally is in the form of derivatives. It can be difficult to tell whether or not a specific product contains palm oil. In some cases, palm oil may be listed simply as “vegetable oil” on a product’s ingredient list.

Common products that may likely contain palm oil

1. Raw ingredients

- a. Vegetable oil
- b. Palm oil

2. Pre-processed food from third party suppliers

- a. Packaged bread
- b. Pizza dough
- c. Canned food (i.e: sardines, baked beans)
- d. Culinary sauces (i.e: salad dressing, black pepper sauce)
- e. Biscuits
- f. Chocolate
- g. Ice cream

3. Non-food products

- a. Soap
- b. Detergent
- c. Cosmetics

For more information visit

<https://www.worldwildlife.org/pages/which-everyday-products-contain-palm-oil>
<https://www.slideshare.net/GreenPalmOil/oil-palm-fractions-derivatives-web-33644317>

Palm oil and palm oil-based ingredients may be described singularly or as a blend of several components in product ingredient lists:

- Palm Oil
- RBDPO (Refined, Bleached, Deodorized Palm Oil)
- Palm Mid-Fraction
- Palm Olein
- Palm Stearin
- Partially Hydrogenated Palm Oil
- Palm Kernel Oil (PKO)
- Palm Kernel Olein
- Palm Kernel Stearin
- Hydrogenated Palm Kernel Oil
- Hydrogenated PKO Stearin
- Modified Palm Kernel Oil
- Mono and Diglycerides (source oil undeclared)

Common palm oil derivatives and oleochemicals

- Alcohol Ether Sulfates
- Alcohol Ethoxylates
- Alcohol Sulfates
- Alkylpolyglycoside (APG)
- Alpha-linolenic Acid
- Ascorbic Acid
- Butyl Alcohol
- Capric Acid
- Capric Alcohol
- Capric-caprylic Acid Blend
- Caproic Acid
- Capryl Alcohol
- Capryllic Acid
- Cetyl Alcohol
- Cetyltrimethylammonium Chloride
- Caprylic/Capric Triglyceride
- Citric Acid
- Cocamide MEA
- Cocamide DEA
- Cocamidopropyl Betaine
- Diacylglycerols (DAG)
- Distilled Monoglycerides
- Elaidic Acid
- Elaidyl Alcohol
- Elaidolinoleyl Alcohol
- Epichlorohydrin
- 2-Ethyl Hexanol
- Fatty Isethionates (SCI)
- Glutamic Acid
- Glycerine Esters
- Glycerols
- Heptadecyl Alcohol
- Isopropyl Myristate
- Isopropyl Palmitate
- Isostearyl Alcohol
- Lactic Acid
- Lauric Acid
- Lauryl Alcohol
- Laurylamine Oxide
- Laureth-7
- Linoelaidic Acid
- Linolic Acid
- Linolenic Acid
- Linoleyl Alcohol
- Methyl Alcohol
- Mono and Diglycerides
- Monoacylglycerols (MAG)
- Myristic Acid
- Myristic Acid Salts
- Myristoleic Acid
- Myristyl Alcohol
- N-butanol
- Octyl Alcohol
- Oleic Acid
- Oleyl Alcohol
- Palmitate
- Palmitic Acid
- Palmitoleic Acid
- Palmitoleyl Alcohol
- Pelargonic Alcohol
- Pentadecyl Alcohol
- Propylene Glycol
- Propylene Glycol Esters
- Quaternary Ammonium Salts
- Ricinoleyl Alcohol
- Sapienic Acid
- Sodium Lauryl Sulfate
- Sodium Laureth Sulfate
- Sodium Palmitate
- Sodium Palm Kernalate
- Sodium Stearate
- Steareth-2
- Stearamidopropyl-dimethylamine
- Stearic Acid
- Stearyl Alcohol
- Structured Triglycerides (TAG)
- Sugar Esters
- Sulfated or Ethoxylated Alcohols
- Tridecyl Alcohol
- Undecyl Alcohol
- Vaccenic Acid

Appendix 5: Sample supplier questionnaire

(adapted from the Food and Drink Federation UK)

Supplier name:	
Date:	
Contact person:	
Contact information:	

1. Checking and mapping use of palm oil

Do you source palm oil as an ingredient by itself?	
Do you source products that are made with palm oil ingredients?	
Do any of the products that we buy from you contain palm oil?	
Contact information: If yes, what is the amount of palm oil or palm oil derivatives per packaging unit?	

2. Sourcing Certified Sustainable Palm Oil (CSPO)

Which of your products are certified according to the Roundtable on Sustainable Palm Oil (RSPO)? List the products that contain palm oil that are certified according to RSPO.	
If yes, which type of certification do you support? E.g. RSPO mass balance, segregated, identity preserved palm oil, or Book and Claim GreenPalm certificates?	

3. Your commitment

Are you a member of the RSPO? If yes, please provide your membership number and link to your latest Annual Communication of Progress (ACOP) documents.	
Do you have a roadmap in place with a time-bound commitment to source Certified Sustainable Palm Oil? If yes, what is your commitment and timeframe? Who is responsible in your company for meeting this commitment?	
Do you produce palm oil? If yes, are any of your plantations certified sustainable by RSPO?	

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