

2023 PALM OIL LANDSCAPE STUDY

PREPARED BY

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About this study

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- This study aims to survey the landscape of palm oil consumption in Singapore, by identifying key sectors and the factors affecting the demand for sustainable palm oil in these sectors.
- It analyses the current practices in respect of sustainable palm oil in these sectors and explores the opportunities to do more, by using case studies.
- It aims to develop deeper insights into the online shopping platforms sector and to find effective ways by way of a survey to encourage an increased adoption of sustainable palm oil products through these platforms.
- It critically reflects on the role of certifications in encouraging sustainable consumption and the effectiveness of the existing labels in increasing the uptake of certified sustainable palm oil.



About PM Haze

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People's Movement to Stop Haze, known as PM Haze, is a non-profit focusing on outreach, research and advocacy on the transboundary haze crisis.

Our mission is to drive a global movement to stop the haze by empowering the community with the knowledge, means and values.

Steering consumption patterns towards sustainable palm oil and paper as well as assisting Indonesian and Malaysian farmers to create a sustainable livelihood are two main ways we empower our community.



Executive Summary

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We studied the key sectors where products containing palm oil are sold in Singapore, i.e. supermarkets, e-commerce platforms, and the skincare sector. Several factors affect the demand for sustainable palm oil in these sectors, such as the attributes of the products (including price, quality, sustainability performance, etc) and transparency of product information.

More could be done by businesses to encourage the adoption of certified sustainable palm oil. We distilled lessons learnt from recent successful environmental initiatives to show that business can offset the cost increase of sustainable practice by incorporating other factors, such as quality and convenience, to build more sustainable brands.

E-commerce platforms

In particular, we found that most of the popular e-commerce platforms were lacking in providing information on the sustainability performance of their listed products. Based on the results from our commissioned survey, consumers are keen to have such information readily available when browsing the product listings and that such information should be simple, concise and easily accessible. Accordingly, online shopping platforms may consider adopting a sustainable or eco-friendly filter to their product listings to aid their customers in making informed shopping decisions.

Supermarkets

In addition, supermarkets can help promote sustainable consumer behaviour by adopting either a "carrot" approach to promote sustainable products or a "stick" approach to boycott or penalise unsustainable ones, which is arguably most effective when haze hits.

Skincare sector

Furthermore, the skincare industry may not be ready for change due to inherent challenges (such as the myriad ingredients that contain palm oil derivatives and the various labels on ethical practices and environmental impact).

Lastly, we reflect on further improvements that could be made to the RSPO label and whether the implementation of RSPO standards are beneficial to rural development in the long run.

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Introduction

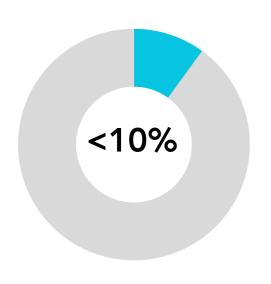
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When PM Haze first started our campaign to encourage restaurants and eatery owners to switch to certified sustainable palm oil in 2016, the awareness of sustainable palm oil alternatives among local business owners [1] and consumers [2] were extremely low.

But that has changed for the better.

More Singaporean restaurants and groceries have switched to using or selling RSPO-certified palm oil in the recent years, which in turn raised the awareness among their customers of the connection between deforestation, forest fire, transboundary haze, and the issues related to the production of palm oil in the ASEAN region [3].

Despite the positive progress, some business are slow in switching to the sustainable options.



According to a survey conducted by PM.Haze volunteers in 2020 in the trendy Tiong Bahru area, less than 10% of the food establishments surveyed used RSPO-certified cooking oil. When asked what would prompt them to switch to sustainable options, respondents cited lower costs and having a healthier choice label (a label issued by Singapore's Health Promotion Board for packaged food products that meet the healthier choice criteria) as the two most significant factors.



Introduction

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Nevertheless, some companies are still willing to compromise on market gains for sustainability.

There are business owners who are willing to absorb the increased costs and switch to RSPO-certified products to make their businesses more sustainable. Many partners of our HazeFree Food Stand campaign are home-based business owners who, despite the relatively small sizes of their businesses, believe that they can make a difference [4].

This motivated us to explore sustainability options for businesses.

The key objective of this research project is to understand what businesses can do to make Singapore a sustainable palm oil country.

To achieve this, we have identified three significant sectors, apart from the Food & Beverage sector, that sell products containing palm oil to Singapore consumers:



#1 Supermarket



#2 Online shopping platforms



#3 Skincare sector



Introduction

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Through a combination of conducting literature reviews and distilling lessons from successful local environmental initiatives, we identified how these businesses can increase the uptake of sustainable palm oil products in the near future. Instead, we aim to demonstrate that consumer demand for sustainable options will increase with the right combination of product attributes and incentive measures.

In doing so, we seek to bust the myth that there can never be widespread adoption of sustainable palm oil due to higher costs involved in the production and certification.

Lastly, by zooming in to the popular online shopping platforms, we have discovered that these platforms were not providing adequate information relating to product certifications. Some of these platforms are even lacking in providing basic information (such as ingredients). To find out whether the e-commerce platforms should fill the information gap, we conducted an online survey among active users of these platforms.



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For many Singaporeans, the 2015 Southeast Asian haze crisis was the worst encounter with transboundary haze in recent memory. The unhealthy air condition lasted for about three months - between August and October 2015 - with record-breaking PM2.5 concentrations observed in various regions.

The leading cause of the transboundary haze crisis is the unsustainable practices adopted by palm oil plantations.





In particular, deforestation and drainage of peatland forests create dry conditions making fires easy to start and spread, but difficult to stop.

Palm oil can be found in various forms and products, including cooking oil, processed food, biofuel, cosmetics, pharmaceuticals and chemicals.

According to a 2021 WWF study, an estimated 10% of palm oil consumed in Singapore is RSPO-certified. While this percentage is higher than some of our Asian neighbours (such as China and India), it is lower than the global average, which is assessed at 19% [6].



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Roundtable on Sustainable Palm Oil ("RSPO") is the leading global certification system that requires certified growers to manage peatland responsibly and not to carry out new planting on peat [7]. Together with other mandatory requirements, compliance with RSPO standards would greatly reduce risks of fires and transboundary haze.

However, the adoption of the RSPO standards is currently voluntary in Singapore.

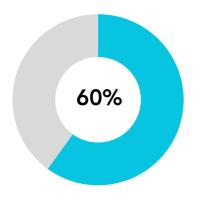
While the Singapore government has praised companies for adopting practices such as sourcing for sustainable palm oil, no mandatory requirements for procuring sustainable palm oil have been implemented to date. As a result, consumer-driven demand for RSPO-certified palm oil products is the key to increase the uptake of sustainable palm oil in Singapore.



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Demand for Sustainable Palm Oil

Encouragingly, there is a high level of awareness in Singapore of the negative impacts of unsustainable palm oil.



According to a survey conducted by Ipsos on behalf of WWF-Singapore in 2020 (the "2020 WWF-Ipsos Survey"), 60% of the 1000 Singapore consumers surveyed were aware of the sustainability issues surrounding conventional palm oil production.

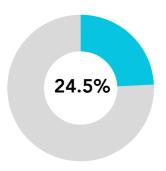
In particular, youths aged between 18 and 34 years old and consumers with a higher monthly household income have the highest level of awareness regarding the environmental and social impacts of unsustainable palm oil [8].



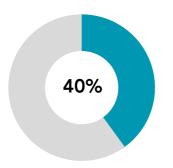
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Demand for Sustainable Palm Oil

Compared with the knowledge of the environmental and social impacts of palm oil, consumers appear to be less aware of sustainable palm oil certifications.



According to a 2016 survey conducted inhouse ("2016 PM Haze Survey)", only 24.5% of the respondents were aware of the RSPO label [9].



In the 2020 WWF-Ipsos Survey, 40% of the consumers surveyed were generally aware of such certification and ecolabels [10].

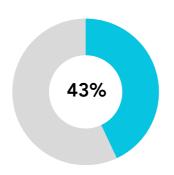


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Bridging the Consumer Intention-Action Gap

The fact that the uptake of RSPO certified palm oil has been slow despite the high awareness of issues surrounding palm oil in Singapore indicates that there exists a "consumer intention-action gap" in relation to the consumption of sustainable palm oil. Such consumer intention-action gap is observed when most consumers fail to follow through with more sustainable behaviours despite having more positive attitudes towards ecofriendly products [11].

There are multiple reasons for the existence of such an intention-action gap. Among Singapore consumers, cost has been cited as one of the key barriers against sustainable consumption.



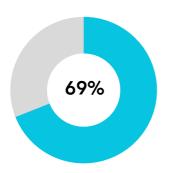
Indeed, a significant portion of consumers in Singapore remain price sensitive. 43% of respondents in the 2020 WWF-lpsos Survey indicated that they would choose sustainable products at price parity [12].



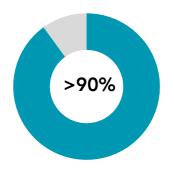
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Bridging the Consumer Intention-Action Gap

That said, surveys have shown that the cost barrier may be overcome with higher awareness.



In the 2020 WWF-Ipsos Survey, 69% of respondents who are aware of sustainable palm oil certification indicated their willingness to purchase sustainable palm oil products regardless of price.



In the immediate aftermath of the 2015 haze crisis, more than 90% of the respondents in the 2016 PM Haze Survey were willing to pay for more for haze-free products.

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Bridging the Consumer Intention-Action Gap

Other reasons for the existence of the gap include:



Inconvenience caused by changing consuming habits.



The **perception** that the government and businesses have a larger role to play in providing sustainable products in the market



Highly stressful work environment making it difficult for people to delay gratification by changing their behaviour. Instead people prefer to seek stress release with immediacy, without thinking too much of environmental impact or saving the planet [13].



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Bridging the Consumer Intention-Action Gap

In the context of sustainable palm oil, there are several challenges with RSPO labeling.

Lack of understanding of different versions of the RSPO label (e.g. mixed or segregated) by consumers

Lack of active promotion

and public education of the
label by the manufacturers
and RSPO itself

One may foresee how the existence of such a consumer intention-action gap could create a negative feedback loop, as manufacturers / companies may become less incentivised to adopt sustainable practices as they believe there is a low consumer demand for sustainable palm oil products.

That being said, the intention-action gap may be bridged by adopting / implementing smart initiatives aimed at nudging the good behaviour and discouraging the bad ones. These initiatives or policies should be derived from heuristics, and create mental shortcuts for make it easy and less costly for people to adopt sustainable behaviour [14].



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Nudging towards More Sustainable Consumption behaviour

In Singapore, there have been several government or business-led initiatives to encourage sustainable consumption behaviour.

We observed two general such approaches.

The 'stick' approach, which aims at penalizing undesirable behaviour, such as the boycott of unsustainable paper products during the 2015 haze crises (more details section xx below).





The 'carrot' approach, which aims at rewarding or encouraging desirable behaviour, such as the Healthier Choice Scheme ("HCS") and the Nutri-Grade label implemented by the Health Promotion Board ("HPB").



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Nudging towards More Sustainable Consumption behaviour

During haze season, the market responds better to penalisation. Otherwise, the market responds better to incentives.

Both approaches could be effective in creating lasting behaviour change. The stick approach is most effective when it is government-led and applied nation-wide, which requires significant resources in publicity and stakeholder engagement. In particular, it is preferred during the time of crisis, as the public demand strong actions against those who are responsible.

The carrot approach, on the other hand, is more suitable during "peace time", where shifts in consumer behaviour are to take place over a period of time and eventually become a new habit. To further understand the effectiveness of the carrot approach, we analysed two case studies, i.e the HCS label and the Nutri-Grade label.

Interestingly, we found that the incentive schemes are most effective where products are ranked and assigned a grade to allow both consumers and manufacturers to move towards the better grades. However, the messaging used to communicate the benefits of the better grade products must be simple and understood easily by busy consumers.

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Nudging towards More Sustainable Consumption behaviour

We compare two case studies to find out which consumption behaviour is more sustainable.

Case Study A - Healthier Choice Symbol

Background

The Healthier Choice Symbol ("HCS") was introduced by the Health Promotion Board ("HPB") in 2001. The objective of the HCS is to label packaged food products to help consumers identify healthier options easily [15].

To date, more than 4000 different food products, spanning across over 100 food categories have qualified for HCS.

Milestone

In 2015, HPB launched the Healthier Ingredient Subsidy Scheme to reduce the price difference between healthier staple ingredients and their unhealthier counterparts.



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Nudging towards More Sustainable Consumption behaviour

Cooking oil was the first ingredient under the subsidy scheme, which aimed to help food operators lubricate the transition to cooking with healthier oil. Oils with a saturated fat level of 35% or lower were eligible for subsidy at 50 cents per kilogram of oil awarded to the oil suppliers. Oil suppliers have to pass down the savings fully to wholesalers and distributors who must in turn sell the oils at an affordable price to food operators e.g. restaurants, hawker centres and caterers [16].

Details of the Initiative

Products labeled with the HCS are lower in saturated fat, sodium, sugar and higher in dietary fibre, calcium, and wholegrains compared to similar products within the same food category [17]. The Ministry of Health ("MOH") and HPB regularly review the HCS nutrient guidelines to stay relevant to the latest consumption trends and new scientific evidence, and to address nutritional gaps in Singaporeans' diets [18]. For each criterion, HPB engages key manufacturers to assess the technical feasibility of these guidelines. Each HCS carries a tagline that focuses on the nutritional aspect of the product so consumers know what criteria that the product has been awarded for. For example, "Lower in Sodium" tagline means at least 25% less sodium compared to similar products in the same food category e.g. on sauces, nuts.



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Nudging towards More Sustainable Consumption behaviour



Sugar Free

Impact of the Initiative

According to a study by Duke-NUS Medical School, HCS led to a 5% increase in purchasing foods and beverages labeled with the HCS [19].

However, where products with Physical Activity Equivalent ("PAE") are displayed alongside those with HCS, the positive effects of both labels are diluted. The study shows "the importance of keeping labelling simple, so shoppers are not confused or overloaded with information" [20].



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Nudging towards More Sustainable Consumption behaviour

Case Study B- Nutri-Grade Label

Background

The Nutri-Grade label was introduced by HPB in 2019, which aims to help consumers identify beverages that are higher in sugar and saturated fat and to reduce the influence of advertising on consumer preferences, thus encouraging more informed, healthier choices and spurring industry reformulation. There are four colour-coded grades: Grade A in green corresponds to the lowest sugar and saturated fat thresholds [21].











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Nudging towards More Sustainable Consumption behaviour

Details of the Initiative

Advertisements of Nutri-Grade beverages graded D are prohibited across all media platforms except at point-of-sale platforms, but these materials must display the Nutri-Grade mark clearly.

All beverages are required to provide its nutrition information (energy value, amounts of protein, carbohydrate, total sugar, fat and saturated fat in beverages).

Starting in December 2022, the Nutri-Grade label applies to beverages sold in Singapore in pre-packaged form and from non-customisable automated beverage dispensers.

From the end of 2023, the Nutri-Grade label will be extended to freshly prepared beverages intended for sale at specified settings e.g. retail settings such as food and beverage outlets and catering establishments.

Impacts of the Initiative

According to a study by Duke-NUS Medical School, Nutri-Grade label was effective in increasing purchases of beverages that were rated A or B [22].



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Nudging towards More Sustainable Consumption behaviour

Most importantly, the label was attributed for shifting manufacturers' practices as well. From October 2019, manufacturers have progressively reformulated their beverages and introduced more lower-sugar and lower-fat choices ahead of the implementation date of the Nutri-Grade label. According to MOH, there has been an increase in sales of beverages which would have been graded A or B from 37% in 2017 to 71% in 2021 [23]. Close to two-thirds of prepacked beverages in the market are now graded 'A' or 'B', more than double of the market share as compared to 2017, where only 30% of prepacked Nutri-Grade beverages in the market would have been graded 'A' or 'B'.



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Nudging towards More Sustainable Consumption behaviour

From the comparison, the Nutri-Grade Label is more successful as it significantly changed not only the behaviour of the consumers, but also the manufacturers.

As mentioned above, HCS has led to a modest 5% increase in purchasing foods and beverages with the HCS label. On the other hand, the Nutri-Grade initiative demonstrated a much higher level of success in terms of changing consumer demand to buying beverages with lower sugar content. There was a significant increase in the sale of beverages labelled 'A' or 'B' from 37% to 71% from 2017 to 2021. Additionally, close to two-thirds of beverages are labelled 'A' or 'B' in 2021, which is almost double of what was available in 2017.

Both initiatives motivated consumers to make sustainable choices in various ways.



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Nudging towards More Sustainable Consumption behaviour

Success factor

By creating a ranking system, the Nutri-Grade label is much more effective in communicating the benefit of choosing the higher grade products to the lower grade ones. Moreover, a study by Duke-NUS found that the messaging of such labelling must be simple in order to make it easier for consumers to understand and adhere to.

Resource required

For both case studies, engaging the food products and beverage manufacturers respectively is potentially resource-intensive given the sheer number of producers in the market.

Time needed to achieve results

In general, manufacturers took around 2 years to implement the necessary changes to their products. This can be seen in the Nutri-Grade case study where many manufacturers have labelled their products with the Nutri-Grade marks since October 2019, before the implementation date.



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Nudging towards More Sustainable Consumption behaviour

However, there still lies limitations in both initiatives.

Lack of report progress

For the HCS initiative, there has been no progress report published following the implementation of the oil subsidy scheme. Thus, it is difficult to evaluate the actual effectiveness of the subsidy in influencing consumer demand.

No lasting behavioural change

The subsidy scheme may not have achieved lasting behaviour change if businesses rely heavily on the financial incentives.

Lack of consumer understanding

The Nutri-Grade initiative seems more successful than the HCS initiative given its success in influencing both the consumers and manufacturers towards adopting the scheme. The success of Nutri-Grade as an initiative tells us that financial incentive may not be the most important factor. This is a prime example of a low-cost solution that could be applied to other sustainability labels.



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Introduction

The pandemic has undoubtedly made online shopping for groceries and daily necessities part of our routines. Singaporean consumers experienced one of the greatest increases in users who shopped online among Southeast Asian countries.

Increasingly, we compare, access and search for product information on e-commerce platforms. Therefore it is crucial that these platform provide adequate product information [24]. The lack of sufficient information about products prevents shoppers from making informed decisions. It may also add a layer of inconvenience as users may have to search for supplementary information elsewhere.





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Product Information Gap

There are currently no standards on how much information should be available to consumers on ecommerce platforms.

A comparison of product listings across popular e-commerce platforms, namely Cold Storage, FairPrice, Redmart, ShengSiong and FoodPanda, reveals that:

- The platforms tend to be generous on marketing / advertising information, but are stingy on information that are usually available on packaging, such as caloric, nutritional, dietary, and manufacturer information.
- None of the e-commerce platforms provide much information on the eco labels/ certifications or sustainability performance of the product. Where good quality product images are available, users may zoom in to the product images to see the eco labels printed on the packaging.

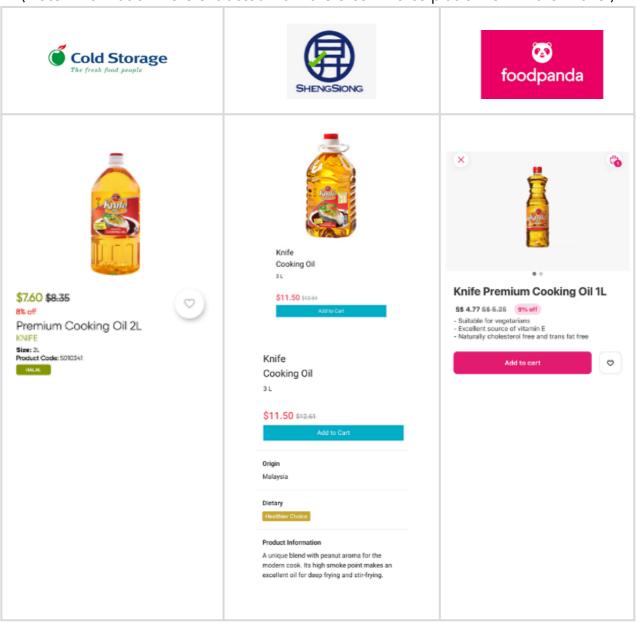


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Product Information Gap

Table [1]: Comparison of Product Information Available for Knife Brand Premium Cooking Oil [28]

The platforms do not provide RSPO certification information under the product's listing. (Note: Information were extracted from the e-commerce platforms in March 2023.)



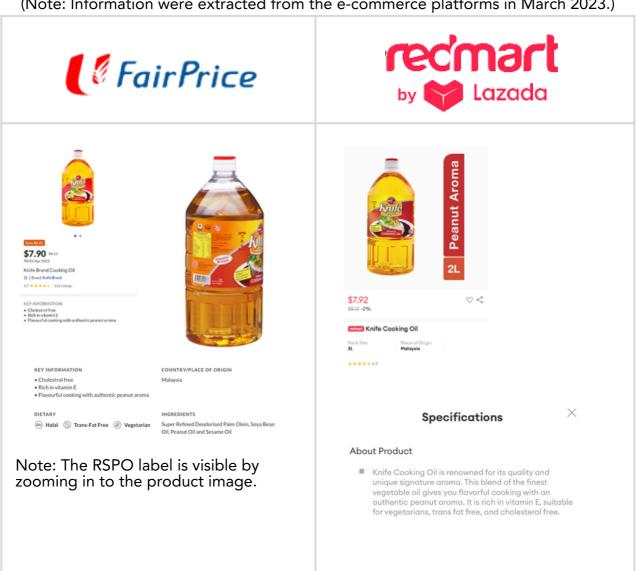


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Product Information Gap

Table [1 cont.]: Comparison of Product Information Available for Knife Brand Premium Cooking Oil [28]

The platforms do not provide RSPO certification information under the product's listing. (Note: Information were extracted from the e-commerce platforms in March 2023.)





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Product Information Gap

We assessed the quality of information provided by these e-commerce platforms in accordance with the following criteria and summarised our findings in the table below according to these four criteria:



Categories for sustainable products: Having a separate category for sustainable products makes it easier for consumers to filter for these products. Only one platform surveyed, i.e Cold Storage, currently provides a category for "Organic and Sustainable Products". However, Cold Storage does not explain the basis for the categorisation on the platform.



Eco-labels: This is essential for consumers to identify green / sustainable products. Relevant certification information is usually unavailable (except for certain paper products) on the platforms.



High quality image: As a lot of information available on product packaging are left out under the product listings on the platforms, having good quality images is important as it allows users to zoom in to the images to find relevant product information, such as eco-labels.



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Product Information Gap



Ingredient list: This is basic information that every platform should provide under the product listing. However, even this basic information is not provided by the majority of the e-commerce platforms surveyed.

Table [2]: Overview of level of convenience across online retailers

Retailer	(Cold Storage The fresh fund people	(F) SHENGSIONG	recimart by b Lazada	© foodpanda
Separate category for sustainable products	X		X	X	X
Explicit listing of certification	X	X	Х	X	Х
Good quality of product image	\checkmark	✓	Х	✓	Х
Ingredient list	\	X	Х	Х	Х



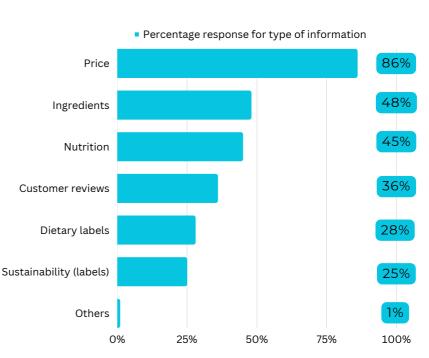
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Survey on Consumer behaviour When Using E-Commerce Platforms

To better understand consumer behaviour when using e-commerce platforms, we commissioned Apeiron Market Research & Consulting to carry out an independent survey in June 2023. The objective of the survey was to investigate consumer preference and attitudes towards product sustainability information on online platforms in the Singaporean context. The report for this survey is separately published by PM Haze at www.pmhaze.org.

The analysis was based on responses from 1,000 respondents who are Singapore residents and use online shopping platforms for their grocery shopping. The key results from the survey are summarized below:

Consumer preferences skew towards price and promotional discounts when choosing a delivery platform.

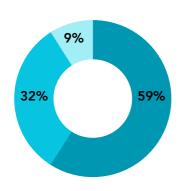




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Survey on Consumer behaviour When Using E-Commerce Platforms

Survey listing #1- ingredient and nutrition information



Majority of respondents (59%) prefer to buy the cup noodles product from Platform B, which provides additional information on ingredients and nutrition compared to Platform A, which only received 32% of the preferences.

Additionally, 9% of the respondents indicated having no preference.

More than half of the surveyees prefer having detailed information on the product ingredients and nutrition.

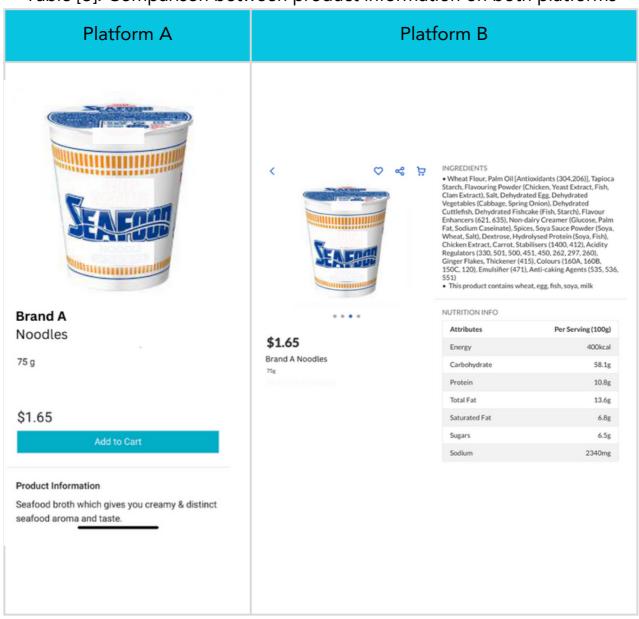




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Survey on Consumer behaviour When Using E-Commerce Platforms

Table [3]: Comparison between product information on both platforms



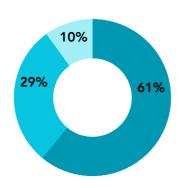


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Survey on Consumer behaviour When Using E-Commerce Platforms

- Platform B's inclusion of detailed information and nutritional facts can give customers a **sense of assurance and trust** in the product and the **seller's transparency**.
- Individuals who are health-conscious or have specific dietary concerns appreciate the availability of nutritional information on Platform B, as it allows them to evaluate the product's health benefits or potential allergens.

Survey listing #2- Sustainability information



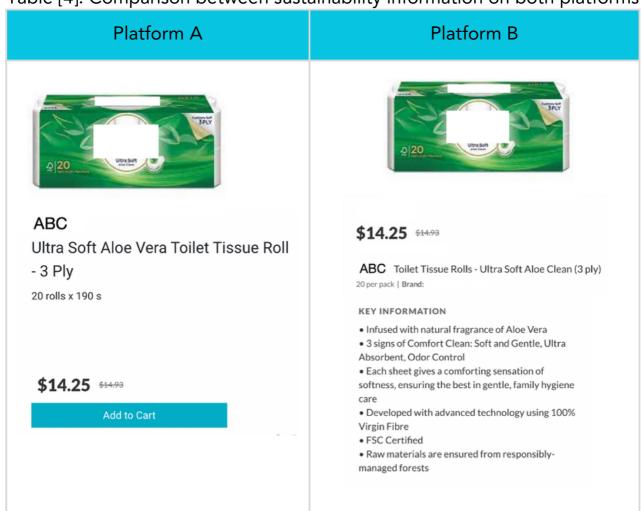
A significant majority of respondents (61%) prefer to buy the toilet paper product from Platform B, which provides additional information on the sustainability of the product, specifically mentioning its "FSC Certified" status. Platform A, on the other hand, received only 29% of the preferences. Approximately 10% of the respondents indicated having no preference.



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Survey on Consumer behaviour When Using E-Commerce Platforms

Table [4]: Comparison between sustainability information on both platforms





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Survey on Consumer behaviour When Using E-Commerce Platforms

Sustainability information is crucial in helping consumers make informed decisions.

"Having sustainability-related information informs me to make the choice that benefits the environment and my well being"

"If a product is described as more sustainable, it would make the product more attractive to purchase"

"Including more information shows that the company is transparent and knowledgeable about what they are selling"

- The mention of the product being "FSC Certified" on Platform B is important to some respondents who prioritize **environmentally friendly choices**. They value knowing that the product has a sustainability certification.
- Platform B offers clear and concise information about the product. They prefer not to read lengthy descriptions and find the information on Platform B to be more **easily understandable**.
- The detailed information on Platform B helps them assess the quality and authenticity of the product. They feel more confident in purchasing when they have access to comprehensive product details.

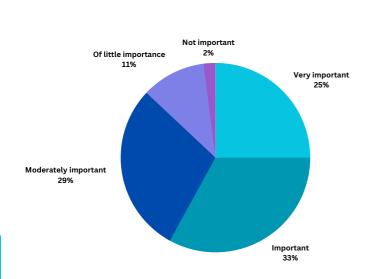
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Survey on Consumer behaviour When Using E-Commerce Platforms

Survey listing #3- Importance of sustainability information



When asked how important is the information on the environmental impact / sustainability of the products in informing your decision when using online platforms for grocery shopping, a considerable portion of consumers place high importance on the information regarding the environmental impact and sustainability of the products.

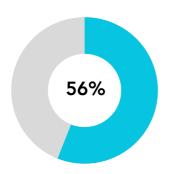
More than half of the surveyees are cognisant with the importance of the environmental impacts and sustainability information of products.



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Survey on Consumer behaviour When Using E-Commerce Platforms

Survey listing #4- Preference of information



When asked to indicate their preference, a significant majority, 56% of the respondents expressed a preference for a platform that displays sustainable or green labels.

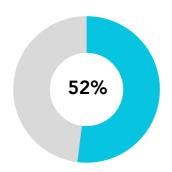
- Healthier choice: The majority of respondents cited the ability to make healthier choices for their families and the importance of transparency in selecting products aligned with their sustainable lifestyle. Sustainability measures and the availability of sustainable options were noted as influential factors for choosing a platform.
- Environmental stewardship: Some users prioritize sustainability and eco-friendliness. They believe that choosing sustainable products helps protect the environment and reduce their ecological footprint.
- Informed decision: Some users appreciate the transparency provided by the option. They find it helpful to have detailed information about products, including their sustainability measures, green labels, and clear information. They consider this information essential for making informed decisions.



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Survey on Consumer behaviour When Using E-Commerce Platforms

Survey listing #4- Preference of information



When asked to indicate their preference, 52% of respondents prefer a platform with a **separate category/filter for sustainable products**, indicating a significant interest in sustainability.

- Convenience: Many respondents mentioned that the chosen option is more convenient for them. It allows for easier navigation, searching, and filtering of products, saving time and effort
- Sustainability: Several respondents expressed a preference for sustainable products and mentioned that the chosen option provides more information about sustainable choices. They believe in supporting sustainable practices and reducing their environmental impact.



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Survey on Consumer behaviour When Using E-Commerce Platforms

Summary of survey findings

Consumer confidence

Consumers want more product information relating to nutritional, dietary, sustainability performance / eco-friendliness to make informed decisions when doing grocery shopping online. Being transparent on product information also engenders consumer confidence and trustworthiness in the platform.

Sustainability performance

Platforms should provide information such as ecolabels and certifications that can help users assess the sustainability performance of a product. This allows the platforms to cater to consumers who consider sustainability as an important aspect in overall assessment of the products.

Convenience

Having a separate category or filter for sustainable products can be convenient for users to quickly filter through the products and to find the information they need.

Accessible information

Platforms should provide additional information in a concise and accessible manner, to avoid overloading consumers with information that they may not find as relevant.



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Call for Action for Supermarket Operators

Given the growing importance of e-commerce platforms in shaping consumer behaviour, we recommend the following actions to be taken by the e-commerce platforms:

Boycott participation

During haze time, the e-commerce platforms should take part in the boycott, together with the supermarkets, to ensure that there are no market "leakage" of unsustainable products.

More information

The e-commerce platforms should provide more information in their product listings to enable consumers to make informed decisions, including such information on product certifications and ecolabels. For instance, if the product is RSPO certified, such information should be reproduced in the product listings.

Sustainability inventory

If possible, to provide a separate category or filter for sustainable products to make it more convenient for users to access sustainable products.



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Role in shaping consumer behaviour

Supermarkets play an important role in informing consumers about products at the point of purchase, and they could leave a lasting impact on consumer behaviour. For instance, at the height of haze back in 2015, NTUC Fairprice, Sheng Siong and Prime Supermarket removed all Asia Pulp & Paper group products from their shelves as a result of a temporary restriction of Green Label - a local eco-label issued by Singapore Environment Council - due to the company's possible connection with forest fires in Indonesia [25]. Indeed, supermarkets have been identified as one of the key enablers in boosting the uptake of RSPO certified palm oil in Singapore [26].





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Role in shaping consumer behaviour

Case Study 1- "Boycott" of Asia Pulp & Paper ("APP") Products in 2015



Photo: Lim Yaohui for the Straits Times

In October 2015, Singaporean supermarket chains, including NTUC FairPrice, Sheng Siong and Prime Supermarket, removed all APP products from their shelves. The Dairy Farm group, which operates chains such as Guardian, 7-Eleven, Cold Storage and Giant, has also stopped replenishing APP stock, but it will continue to sell existing items till they run out [27].

Online groceries retailer RedMart also announced in late October that all paper products sourced from APP Group would be withdrawn from sale, over the company's purported links to Indonesian forest fires causing the haze [28].



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Role in shaping consumer behaviour

The actions come after the Singapore Environment Council ("SEC") temporarily suspended the APP from using the "Singapore Green Label" certification on its products. APP was one of the five Indonesian firms named by Singapore's National Environment Agency as a likely contributor to the haze.

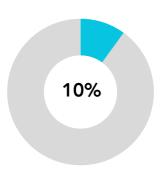
The moves also come shortly after FairPrice and 16 other firms were asked by the SEC to sign a declaration form stating that they did not carry products from the five companies being investigated by NEA for their possible connection to the forest fires in Indonesia.



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Role in shaping consumer behaviour

In the aftermath of the 2015 haze, there has been an increase in the uptake of products containing certified sustainable palm oil in Singapore supermarkets.



At least 10% of palm oil-based cooking oils available in Singapore are currently RSPO-certified [29].





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Role in shaping consumer behaviour

Fairprice NTUC is sourcing 100% RSPO CSPO for its homebrand products [30]. However, the update of CSPO products has been slow - despite up to 50 to 68% of products available in supermarkets contain palm oil, only 1.7% of these products were RSPO-certified [31].

A key reason for supermarkets' slow uptake of sustainable products could be consumers' perceived price sensitivity towards sustainable products. [32]

This in turn will have serious implications on shaping business practices as businesses will not be incentivised to adopt sustainable practices if they will not be able to charge consumers for a premium.



"lack of consumer awareness and demand for certified sustainable palm oil, so there was no rush to make changes in the supply chain."

-8 companies' response in WWF poll [37]

99

[33]



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Role in shaping consumer behaviour

That being said, supermarkets could implement initiatives to help sustainable products overcome the cost barrier and promote sustainable consumer behaviour.

As shown by the case study on "Made in Singapore" Fair by NTUC FairPrice, consumers are influenced not just by costs, but other considerations including **convenience**, **quality** and **branding** of the products.









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Role in shaping consumer behaviour

Case Study 2- "Made in Singapore" Fair by NTUC FairPrice



Photo: Kevin Lim for the Straits Times

In 2012, NTUC FairPrice launched an initiative called "Made in Singapore" Fair, which features locally produced items [34].



While the local produce usually cost more than 30% than imported ones [35], the initiative has been successful as consumers were able to easily identify sustainable substitutes for ingredients they used daily.



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Role in shaping consumer behaviour

The fair also presented a highly positive image of local produce as fresh and equally tasty as its imported counterparts.

Research by NUS showed that demand for the more expensive local produce is largely driven by "product-specific factors, such as freshness and quality of the produce, and easiness to identify the product at store" [36].



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Call for Action for Supermarket Operators

In sum, there appears to be two main approaches that supermarket operators can take to nudge consumer towards more sustainable behaviour:

Direct promotion

The 'carrot' approach through direct promotion of sustainable products, e.g. the "Made in Singapore" initiative. While the sustainable products may be more expensive compared to the alternatives, the cost barrier may be overcome by other considerations, such as higher quality and convenience.

Boycott

The 'stick' approach through 'boycott' of unsustainable products. This approach has proven to be effective during an environmental crisis, in raising awareness among consumers and in addressing the crisis directly. For example, the removal of all APP paper products by most supermarket operators during the 2015 haze was very impactful.



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A Myriad of Ingredient Names and Sustainability Labels

Caprylic acid Lauric acid Caprylic acid Vegetable oil Palmitate Sodium Jauryl sulfato

Sodium lauryl sulfate

These are just a few names of the over 200 ingredients that are derived from palm oil, which are commonly found in skincare products. Yet, average consumers would hardly take notice of these ingredients or the presence of palm oil in these products.

Even with knowledge of the environmental impacts of palm oil, it could be somewhat overwhelming and confusing for consumers to keep track of what ingredients to look out for and which to avoid. Therefore, consumers rely heavily on sustainability labels to understand the sustainability performance of products. The popular labels for skincare products are summarized in the table next page.





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A Myriad of Ingredient Names and Sustainability Labels

Table [5]: List of popular labels and what they represent

Table [5]: List of popular labels and what they represent					
	OTEST ALLEY OF THE PROPERTY OF		EUFIED VEC	Series Control of the	OICO
	Rainforest Alliance	Leaping Bunny (not animal tested)	Vegan Action	CCPB - the European Organic Certifiers Council	Oregon Tilth Certified Organic
Human rights e.g. gender equity, living wages	\checkmark				
Animal cruelty free		\checkmark	\	\checkmark	
Environmental conservation (biodiversity, land, and deforestation)	✓			✓	✓
Sustainable agriculture	\checkmark			✓	
Containing only natural ingredients and/or organic ingredients			✓	✓	✓



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Sustainability as a Branding Strategy

Due to increasing awareness of the health and environmental impacts of skincare products, communications of the products' eco-friendliness and ethical practices are the core strategy for some brands, such as The Body Shop, L'Occitane and Lush. Having organic and natural ingredients in their products as well as the option to refill to reduce packaging wastes are initiatives these brands use to showcase their dedication to sustainability.

We observe two different approaches adopted by brands in communicating sustainability efforts:

Direct labelling

One approach is to include the sustainability labels directly on product packaging. One brand that adopts this approach is Dr Bronner's, which displays an array of independent third-party certifications, such as fair trade and non-GMO, on the product packaging.

Selective labelling

The other approach is to focus on certain aspects of sustainability (presumably the aspect that consider their customer regard as the important). For example, most L'Occitane features a short narrative on the sustainable and ethical sourcing of their ingredients, with the other aspects of sustainability (such as sustainable packaging and traceability) mentioned on the product listings on their website. It should be mentioned that L'Occitane used to be one of a handful of skincare brands that displayed the RSPO certification logo on the product packaging, which has since been removed.



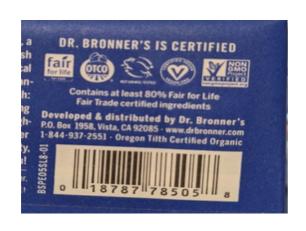
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Sustainability as a Branding Strategy

Table [6]: Comparison between sustainability branding on both products

Dr Bronner's peppermint soap packaging

L'Occitane's product listings on its website





On its website, Dr Bronner's states that its products "meet the highest standards for ecological and social sustainability", and are independently certified by USDA Organic, Oregon Tilth Certified Organic, Regenerative Organic Certified, Fair for Life, NSF: Personal Care Products Containing Organic Ingredients, Leaping Bunny (not animal tested), Vegan Action, B Corp, Non-GMO Project and OK Kosher [37].

"L'OCCITANE's Commitments" [38]

L'OCCITANE is committed to more than beauty care. Our most loved Shea Butter is only possible thanks to the women in Burkina Faso, West Africa who produce this nourishing staple. Through business development training, we empower 10,000 women in environmentally-friendly shea processing, the best way to make an eternal favorite."



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Sustainability as a Branding Strategy

Both approaches have their pros and cons.

Direct labelling

Pros: Gives the impression that the products' sustainability claims are independently verified.

Cons: The effectiveness of the communication depends on the extent of the consumers' knowledge of the certifications.

Selective labelling

Pros: May connect better with consumers by effective storytelling.

Cons: It does not present a comprehensive account of the overall sustainability performance of the product.

Brands also show their different approaches to sustainability in line with the nature of their businesses and the level of complexity of the supply chain. However, the strategy by one company may not be appropriate for another. For instance, Dr Bronner's palm oil policy requires the company to work directly with local palm oil producers instead of procuring RSPO-certified palm oil from large-scale palm oil plantations. The company states that it "sources 100% of its palm oil directly from sustainably-harvested palm fruits in Ghana's Eastern Region. The project is owned and coordinated by Serendipalm, Dr. Bronner's sister company in Ghana. The company buys palm fruits exclusively from 500 small organic family farms which use organic and regenerative agriculture practices to improve the health of the soil and, as Dr. Bronner's rallying call goes, 'Heal Earth'." [39] However, this strategy would not be appropriate for companies that require large quantities of palm oil.



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The Sins of "Greenwashing"

A worrying trend in the communication of sustainability in the skincare industry is "greenwashing".

While there is no universally accepted definition of greenwashing, a useful way of understanding greenwashing is via the "7 sins of greenwashing" identified by Terrachoice in 2007 [40]. For present purposes, we highlight the following three "sins", i.e. the sin of worshiping false labels, the sin of vagueness / no proof and the sin of irrelevance, which we have observed in the Singapore market:

Worshipping false labels

A product that, through either words or images, gives the impression of third-party endorsement where no such endorsement exists; fake labels, in other words. For example, products with labels that resemble legitimate certifications (as shown in the images below), but are in fact fake labels.

Table [7]: Comparison between sustainability labels

	Fake Label	Independent third-party certification labels	
Certified Vegan	Grown Lifestryle	E COAN OLD	
Products not tested on animals	Love thes	NOT TESTED ON ANIMALS CHOOSE CRUCTITY FREE (CCF) LEAPING BLINNY	



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The Sins of "Greenwashing"

Vagueness of claims

Claims that are broad and not clearly defined which are likely to be misunderstood by consumers or that claims are made without any credible evidence to support them. One example is Korean beauty brand Innisfree, which claimed that its green tea serum came in a 100% recyclable paper bottle. It was discovered that the packaging was in fact a plastic bottle wrapped inside paper [41].

Irrelevance of information provided

Environmental claims that may be truthful but is unimportant or unhelpful for consumers seeking environmentally preferable products. For example, SK-II announced its plans to launch the SK-II City in metaverse where consumers can play recycling games to learn more on recycling products from the brand after its use. The company stated that "... we will soon be launching within our metaverse, what we're calling the SK-II City, where on that bottle, there is a QR code and the consumers can scan to enter and explore an arcade of games. It's a hybrid of the game and gamification where you could be a recycling master and play games about recycling the products and what parts are the right things to go, driving that positive change in consumers' behaviours and minds with storytelling in an engaging way." One can easily see the contradictory nature in this initiative considering the significant amount of energy and the large carbon footprint by playing a game in the metaverse [42].



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Brands to Reflect on Their Approach to Sustainability and Avoid Greenwashing

There is no one-size-fits-all approach to sustainability for skincare products. Companies should adopt the approach to suit their production and business.

For smaller businesses or businesses that require small quantities of palm oil, having third-party certification may not always be feasible, considering the costs and capacity constraints. These businesses may seek alternative methods to support their sustainability claims. For instance, to back up its claim of being sustainable, Rough Beauty, a Singaporean soapmaker, sought out PMHaze's aid in switching to the use of sustainable palm oil rather than going through the process of becoming an RSPO member in order to attain the RSPO label [43].

On the other hand, for larger businesses that source palm oil from largescale palm oil plantations, having RSPO-certification is a must to reduce their products' environmental impact. Where brands decide not to display the RSPO certification logos on their product packaging, the information should nevertheless be made accessible via their website or ecommerce channels.



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Creating a Better Label by Using Cognitive Shortcuts

It has been almost 20 years since RSPO was established in 2004. Notwithstanding having set the highest standards for production of sustainable palm oil, RSPO has been criticized for not being able to change consumer behaviour on palm oil consumption.

Furthermore, considering the recent reports of abusive labor practices on the palm oil plantations owned by the RSPO members [44], question remains whether RSPO will achieve the ultimate goal of improving the livelihood of farmers in the long run.

From PM.Haze's experience in educating the public about the RSPO label, one of the key challenges in changing consumer behaviour lies in the complexity of the message.

Significant efforts are required to connect the issue of transboundary haze - which most Singaporeans regard as an issue entirely caused by its neighbouring countries - with forest fires, degradation of peatlands, unsustainable production of palm oil, and finally products that contain palm oil. Our audience will also need to overcome the immediate reactions of boycotting such products and understand the meaning of various forms of the RSPO labels.



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Creating a Better Label by Using Cognitive Shortcuts

Furthermore, the visuals of the RSPO label, i.e. RSPO-mixed, RSPO-identity preserved and segregated, and RSPO credits, are very similar, making it cognitively difficult for consumers to tell them apart which does not incentivise manufacturers to adopt the harder to achieve certifications.

Table [8]: Summary of RSPO Labels [45]

CERTIFIED CERTIFIED	MIXED WIXED	CREDITS	
Identity Preserved & Segregated	Mass Balance	RSPO Credits	
RSPO Certified Sustainable Palm Oil from a single or different identifiable certified source(s) that is kept separately from ordinary palm oil throughout the supply chain.	RSPO Certified Sustainable Palm Oil from certified sources that is mixed with ordinary palm oil throughout the supply chain.	Manufacturers and retailers can buy RSPO Credits and RSPO Independent Smallholder Credits from RSPO Certified growers, crushers and independent smallholders.	



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Creating a Better Label by Using Cognitive Shortcuts

With better understanding of cognitive science, it is perhaps a more strategic approach for RSPO, the brands and relevant regulators to focus on smart ways to create cognitive / mental shortcuts and nudge consumers towards sustainable consumption behaviour.

An easy fix to the current unsatisfactory state of the RSPO label is to adopt the gradient scheme of the Nutri-Grade label with a differentiated color code for each grade.

RSPO may consider using "A, B, C" grading / ranking system to replace the "certified, mixed and credits" system, so that consumers can more easily understand the meaning of the labels. At the same time, this may also give manufacturers more incentive to improve their sustainable performance.



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Towards a Sustainability "Super Label"

To take the lessons from the Nutri-Grade Label one step further, the most efficient approach to shape consumer behaviour and business practices appears to be a "super label" on the sustainability performance of consumer products. Such labels will ideally be based on meta-scores that assess a product across multiple environmental and social impact categories, such as water usage, greenhouse gas emissions, land use and labour practices. In other words, the meta-score will combine all relevant / material environmental and social impacts into a single aggregate score that can be presented to consumers in a clean minimalist format. To increase the trustworthiness of the scoring system, it should be designed by an independent third party organisation dedicated to the task.

The implementation of such a super label system on a large scale will be resource intensive, and is likely a long-term solution requiring trials and testing as well as extensive engagement with various stakeholders. One can also imagine the huge amount of data required for completing the scoring.

Therefore, government agencies and large non-profit organisations are best suited to lead such an initiative.



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Towards a Sustainability "Super Label"

Case Study- Eco-Score by Lidl GB

An example of a meta-label is the Eco-Score label which is currently under trial by LIDL GB, the British arm of German discount supermarket Lidl [46].

The Eco-Score label is a "traffic light labelling system" aimed at helping shoppers understand the sustainability credentials of food and drink products. The Eco-Score label has been applied to 50 of Lidl's house brand products, including teas, coffees and hot chocolate.

The Eco-Score uses open-source data to independently grade products on their sustainability credentials and assigns a colour code ranging from green 'A' (low impact) to red 'E' (high impact). To grade a product, Eco-Score independently assesses various factors including production methods, impact on biodiversity, packaging and carbon footprint. Products also receive better scores where they are certified to third party schemes such as Fairtrade and Rainforest Alliance and Lidl plans to use the scheme to promote its commitment to sourcing 100% of its key raw materials, such as tea, coffee and cocoa from certified sustainable sources.

ECO-SCORE













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RSPO and Rural Development

In the seminal book of "Plantation Life: Corporate Occupation in Indonesia's Oil Plam Zone" [47] Professor Tania Li and Associate Professor Pujo Semedi present an eye-opening discussion on the effect of mass corporation plantation on the livelihood and development of local and indigenous communities in Indonesia. They likened corporate plantations to an "occupying force" that are exploitative in nature, wherein villagers' well-being is sacrificed in the name of economic development.

According to the authors, industry-driven efforts, such as implementation of the RSPO standards, which focuses on making bad corporations good, detract from the crucial questions of whether growing oil palm in massive corporation plantations is effective, and whether the plantation model is an effective means to bring jobs and development to rural communities. The answers to both these questions are negative [48]. Therefore, while RSPO creates a distinction between good and bad corporations and holds out the possibility that bad corporations can become good, it does not address the fundamental paradox that corporate presence by its nature undermines citizenship of local communities and hinders rural development [49].

To further extend the above argument, any effort in promoting RSPO certification to consumers serves only to entrench the "corporate occupation" of rural land, which may not be beneficial to the communities in the long run. Therefore, the debate for best practices in growing palm oil is far from concluded. While adoption of sustainable practices by large-scale plantation companies reduces ecological harm of palm oil and is certainly a step in the right direction, we should also keep in mind that it is not the optimal solution that resolves all the issues at once.



Conclusion

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The high risk of transboundary haze this year provides businesses an opportunity to implement measures to reduce such risk by increasing the demand for RSPO certified products. This will in turn contribute to companies' actions towards mitigating the impact of climate change and create lasting consumer behaviour change.

It appears that the timing is ripe for the e-commerce platforms to provide better information for the product listings to allow consumers to make informed decisions. Such information should include verifiable certifications, or eco labels (such as RSPO certification) to demonstrate the sustainability performance of these products.

Furthermore, certification labels should also improve the effectiveness of their labeling scheme. Much can be learnt from the success of the Nutri-Grade label, which changed the behaviour of both consumers and manufacturers.

In communicating about sustainability performance, companies should avoid "greenwashing" practices. This requires a good understanding of what sustainability means to their business and adopt a suitable strategy towards sustainable supply chain and marketing.



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