Peeling back the label—exploring sustainable palm oil ecolabelling and consumption in the United Kingdom

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Peeling back the label—exploring sustainable palm oil ecolabelling and consumption in the United Kingdom

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Abstract

Palm oil production has been linked to deforestation, biodiversity loss, and climate change. We explore consumer awareness of palm oil, perceptions of its environmental impact, recognition of ecolabels including the Roundtable on Sustainable Palm Oil (RSPO) ecolabel, and inclusion or avoidance of ecolabels in household shopping using a representative sample of the British population. We find consumer awareness of palm oil to be fairly high (77%), with 41% of those aware of palm oil perceiving it as 'environmentally unfriendly', more than double the level of any other vegetable oil examined. However, recognition of the RSPO ecolabel is the same as those who 'recognize' a fictitious ecolabel, making recognition indistinguishable from zero. Based on our logistic regression analysis, members of the British population most likely to actively include ecolabelled products in their weekly household shopping are those who are female, from higher socioeconomic groups, spend more than £120 per week on household shopping, and have received a Bachelors degree or higher. Despite clear benefits of environmental certification and ecolabelling, a relatively niche segment of the general population actively includes ecolabelled products in their weekly household shopping. Therefore, we recommend current policies be amended to require companies to source 100% identity preserved certified palm oil that can be traced to the plantation level to avoid having to rely on consumer decisions to enable a shift towards more responsibly-sourced palm oil. Additionally, requiring multinational companies to map and publicly disclose full supply chain information for all global operations, including palm oil suppliers and concessions, could help illuminate and discourage unsustainable practices.

1. Introduction

Palm oil production is a driver of deforestation, biodiversity loss, and greenhouse gas emissions (Fitzherbert *et al* 2008, Carlson *et al* 2013, Guillaume *et al* 2018). The negative environmental impacts associated with palm oil production have primarily occurred in Malaysia and Indonesia where approximately 84% of the world's palm oil is produced (United States Department of Agriculture (USDA) 2018). In Borneo, the world's largest palm oil producing region, deforestation has enabled industrial oil palm plantations to expand to 7.8 million hectares over the past four decades (Gaveau *et al* 2016). Deforestation in this biodiverse region has placed some of the world's most threatened species, including the orangutan, at risk of extinction (IUCN 2018). Emissions from peat oxidation in Borneo, Sumatra, and Peninsular Malaysia are estimated to be approximately 146 Mt C yr^{-1}, 78% of which are emitted from managed landscapes including those used to cultivate oil palm (Miettinen *et al* 2017). These negative environmental impacts have been predominantly driven by expansion of private enterprises rather than smallholder or state-owned plantations (Lee *et al* 2014).

Palm oil is the most commonly consumed vegetable oil—65 million tonnes were consumed globally in 2017

(United States Department of Agriculture (USDA) 2018). It is found in a variety of products including foods, body products, detergents, and biofuels. Western Europe was the leading palm oil importer from the 1960s through the early 1990s (Berger and Martin 2000). Currently, palm oil production feeds the demand of a diverse range of importers including India (21% of total global imports), the European Union (14%), and China (11%), among others. Indonesia also consumes approximately one quarter of the palm oil it produces (United States Department of Agriculture (USDA) 2018).

In an effort to improve the sustainability of palm oil production, the Roundtable on Sustainable Palm Oil (RSPO) was founded in 2004 by the World Wildlife Fund (WWF) and other key stakeholders from throughout the palm oil supply chain. The RSPO is a non-profit organization, and currently has over 4000 members including growers, processors, traders, consumer goods manufacturers, retailers, social and environmental non-governmental organizations (NGOs) and financial institutions. Following the adoption of its principles and criteria for sustainable palm oil production in 2007, and supply chain certification systems in 2009, the RSPO launched its trademark (ecolabel) in 2011 (RSPO 2013, 2015, 2017b). Compared to other environmental certification initiatives, the RSPO certified the second largest land area (3.46 million hectares) behind organic (50.92 million hectares) in 2015 (Lernoud *et al* 2017). The area of RSPO certified land has increased by approximately 17% since 2015. There are currently 4.04 million hectares of RSPO certified land globally, and 19% of the world's palm oil by volume is RSPO certified (RSPO 2018).

Environmental certification and ecolabelling play a critical role in raising production standards, helping consumers identify sustainable products, and leading to the adoption of new policies and regulations (Gallastegui 2002). The world's first environmental certification and ecolabelling initiative, Der Blaue Engel (The Blue Angel), was created in 1978 by the German federal government (Umweltbundesamt 2018). Over the past several decades, roundtables and environmental certification initiatives have been developed to improve the environmental sustainability of some of the world's most resource intensive commodities. Examples include the Forest Stewardship Council, Marine Stewardship Council, Roundtable on Sustainable Soy, and Global Roundtable on Sustainable Beef, among others (WWF 2018). Research has found that roundtables and their associated environmental certification initiatives could help mitigate land cover change due to more stringent standards than conventional practices and policies (Garrett *et al* 2016).

Studies on the impact of RSPO certification have highlighted the differences between RSPO certified and non-certified oil palm plantations. RSPO certified plantations have significantly lower forest-fire activity than non-certified plantations (Cattau *et al* 2016, Noojipady *et al* 2017). Certified plantations have reduced deforestation compared to non-certified plantations, although certified plantations are generally older and with little forested area remaining (Carlson *et al* 2017). They also have higher profits and yields than non-certified plantations but were not found to have a significant impact on conserving orangutan populations (Morgans *et al* 2018). Generally, RSPO certified oil palm plantations exhibit more sustainable practices than non-certified oil palm plantations, but faster adoption of RSPO certification on oil palm plantations will be needed considering the vast majority of palm oil is still produced using conventional practices.

Consumer goods manufacturers and retailers may purchase identity preserved, segregated, and mass balance certified palm oil, or credits that represent a volume of certified palm oil (formerly GreenPalm certificates) (RSPO 2017b) (table 1). In 2015, total global market uptake of RSPO certified palm oil was 2.76 million tonnes of mass balance, segregated, or identity preserved physical certified palm oil, and 3.43 million tonnes in the form of GreenPalm certificates (RSPO 2016c). Companies primarily opt to purchase certificates rather than physical certified palm oil despite the fact that research in the UK suggests consumers may be willing to pay a premium for products containing sustainable palm oil and marketed as such (Bateman *et al* 2010, 2015).

In 2015, numerous retailers reported using the RSPO ecolabel on their own-brand products while top consumer goods manufacturers reported that they did not use the RSPO ecolabel on their products (RSPO 2016a, 2016b). At the time, companies could only use the RSPO ecolabel if products contained 95% certified palm oil, but could use the GreenPalm ecolabel if purchasing credits (RSPO 2015). The RSPO ecolabelling standard was relaxed in 2016 so companies could use the label with only 50% certified palm oil and 45% fulfilled via credits (RSPO 2016d). Are enough companies using the RSPO ecolabel for consumers to be aware of the certification initiative?

In 2012, the United Kingdom (UK) set a national commitment to achieve 100% certified palm oil by 2015 (Defra 2012). In addition to identity preserved and segregated certified palm oil, the commitment allows mass balance and GreenPalm supply chain certification system options. Progress towards meeting the national policy is measured using data from the RSPO Annual Communication of Progress (ACOP) Reports and other sources. ACOP data is submitted to the RSPO by companies and is not externally verified. The Final Annual Review of UK Palm Oil Consumption found UK certified palm oil purchases in 2015 to be between 87% and 108% of total imports, depending on the data used (United Kingdom Central Point of Expertize on Timber (CPET) 2017). The target was met through approximately 25%–31% certificates, and 62%–77% mass balance and segregated certified palm oil (United Kingdom Central Point of Expertize on Timber (CPET) 2017).

Table 1. RSPO supply chain certification system options Sources: Potts *et al* (2014), RSPO (2015).

Supply chain certification system	Description	Market claim	Ecolabel	Premium price per tonne
Identity preserved	Traceable from plantation through entire supply chain	Contains certified palm oil		$15–50
Segregated	Physically separated from non-certified palm oil, but not traceable throughout	Contains certified palm oil		$15–50
Mass balance	Contains a percentage of non-certified palm oil	Contributes to the production of certified palm oil		$10–25
GreenPalm certificates	Represents a volume of certified palm oil, but physical certified palm oil is not used	Contributes to the production of certified palm oil		$2.20 (representing one tonne)

National sustainable palm oil targets have been set in countries across Europe. Germany was a leader in bringing sustainable palm oil onto the European agenda, and its Forum for Sustainable Palm Oil (FONAP) is committed to achieving 100% segregated certified palm oil by 2018, along with Norway and Denmark (European Sustainable Palm Oil (ESPO) 2017, Forum Nachhaltiges Palmöl (FONAP) 2018). The European Union (EU) also passed Regulation 1169/2011 on the 'provision of food information to customers' to improve transparency in product labelling so companies could no longer obscurely label palm oil as 'vegetable oil'. The legislation came into force in December 2014 and requires 'palm oil' be explicitly labelled on food products, including pre-packaged foods (European Union, 2011). Thus, the expectation is that labelling has an important role to play in encouraging the desired shift in consumption.

Although UK and European policies aim to increase the consumption of sustainable palm oil, it is currently unclear how members of the general public perceive palm oil, its environmental impacts, and the RSPO. Our research aims to explore the extent to which members of the general public are aware of palm oil, their perceptions about its environmental impact, and recognition and inclusion of RSPO ecolabelled products in household shopping compared to other widely known ecolabels. In essence, to what extent are consumers actively seeking to make sustainable choices when it comes to palm oil, and should making the choice to purchase sustainably produced palm oil be left to the consumer? Based on those findings, what additional efforts could governments take to ensure sustainable palm oil consumption? We explore these research questions to gain further insight using a representative sample of the British population.

2. Methods

2.1. Survey

The survey was administered in collaboration with YouGov, a leading market research firm headquartered in the UK. YouGov has a panel of over 800 000 respondents in the UK. The organization conducts active sampling, where participants are sent an email invitation to complete a survey, with a response rate of 35%–50%. YouGov weights the data to the national profile, including adults who do not have access to the Internet (YouGov 2018). One thousand six hundred ninety-five British adults completed the survey 2–3 March 2016. Benefits of conducting an online survey include low cost, geographic reach, and fast data collection (Sue and Ritter 2012). According to Pew Research Center, YouGov is the most accurate survey company compared to its competitors (Pew Research Center 2016).

2.1.1. Ecolabel recognition and inclusion or avoidance of ecolabels in shopping

Respondents were presented with images of several of the most prevalent ecolabels, and asked which, if any, of the logos they recognized: Fairtrade, Marine

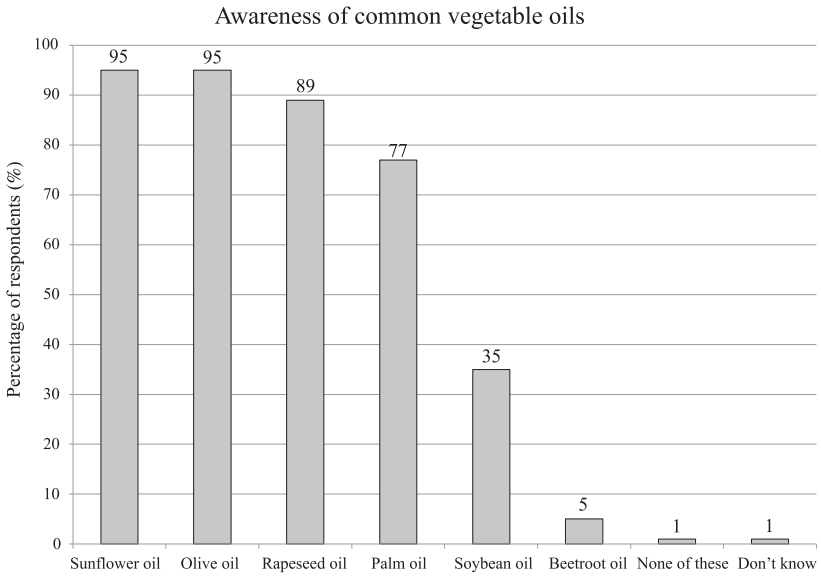

Figure 1. Awareness of common vegetable oils ($n = 1695$).

Stewardship Council, Forest Stewardship Council, Soil Association, Leaping Bunny, the RSPO, and a fictitious ecolabel. Respondents were presented with the ecolabels they recognized and were asked which they actively sought to include in their shopping. Then, which they actively sought to avoid. 'Neither', and 'Don't know' were answer options.

2.1.2. Awareness of palm oil and perceived environmental impact

A list of vegetable oils including 'sunflower oil', 'olive oil', 'rapeseed oil', 'palm oil', 'soybean oil', and the fictitious 'beetroot oil' was presented to respondents. Respondents were asked to select the vegetable oils they had heard of, or 'None of these', or 'Don't know'. For each of the oils the respondent had heard of, they were asked, 'And from what you know, do you think the following is generally produced in a way that is friendly or unfriendly to the environment? The following is generally produced in a way that is…' and were given the options, 'Environmentally friendly', 'Environmentally unfriendly', 'Neither', and 'Don't know'.

2.1.3. Spending on weekly household shopping

Respondents were asked how much they estimated they spent on their weekly household shopping, defined as 'buying goods to be consumed and used within the household, such as food and drink, toiletries, cleaning materials, pet food and other items etc' Options included, 'less than £20', '£20 to 39.99', '40 to £59.99', '£60 to £79.99', '£80 to £99.99', '£100 to 119.99', '120 or more', per week, along with 'Not applicable—I have not bought food or regular household goods in the last three months', and 'Don't know'.

2.2. Analysis

We explore respondent's likelihood of purchasing products including ecolabels using a logistic regression analysis and compute marginal effects. The dependent variable is inclusion of products with at least one of the ecolabels, excluding the fictitious ecolabel, in weekly household shopping. Independent variables include factors such as gender, age, children, region, education level, social grade based on the UK National Readership Survey (NRS) (2018), gross household income per year, 2015 vote, and weekly spending on household shopping. We have analysed the data using Stata statistical software. Supplementary information is available online at stacks.iop.org/ERL/14/014001/mmedia including summary statistics, and additional estimations such as the likelihood of purchasing an RSPO ecolabelled product, effect of the fictitious ecolabel, and endogeneity of voting behaviour.

3. Results

3.1. Awareness of common vegetable oils and environmental impacts

Consumer awareness of common vegetable oils was high. The highest levels of awareness were for sunflower oil and olive oil (both 95%), and rapeseed oil (89%). Over three quarters of respondents were aware of palm oil (77%), followed by just over a third (35%) who recognized soybean oil, whereas 5% claim to had heard of a fictitious oil called 'beetroot oil', 1% responded they were aware of 'None of these' oils, and 1% responded 'Don't know' (figure 1).

Of the vegetable oils presented to respondents in the survey, the two vegetable oils with the lowest global production and consumption in 2015 (table 2), sunflower oil and olive oil, both had the highest percentage of respondents who were aware—both 95%. Consumers were

Table 2. Global production and consumption of common vegetable oils Source: USDA 2018.

Vegetable oil	Total global production 2015–2016 (million tonnes)	Total global consumption 2015–2016 (million tonnes)
Palm oil	58.89	59.31
Soybean oil	51.53	52.08
Rapeseed oil	27.77	28.31
Sunflower oil	15.38	15.22
Olive oil	3.13	2.81

most aware of vegetable oils that are used for cooking and sold separately, such as sunflower oil, olive oil, and rapeseed oil as opposed to being used as an ingredient in another product. Palm oil is less frequently used as a cooking oil in the UK, so its somewhat lower level of awareness is not surprising despite high levels of consumption.

The perception of palm oil as environmentally unfriendly was relatively high compared to other vegetable oils presented in the survey (figure 2). Environmental campaigning against the other vegetable oils presented in this survey has been limited, with the exception of soybean oil (Croezen 2010).

3.2. Recognition of ecolabels and inclusion or avoidance in shopping

Recognition of the RSPO ecolabel was very low (5%). A large majority (82%) of respondents recognized the Fairtrade ecolabel, while recognition was 54% for The Forest Stewardship Council ecolabel, 34% for the Soil Association ecolabel, 27% for the Marine Stewardship Council ecolabel, 13% for Leaping Bunny, 5% for the RSPO, and 5% for the fictitious ecolabel 'Eco Earth' (figure 3). Recognition of the RSPO ecolabel is essentially zero in the sense that its recognition was indistinguishable from the fictitious ecolabel. Although a large majority of respondents (82%) recognized the Fairtrade ecolabel, only 29% of those who recognized the Fairtrade label actively included those products in their shopping. In 2015, the global production volume of Fairtrade compliant commodities was 3.09 million tonnes, while 15.88 million tonnes of palm oil and palm kernel oil were RSPO compliant (Lernoud *et al* 2017). The UK was also the leading consumer of Fairtrade products globally (Lernoud and Willer 2017). For the other ecolabels, 10% or less of those who recognized the label would include it in their shopping. The number of respondents who would claim to actively include products containing the RSPO ecolabel in their shopping is negligibly small (1% of those who recognized the label), and virtually indistinguishable from those who stated they included the fictitious 'Eco Earth' ecolabel (1%). 53% of respondents did not actively include any products containing ecolabels, and 11% did not know.

Respondents were also asked which ecolabels they actively avoided including in their shopping. If respondents reported actively avoiding products containing ecolabels, this could reveal negative perception of green products, distrust of green claims, or higher prices, as potential barriers to increasing uptake of environmentally friendly goods (Bonini and Oppenheim 2008). In general, respondents did not avoid including products containing ecolabels in their shopping, and such views were negligible. Only 1% of all respondents reported actively avoiding products containing the Fairtrade ecolabel, while <1% of total respondents reported actively avoiding products containing any of the other ecolabels. 89% of respondents replied, 'None of these', and 9% replied 'Don't know'.

3.3. Analysis of respondents who purchase ecolabelled products

According to our main estimation (1), respondents most likely to actively include ecolabelled products in their household shopping: (1) are female (11.4% more likely than males); (2) spend more than £120 per week on household shopping (17.9% more likely than those spending less than £120); (3) are from higher socioeconomic groups (AB households led by those working in higher or intermediate managerial, administrative or professional employment are 14.4% more likely than households led by other socioeconomic groups); and (4) have received a Bachelors degree or higher (10.1% more likely than those who have not). People who voted for Conservative candidates in the 2015 election (−13.6%) or for the UK Independence Party (UKIP) (-19.5%), and those who did not vote (-11.8%) are less likely to actively include ecolabelled products. People who live in the North are also less likely to actively include ecolabelled products (−9.13%) than people living in other regions of the UK. Although the market research firm Nielsen (2015) found sustainability to be a shopping priority for Millennials, our main estimation found that the 25–49 age group has a slightly lower chance of including ecolabelled products in their weekly household shopping (−4.1%) than other age groups, and found no impact for the youngest age group, ages 18–24[5] (table 3).

4. Discussion and conclusions

4.1. Consumers choice and sustainable palm oil consumption

Ecolabelling has a clear role in raising production standards, and empowering consumers to make more sustainable purchases. However, use of the RSPO ecolabel on products does not appear to be widespread enough for consumers to be aware of the certification initiative, and relying on consumers to consciously

[5] This may be driven by the way age groups were constructed in the survey, which did not allow us to clearly identify the Millenial age group, ages 20–35.

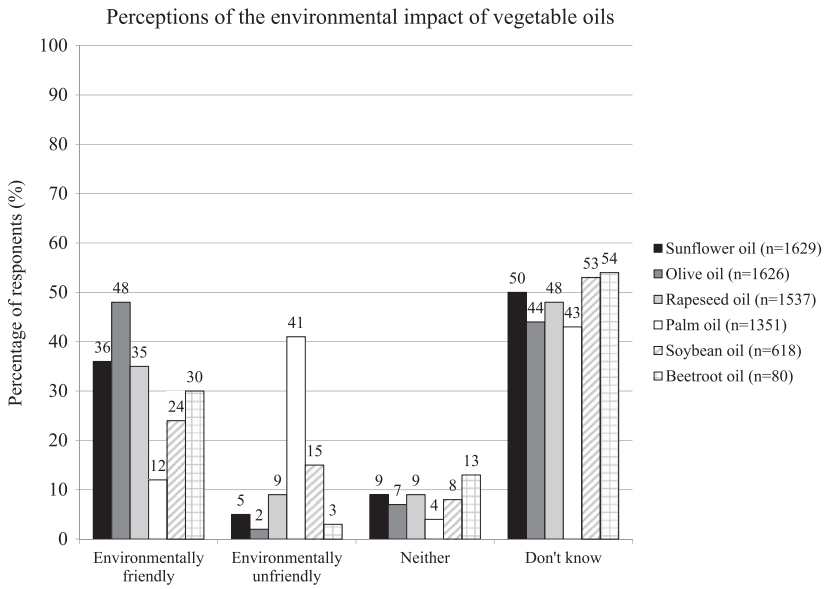

Figure 2. Perception of the environmental impact of vegetable oils.

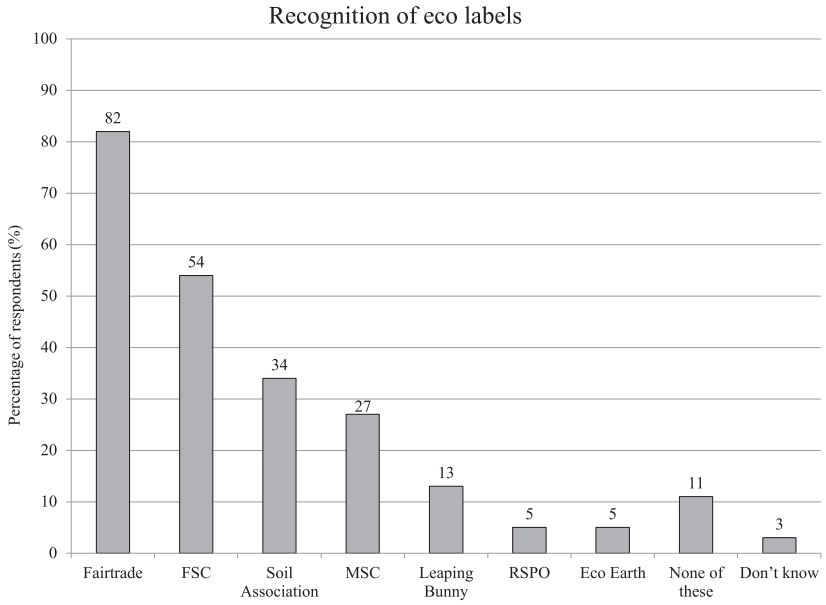

Figure 3. Recognition of common ecolabels ($n = 1695$).

and regularly include certified products in their household shopping has limitations. Our research indicates that consumer awareness of the RSPO ecolabel in the UK is very low (5%). The reason for low labelling levels requires further evaluation, but may be due in part to reluctance amongst consumer goods manufacturers and retailers to draw attention to the fact they are using palm oil to avoid consumer boycotts (Chaudhari and Purkayastha 2011). If this is the case, our research indicates that this reluctance may be unwarranted—consumers do not actively avoid ecolabelled products. However, it is true that our survey finds that palm oil is perceived as 'environmentally unfriendly' by many consumers. It may also be the case that many consumer goods manufacturers and retailers fall short of the 95% physical certified palm oil content previously required to use the ecolabel, and so greater use of ecolabelling may promote more sustainable consumption and more favourable views of palm oil (RSPO 2016a, 2016b).

Regardless of the reason for low awareness of the RSPO ecolabel, our research findings show that even in the case where consumer awareness of an ecolabel is high, it is not guaranteed that consumers will consistently make sustainable choices. For example, despite 82% of British consumers recognizing the Fairtrade label, less than three in ten will actively include products containing the Fairtrade label in their weekly household shopping. More generally,

Table 3. Logistic regression model.

Estimation	(1) Baseline (including ecolabels, *logit*)
Gender: Female	0.114***
	(0.0232)
Weekly amount spent on shopping: £120 or more	0.179***
	(0.0592)
Vote in the last election: Conservative	−0.136***
	(0.0248)
Vote in the last election: UKIP	−0.195***
	(0.0291)
Did not vote in the last election	−0.118***
	(0.0282)
Social grade: AB	0.144***
	(0.0270)
Education: Bachelor's degree or higher	0.101***
	(0.0285)
Age group: 25–49 years	−0.0410*
	(0.0244)
Region: North	−0.0913**
	(0.0364)
Observations	1,695
Standard errors in parentheses	0.0776

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

[1]The impact of voting behaviour was compared to the other voting groups, principally made of those who voted for Labour and Liberal Democrat candidates. When including all main voting groups as dependent variables in preliminary estimations, only the ones mentioned above had a significant impact.

[2]This estimation initially tested the following variables that were not significant: other political parties, social groups, age groups, regions, gross household income per year, children, and lower levels of spending on weekly household shopping.

although consumers may care about the environment, there is often a gap between their values and actions (Young *et al* 2009). The results of our logistic regression analysis indicate that consumers most likely to consistently include ecolabelled products in their weekly household shopping are a very niche segment of the general population. Moreover, as noted above, the majority of palm oil demand is in developing countries, and even if European consumers were to respond aggressively to ecolabels, that only constitutes one slice of the problem. Considering the urgency in which the negative environmental impacts of palm oil production must be mitigated, more proactive policy approaches must be taken to ensure widescale sustainable consumption.

4.2. The potential for policies to increase sustainable palm oil consumption

The UK's current sustainable palm oil policy has increased market uptake of certified sustainable palm oil in the UK (United Kingdom Central Point of Expertize on Timber (CPET) 2017, RSPO 2017a). Moving forward, requiring companies to source 100% identity preserved certified palm oil rather than credits to meet national sustainable palm oil targets, and improve supply chain transparency and traceability across global operations has the potential to increase sustainable palm oil consumption despite the value-action gap present amongst consumers. Multinational consumer goods manufacturers and retailers have worked towards achieving the UK's national target, but the share of physical certified palm oil relative to credits can be increased. Identity preserved certified palm oil provides the greatest level of traceability back to the plantation of origin. A national policy that requires companies to source only 100% identity preserved physical certified palm oil could ensure sustainable palm oil consumption where such policies are enacted. Yet, national sustainable palm oil policies do not guarantee that multinational companies will incorporate certified palm oil into products across all global markets. Requiring multinational companies to map their supply chains and publicly disclose palm oil suppliers, including concession maps for all global operations, can illuminate unsustainable practices related to palm oil products sold in other global markets (Greenpeace 2018, Taylor and Streck 2018). A policy that sets a 100% identity preserved physical certified palm oil national target combined with full supply chain supplier and concession map disclosure has the potential to increase sustainable palm oil consumption.

4.3. Ensuring continued RSPO improvement

The RSPO has faced legitimate criticism which it has aimed to address (Laurance *et al* 2010, Greenpeace 2013). Environmental NGOs have also played a critical role in illuminating unsustainable practices exhibited by RSPO members (Greenpeace 2016, 2018). For example, following complaints filed by an environmental NGO, the RSPO suspended the membership of one of the largest palm oil growers in 2016. Suspension of RSPO membership resulted in the company's shares falling 17%, and the loss of 26 corporate customers over a period of several months (Thoumi and Levicharova 2016). The RSPO will need to continue to handle RSPO membership violations seriously to maintain its legitimacy. The Palm Oil Innovation Group (POIG), an initiative which builds upon RSPO standards, also provides opportunity for improved sustainability in the palm oil industry.

4.4. Policy recommendations

Due to the efficiency of producing palm oil, its high yields compared to other vegetable oils, and its role in sustaining the livelihoods of millions of people, banning of palm oil is not plausible (IUCN 2018). However, even in the presence of national policies promoting sustainable palm oil, consumer goods manufacturers and retailers are still sourcing vast quantities of palm oil that has been produced using conventional practices. If a consumer goods manufacturer or retailer is utilizing credits or even mass balance, they may still be purchasing palm oil from growers that could be engaged in unsustainable

practices, enabling those practices to be perpetuated. Additionally, although consumers are aware of palm oil and associate it with being environmentally unfriendly, the value-action gap even for well-established ecolabels is too large to rely on consumers to consistently include sustainably produced products in their weekly household shopping.

Therefore, we recommend that governments seeking to implement sustainable palm oil policies require consumer goods manufacturers and retailers to:

1. *Purchase 100% identity preserved certified palm oil that can be traced back to the plantation level to meet national sustainable palm oil targets.*
   Requiring the national target to be met with identity preserved certified palm oil will increase demand for physical certified palm oil, consumption of sustainable palm oil, and enable unsustainable practices to be illuminated more readily. The RSPO makes RSPO member oil palm concession data publicly available via the GeoRSPO tool, and Global Forest Watch provides a plethora of relevant data. Concession data coupled with satellite imagery provides the potential to track forest cover loss and other environmental indicators.

2. *Map and publicly disclose full supply chain information for all global operations, including palm oil suppliers and concessions.*
   Although purchasing identity preserved certified palm oil to meet national targets will improve transparency and traceability domestically, many multinational consumer goods manufacturers and retailers fail to map their full supply chains for all global operations. This measure will allow consumers and environmental NGOs to determine if consumer goods manufacturers and retailers are sourcing palm oil from growers engaged in best practices globally. Publicly available tools, such as the Zoological Society of London Sustainable Palm Oil Transparency Toolkit (SPOTT), provide rankings of palm oil growers and traders and would benefit from the additional transparency.

RSPO certification provides the best available indicator that palm oil has been produced in accordance with externally verified principles and criteria for sustainable palm oil, and the RSPO has pushed the industry forward in attaining sustainability goals. Our policy recommendations could promote a more rapid move towards sustainable palm oil consumption, and higher levels of accountability throughout the supply chain. More broadly, certification initiatives coupled with improved transparency and traceability could also improve environmental sustainability of other commodities.

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Conflict of interest

The authors declare no competing financial interest and have never been employed by, contracted by, or received research funding from the RSPO.

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