Reducing Palm Oil Usage

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Abstract

'Reducing Palm Oil Usage' discusses a sustainability challenge I undertook in 2015: to reduce my consumption of palm oil. This challenge proved surprisingly difficult. The report begins with a summary of the serious environmental and social problems caused by palm oil production. It then details my experiences during the challenge, including a frank discussion of the problems I faced in changing my behaviour, and the difficulties I experienced in trying to influence others to do the same. The report uses system analysis to understand the production and consumption of palm oil as an unsustainable system. The final section outlines the general barriers to individual behavioural change, and possible ways to overcome these obstacles.

I. The task

Palm oil is grown in sensitive tropical rainforest areas and its production is associated with a number of sustainability issues. Palm oil is an ingredient found in many manufactured goods, that most people use every day.[1] For a two-week sustainability challenge I attempted to eliminate my consumption of palm oil.

II. Introduction

Palm oil is a critical sustainability issue because of the methods of its production and its extensive use. The report begins with an overview of the profound problems caused by the production of palm oil. This section establishes the rationale for my sustainability challenge. The second section is a summary of my experiences during the challenge, including the difficulties I faced in changing my behaviour and in attempting to influence others to do the same. The third part of the report portrays the production and consumption of palm oil as a system that needs to be shifted from an unsustainable to a sustainable path. The final section of the report analyses the barriers to individual behavioural change, and potential methods to reduce these barriers.

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[1] World Wildlife Fund, 'What Is Palm Oil?' (27 May 2016, World Wildlife Fund) <http://www.wwf.org.au/our_work/saving_the_natural_world/forests/palm_oil>.

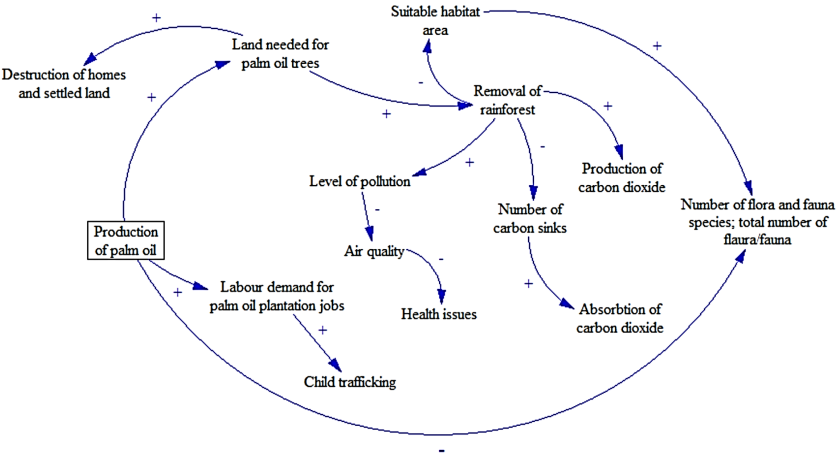

Figure 1: The negative flow on effects of palm oil production.

III. Why is palm oil a sustainability issue?

The production of palm oil has significant negative flow on effects. These include loss of rainforest, human rights abuse and large carbon dioxide emissions. The issues created by palm oil production are shown in Figure 1.

Palm oil production is a significant contributor to the serious problem of deforestation of rainforest.[2] Palm oil is the most extensively used vegetable oil in the world and many manufactured goods, such as processed food and toiletries, contain palm oil. The World Wildlife Fund (WWF) found that one half of all packaged items in a typical supermarket contain palm oil. Worryingly, the consumption of palm oil is increasing. World population growth and higher demand for manufactured goods from developing nations mean that by 2020 palm oil use is expected to double.[3]

Palm oil is predominantly grown in tropical areas. Unfortunately, these are also the areas of the highest biodiversity in the world.[4] Indonesia grows the majority (52%) of the worlds palm oil.[5] Malaysia contributes a further 33%, with the

[2] Emily Fitzherbert, 'How Will Oil Palm Expansion Affect Biodiversity?' (2008) 23 *Trends in Ecology & Evolution* 538–45.

[3] World Wildlife Fund, above n 1.

[4] Eric Wakker, 'Greasy Palms: the Social and Ecological Impacts of Large-Scale Oil Palm Plantation Development in Southeast Asia' (January 2005, Friends of the Earth) <http://www.foe.co.uk/sites/default/files/downloads/greasy_palms_impacts.pdf>.

[5] Index Mundi 2016, 'Palm Oil Production by Country in 1000 MT' (25 May 2016, Index Mundi) <http://www.indexmundi.com/agriculture/?commodity=palm-oil>.

remaining 15% grown across 25 different countries. Indonesia, despite its small land size, contains between 10 and 20% of all terrestrial flora and fauna species.[6] Deforestation of rainforests threatens many of these species, including orang-utans, tigers, elephants and rhinoceroses (United Nations Environment Program 2011). The orang-utan is termed an 'umbrella' species because any efforts which protect the orang-utan will also help other flora and fauna species.[7]

Palm oil production not only threatens native rainforest flora and fauna species, it also causes serious sustainability issues for groups living in and around Indonesian and Malaysian rainforests. Land rights violations are rife, and it is common for land to be illegally taken from native owners for palm oil production. The consequences of takeovers are severe and include killing and maiming of locals, the destruction of housing and land, and the torture of activists.[8] According to World Vision,[9] palm oil production is linked to forced labour of illegal immigrants, particularly children.

Palm oil is a major contributor to global warming and pollution. Callery reports that: 'Deforestation is the second largest manmade source of atmospheric carbon dioxide, after fossil fuel burning'.[10] The deforestation of rainforest has a two-fold consequence. Firstly, the deforestation itself emits CO2 through the burning of trees. Rainforests are also large carbon sinks and when these are destroyed, not only is all of the carbon released, but the carbon sink no longer exists. The pollution created by burning also significantly reduces air quality in Indonesia and Malaysia.

Palm oil production is an example of an industrialised system, within societies that have themselves moved from agrarian to industrialised.[11] Technological developments have allowed greater exploitation of the land, where once subsistence farming was the most damaging human activity. Technology is a double-edged sword: improvements to technology enable "industrial-scale" agriculture, while poor technology means that collateral damage to other forests is more likely.[12]

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6 Wakker, above n 4.

7 E Pearson, J Dorrian and C Litchfield, 'Harnessing Visual Media in Environmental Education: Increasing Knowledge of Orang-Utan Conservation Issues and Facilitating Sustainable Behaviour Through Video Presentations' (2011) 17 *Environmental Education Research* 751–61.

8 Wakker, above n 4.

9 World Vision, 'Forced, Child and Trafficked Labour in the Palm Oil Industry' (2012, World Vision Australia) <https://campaign.worldvision.com.au/wp-content/uploads/2013/04/Forced-child-and-trafficked-labour-in-the-palm-oil-industry-fact-sheet.pdf>.

10 Susan Callery, 'Palm Oil: A Climate Change Culprit' (7 January 2015, Global Climate Change: Vital Signs of the Planet) <http://climate.nasa.gov/blog/1144>.

11 Jared Diamond, *Guns, Germs and Steel: The Fates of Human Societies* (1997, Norton).

12 Rebecca Lindsey, 'Tropical Deforestation' (3 March 2007, NASA Earth Observatory) <http://earthobservatory.nasa.gov/Features/Deforestation/printall.php>.

Vegetable oil	Stearate	Sodium Laureth Sulfate
Vegetable fat	Stearic Acid	Sodium Lauryl Sulfate
Palm Kernel	Octyl Palmitate	Sodium Kernelate
Palm Kernel Oil	Palmityl Alcohol	Sodium Palm Kernelate
Palm Fruit Oil	Palmitic Acid	Sodium Lauryl Lactylate
Palmate	Palm Stearine	Hyrated Palm Glycerides
Palmitate	Palmitoyl Oxostearamide	Etyl Palmitate
Palmloein	Palmitoyl Tetrapeptide-3	Cetearyl isononanoate
Glyceryl	Elaeis Guineensis	

Table 1: A sample of the alternative names for palm oil and palm oil derivatives. There are many more.

IV. Analysis of the sustainability challenge

Individual Challenge

The transition away from products containing palm oil was challenging. I began the process by trying to establish which of the products I use contain palm oil. However, it is very hard to determine those products which definitely, or are likely to, contain palm oil. There are no firm labelling laws about palm oil in Australia. To further confuse matters, there are many different names for derivatives of palm oil.[13] Some of these are listed in Table 1.

The difficulty faced by the lack of clear labelling is compounded by a general lack of palm oil-free goods, as well as the cost of these alternatives. These problems were solved to a limited extent by purchasing guides. Several activist websites, including 'Deforestation Education', 'Borneo Orangutan Survival' and 'Palm Oil Action Australia' provide long lists of products containing palm oil. However, these lists are not always accurate and are not sufficiently comprehensive.

An example of my consumption of palm oil on a typical day before the challenge is shown in Table 2, and it is evident from this list that I used palm oil extensively in my everyday life. I faced some high start-up costs for the challenge; for example, I could only find one brand of dishwashing liquid that did not contain palm oil, and it was much more expensive than my usual brand.

An unexpected benefit of the challenge was that it forced me to eat healthily. The food products that contain palm oil are all processed. Eliminating palm oil inevitably meant eliminating all unhealthy snacks from my diet, and cooking all of my food from basic ingredients. I was unable to eat out at all during the challenge, because I could not determine what oils were being used. During the challenge I realised that the dietary changes required to eliminate palm oil consumption would

[13] Orangutan Foundation International 2016, 'Palm oil', (Orangutan Foundation, 2016), <http://orangutanfoundation.org.au/palm-oil/>.

Time	Activity	Products with Palm Oil
8am	Showered, brushed teeth, breakfast (toast with jam)	Body wash, shampoo, bread, toothpaste
12:30	Lunch: sandwich	Bread
2pm	Afternoon tea: cup of tea and biscuit	Arnott's shortbread cream biscuit
6pm	Dinner: Stir fry	Hokkien noodles
7pm	Wash dishes	Washing detergent
8pm	Used washing machine for clothes	Fabric softener
11pm	Brushed teeth	Toothpaste

Table 2: A description of the day before the sustainability challenge begun. Many of the products I used contained palm oil.

be a barrier for many people. Therefore it is important that palm oil is eliminated from the food products in which it is currently used.

Overall I succeeded in the challenge. However, I acknowledged that it would be hard to sustain a completely palm oil free life for an extended period, particularly because the use of palm oil is so commonplace in the cosmetics and pharmaceuticals industries.

Influencing Others

Part of the challenge was to influence others into adopting the challenge. Rooney contends that social norms and peer pressure are the most effective way of making people change their behaviour.[14] To influence others, I engaged friends in informal conversations about palm oil in order to exert peer pressure. The friends I attempted to influence (nine in total) were all university students, studying science or law.

Overall, my attempt at changing my friends' behaviour was unsuccessful. On reflection, it is difficult to influence people when peer pressure is from a single individual, not a group. Further, while many expressed great concern about the impacts of palm oil production, this did not readily translate into behavioural change. This was due to a myriad of factors, in particular practical barriers, a feeling of 'hopelessness', and even cynicism. The practical barriers most mentioned by my peers were a lack of clear packaging, and the expense of buying palm oil free products, which was particularly resented if they already owned the equivalent palm oil containing products. A lack of knowledge hindered change, along the lines of 'even if I put in an effort to stop using palm oil, I would probably

[14] Millie Rooney, 'Wicked problems, wicked delight' (May 2011, Griffith Review) <https://griffithreview.com/articles/wicked-problems-wicked-delight/>.

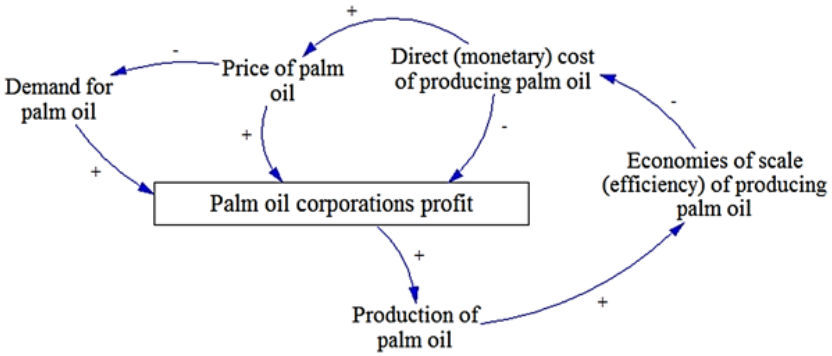

Figure 2: The economic system of palm oil. The driving factor for palm oil production is corporations' profit, with little attention given to social or environmental factors. This results in the sustainability issues discussed in Section III.

use it anyway without knowing'. This feeling of hopelessness was a dominant emotion. Many people argued further that there was 'no point' in changing their behaviour, because it would have no influence whatsoever on the overall production of palm oil. I even detected some cynicism 'Yet another global problem I have to solve'. I now question whether it is fair to place the burden on consumers, when the issues from palm oil stem from its production. It seemed to me that there is a strong and urgent case for government intervention.

Overall, the barriers people could see to changing their behaviour meant there was little chance they would even try. I did not manage to influence anyone in a significant way.

V. Palm Oil Consumption and Production System

If we are to influence consumption patterns, it is vital to understand the system in which individuals' choices are made. The current system of palm oil production is economically focused, as shown in Figure 2. Palm oil is extremely inexpensive to produce, and yields high returns for producers. Budidarsono et al found palm oil profitability in Indonesia was as much as $22,000 (USD) per hectare per year.[15] They also found global demand for palm oil was growing, particularly due to increased biofuel usage.

[15] Suseno Budidarsono, Arif Rahmanulloh and Muhammad Sofiyuddin, 'The economics of oil palm in Indonesia' (25 October 2012, World Agroforestry Centre) <http://blog.worldagroforestry.org/index.php/2012/10/25/the-economics-of-oil-palm-in-indonesia/>.

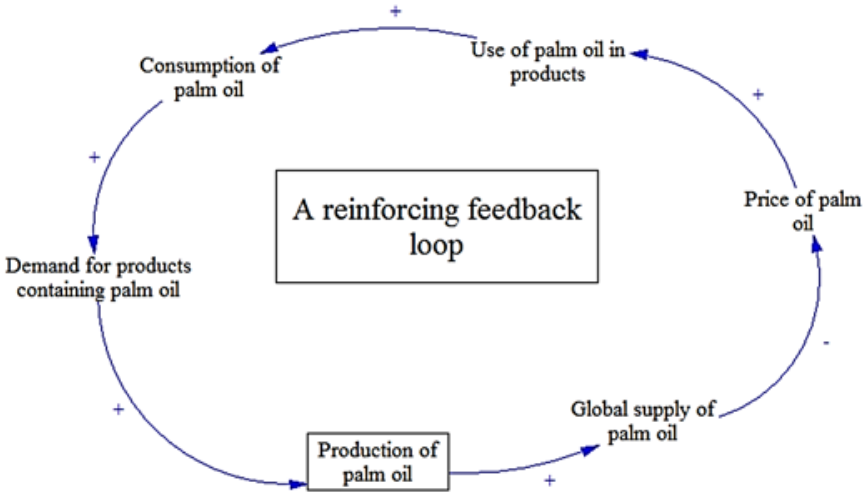

Figure 3: The production and consumption of palm oil reinforce each other, resulting in a seemingly endless expansion of the production of palm oil. This means that the sustainability issues created by palm oil are enduring and worsening.

Palm oil consumption is driven by demand, a key variable in Figure 2. Indeed, my sustainability challenge framed the problem around consumption, and consumer choice. The reinforcing feedback loop between the consumption and production of palm oil is shown in Figure 3.

The case study of the Huai River shows that a sustainable system comes about when the economy, society and the environment are balanced.[16] The environment depends on a healthy economy and society, and vice versa. An example of a sustainable system is shown in Figure 4.

The challenge that is evident when examining the differences between Figure 2 and Figure 4 is the transition from an economically focused system to one motivated by the sustainability of the rainforest. The views expressed by my peers present an argument for changing the nature of the system through government policy that targets production, not consumption. However, the focus of this report is on changing human behaviour and reducing consumption, while acknowledging the interplay between production and consumption. Clayton argues that because humans have a 'causal influence' on the environment, a focus on human behaviour must be taken to solve environmental issues.[17] The barriers to human behavioural

[16] Xuemei Bai and Peijun Shi, 'Pollution Control: in China's Huai River Basin: What Lessons for Sustainability?' (2006) 48 *Environment: Science and Policy for Sustainable Development* 22–38.

[17] Susan Clayton, Carla Litchfield and E Scott Geller, 'Psychological Science, Conservation, and Environmental Sustainability' (2013) 11 *Frontiers in Ecology and the Environment* 377–82.

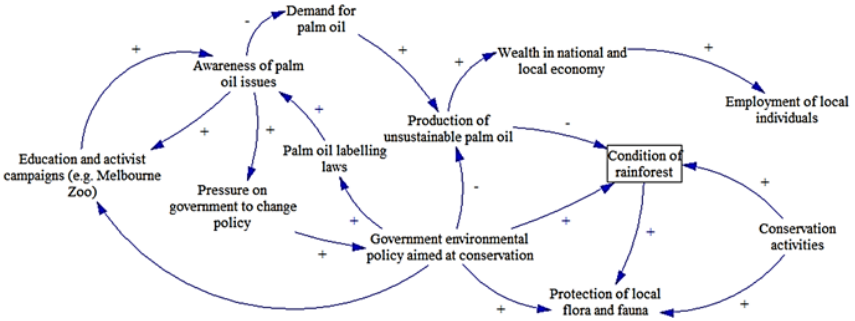

Figure 4: A potentially more sustainable system. The major factor is the condition of the rainforest, however, economic and social factors are also considered.

change, and possible solutions to those barriers, are discussed in Section VI. These solutions include the creation of 'collective hope' through collective action as well as government policy intervention.[18]

VI. Human behaviour and transformative change

Consumers face a number of barriers to behavioural change. Awareness of the problems of palm oil production is a crucial first step in changing behaviour. However, while awareness is a necessary condition, it is not sufficient to change consumer behaviour. Psychosocial barriers including feelings of hopelessness, and practical barriers, such as lack of clear labelling and cost, prevent behavioural change. Thus, government policy and collective action are essential to shift consumer behaviour.

The seriousness of the sustainability issue of palm oil is deepened by a lack of awareness in general society. This lack of awareness is predominantly created because environmental problems are hard to observe.[19] In the case of palm oil, the problems are of a long-term nature and consumption is remote from production. Awareness is a crucial factor for influencing individual's behaviour. It is needed because before someone can care about an issue, they have to know the issue exists. Caring is a precursor to behavioural change.[20] This simple relationship is shown in Figure 5.

[18] V Braithewaite, 'Collective hope: Preface to Hope, Power and Governance' (2004) 592 *Annals of the American Academy of Political and Social Science* 5–16.

[19] Susanne Moser and Lisa Dilling, 'Communicating Climate Change: Closing the Science-Action Gap' (2011) *The Oxford Handbook of Climate Change and Society* 161–74.

[20] E L Pearson, R Lowry, J Dorrian and C A Litchfield, 'Evaluating the conservation impact of an innovative zoo□based educational campaign: 'Don't Palm Us Off' for orang□utan conservation' (2014) 33 *Zoo Biology* 184–96.

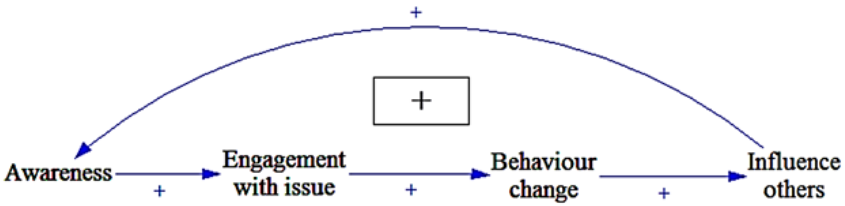

Figure 5: Awareness is a precursor to behavioural change

However, as the sustainability challenge revealed, the relationship between awareness and behaviour is more complex than just described. Pearson et al's studies show that the path from awareness to behavioural change is strewn with practical obstacles.[21] The factors listed in these studies are the same as the factors I encountered when talking to individuals: a lack of knowledge, time and money. The nonexistence of clear labelling made palm-oil free shopping too time intensive. It was more convenient on many levels to buy products that did contain palm oil. Despite this, 18% of individuals in the first study and 39% of participants in the second study changed their behaviour after becoming aware of the issues surrounding palm oil production.[22]

Clayton et al also contend that a focus on awareness is too crude,[23] and that a more nuanced study of societal values, denial reactions, the costs of changing an individual's behaviour and the normalising effect of many people undertaking in 'negative behaviour', is needed to fully understand the motivations behind consumer behaviour. Shove argues that the 'social construction of routinized needs and wants' is an important factor to consider when analysing consumer choices and how they impact on sustainability.[24]

Braithewaite reasons that collective hope is needed for individuals to change their behaviour.[25] If there is no collective hope, individuals feel hopeless, and become disengaged from an environmental cause. This was evident in my attempts to persuade people to stop consuming palm oil. Alone, people felt they could make no change whatsoever. However, if a large group of people boycotted palm oil, the measurable and visible change would be far greater, and individuals would change their behaviour in the long term.

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21 Ibid.

22 Pearson, Dorrian and Litchfield, above n 7; Pearson, Lowry, Dorrian and Litchfield, above n 20.

23 Clayton et al, above n 10, 17.

24 Elizabeth Shove, *Comfort, Cleanliness and Convenience: The social organisation of normality* (Berg Publishers, 2003).

25 Braithewaite, above n 18.

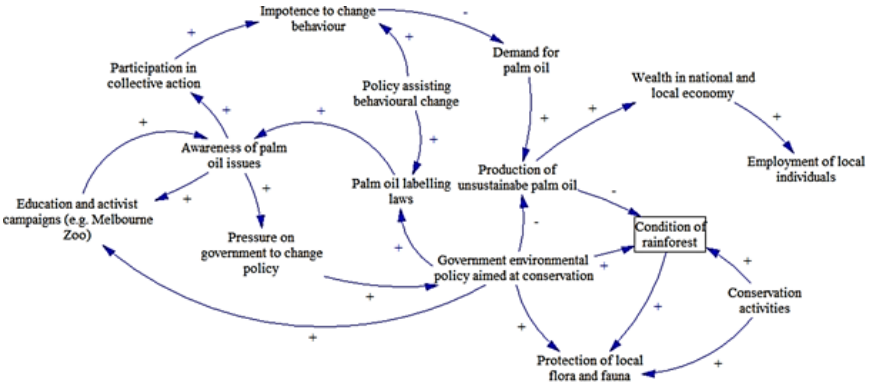

Figure 6: Collective action and government policy are potential factors that could remove barriers to behavioural change

Rooney portrays collective hope in a slightly different way.[26] She argues that peer pressure, or people being influenced by authoritative figures in their lives, is more effective than trying to persuade individuals of the environmentally beneficial nature of their actions. However, she points out that the changes that they are urged to make are not 'always comfortable or easy'.

There is thus strong evidence for both practical and psychosocial barriers to behavioural change, and for the need to move beyond consumer awareness as a solution. Collective action and government policy intervention are possible methods to aid a shift in consumer behaviour. Figure 6 depicts a system which illuminates the role that other measures, such as government intervention and collective action could play in affecting consumer behavioural change.

Westley discusses the use of 'top down management' to influence environmental outcomes.[27] Top down management is the manipulation of positive and negative sanctions to shape the context in which innovation occurs. Government mandating of product labelling is an example of top down management which could have immediate beneficial effects. A study by Melbourne Zoo found 90% of visitors to the zoo supported clear labelling of palm oil on products.[28] If companies are required to label palm oil clearly, there could be negative repercussions on the demand for their product. Furthermore, products without palm oil would have a market advantage. Thus, clear labelling could encourage companies to use alternative oils in production. This innovation would be 'disruptive': changing

[26] Rooney, above n 14.
[27] Frances Westley et al 'Tipping toward sustainability: emerging pathways of transformation' (2011) 40 *Ambio* 762–80.
[28] Pearson, Dorrian and Litchfield, above n 7.

the nature of the system from being unsustainable to sustainable. Clear labelling is unlikely to occur without government intervention.

Government policy can also encourage individual behaviour change by shifting the norms around consumption. For example, a study analysing the policy effect on smoking norms by Brown found that government anti-smoking policy 'denormalises' smoking.[29] This finding can be expanded to suggest that government policy widely affects the social context in which consumer choices are made, as shown earlier in Figure 4.

VII. Conclusion

I successfully completed the two-week challenge. However, I was unsuccessful in influencing others. My own efforts would be difficult to maintain in the long term, mainly due to practical issues, such as the deficiency in labelling.

Palm oil production is a serious sustainability issue. It is a major contributor to deforestation and global warming, and has driven endangered species to the edge of extinction. It also has extreme social consequences. These issues all stem from the production of palm oil, but targeting consumer demand is one way of discouraging production. There are significant barriers to behavioural change, including feelings of hopelessness, lack of awareness, and more practical considerations such as lack of labelling and the cost of alternatives. The findings in the literature align with my own experience and my unsuccessful efforts to sway others. Collective action and government policy are both methods that could have a positive influence on behavioural change. This report has argued that once collective action is achieved, feelings of hopelessness are reduced and individuals are more likely to remain politically engaged with an issue. The solution to the problem of palm oil production ultimately relies on the removal of barriers to change so that a systemic shift in the economy, society and environment can occur.

[29] Abraham Brown, Crawford Moodie, Gerard Hastings, 'A longitudinal study of policy effect on smoking norms' (2009) 11 *Nicotine & Tobacco Research* 924–32.

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