



I've heard a lot about palm oil, but why is it a problem?

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In a now [banned viral advert](#) from the supermarket Iceland, a young, animated orangutan swings around a young girl's bedroom, destroying all her house plants and throwing away her chocolate. Eventually the girl tells the naughty orangutan to go away, but just before it does, she asks her why she is there. To this the orangutan responds that there is a human in her forest, "he destroyed all of our trees, for your food and your shampoo. They're burning it for palm oil, so I thought I'd stay with you". Learning this, the girl then promises to fight to save the young orangutans home and make the future theirs. The advert ends with a dedication to the 25 orangutans that are lost every day and a promise from Iceland that they will remove palm oil from all their own brand products, until it causes zero deforestation. This heartfelt advert makes a visual and emotional case for the need to ditch unsustainable palm oil. But is palm oil as bad as people suggest and can it ever be sustainable?

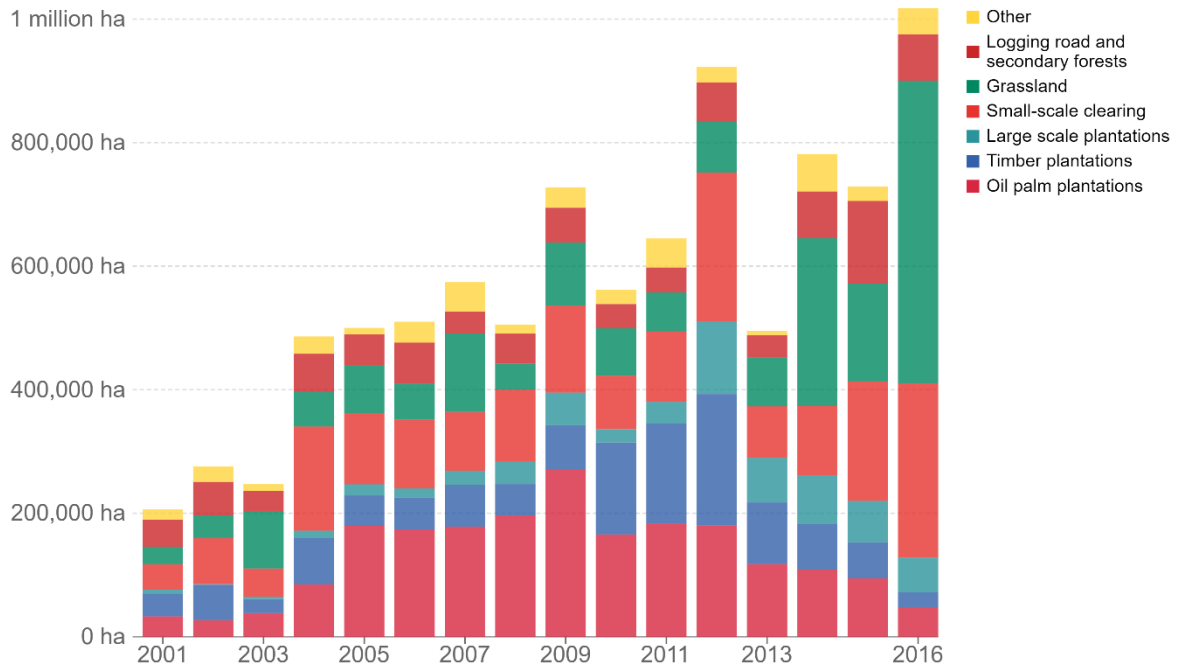
As of 2018, the world produced [71 million tons of palm oil](#), 35 times more than in 1970 (2 million tons). This prodigious rise can be attributed to a growing demand for vegetable oils more broadly – with palm oil only making up 36% of total vegetable oil production. The global production of palm oil is likely to continue to rise as demand for vegetable oil continues to grow. Most of this is driven predominantly by the food sector, where over two-thirds (68%) of palm oil is used – in a [range of products](#) from chocolate, to pizzas and ice cream to margarine. The rest is used for industrial applications (e.g., in soaps, detergents and cosmetics) or for bioenergy (e.g., biofuels for transport, electricity and heat). The sector palm oil is used most in changes from country to country. For example, in many European countries like Germany, most palm oil is used for bioenergy. As oil palm is a tropical plant the overwhelming majority is grown in countries where there is high rainfall, lots of sunlight and high humidity. [Indonesia and Malaysia](#) dominate the world in terms of palm oil production, accounting for 84% of all global production between them. Other countries - such as Nigeria, Columbia, and Thailand – also produce palm oil, but at a fraction of the scale of Indonesia and Malaysia. As demand for palm oil has grown, as has the demand for land for oil palm plantations – in fact it has quadrupled since the 1980's to [19 million hectares in 2018](#). This expansion is having major consequences for tropical forests.

The impact this has had on tropical forests is most clearly demonstrated by its expansion in the two key countries for palm oil production: Indonesia and Malaysia. The chart below makes it clear that palm oil was a major driver of [deforestation in Indonesia](#) between 2001 and 2016. In fact, over this period palm oil was the main driver of deforestation, responsible for 23% of all the deforestation in Indonesia. Although, despite total deforestation in Indonesia increasing over this period (from 206,313 ha in 2001 to 1,017,373 ha in 2016), the role of palm oil has begun to decline, having peaked in 2009 at 271,589 ha - in 2016 it was only 47,920 ha. One issue when looking at the level of deforestation caused by palm oil, is the speed at which oil palm plantations replace tropical forests. In the most clear-cut cases, forests are cleared and immediately planted with oil palm, however this is not always the case. A significant proportion of the time, forests are logged for other products (e.g., wood, paper, or pulp) and then the empty land is quickly replaced with oil palm plantations – this can lead to an underestimate of oil palms impact on forests. One study for example found that 45% of oil palm plantations in Southeast Asia are in areas that were forests as

recently as 1989. What is clear, no matter how you measure it, oil palm is a [leading cause of deforestation](#).

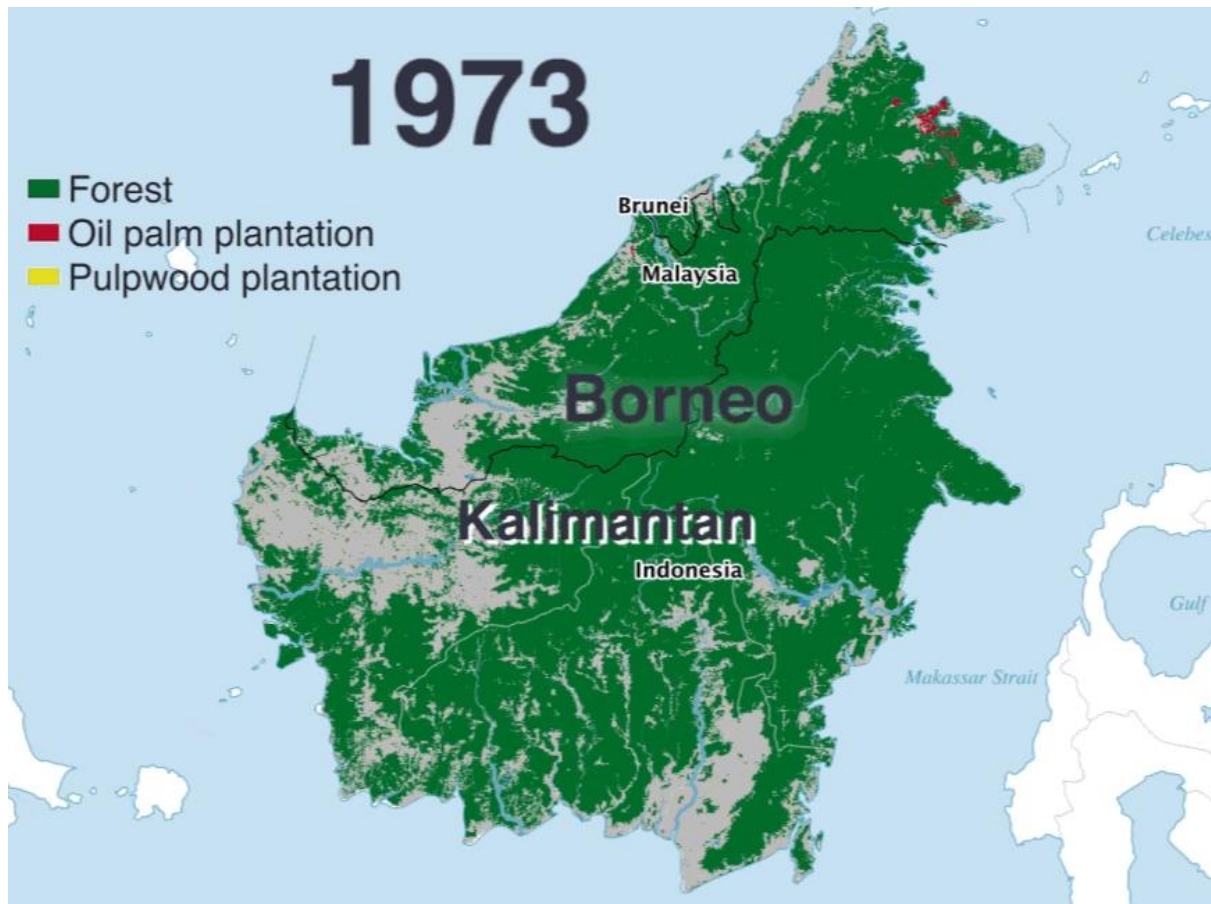
Drivers of deforestation in Indonesia

Our World
in Data



Source: Austin, K. G., Schwantes, A., Gu, Y., & Kasibhatla, P. S. (2019). What causes deforestation in Indonesia? OurWorldInData.org/forests • CC BY

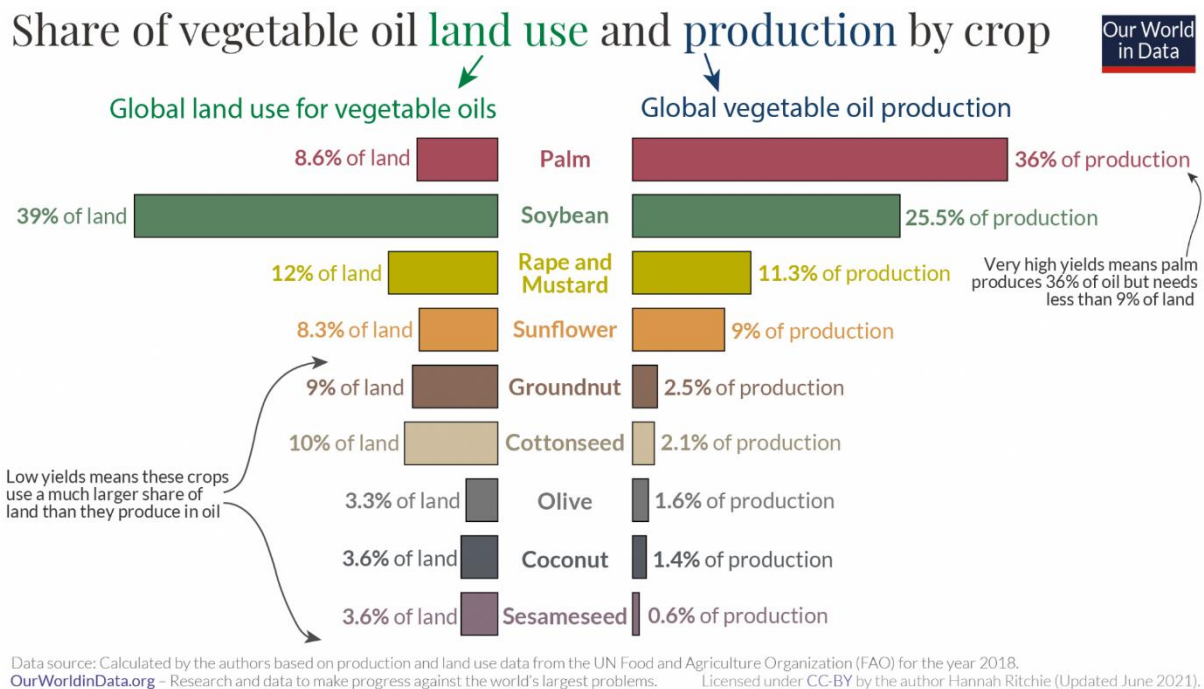
This deforestation is important. It's important because the tropical rainforests being cut down are home to a [significant proportion](#) of the world's species. The [International Union for the Conservation of Nature](#) (IUCN) has estimated that palm oil production currently threatens 193 species with extinction – including species such as the Sun Bear, Sumatran Tiger, Sumatran Rhino, Pygmy Elephant and of course the Orangutan (the star of the Iceland advert). [One estimate](#) suggests that the Bornean Orangutans (one of [three species of Orangutan](#) which are all [critically endangered](#)) has seen its numbers decline from 250,000 in 1999 to only 100,000 in 2015. These declines have been driven by multiple factors, including poaching, logging, and conversion of forests to oil palm plantations. Furthermore, oil palm expansion [could affect](#) 54% of all threatened mammal species and 64% of all threatened bird species.



GIF showing how forest cover has changed in Borneo (Malaysia and Indonesia) between 1973 and 2015.

However, the issue is not simply black and white. Although 19 million hectares sounds like a lot of land, in the broader context of land dedicated to oil crops (a whopping 300 million hectares), it is surprisingly small, only accounting for 6% - this is despite palm oil making up [36% of all vegetable oil production](#). This is because oil palm is an incredibly productive crop, producing 4 times more oil per hectare than the next best alternative vegetable oil (sunflower oil) and is over 10 times more productive than other popular alternatives such as coconut oil. Soybean oil is the next most popular vegetable oil, accounting for 25.5% of all vegetable oil production, however, soybeans use 39% of all the land used to produce vegetable oils. This means that if we were to replace palm oil with soybean oil, it would lead to an even greater loss of land. To illustrate this, if 100% of all vegetable oil was supplied solely by palm oil, it would require 79.97 million hectares of land, compared to 306 million hectares for sunflower oil and 486.76 million hectares for soybean oil (this is equivalent in land area to almost 20 UK's). However, not all land is equal, devoting one hectare of land in the UK to grow sunflower oil will have a much lower environmental impact than devoting the same amount of land to grow palm oil in Indonesia. In places like the UK therefore, it is likely to be beneficial to use slightly more land to grow sunflower or rapeseed oil. However, not all oils are equal. Palm oil is so popular because it is [incredibly versatile](#). Oils such as sunflower or rape could be substituted in food products but would not be suitable for products such as soaps, detergents, and cosmetics. Switching away from palm oil is thus unlikely to be beneficial on a global scale, especially if demand for vegetable oil continues to

rise. Palm oil is therefore here to stay, so the big question is can it be produced in a way that does not have negative environmental impacts?



There are several steps that can be taken to lessen the impact resulting from palm oil production. The first would be a ban on palm oil products where more environmentally friendly alternatives exist – most notably, its use as a [biofuel](#). A large amount of [research](#) exists which suggests that when taking into account the deforestation associated with palm oil production, using palm oil-based biofuels actually has a higher environmental impact than conventional fuels such as petrol or diesel. The EU has already taken this step and is planning on [phasing out palm oil-based biodiesel by 2030](#). Another solution is to use only sustainably sourced palm oil. There are several sustainable certification bodies for palm oil, however the most well-known is the Roundtable on Sustainable Palm Oil ([RSPO](#)) – 19% of palm oil production is currently covered by RSPO. In order to receive certification, the RSPO [requires growers](#) to conduct environmental impact assessments, prohibits them from clearing [primary forests](#), requires them to identify and protect high conservation value areas and avoid fires. It has been demonstrated that RSPO has been [successful in reducing deforestation](#) in Indonesian plantations by 33%. Although very few of the plantations that have received certification contained intact forest – only 1% of all forests within plantations. Furthermore, a recent study has [questioned the true sustainability](#) of sustainable palm oil. In this study, they found that 75% of RSPO plantations are on land that, as recently as 30 years ago, was intact forest. This raises the question of whether palm oil can truly be called sustainable, if you do not account for the historic land use of the plantation?

We have seen how palm oil has come to be one of the most important crops in the world and is a key component of many of the stuff we use every day. But we have also seen how this has had devastating impacts on the environment, especially in the tropical forests of Malaysia and Indonesia where most of it is grown and where the young Orangutan from the Iceland advert lives. Balancing the demand for palm oil with the need to protect the tropical

forests, it so often replaces, is therefore essential. Simply replacing palm oil is not a solution, as the alternatives will have an even greater impact on the environment or are not suitable as a substitute. Where the solutions will come from therefore, is sustainable palm oil – that is palm oil that does not drive deforestation. There is still a long way to go to achieve this and will require interventions from multiple actors, including you as a consumer (by only buying sustainable palm oil and pushing governments to ban unsustainable uses of palm oil), governments (banning palm oil for fuel), certification bodies (ensuring the palm oil they call sustainable has not driven deforestation in the past) and growers (growing palm oil in sustainable ways).