

FT Magazine Food & Drink**Could we save the world if we all went vegan?**

The amount of farmland needed to sustain human life would shrink by 3.1bn hectares – the size of the African continent



Chloe Cornish YESTERDAY

Have you tried butterfly pea flowers? They are all the rage in vegan circles. People are brewing the *Clitoria ternatea* to make trippy teas that change from blue to purple when you add lemon. Flipping through the vegan magazine in which I discovered this exotic ingredient, I felt surprised. Veganism is supposed to have a lower environmental cost than animal products. Yet this flower grows in Thailand, so if you need it fresh in the UK, it has to be flown in. How does that square with the clean, green vegan dream?

Mike Berners-Lee, a professor at Lancaster University and author of *How Bad Are Bananas? The Carbon Footprint of Everything*, cautions that trendy vegan foods heavy in air miles or packaging undo some of the environmental benefits of abstaining from meat and cheese.

Fresh Peruvian asparagus might do well on Instagram, for example, but, thanks to its transportation by air, each kilo of those green spears has a carbon-dioxide equivalent of 8.9kg — [almost seven times higher than bananas](#) or avocados, which can be transported by sea.

But let's not get too caught up in the perils of Peruvian asparagus. Compared with meat-eating, their impact on the environment is minuscule. British people, for example, each consume on average 81kg of meat per year. Those animals have to live somewhere and eat something. And their food has to be grown somewhere. Nearly 80 per cent of the world's farmland is dedicated to rearing animals.

At school, we learn that energy is frittered away at every stage in the food chain (sun > plants > animals > humans). If we eat food closer to the sun end of the chain, less energy is lost. "If you feed soyabeans to a cow, you get about a tenth of the nutrition back out again," says Berners-Lee. Soyabeans, which contribute significantly to global deforestation, are rich in protein and can be eaten by people. Berners-Lee's team has found recently that 40 per cent of energy from crops fit for human consumption went to farm animals. "You'd not far off double the food supply if you'd just stop doing that," adds Berners-Lee.

[According to scientist Joseph Poore](#) of Oxford University, worldwide conversion to veganism would shrink the amount of farmland needed by 3.1 billion hectares, the size of the African continent. That land could store carbon instead, in trees for example. Poore estimates worldwide veganism could also help cut greenhouse gas emissions by a quarter.

In 2014, a UK study published in the journal *Climatic Change* found that eating a diet high in meat came with a cost of 7.2kg of carbon dioxide emissions per day, compared with 3.8kg for vegetarians and just 2.9kg for vegans. About a quarter of greenhouse gases attributable to human activity come from intensive farming, which is roughly the same as electricity and heat production, and slightly more than industry, according to the US Environmental Protection Agency. Agriculture also pulverises ecosystems with deforestation and chemical change caused by fertilisers and pesticides.

And it's only going to get worse, because demand for meat and milk is rising. By 2050, humans will consume 500 billion kgs of meat and 1.1 trillion litres of dairy per year, [according to the Food and Agriculture Organisation](#).

Poore and his colleagues have marshalled data from 570 studies covering 38,700 farms. They have looked at 40 common foods and assessed how much land and water they use, what they contribute to greenhouse gas emissions and to what extent they cause problems such as groundwater and freshwater becoming more acidic. Published in 2018, the results were stark — they couldn't find any animal products that were more environmentally friendly than their plant-based alternatives. Poore ate his last Pret A Manger cheese-and-tomato croissant and went vegan.

The more we cut back on food made by animals, the less land, fuel and chemicals are needed to produce our meals. Berners-Lee, who is neither vegetarian nor vegan but is “moving that way”, advises putting yourself “on a five- or 10-year trajectory” towards quitting. Worldwide milk and cheese production takes up an area the size of China, yet big business is making milk alternatives mass market. Coca-Cola-owned Innocent Drinks has introduced dairy-free milks, while French dairy company Danone acquired Belgian soya-milk upstart Alpro last year; Tyson Foods, an American meat group, has a stake in veggie-burger maker Beyond Meat, and Unilever owns soya-ice-cream maker Swedish Glace.

“A vegan diet is probably the most powerful change you make as an individual to reduce your impact on the earth,” says Poore. We need governments and societies to change too.

Chloe Cornish is the FT's Middle East correspondent; [@ChloeNCornish](#)

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