



Home

News

Sport

Weather

Shop

Earth

Travel

Capital

Culture

Autos

Future

TV

Radio

ADVERTISEMENT

Home

Owning Your Time

Affording Your Life

NEW SERIES:

Generation Project

DISCOVER:

Bright Sparks

The Economics of Change

Swapping t-bone for tofu - but does it add up?

If we all ditched meat for beans would the world be a better place? Some people think so. But does the economic argument stack up?

Follow BBC Capital



By **Veronique Greenwood**
12 November 2018

Facebook

The Economics of Change

Richard Buckley is the owner of the Acorn Restaurant in Bath in the UK, a fine dining landmark that just happens not to serve meat. He has been vegetarian or vegan all his life.

But lately, he's noticed something interesting. In the 80s, 90s and 2000s, people used to ask him, how do you live without



Twitter

bacon? Don't you ever want a hamburger? What do you eat for Christmas lunch? "There was very much an attitude of you were missing out. Somehow you were weird and they were normal," he reflects.

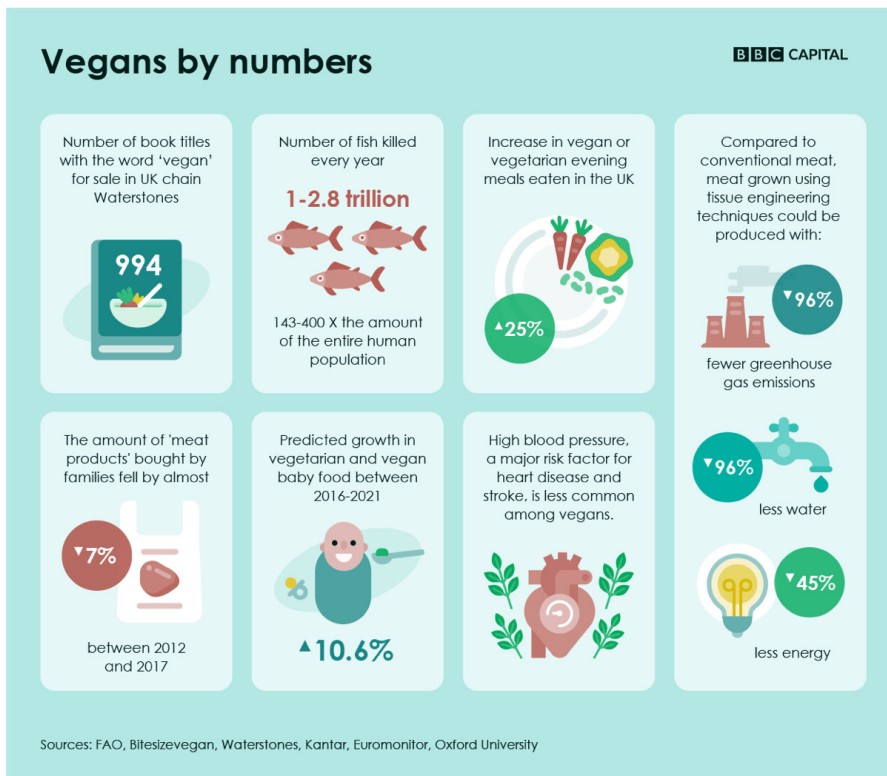
"Now when you say that you're vegan or vegetarian, the first thing they tell you is: 'Well, I don't eat that much meat... And my daughter's vegetarian...'. The subtle power relationship is reversed! You're not the odd one," says the owner of the Michelin Guide-recognised restaurant.



Somehow you were weird and they were normal

Indeed, if you've noticed more vegetarian options springing up around you, you're not imagining it. Food companies and market research firms have noted a distinct uptick in demand. **In 2018, 168,000** people participated in Veganuary in a bid to try veganism

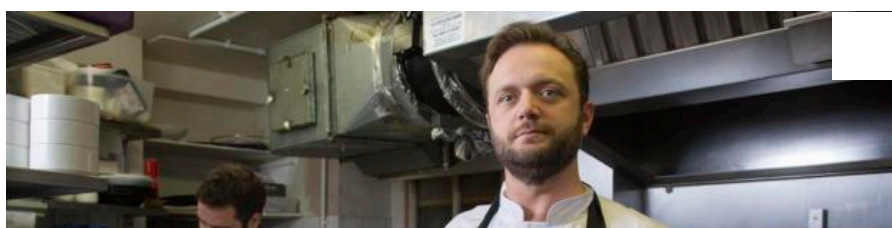
out for a month, up from 3,300 in 2014 when the campaign started. In 2016, Veggie Pret, Pret a Manger's all-vegetarian offshoot, was intended to be a one-month pop-up in London, but the concept was so popular there are now four stores. Plant-based foods are a trend that's "here to stay", **Nestle told analysts last year**, and better-tasting meat substitutes are in high demand, as the market is **expected to grow to \$7.5bn dollars by 2025**. One **market research firm reports** that 44% of consumers in Germany say they eat a low-meat diet, up from 26% in 2014, and that more people in the US are identifying as vegan.

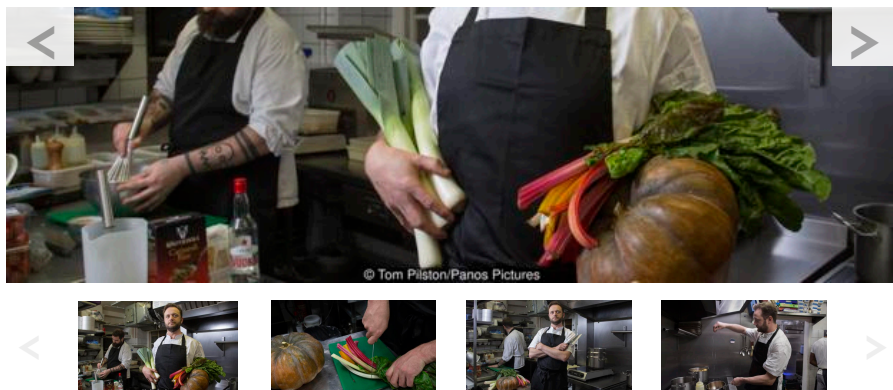


Click or pinch to zoom on mobile.

The reasons behind such personal decisions are varied. “It all started with some pretty sad videos on the internet about farming and how the animals are treated,” says Elena Stepko of Melbourne, Australia, on her choice to go vegetarian and then vegan about four or five years ago while studying zoology. “I’ve been an animal lover all my life,” she adds, and her concern for animals pushed her in that direction, as it has many others. Some do it to lessen their environmental footprint, and others to improve their health. And for Europeans, veganism is now protected as a human right under **Article 9** of the European Convention for the Protection of Human Rights.

But what is the economic impact of shifting your diet away from meat and other animal products? Can it be a smart financial decision, for the individual? And if more people make the shift, how will that change things for the global economy?





(Credit: Tom Pilston/Panos Pictures)

Richard Buckley is head chef at Acorn in Bath in the south west of the UK raised to eat plants by his parents 'before it became fashionable' (Credit: Tom Pilston/Panos Pictures)

It's no secret that growing meat is resource-intensive. The land, fertiliser and water to grow animal feed, as well as fuel for transportation of feed and animals, can add up quickly. One 2018 [study](#) from Switzerland's agriculture research institute Agroscope and the University of Oxford calculated that per 100 grams of protein, beef producers could use as much as 370 square metres of land and 105kg of CO2 equivalents.

That same amount of protein could be produced by beans, peas and other sources of protein from plants using only 1 square metre of land and 0.3kg of CO2 equivalents. It all makes sense when you consider that large amounts of crops are concentrated in the production of smaller quantities of meat. Milk, eggs and cheese are resource-intensive for the same reasons - cheese surprisingly so, in that it can take around 10 pounds of milk to make a single pound of cheese. One [study in 2015](#) suggested that feeding nine billion people using organic agriculture rather than higher-yielding conventional methods might be feasible if they all switched to vegan or vegetarian diets.

Does that translate to smaller food bills for shoppers? Pound per pound, plant-based foods and calories in general are cheaper than those from animals. Studies find that those who are vegan or vegetarian tend to spend less money on groceries than those who eat meat: Economist Janina Grabs, who has studied Swedish consumers' spending habits in detail, [found switching to a vegetarian diet meant savings of about 10% on food and drink costs.](#)



For Europeans, veganism is now protected as a human right under Article 9 of the European Convention for the Protection of Human Rights

That's in line with **earlier work** which showed a reduction of about 15% with a switch to a diet containing less meat and processed foods. "Balanced plant-based diets would generally be cheaper, by up to a third, than average diets in high-income countries," says Marco Springmann, an economist at the Oxford Martin Programme on the Future of Food at the University of Oxford.

But your results may vary - whether going vegan or vegetarian will save you money personally will depend on how you do it. One exception is people who identify as vegans or vegetarians but who still buy meat, perhaps because someone in their household likes a beefburger now and again. **One study** by Jayson Lusk at Purdue University and Bailey Norwood at Oklahoma State University revealed that these people spend more than those who reported themselves as eating meat, who in turn spend more than true vegetarians, no matter their household income level.

One 2018 study calculated that per 100g of protein, beef producers could use as much as 370 square metres of land and 105kg of CO2 equivalents (Credit: Getty Images)

Another wrinkle is that if vegetarian or vegan consumers are buying organic, then they will tend to be spending more than meat-eaters who buy conventionally grown products, and for processed foods, vegan alternatives can be pricy.

For Elena Stopko, who was a strict vegan for two years but now considers herself primarily vegetarian, veganism was surprisingly expensive and time-consuming. She had to drive to one of only a small number of supermarkets in Melbourne that had vegan versions of products. "Packaged foods' vegan alternatives are sometimes double, triple, quadruple the price of the non-vegan ones," she says. "Really small things like tea biscuits—the ones that have butter in them will cost \$2 and the vegan ones will be like \$6." Sticking with simple vegetable curries and so on, rather than trying to recreate versions of meat-based dishes or buying packaged

foods, is the way to make a vegan diet cheaper, she suggests, but it may not appeal to everyone.

Grabs, the economist, says that while switching away from animal products can in some cases save a pretty penny, to keep the environmental gains intact people would have to consider carefully what those extra pennies were spent on.

“The idea is that if I add another dollar to your income, what would you spend that money on?” she explains. If the answer is a carbon-intensive plane ticket or a fuel-inefficient car, then merely switching to a vegetarian or vegan diet might not substantially alter your overall personal carbon footprint. If people went vegetarian and kept everything else the same, they’d use 16% less energy and create 20% less greenhouse gas emissions, she found in her study of Swedish consumers. But she also found that if those who saved money spent the money the same way that higher-income consumers did, the energy savings were essentially eliminated and the greenhouse gas savings dropped to 2%.

“Switching consumption patterns can have a big impact on carbon, but it takes more than that,” she says. Following the money makes it clear that looking at the big picture of someone’s lifestyle matters. “It is a good idea, but it shouldn’t be our entire strategy,” she says of switching to a vegetarian or vegan diet.

Veggie Pride Parade, now in its 11th year in New York starts in the old meatpacking district (Credit: Getty Images)

So what about the impact of eating less meat on national economies when it comes to healthcare, for instance? Consuming less red meat and eating more fruit and vegetables have population-wide effects on deaths from heart disease, cancer and other illnesses. The same goes for lowering the fraction of people who are obese or overweight. We’ve come some distance since the 80s, Richard Buckley, the restaurateur, notes, when his parents were approached by child welfare advocates who said that his vegetarian diet was child abuse and his growth would be stunted (at more than 6 feet and 16 stone, he says that clearly wasn’t a problem).

In [a 2016 analysis in PNAS](#), Springmann and colleagues

calculate what a global dietary shift would mean for health. For some countries, that means people eating more vegetables, while for others it's more vegetables as well as less red meat. The researchers looked at models where people ate a diet that meets current dietary standards, where they shifted to vegetarianism and where they shifted to veganism.

The People for the Ethical Treatment of Animals say it takes over 15,500 litres of water to produce 1kg of beef, versus 1,000 litres to produce 1kg of wheat (Credit: Getty Images)

A staggering saving

When the numbers all shake out, compared to a business-as-usual scenario for 2050, in the vegan and vegetarian cases not only was global mortality reduced by 6-10% but the savings in healthcare and lost work productivity came to \$28 trillion and \$30 trillion a year, a staggering 12 and 13% of projected global GDP.

More than half of all the cost savings occurred in developed countries, where healthcare is expensive, while more than half of the avoided deaths were in developing countries. These models are more like thought experiments to explore what might be possible rather than statements of what is feasible, the researchers clarify. But they are eye-opening all the same.

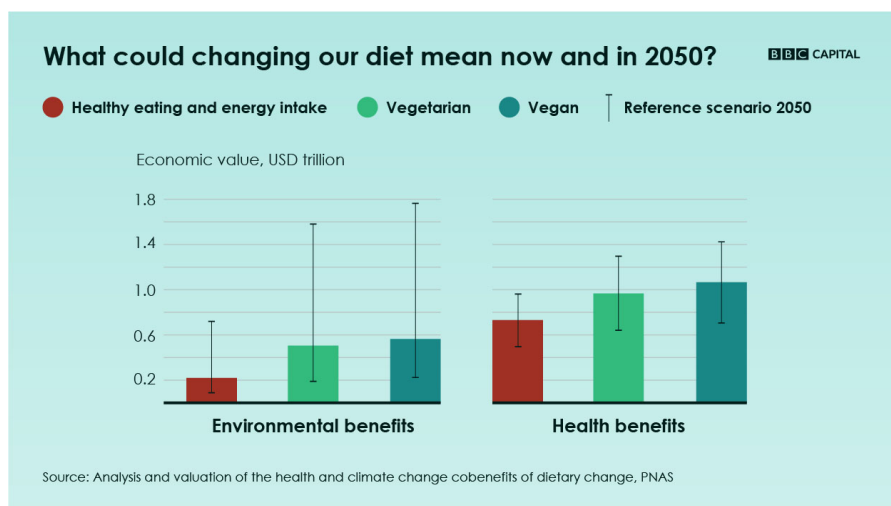


With the global food system behind up to a third of greenhouse gas emissions and likely to rise as meat consumption grows precipitously in places like China, things can't continue as they are

We are not presently growing anywhere near the amount of vegetables and fruit needed, however. "We estimated that just in order to meet the minimum recommendations for fruit and vegetable consumption - the five-a-day recommendation - production would have to increase by 50% by 2050," says Springmann. If consumers do move away from meat-based diets, there will be shifts in the economics of production,

potentially very large ones.

“You might have more employment in fruit and vegetable sectors, but the employment might also rely on seasonal contracts,” Springmann speculates. And for farmers who currently produce meat, a rise in veganism or vegetarianism is likely to be unsettling. “Animal proteins are ‘value-added’ products from the producer side of the equation,” says Jayson Lusk, meaning that they transform relatively low-cost products, like feed, into something that will sell for a higher price.



Click or pinch to zoom on mobile.

Annika Carlsson-Kanyama, who studies the environmental impact of food in the Swedish context, says as demand for meat has declined slightly, the response from producers has not been sanguine. “Clearly in Sweden the farmers’ organisation is feeling this trend as a threat... They are not really outspoken but they have started to produce ads where they show negative pictures on the alternatives to meat, for example,” she says.

However, half of all of Sweden’s meat is imported, she points out, so reducing consumption doesn’t necessarily mean that domestic producers have to feel a hit. And she also notes that meat replacements and new, higher-protein versions of foods like pasta, using flour made from beans, are a growing industry there. “I see it as an opportunity for Swedish agriculture to start producing new products,” she says. Vegan milk made from Swedish oats, for example, made by the company Oatly, is now not only available in-country but abroad.

At any rate, with the global food system behind **up to a third of greenhouse gas emissions** and likely to rise as meat consumption grows precipitously in places like China, things can't continue as they are. We can take heart in the fact that things have already shifted, Carlsson-Kanyama says, since she began her work. Attitudes are changing, just as Buckley has noticed.

"During the 90s, when I talked about my research, some people would always get very irritated," she reflects. "People always got angry with me... they scolded me and so on. But nowadays nobody does that. It's become accepted to say we do really have a lot of evidence that shows that eating less animal products will not only save the environment but also promote our health. I think we've come a long way."

"Of course it's a challenge to those who produce meat and dairy products. Of course that is a challenge," she says. But for the sake of the planet and our health - not to mention pocketbooks - it may be one to consider.

--

*To comment on this story or anything else you have seen on BBC Capital, please head over to our **Facebook** page or message us on **Twitter**.*

*If you liked this story, sign up for the weekly [bbc.com](#) features **newsletter** called "If You Only Read 6 Things This Week". A handpicked selection of stories from BBC Future, Culture, Capital and Travel, delivered to your inbox every Friday.*

Share this article:



Around the BBC

Future

Myth-busting the vibrator's origins

Future

The secrets of endurance athletes

Culture

Film review: If Beale Street Could Talk

Culture

The art of the ménage à trois

Travel

'I'll paint until I can no longer see'

Travel

A New York restaurant unlike any other

Explore the BBC

- Home
- Sport
- Shop
- Travel
- Culture
- Future
- Radio
- CBeebies
- iWonder
- Music
- Make It Digital

- News
- Weather
- Earth
- Capital
- Autos
- TV
- CBBC
- Food
- Bitesize
- Arts
- Taster

Nature

Local

[Terms of Use](#)

[About the BBC](#)

[Privacy Policy](#)

[Cookies](#)

[Accessibility Help](#)

[Parental Guidance](#)

[Contact the BBC](#)

[Get Personalised Newsletters](#)

[Advertise with us](#)

[Ad choices](#)

Copyright © 2018 BBC. The BBC is not responsible for the content of external sites. [Read about our approach to external linking.](#)