

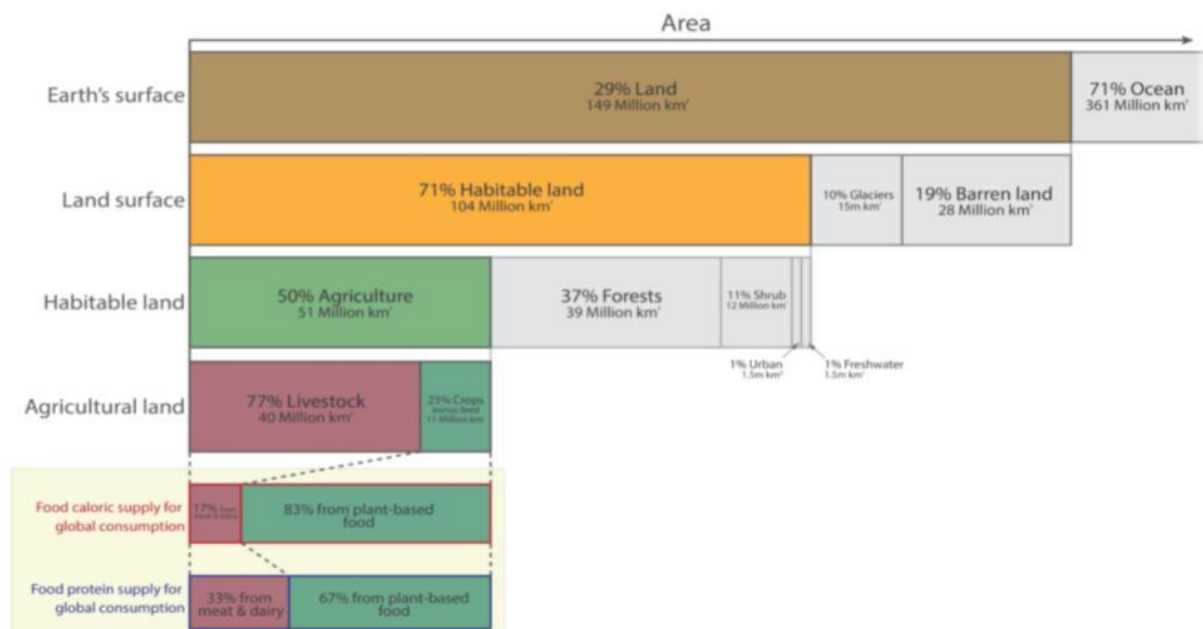
Rethinking What We Eat, Plant and Insect-based Alternatives to Traditional Food

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Last week's blog, concerning the impact of continued consumption of milk on the environment, elicited thoughts from some of those who read it. There was a sense that in our busy worlds we don't tend to think sufficiently about the way in which everything we consume has environmental impact.

Consideration of the way in which all goods, particularly food, is produced, processed and transported to us should become something we are far more aware of. Our decisions should be based on what's good for us and good for the planet.

Milk and the dairy products so many of us take for granted have an environmentally destructive 'footprint' due to the amount of land necessary to produce feed for herds of cows. Producing grain for cows, like all cattle, requires a tremendous amount of land.



Data source: based on UN Food and Agricultural Organization (FAO) Statistics. The data visualization is available at [OurWorldInData.org](https://ourworldindata.org). There you find research and more visualizations on this topic.

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Source: Our World in Data

As the diagram above shows, of the 29% of the earth's surface that is land, only 71% is habitable and half is used for agriculture. Of that half, 77% is dedicated to livestock in either land for grazing or land to grow animal feed, 40 million square kilometres.

World in Data stress that despite taking a huge proportion of land, "meat and dairy only make up 17 percent of global caloric supply and 33 percent of global protein supply."

What the diagram so clearly indicates is that a quarter of the amount of land used for plant-based crops, 11 million square kilometres, supplies 83% of calories and 67% of protein for world's population than the almost four-times larger area used for livestock.

Clearly, there's disparity.

Others are more scathing in their contempt for the way in which so much land is needed to feed animals to produce meat. According to [PETA](https://peta.org) (People for the Ethical Treatment of Animals) in its

article 'Meat and the Environment', it requires "20 times less land to feed someone on a plant-based (vegan) diet than it does to feed a meat-eater."

As suggested when I wrote about milk, the view that something needs to change has gathered momentum recently. The amount of carbon produced by livestock, making it a major contributor to greenhouse gas, means an alternative to the current approach is urgently needed; one ensuring protection of the environment for future generations.

Many believe plants offer the sort of radical solution required to achieve a viable alternative to farmed food including milk, all dairy products and meat. In *Healthy Diets From Sustainable Food Systems* published in 2019, the EAT-Lancet Commission, a non-profit foundation established by the Stordalen Foundation, Stockholm Resilience Centre and Wellcome Trust, advocate the increasing adoption by the developed world of 'green diets'.

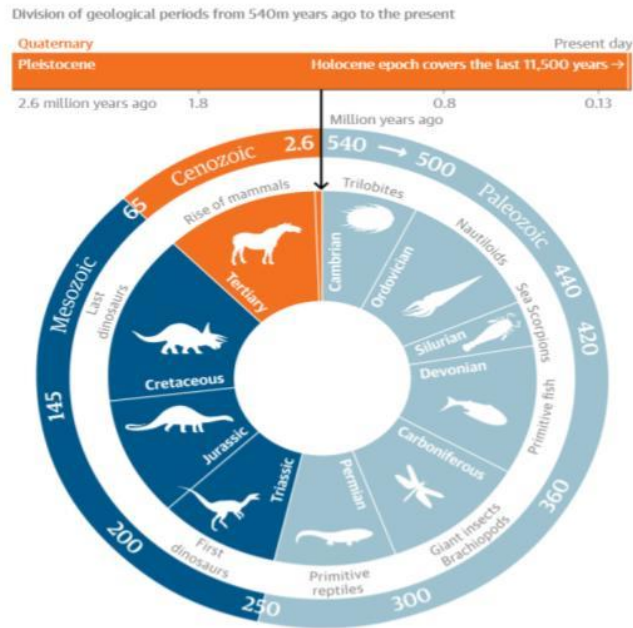
As is stressed by the authors of this report, in addition to the immense environmental threats resulting from continued use of resources to produce farmed food, there are significant health benefits to a plant-based diet. As *Healthy Diets From Sustainable Food Systems* makes explicit, unhealthy eating, frequently the hallmark of advanced countries such as the UK and the US, poses as great a threat to "morbidity and mortality than unsafe sex, alcohol, drug and tobacco use combined".

Like many others arguing the need for urgent action, the authors pull no punches in painting an apocalyptic vista of failure to do enough. Without radical transformation in the global food system, consistent with the UN's Sustainable Development Goals (SDGs) and Paris Agreement, they contend, "today's children will inherit a planet that has been severely degraded and where much of the population will increasingly suffer from malnutrition and preventable disease."

When analysing issues of climate change caused by humanity, it's should be remembered that despite us being around for an extremely short period of time, we've wrought tremendous damage on the planet's ecosystems. Though we are in the epoch known as the Holocene, the 11,500 years since the last ice age during which all human civilisation developed, the period since the second world war has been characterised as being especially harmful. The past 60-70 years has been marked by the rapid rise in greenhouse gases that've led to melting of ice caps and increases in sea level.

The damage suffered by the earth is so intense, it's argued, that the Holocene epoch should be replaced by what's known as the Anthropocene epoch.

Geological periods



Source: Guardian (based on British Geological Survey)

Significantly, in referring to the Anthropocene epoch, the authors of *Healthy Diets From Sustainable Food Systems* stress the importance of any approach to food production being achieved with recognition of the “inextricable link between human health and environmental sustainability”. Understanding the boundaries for each of these, they believe, is essential in creating sustainability for the earth and the total population of 10 billion people who’ll be alive by 2050.



Source: *Healthy Diets From Sustainable Food Systems* (EAT-Lancet Commission, 2019)

Ideally, it’s recommended, a “planetary health plate” would consist by volume of approximately half of vegetables and fruits with the other half being made up of “primarily whole grains, plant protein sources, unsaturated plant oils, and (optionally) modest amounts of animal sources of protein.”

As the diagram below shows, the amount of protein sourced from farming and fishing assumes a small proportion of future global intake and would represent a vast reduction for developed countries such as the UK. We'd be expected to halve the intake of harmful foods currently consumed and eat more fruit, vegetables, legumes and nuts.



Source: *Healthy Diets From Sustainable Food Systems* (EAT-Lancet Commission, 2019)

Such expectations raise considerable challenges. As individuals we'd need to radically alter taste and consumption habits of food. No longer would we eat as much processed and pre-packaged food produced by global companies and sold by large supermarkets. For producers, farmers and, more especially, the large businesses they supply to which, in turn, provide stock to the supermarkets we purchase from, the potential for considerable change is considerable.

The message we can't continue consuming in the way we've become accustomed to is better understood than, say, ten or fifteen years ago. However, for many, the imperative, of feeding their families is based on what's cheapest and most freely available.

For any transition to be successful resulting in a collective move away from animal-based food towards one that's plant-based, requires incentives to consumers, particularly those on low incomes whose situation leads them to making choices based on their limited budget.

With resonance to the green agenda more generally, even those who committed to green food appreciate the need to pay higher prices for plant-based alternatives. Paying double digit premium on vegan products is common. In some cases, products, which may be limited in supply and possibly only available from specialist retailers, may be two or three times more expensive than the traditional meat and dairy-based equivalents.

This is hardly likely to produce the increased demand that will have the cyclical effect of ensuring those in the supply chain react positively by increasing supply which will in turn reduce prices. Significant change by key players is crucial in shaping the mood and providing the basis for transition.

As such the recent announcement by the Co-op of its plan to cut the cost of plant-based food sold in its 2,600 stores is very welcome. As [the Guardian](#) explains, that the Co-op intends to make a "seven

figure investment” in the vegan range it offers, Gro. This could mean that some products, including alternatives for burgers and sausages, will be halved in price. Choice of what to buy would no longer simply be based on what’s cheapest.

The ‘direction of travel’ is certainly positive and, as always, investment seeking opportunity for return is essential. A recent [Financial Times article](#), ‘The battle for the future of milk’, examined the fact that start-ups companies and multinationals are seeking to compete in replacement products achieved through plants that is already worth an estimated \$17 billion (about £12 billion).

The FT article recognises the difficulties confronting those seeking to offer something different. At the outset, as in any technological shift, there’s a need to be price sensitive and expect lower margins whilst tastes shift. Nonetheless, according to experts quoted, as the importance of saving the planet becomes more widely accepted, demand will inevitably increase.

Regardless of high prices currently charged, sales of UK plant-based food exceeded £1 billion last year. Grocery market analyst Kantar calculate that over 13 million UK shoppers purchased meat and dairy-free products in the last 12 months. Such progress, somewhat slower than some would like, represents increasing desire to eat more healthily and in a way that will benefit the planet. Indeed, that plant-based solutions to food are now seen as a viable alternative demonstrates a cultural shift in eating is underway. What was once viewed as radical becomes commonplace.

Such is the basis of societal development. This shows humanity’s ability to respond to crisis with ingenious science-based solutions which, it must sincerely be hoped, offer alternatives more beneficial to our health and the planet than the majority of processed foods developed in recent decades are not.

Intriguingly, shifts in consumption lead us to derive food from a source which, outside of the those living in the Far East, appear as off-putting as it seems radical. As Richard Godwin writing in [the Guardian](#) last week speculated, insects, already eaten after cooking as a matter of course by many hundreds of millions people, could offer another solution to the impending food crisis identified by the authors of *Healthy Diets From Sustainable Food Systems*.

As Godwin, explains, though unlikely we’ll be eating whole insects anytime soon, there is recognition of the fact that insects represent a source of almost pure protein. As such, insects offer a way of creating sustenance that can be processed into forms, similar to plant-based alternatives, which look, and taste, like traditional food.

Though the market sector for edible insects in the west is currently marginal, it’s likely to increase in the next decade as we accept the need to eat food based on sources once regarded as outlandish. It’s notable that Godwin points to the fact that research carried out by supermarket Sainsbury discovered 42% of British consumers were be prepared to consume insect-based food.

This tells us there’s potential for change that will undoubtedly contribute to creating the shifts in our tastes likely to assist in averting the impending crisis we face.

Whether such changes will be sufficient remains to be seen. However, given the magnitude of the problems confronting us in terms of the climate, adequate food supply as well as health and wellbeing, developing alternatives to the food we currently consume is something we simply cannot afford to ignore.

Dr. Steven McCabe is co-editor of *Brexit and Northern Ireland, Bordering on Confusion* (published by Bite-Sized Books, ISBN-13:978-1694447807) and *English Regions After Brexit: Examining*

Potential Change through Devolved Power (published by Bite-Sized Books, ISBN-13: 979-8666953099). His latest co-edited book, ***Exploring the Green Economy, Issues, Challenges and Benefits***, will be published in early Summer. Additionally, 'AI Promised You a Miracle – Life Under 'Greased Piglet' Johnson', will be included as a chapter in a forthcoming book, ***Populism and the Media***, to be published by Abramis Academic Publishing in June.