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Tomato shortage in
the UK is just a taste
of what's to come

OASTHOUSE
VENTURES

Photographer: Christophe Simon/AFP

The great salad shortage highlights a challenge facing many nations around the world: food security.

The lack of tomatoes in UK supermarkets is a little disconcerting when you're used to eating what you want, whenever you want. Thanks to global supply chains, Brits have become accustomed to eating avocados in the depths of winter and spinach at the height of summer. Now, as supermarkets ration cucumbers and bell peppers, our salad days may be over.

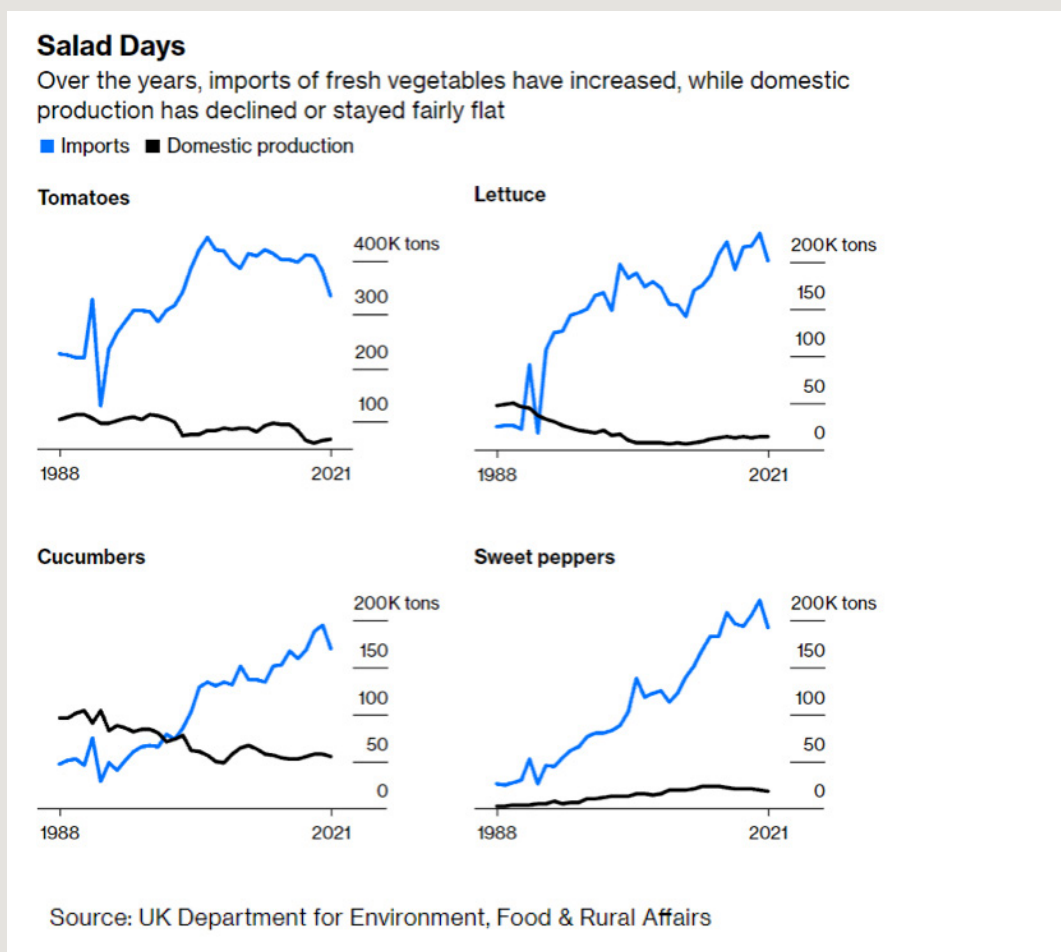
Of course, bare shelves aren't completely unprecedented these days. The great loo roll and pasta shortages of the 2020 pandemic are gone but not forgotten. But the dearth of produce in 2023 may just be a taste of what's to come as the climate crisis screws up weather patterns around the world.

The UK imports 46% of its food, with self-sufficiency at about 54% in fresh vegetables (tomatoes, though technically a fruit, count as a vegetable here) and just 16% in fruit. This is highly dependent on the season: From December through to March, the nation imports 95% of its tomatoes and 90% of lettuce. When it works, it's great. Some imported foods actually have a lower carbon footprint than the home-grown stuff — a 2009 study found that *importing lettuce from Spain* to the UK during winter results in three to eight times lower emissions than producing it locally.

But the collision of Brexit, the energy crisis and climate change have wrenched salad off the menu for the next few weeks at least.



Crop yields are suffering after a cold snap in Spain and floods in Morocco — and we Brits rely on these countries to feed us in the winter. Meanwhile, high gas prices have put off domestic and Dutch growers from planting in greenhouses over the cold months. Some growers actually found it far more *profitable to sell their gas contracts* than grow food. We're yet to feel the full brunt of Brexit's impact on our food supply chains, as border controls on food coming from the European Union are not due to be introduced until 1 January 2024, but it's striking how supermarkets on the continent have tomatoes and peppers in abundance.



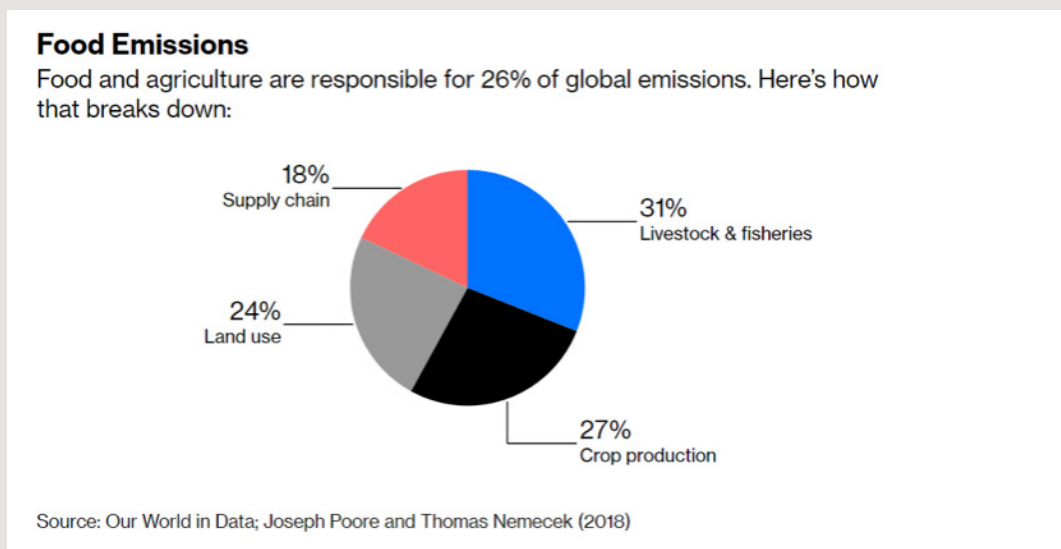
Although the UK's great salad shortage will hopefully be temporary, it highlights the very real global problem of food security.

With the world's food supply built on teetering blocks of super-suppliers (76% of global maize exports come from just four countries, and 86% of the world's soybeans are grown in just three nations, for example) and just-in-time supply chains, it doesn't take much of a shock to cause shortages in even the most



food-secure countries. And you can bet those shocks will start coming faster as the climate crisis increases the intensity and frequency of droughts, floods and other *weird weather events*. In the meantime, natural gas is only going to get more expensive as fossil fuels are eventually phased out, making life harder for growers and farmers, *who are already diversifying away from food* in order to make ends meet.

The other issue, of course, is that agriculture also happens to be one of the leading causes of climate change. From field to supermarket, food accounts for 26% of global greenhouse gas emissions, thanks mostly to land-use change and a proliferation of methane-belching animals.



So, if we're going to build a sustainable, resilient food supply, then we're going to have to change what we eat and how we grow it. Thankfully, that doesn't have to look like *Environment Secretary Therese Coffey's suggestion of "turnips."* There are ways to boost domestic production and move toward net zero at the same time. Take two giant greenhouses in England, covering 70 acres and growing about 12% of the UK's tomatoes. Unlike standard gas-powered greenhouses, these use waste heat from adjacent water-treatment works to warm themselves by way of industrial heat pumps, reducing CO2 emissions by 75%. Future projects by developer *Oasthouse Ventures* plan to capture and use waste carbon dioxide from water plants in the greenhouses as well (to speed up the growth of the tomatoes or other plants, growers increase the amount of CO2 inside).

According to Andy Allen, director of Oasthouse Ventures, there are about 40 potential sites in Britain that could use the same method, recycling waste heat and CO2 to enable the UK to grow much more of its own food — or even flowers



— throughout the year with a fraction of the carbon footprint. Though they're more expensive to build than standard gas-powered greenhouses, the economies of scale, increased yields and better efficiency mean it's more cost-effective in the long term.

This is the kind of innovation we'll need to reach our net zero and food security goals, but the UK isn't making it easy. Last year, the company had to abandon a plan to build two greenhouses between a sewage works and an abattoir in Wrexham, Wales. The local planning office rejected the proposal for reasons related to its location in the countryside and impact on the landscape — grounds that were later found to be unjustified upon an appeal. It was eventually approved, but by then the government's non-domestic Renewable Heat Incentive scheme had ended, meaning the project had to be ditched.

Oasthouse Ventures is now hoping to get planning permission for two other low carbon greenhouse projects in England which, if approved, would produce 54,400 tons of tomatoes a year. In 2021, the UK produced just 68,300 tons, so it'd nearly double the UK's tomato production. But the Wrexham incident has cost a lot of money and time. Allen says the company is now also looking at expanding to the US, citing a more pro-business attitude than in the UK.

It's a frustrating example of how red tape, NIMBYism and a lack of long-term thinking in government is holding back both food security and the net zero transition. Britain needs a radical overhaul of its land use, food and planning strategies, and quickly.

There are plenty of other solutions that the UK, and others, will need to get behind in order to strengthen food security, such as embracing technologies including vertical farming, precision fermentation and *genetically-modified crops*. Regenerative agricultural methods show promise in improving both yields and biodiversity. Growers have called for a *more reliable workforce* and fairer retail negotiations, as well as investment into better water capture and storage to stave off droughts. The UK is likely to always be dependent on imports, but it could also diversify its suppliers so that when drought hits one region, the risk is mitigated.

This won't be the last time that climate change threatens to empty supermarket shelves, but exciting solutions already exist to mitigate the problem. The government just has to start believing in more than turnips.

