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Dry Run

7–8 minutes

The mega-droughts in Spain and the US are a portent of a gathering global water crisis.

By George Monbiot, published in the Guardian 4th March 2024

There's a flaw in the plan. It's not a small one: it is an Earth-sized hole in our calculations. To keep pace with the global demand for food, crop production needs to grow [by at least 50%](#) by 2050. In principle, if nothing else changes, [this is feasible](#), thanks mostly to improvements in crop breeding and farming techniques. But everything else is going to change.

Even if we set aside all other issues – heat impacts, soil degradation, [epidemic plant diseases](#) accelerated by the loss of genetic diversity – there is one which, without help from any other cause, could prevent the world's people from being fed. Water.

A paper published in 2017 estimated that to match crop production to expected demand, water use for irrigation would have to [increase by 146%](#) by the middle of this century. One minor problem. Water is already maxed out.

In general, the dry parts of the world are becoming drier, partly through reduced rainfall; partly through [declining river flow](#) as mountain ice and snow retreats; and partly through rising

temperatures causing increased evaporation and increased transpiration by plants. Many of the world's major growing regions are now threatened by "[flash droughts](#)", in which hot and dry weather sucks moisture from the soil at frightening speed. Some places, such as the southwest of the US, now in its 24th year of drought, may have [switched permanently](#) to a drier state. Rivers fail to reach the sea, lakes and aquifers are shrinking, species living in freshwater are becoming [extinct at roughly five times](#) the rate of species that live on land and major cities are threatened by [extreme water stress](#).

Already, agriculture [accounts for 90%](#) of the world's freshwater use. We have pumped so much out of the ground that we've [changed the Earth's spin](#). The water required to meet growing food demand simply does not exist.

That 2017 paper should have sent everyone scrambling. But as usual, it was ignored by policymakers and the media. Only when the problem arrives in Europe do we acknowledge that there's a crisis. But while there is understandable panic about the [drought in Catalonia](#) and [Andalusia](#), there's an almost total failure among powerful interests to acknowledge that this is just one instance of a global problem, a problem that should feature at the top of the political agenda.

Though drought measures have [triggered protests](#) in Spain, this is far from the most dangerous flashpoint. The catchment of the Indus river is shared by three nuclear powers – India, Pakistan and China – and several highly unstable and divided regions already afflicted by hunger and extreme poverty. Today, 95% of the river's [dry season flow](#) is extracted, mostly for irrigation. But water demand in both Pakistan and India is growing rapidly. Supply –

temporarily boosted by the melting of glaciers in the Himalayas and the Hindu Kush – will, before long, peak and then go into decline.

Even under the most optimistic climate scenario, runoff from Asian glaciers is expected to peak before mid-century, and glacier mass will shrink by about [46% by 2100](#). Some analysts see [water competition](#) between India and Pakistan as a major cause of the repeated conflicts in Kashmir. But unless a new [Indus waters treaty](#) is struck, taking falling supplies into account, this fighting could be a mere prelude for something much worse.

There's a widespread belief that these problems can be solved simply by enhancing the efficiency of irrigation: huge amounts of water are wasted in agriculture. So let me introduce you to the [irrigation efficiency paradox](#). As better techniques ensure that less water is required to grow a given volume of crops, irrigation becomes cheaper. As a result, it attracts more investment, encourages farmers to grow thirstier, more profitable plants, and expands across a wider area. This is what happened, for instance, in the Guadiana river basin in Spain, where a €600m investment to reduce water use by improving the efficiency of irrigation has [instead increased it](#).

You can overcome the paradox through regulation: laws to limit both total and individual water consumption. But governments prefer to rely on technology alone. Without political and economic measures, it doesn't work.

Nor are other technofixes likely to solve the problem. Governments are planning massive engineering [schemes to pipe water](#) from one place to another. But climate breakdown and rising demand

ensure that many of the donor regions are also [likely to run dry](#). Water from desalination plants typically costs [five or 10 times as much](#) as water from the ground or the sky, while the process requires masses of energy and generates great volumes of [toxic brine](#).

Above all, we need to change our diets. Those of us with dietary choice (in other words, the richer half of the world's population) should seek to minimise the water footprint of our food. With apologies for [harping on about it](#), this is yet another reason to switch to an animal-free diet, which reduces both [total crop demand](#) and, in most cases, water use. The water demand of certain plant products, especially almonds and pistachios in California, has become a major theme in the culture wars, as rightwing influencers attack plant-based diets. But, excessive as the watering of these crops is, more than twice as much irrigation water is used in California to grow forage [plants to feed livestock](#), especially [dairy cows](#). Dairy milk has much [higher water demand](#) even than the worst alternative (almond milk), and is astronomically higher than the best alternatives, such as oat or soya milk.

This is not to give all plant products a free pass: horticulture can make massive [demands on water supplies](#). Even within a plant-based diet, we should be switching from some grains, vegetables and fruit to others. Governments and retailers should help us through a combination of stronger rules and informative labelling.

Instead, they do the opposite. Last month, at the behest of the EU's agricultural commissioner, Janusz Wojciechowski, the European Commission [deleted from its new climate plan](#) the call to incentivise “diversified” (animal-free) protein sources. Regulatory

capture is never stronger than in the food and farming sector.

I hate to pile yet more on to you, but some of us have to try to counter the endless bias against relevance in politics and most of the media. This is yet another of those massive neglected issues, any one of which could be fatal to peace and prosperity on a habitable planet. Somehow, we need to recover our focus.

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