

Ridley: CO2 is greening the Earth - by Matt Ridley

So - why aren't climate alarmists celebrating?

Matt Ridley, 19th June, 2026

According to the BBC, climate change has become more alarming during the 21st century. What they once called global warming they now call global heating; what they once called climate change they now call the climate crisis. If it is a crisis, then official estimates of the damage that climate change has done & will do if the models prove accurate should be easy to obtain. They are not.

The technical term for this damage is 'the social cost of carbon', meaning the net value in dollars of harm done today & in the whole of the future by each tonne of extra carbon dioxide added to the atmosphere. This includes damage to people's living standards, to infrastructure, to peace of mind, to the natural environment, to everything.

Yet here is a strange thing. The British Government, though obsessed with carbon, no longer estimates or considers the social cost of carbon – at all. Its [official position](#) is that "*carbon valuation for policy appraisal no longer uses the social cost of carbon*". It gave up estimating this measure of the net harm from future climate change in 2008.

Why? That's easy: because scientists & economists just could not get the number up high enough to surpass the cost of reducing emissions. As the economists Sir Nicholas Stern & Joseph Stiglitz put it in a [recent paper](#): "*The interim values produced by the Interagency Working Group (IAWG) on the SCC range from \$62 by 2030 to \$85 in 2050 (assuming an average discount rate of 3%) — values far lower than those needed to limit warming to well below 2°C or reach net zero by 2050.*"

Says a former senior UK official: "*It was embarrassing. You see we couldn't find a mitigation policy with an abatement cost even close to the Social Cost, let alone below it.*" Policies that cost more than the damage they are intended to redress do not make sense.

In his eponymous report in 2006, Stern had tried to solve this conundrum by adopting unusually low discount rates, so that damage done 50 years from now is treated as almost as harmful as damage done today. But this was not convincing: in the real world nobody values a pound of harm 50 years hence the same as a pound of harm today. After all, your grandchildren will be much richer than you when they face future harms, according to official projections.

As Bjorn Lomborg has shown, the United Nations expects the average person by 2100 to earn 434% of today's income – reduced from 450% by climate change – so it's a bit harsh to ask today's poor to pay the bills of tomorrow's rich. Posterity can pay posterity's bills.

Stern later tried a [different approach](#), abandoning the social cost of carbon & replacing it with a "*marginal abatement cost*" which "*aims to produce a price pathway that efficiently moves policy & economic activity toward a given target*". In other words, don't estimate the damage, just assume it's big enough to justify the cost of preventing it. Hey presto!

The American government took a different approach. It stuck with the social cost of carbon but bumped it up as high as it could. In 2023, the Biden administration quintupled its estimate of the social cost of carbon in 2030 to \$220 per tonne, assuming a 2% discount. It justified this mostly by referring to a 2017 paper that had reanalysed another set of data on the effect of climate change on agricultural yields, published in 2014. Increasing future crop yield damage was the biggest contributor to the new cost, dwarfing the cost of damage from storms, droughts, sea-level change & other effects.

The 2014 study, which was a meta-analysis of many different studies, had, awkwardly, concluded that the net effect of extra carbon dioxide on crop yields was, & would continue to be, positive, not negative. The [2017 re-analysis](#), done by scientists from California-Davis, Stanford & Purdue universities, reversed that conclusion. This struck the economist Ross McKittrick of the University of Guelph in Canada as peculiar. After all, commercial greenhouses routinely spend money purchasing carbon dioxide to pump into the air inside them, because it boosts the yield of tomatoes, strawberries & everything else.

So McKittrick went back through the studies considered by the meta-analysis, all 1,722 of them, & recalculated the effect on crop yields. He [found](#) that the 2017 reanalysis had omitted 360 perfectly valid sets of data on the effect of carbon dioxide itself on crops & considered climate change alone. He put these data back in & – bingo! – the overall effect of carbon dioxide on crop yields goes from \$100 per tonne negative to significantly positive & will remain so even if the world warms by a highly unlikely five degrees Centigrade.

For example, the 2017 study had found wheat yield would fall by 36.7% with a two-degree warming & rice by 4%; McKittrick corrected that to a rise of 8% & 7% respectively by including the effect of carbon dioxide fertilisation. Yes, you read that right: by leaving out carbon dioxide's direct effect, the previous study had **wrongly** turned net benefit into net harm.

Scores of laboratory studies & so called, FACE studies (free-air concentration experiments) have over the past few decades surprised plant scientists by showing that the 'greening' effect of extra carbon dioxide is large even in forest ecosystems. They had expected other factors such as water & nutrients to be limiting, but no, for many ecosystems & crops, extra carbon dioxide can increase growth rates well beyond this century's probable levels.

Moreover, it has now been [proved](#) beyond all doubt that the world is indeed a greener place than it was 40 years ago thanks to the rise in carbon dioxide in the atmosphere. The numbers are striking. Satellite data show that almost all ecosystems, from the Arctic to the tropics, from desert to rainforest, from farmland to wilderness, have grown greener in the past four decades – by about 15% in 33 years. So have marine ecosystems, whether based on phytoplankton, corals or seaweed: **all are growing faster**.

It may seem surprising that such a slight change in the composition of the atmosphere – from just below 0.03% carbon dioxide to just above 0.04% in four decades – could have such a large effect on the world's ecosystems. But it is no more surprising than that such a small change could affect the world's temperature. Plants must open their

pores – stomata – to inhale CO₂ & in doing so they lose water, so [any increase in CO₂ levels helps them reduce water loss](#).

Moreover, the [greening trend is continuing](#), indeed [slightly accelerating](#), & ingenious analysis shows that the biggest cause is the [increase in carbon dioxide](#) rather than warming, wetting, farming or tree planting – though reforestation is also contributing to global greening & now exceeds deforestation globally. The effect is strongest in arid areas & is huge: equivalent over the course of 33 years to adding an area of green vegetation “*about two-times the size of mainland USA*” in the words of Zaichun Zhu of Peking University. Global greening is, in fact, a more certain scientific fact than global warming, where doubt persists over the relative contribution of man-made & natural causes.

Putting a monetary value on greener forests, with more food for caterpillars & monkeys, is not easy but can be done. Higher crop yields are easier to value. They have a monetary worth in themselves but by reducing hunger, lowering food prices & lowering the amount of land needed to feed the world, they also add materially to human welfare.

Global greening is thus the biggest & most conspicuous effect of rising carbon dioxide emissions.

Remember that the effects of greenhouse gases on much of the climate have so far refused to show up: storms, cyclones & tornados have not grown stronger or more frequent; wild fires are less frequent than in centuries past except where poor land management practices have encouraged them; floods have shown no consistent trend except where deforestation & drainage have made them locally worse; [droughts](#) have slightly declined on a global scale, as warmer oceans release more moisture into the atmosphere.

Heatwaves & sudden downpours are showing a very slight signal of increased intensity but neither is very harmful on a global scale. Note, too, that fatalities caused by all meteorological phenomena are [falling](#), not rising: deaths from famine, flood, fire & storm are down by 96% in a century – from 485,000 per year in the 1920s to 18,362 per year in the 2010s. This is **not** because weather is less dangerous but because we are better at warning, protecting & assisting people.

True, rising sea level as a result of melting glaciers & thermal expansion of sea water is the biggest of the potential costs of carbon dioxide. The rate at which sea level is rising has [accelerated](#) from about 2mm a year in 1992 to 4.5mm a year in 2024 or less than two feet per century. But it will have to accelerate faster than that to do significant harm this century. Most Pacific & Indian Ocean islands are [gaining land from the sea](#), & Antarctica is currently [gaining rather than losing ice](#).

Oh, & do not forget that the warming that results from the greenhouse effect is stronger at night, in winter & in the north. That means it is weaker in the daytime, in summer & in the tropics. The upward trend in daytime temperatures in [tropical regions](#) is small. Far more people live in the tropics than the Arctic, & most are active in the daytime so again the impact of global warming is correspondingly less. Around nine times as many people [die of cold than heat worldwide](#).

An honest accounting of the net effects of carbon dioxide emissions would include the social benefits of carbon, especially global greening's impact on crop yields, land use & natural vegetation; plus the benefits of warming itself, which include less drought & fewer cold deaths.

Beside, global warming has been slower than originally expected. The 1990 [first report](#) of the IPCC predicted 0.3 degrees of warming per decade & the rate of warming since then has been less than [0.2 degrees per decade](#). This fits with recent estimates that climate sensitivity is [lower than previously thought](#), which in itself drastically reduces realistic estimates of the [social cost of carbon](#). Once you do all this, you find that it is impossible to justify the word 'crisis'.

Now compare the small, possibly negative cost of carbon with the large & rising [cost of the green transition](#), especially fuel poverty, indoor air pollution & deforestation in Africa (caused by the West refusing to help Africans replace firewood with natural gas). This must include the environmental impact of the land grab for the unreliaables, resulting in – just one example -- the imminent extinction in the wild of the Great Indian Bustard, caused by wind farms & solar farms (fossil fuels by contrast have caused zero extinctions so far).

But still, you have not finished. You cannot forget the opportunity cost of spending fortunes on climate change while ignoring invasive species, ocean overfishing & other much more urgent environmental threats. Or the cost of stranded assets: blowing up & replacing power stations before the end of their useful lives, wasting useful investment.

Once you take all this into the calculation & if you use reasonable discount rates, it is difficult to get the social cost of carbon as a net harm at all, even in the distant future, let alone make it bigger than the cost of the transition.

The effect of global greening thus trumps the effect of global warming. But to admit as much would threaten the careers of many thousands of activists, politicians, scientists & journalists. So psychologically, they will be very reluctant to admit it.