

Editorial: Climate change is already here. 2020 could be your last chance to stop an apocalypse



(Shonagh Rae)

By [The Times Editorial Board](#) Sep. 15, 2019 7 AM

The world is drifting steadily toward a climate catastrophe. For many of us, that's been clear for a few years or maybe a decade or even a few decades.

But others have known that a reckoning was coming [for much longer](#). A Swedish scientist [first calculated](#) in 1896 that adding carbon dioxide to the atmosphere could lead to warmer global temperatures. By the 1930s, scientists [were measuring the increase](#), and in the late 1960s, they had documented the impact of [melting ice in Antarctica](#). By 1977, [Exxon-Mobil had recognized](#) its own role in the warming of the ocean, the polar ice melt and the rising sea level.

For obvious reasons, Exxon-Mobil launched a massive [public disinformation campaign](#) to muddy the science and downplay the danger. But in retrospect, it needn't have bothered. Because even after the facts became incontestably clear, the world did shockingly little to protect itself. In the first 17 years after the Kyoto protocol committed its signatories to reducing greenhouse gas emissions, global

emissions [continued to rise](#). Decades of studied ignorance, political cowardice, cynical denialism and irresponsible dithering have allowed the problem to grow deeper and immeasurably harder to solve.

A three-part series on climate change

Part 2: [Wealthy countries are responsible for climate change, but it's the poor who will suffer most](#)

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But today, we are at an important turning point. The changing climate is no longer an abstract threat lurking in our distant future — it is upon us. We feel it. We see it. In our longer and deeper droughts and our more brutal hurricanes and raging, hyper-destructive wildfires. And with that comes a new urgency, and a new opportunity, to act.

Climate change is now simply impossible to ignore. The temperature reached a record-breaking 90 degrees in Anchorage this summer and an unprecedented 108 degrees in Paris. We can watch glaciers melting and collapsing on the web; ice losses in Antarctica have tripled since 2012 so that sea levels are rising faster today than at any time in the last quarter-century. Human migration patterns are already changing in Africa and Latin America as extreme weather events disrupt crop patterns, harm harvests and force farmers off their land, sending climate refugees to Europe and the United States.

It's often difficult to attribute specific events to climate change but, clearly, strange things are happening. In India, entire cities are running out of water, thanks, scientists say, to a dangerous combination of mismanagement and climate change. In Syria, the civil war that has killed

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hundreds of thousands of people and displaced more than [11 million](#) is believed by many scientists to have been sparked at least in part by climate-related drought and warming. Closer to home, two invasive, non-native [mosquito species](#) that have the potential to [transmit viruses](#), including dengue, Zika and yellow fever have recently been found in several California cities.

According to NASA, 18 of the 19 warmest years ever recorded have occurred since 2000. The last five years have been the hottest since record-keeping began in 1880. July set an [all-time record](#).

Here's another reason we're at a turning point (at least in the United States): An election is coming.

For three years, Americans have been living under the willfully blind, anti-scientific, business-coddling rule of President Trump, who has stubbornly chosen climate denial over rationality. We now have an opportunity to resoundingly reject his policies by voting him out of office, along with congressional Republicans who enable him. There are plenty of reasons to fight for Trump's defeat in November 2020, but his deeply irresponsible climate policies — including moving to pull the U.S. out of the Paris climate agreement, roll back Barack Obama's emission limits on coal-fired plants, rescind rules governing methane emissions and relax national fuel emission standards — are among the strongest.

It is late — terribly late — for action, but with some luck, perhaps it is not too late to avoid some of the worst impacts of climate change. In nations across the world, people finally recognize climate change as a top or very serious threat, according to the Pew Research Center. In the U.S., even Republican voters — and especially younger ones — are waking up to the realities and dangers of a warming planet.

Fewer and fewer people today doubt the overwhelming scientific evidence: By burning

fossil fuels for energy, humans have added so much carbon (and other greenhouse gases) to the atmosphere that we are changing nature itself, imperiling the delicate interdependence among species and putting our own survival at risk. Scientists say with certainty that we must radically transform how we make and use energy within a decade if we are to have any chance of mitigating the damage.

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But figuring out what must be done at this late stage is complicated. There are a wide range of emissions sources and many ways to approach them, ranging from the microsteps that can be taken by individuals — Do you have to take that car trip? That airline flight? — to the much more important macro-policies that must be adopted by nations.

Globally, 25% of [greenhouse gas emissions](#) today comes from burning fossil fuels to create heat and electricity, mostly for residential and commercial buildings; another 23% is the result of burning fuel for industrial uses. And 14% comes from transportation.

All that burning of carbon fuels needs to end; yet unless policies and politics change dramatically, it won't end. Even in this time of heightened clarity, two-thirds of new passenger vehicles [bought in the U.S.](#) last year were gas-guzzling pickup trucks and SUVs. Those SUVs will [be on the road](#) an average of eight years, and the pickups for more than 13 years, as the time to address the climate problem slips away. Blame for this falls not just on consumers, but also on the manufacturers and the government, which has done too little to disincentivize the driving of gas-powered cars.

In the years since Kyoto, the world has undertaken significant efforts to ratchet down energy consumption, curtail coal burning (the

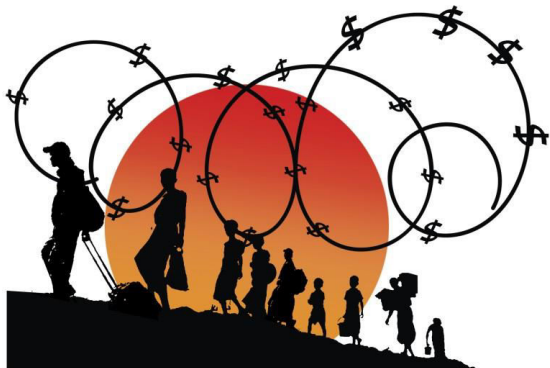
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dirtiest of the fossil fuels) and turn to renewable energy sources, yet overall [emissions have increased](#). Today there are [7.7 billion people](#) on the planet — twice as many as 50 years ago — and more people means more demand for power, especially in fast-growing countries such as India and China. Last year saw a global [acceleration of emissions](#), as total carbon levels in the atmosphere reached 414.8 parts per million in May, the [highest recorded](#) in 3 million years. The richer human society becomes, it seems, the more we poison the world.

[Editorial: Why we wrote our series on climate change](#)

At this point, the mission is no longer to avert or reverse climate change, but to mitigate its worst effects (by continuing to reduce emissions and slow warming) and to adapt to others. Adaptation might mean retreating from coastal developments as the seas rise or elevating roads and installing flooding pumps (as the city of Miami is already doing), or [creating carbon sinks](#) to remove carbon dioxide from the atmosphere, all while continuing to try to curtail further emissions.

This is Part 1 of a three-part series on climate change.



[Part 2: Wealthy countries are responsible for climate change, but it's the poor who will suffer most](#)

None of this is cheap or easy, but neither is the alternative. 2017 ranks as [the costliest year](#) for severe weather events and climate disasters worldwide; in the U.S. there was more than \$300 billion in cumulative damage, according to the National Oceanic and Atmospheric Administration. Obviously, the cost of dealing with inundated coastal areas — home to as many as [650 million people](#), or 8% of the [world's population — will be extraordinarily high](#). And that's only one of the dangers on the horizon. We can expect people to be displaced by drought, river flooding, hurricanes and typhoons. Parts of the world can expect more food shortages, which some experts believe will lead in turn to political instability, civil unrest and mass migration. The U.S. military rightly refers to climate change as a “threat multiplier.”

Fighting the rise in temperature and sea levels will be tough. Our democracy doesn't encourage politicians to take bold stances; our economic system doesn't encourage companies to sacrifice profits for the common good. And we humans are understandably disinclined to live differently or to make sacrifices. But we must stop dawdling and forge ahead if we are to protect ourselves and our planet.



[Part 3: Surviving climate change means an end to burning fossil fuels. Prepare yourself for sacrifices](#)

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Editorial: Wealthy countries are responsible for climate change, but it's the poor who will suffer most



(Shonagh Rae)

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Although the richest, most developed countries in the world are overwhelmingly to blame for the catastrophe of global climate change, they are not the ones who will suffer the most from it. Who will? You guessed it: the poorest countries.

The unfairness of that is self-evident, but so is the truth of it. For more than a century, the largest emitters of greenhouse gases, [in total](#) as well as [per capita](#), have been the big developed nations, most notably the United States and the countries of Europe, which grew their economies by burning fossil fuels and spewing carbon from their factories, homes and cars. Today they still emit carbon and other greenhouse gasses disproportionately into the environment, although other big countries such as China and India have caught up.

Yet even as the wealthy nations drive the world toward ecological disaster, it is clearly the poor

countries that will face the gravest consequences and have the most difficulty coping. For instance, low-lying Bangladesh, already battered by [increasingly powerful cyclones](#), could lose 10% of its territory to the ocean within a few decades, [displacing 18 million people](#).

Political instability and violence, influenced in part by droughts and poor harvests, have already driven [millions of people](#) from their homes in [sub-Saharan Africa](#) and [Central America](#).

A [recent study](#) from Stanford University found that climate change is exacerbating global income inequality between wealthy nations in cooler regions, and poor nations in hotter parts of the world. This is due, at least in part, to the relative inability of poorer countries to pay for the projects necessary to mitigate the effects of climate change, including more extreme weather events and the deterioration of arable land in subsistence economies.

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For instance, Miami Beach is spending hundreds of millions of dollars to raise streets and install pumps in preparation for the expected flooding from rising seas — but Port-au-Prince, Haiti, only 700 miles away, simply doesn't have the resources for such projects.

A report released last week found that extreme weather displaced 7 million people from their

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homes during the first half of 2019, especially in Asia and Africa. That set a new record, but researchers warned that the number of such events would increase as the climate continues to change.

So whose problem is this to fix? The simple answer, of course, is that the responsibility for mitigating climate change belongs to all of us: A global problem requires a global solution. We must all change our behavior and our policies.

But the effort must be led by the nations that reaped so many of the benefits of economic development and increased wealth through industrialization for so long. The poorest countries in the world need help finding the money, resources and technology to move toward a sustainable future without plunging themselves much further into crushing poverty and inequality. The richer countries, though they will have enormous costs of their own, have a moral obligation to step up.

The call for “climate justice” is not new. In 2010 and then again at the 2015 Paris agreement on climate change, wealthier nations [pledged to donate](#) to the so-called Green Climate Fund, building up to \$100 billion per year by 2020. The fund was created under the auspices of the United Nations to help developing countries reduce the emissions that lead to climate change and adapt to the inevitable effects of it that are already underway. The goal of the fund is to use “public investment to stimulate private finance” for climate-related projects. It is governed by a board of representatives from 24 nations.

But in 2018, Oxfam found that the donor nations had fallen behind in meeting their pledge. The organization’s senior climate change policy advisor called the money moving from rich countries to the least developed and most vulnerable “sadly inadequate.” We would add: shameful. While the world burns, the politicians and bureaucrats fiddle.

So far, donor nations have coughed up only \$10.3 billion and the Green Climate Fund has

committed \$5.2 billion of that to [111 projects](#) around the world. President Trump, true to form, has vowed to “terminate” American contributions to the fund; to date, the U.S. has only sent \$1 billion of the \$3 billion that President Obama had pledged.

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Further, there is no official mechanism for determining how much different countries should provide. Like a farmer’s roadside stand, the Green Climate Fund seems to be based on an honor system. As the [World Resources Institute noted](#), the initial \$10.3 billion in commitments was “a good start,” but “more accidental than the product of a deliberate and transparent logic.”

Self-preservation demands a much stronger sense of urgency.

Even as they change their own energy policies, the world’s wealthier nations must also help developing countries create sustainable energy grids. We must confront China’s counterproductive practice of building coal-fired power plants in developing nations to curry political influence. We must offer aid and policies to reverse deforestation in the Amazon, Indonesia and other vital forests that remove carbon from the atmosphere.

[Editorial: Why we wrote our series on climate change](#)

The rich nations must help heavily populated low-lying regions — such as India, Bangladesh, Indonesia and Thailand — prepare for the inevitable loss of habitable land, and the resulting human migration that will follow.

We also must help with mitigation efforts. [Bangladesh](#), for instance, needs financial assistance for a program developing a salt-resistant strain of rice, in anticipation of seawater intrusion. African nations, where 600 million people [do not have access](#) to electricity,

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need help creating that power from renewables rather than fossil fuels. Sub-Saharan nations face longer and more severe droughts that will sharply reduce crops; the region needs biotechnology help and investment to create new hybrid crops that can thrive in harsher, drier climates.

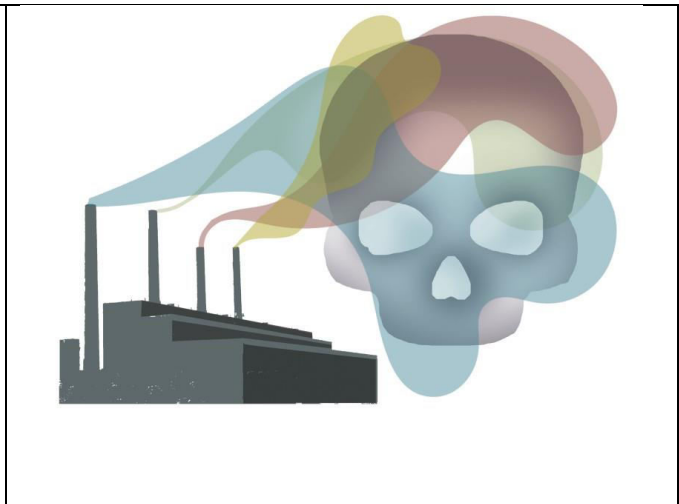
There is no doubt that this will be expensive. But the cost of inaction would be astronomical, both in dollars and in human suffering. All too often, possible solutions to critical problems

face headwinds from people who can't see beyond the dollar signs. But in the case of global warming, we have little choice. If a homeowner knows the roof is leaking, the electric lines are sparking and the foundation is beginning to crumble, he can't rationally decide not to spend the money to fix it. The investment here is in our continued survival — and it must be undertaken collectively with other nations around the world. To turn away would be catastrophic.

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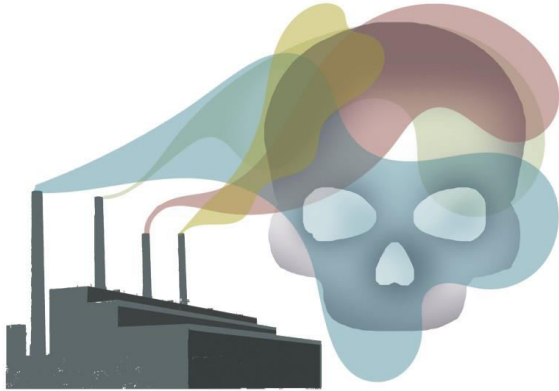


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The evidence, the expert advice, common sense — they all point to a single unavoidable conclusion: Humankind has dragged its feet for so long on the looming crisis of climate change that it is no longer looming but is upon us, and will be impossible to undo.

It would be foolish, of course, to rule out nascent or not-as-yet conceived technological advances that could claw back some of the carbon and other greenhouse gases we've already emitted. But it would be equally foolhardy to count on them. What is required, at a minimum, is a radical change, as quickly as possible, in the way the world produces and consumes energy. The goal is to eliminate most future emissions, especially of carbon, and to "capture" the carbon that *is* emitted so that it does not enter the atmosphere.

Of course that alone won't solve all our planet's climate problems. We will have to deal with the trouble we have already set in motion and which can no longer be averted. That means, for example, crafting approaches to handle the flow of migrants as regions of the world become

uninhabitable, protecting people in low-lying lands from rising oceans, and preparing for the excessive heat, longer droughts, more ferocious hurricanes and other extreme weather events that will, among other things, [threaten the global food supply](#).

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But to keep the bad outcomes to a minimum, we must do what we can to not make the situation worse. That means continuing the fight to reduce emissions. A [2018 estimate](#) put the annual cost to mitigate climate change if the world does nothing to curtail emissions at \$500 billion per year by 2090 — and that's just for the United States. Globally, [one estimate says](#), a temperature rise of 4 degrees Celsius would cost \$23 trillion per year. So we must not let it get to that point.

The best way to keep human-generated carbon out of the atmosphere, where it and other greenhouse gases trap heat and drive up temperatures, is to not create it in the first place. The world has been making progress at this, but not nearly enough. In the United States, for instance, reliance on coal continues to decline, but in many cases, power plants that used to burn coal are now burning natural gas. That's an improvement, yes, but it's insufficient, since burning natural gas also releases carbon. Dishearteningly, total global emissions have actually increased substantially in the last two decades.

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Here's one heartening fact: In April, the amount of energy the U.S. is capable of producing from renewable sources for the first time [surpassed](#) what it can produce from coal, and the gap is expected to widen as more power comes from wind, solar and other renewable sources and more fossil-fuel plants are shut down.

But globally the view is more dour. China has worked to ratchet back on burning coal at home (though it [recently revived](#) some mothballed projects), but it has been [building coal-fired power plants](#) in other countries, hoping to extend its political and economic influence at the expense of the global environment. That needs to stop.

By one estimate, about half of Africa [does not have access](#) to electricity. There and elsewhere, new power generation should not involve coal, but should be achieved with renewable sources. The developed nations must help build power grids in developing nations that give them the power they need without exacerbating our mutual suffering through increased carbon emissions.

Governments must not remain idle as the problem gets worse. For instance, there have been international calls since the [1997 Kyoto Protocol](#) for governments to end [domestic subsidies](#) for fossil fuels, particularly oil. [But they haven't](#). In the U.S., federal and state governments provide, in [one conservative estimate](#), \$20.5 billion a year in such subsidies — including industry-specific tax deductions and exemptions. About 80% of that money goes to the oil and gas industry and nearly all the rest to the coal industry. There are also more difficult to count (and more controversial to eliminate) consumption subsidies, including those that help low-income families pay for the fossil fuels that heat their homes. If poorer people need assistance from government, government should find ways to do so that don't incentivize the continued use of carbon.

[Editorial: Why we wrote our series on climate change](#)

What will our world look like in 15 years if we begin to do what we have to do? Charging stations for motor vehicles as plentiful as gas stations are now. A significant drop in gas-powered vehicles through phased-out production, and government-funded buyback programs to get older cars off the road. Millions of people working to create new power systems; the world needs cheaper and more efficient solar panels, bigger and more efficient energy storage systems, more utility-scale renewable production facilities and more efficient hydro and geothermal technologies. Oil companies will no longer have such disproportionate influence on government policy. Perhaps they will have become energy companies, transitioning away from fossil fuels — or perhaps they will have been superseded by new energy providers.

Sacrifice will be a part of this too. Doing the right thing will require shifts in employment, changes in consumer habits (cutting way back on meat consumption, for instance, reduces global carbon emissions). We will drive less, ride more public transit, use less air conditioning. Costs will undoubtedly rise for goods we've taken for granted.

Is this level of change unachievable? Perhaps. For the moment, at least, the politics are against us. President Trump and his climate-denying supporters have moved the United States backward rather than forward. The recalcitrant oil and gas industry remains a powerful force to be reckoned with, too.

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Yet the world has transitioned before. We thrived on [whale oil](#) until we decimated the whale population and discovered how to make [kerosene from oil](#), and how to [commercialize natural gas](#). This time the transition will have to

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happen a lot faster and will require more than just market forces. We'll need more government intervention through even stronger pacts than the 2015 Paris agreement under which the world's nations agreed (though President Trump has directed the U.S. to withdraw) to try to limit

global temperature rise to significantly less than 2 degrees Celsius above preindustrial levels.

It's clear now that those promises will not be sufficient to avert the effects of climate change. But they provide a model upon which we must build to try to steer us away from, in essence, self-annihilation

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