

Addressing climate change in a post-pandemic world

The coronavirus crisis holds profound lessons that can help us address climate change—if we make greater economic and environmental resiliency core to our planning for the recovery ahead.

by Dickon Pinner, Matt Rogers, and Hamid Samandari

A ferocious pandemic is sweeping the globe, threatening lives and livelihoods at an alarming rate. As infection and death rates continue to rise, resident movement is restricted, economic activity is curtailed, governments resort to extraordinary measures, and individuals and corporations scramble to adjust. In the blink of an eye, the coronavirus has upended the world's operating assumptions. Now, all attention is focused on countering this new and extreme threat, and on blunting the force of the major recession that is likely to follow.

Amid this dislocation, it is easy to forget that just a few short months ago, the debate about climate change, the socioeconomic impacts it gives rise to, and the collective response it calls for were gaining momentum. Sustainability, indeed, was rising on the agenda of many public- and private-sector leaders—before the unsustainable, suddenly, became impossible to avoid.

Given the scope and magnitude of this sudden crisis, and the long shadow it will cast, can the world afford to pay attention to climate change and the broader sustainability agenda at this time? Our firm belief is that we simply cannot afford to do otherwise. Not only does climate action remain critical over the next decade, but investments in climate-resilient infrastructure and the transition to a lower-carbon future can drive significant near-term job creation while increasing economic and environmental resiliency. And with near-zero interest rates for the foreseeable future, there is no better time than the present for such investments.

To meet this need and to leverage this opportunity, we believe that leaders would benefit from considering three questions:

- What lessons can be learned from the current pandemic for climate change?

- What implications—positive or negative—could our pandemic responses hold for climate action?
- What steps could companies, governments, and individuals take to align our immediate pandemic response with the imperatives of sustainability?

What follows is our attempt at providing some initial answers to these questions, in the hope that they will inspire ideas and actions that help connect our immediate crisis response with priorities for recovery.

Potential lessons from the current pandemic

Understanding the similarities, the differences, and the broader relationships between pandemics and climate risk is a critical first step if we are to derive practical implications that inform our actions.

Fundamental similarities

Pandemics and climate risk are similar in that they both represent *physical shocks*, which then translate into an array of socioeconomic impacts. By contrast, financial shocks—whether bank runs, bubble bursts, market crashes, sovereign defaults, or currency devaluations—are largely driven by human sentiment, most often a fear of lost value or liquidity. Financial shocks originate from within the financial system and are frequently remedied by restoring confidence. Physical shocks, however, can only be remedied by understanding and addressing the underlying physical causes. Our recent collective experience, whether in the public or the private sector, has been more often shaped by financial shocks, not physical ones. The current pandemic provides us perhaps with a foretaste of what a full-fledged climate crisis could entail in terms of simultaneous exogenous shocks to supply and demand, disruption of supply chains, and global transmission and amplification mechanisms.

Pandemics and climate risk also share many of the same attributes. Both are *systemic*, in that their direct manifestations and their knock-on effects propagate fast across an interconnected world. Thus, the oil-demand reduction in the wake of the initial coronavirus outbreak became a contributing factor to a price war, which further exacerbated the stock market decline as the pandemic grew. They are both *nonstationary*, in that past probabilities and distributions of occurrences are rapidly shifting and proving to be inadequate or insufficient for future projections. Both are *nonlinear*, in that their socioeconomic impact grows disproportionately and even catastrophically once certain thresholds are breached (such as hospital capacity to treat pandemic patients). They are both *risk multipliers*, in that they highlight and exacerbate hitherto untested vulnerabilities inherent in the financial and healthcare systems and the real economy. Both are *regressive*, in that they affect disproportionately the most vulnerable populations and subpopulations of the world. Finally, neither can be considered as a “black swan,” insofar as experts have consistently warned against both over the years (even though one may argue that the debate about climate risk has been more widespread). And the coronavirus outbreak seems to indicate that the world at large is equally ill prepared to prevent or confront either.

Furthermore, addressing pandemics and climate risk requires the same fundamental shift, from optimizing largely for the *shorter-term performance* of systems to ensuring

equally their *longer-term resiliency*. Healthcare systems, physical assets, infrastructure services, supply chains, and cities have all been largely designed to function within a very narrow band of conditions. In many cases, they are already struggling to function within this band, let alone beyond it. The coronavirus pandemic and the responses that are being implemented (to the tune of several trillion dollars of government stimulus as of this writing) illustrate how expensive the failure to build resiliency can ultimately prove. In climate change as in pandemics, the costs of a global crisis are bound to vastly exceed those of its prevention.

Finally, both reflect “tragedy of the commons” problems, in that individual actions can run counter to the collective good and deplete a precious, common resource. Neither pandemics nor climate hazards can be confronted without true *global coordination and cooperation*. Indeed, despite current indications to the contrary, they may well prove, through their accumulated pressures, that boundaries between one nation and another are much less important than boundaries between problems and solutions.

Key differences

While the similarities are significant, there are also some notable differences between pandemics and climate hazards.

A global public-health crisis presents *imminent, discrete, and directly discernable dangers*, which we have been conditioned to respond to for our survival. The risks from climate change, by contrast, are *gradual, cumulative, and often distributed dangers* that manifest themselves in degrees and over time. They also require a present action for a future reward that has in the past appeared too uncertain and too small given the implicit “discount rate.” This is what former Bank of England Governor Mark Carney has called the “tragedy of the horizon.”¹

Another way of saying this is that the *timescales* of both the occurrence and the resolution of pandemics and climate hazards are different. The former are often measured in weeks, months, and years; the latter are measured in years, decades, and centuries. What this means is that a global climate crisis, if and when ushered in, could prove far lengthier and far more disruptive than what we currently see with the coronavirus (if that can be imagined).

Finally, pandemics are a case of *contagion risk*, while climate hazards present a case of *accumulation risk*. Contagion can produce perfectly correlated events on a global scale (even as we now witness), which can tax the entire system at once; accumulation gives rise to an increased likelihood of severe, contemporaneous but not directly correlated events that can reinforce one another. This has clear implications for the mitigation actions they each call for.

Broader relationships

Climate change—a potent risk multiplier—can actually contribute to pandemics, according to researchers at Stanford University and elsewhere.² For example, rising temperatures

¹ “Breaking the tragedy of the horizon—climate change and financial stability—speech by Mark Carney,” Bank of England, September 29, 2015, bankofengland.co.uk.

² See Andrew Winston, “Is the COVID-19 outbreak a black swan or the new normal?,” *MIT Sloan Management Review*, March 16, 2020; and Rob Jordan, “How does climate change affect disease?,” Stanford Earth, School of Earth, Energy & Environment, March 15, 2019.

can create favorable conditions for the spread of certain infectious, mosquito-borne diseases, such as malaria and dengue fever, while disappearing habitats may force various animal species to migrate, increasing the chances of spillover pathogens between them. Conversely, the same factors that mitigate environmental risks—reducing the demands we place on nature by optimizing consumption, shortening and localizing supply chains, substituting animal proteins with plant proteins, decreasing pollution—are likely to help mitigate the risk of pandemics.

The environmental impact of some of the measures taken to counter the coronavirus pandemic have been seen by some as a full-scale illustration of what drastic action can produce in a short amount of time. Satellite images of vanishing pollution in China and India during the COVID-19 lockdown are a case in point. Yet this (temporary) impact comes at tremendous human and economic cost. The key question is how to find a paradigm that provides at once environmental and economic sustainability. Much more easily said than done, but still a must-do.

What could happen now?

While we are at the initial stages of a fast-unfolding crisis, we can already start seeing how the pandemic may influence the pace and nature of climate action, and how climate action could accelerate the recovery by creating jobs, driving capital formation, and increasing economic resiliency.

Factors that could support and accelerate climate action

For starters, certain temporary adjustments, such as teleworking and greater reliance on digital channels, may endure long after the lockdowns have ended, reducing transportation demand and emissions. Second, supply chains may be repatriated, reducing some Scope 3 emissions (those in a company's value chain but not associated with its direct emissions or the generation of energy it purchases). Third, markets may better price in risks (and, in particular, climate risk) as the result of a greater appreciation for physical and systemic dislocations. This would create the potential for additional near-term business-model disruptions and broader transition risks but also offer greater incentives for accelerated change.

There may, additionally, be an increased public appreciation for scientific expertise in addressing systemic issues. And, while not a foregone conclusion, there may also be a greater appetite for the preventive and coordinating role of governments in tackling such risks. Indeed, the tremendous costs of being the payor, lender, and insurer of last resort may prompt governments to take a much more active role in ensuring resiliency. As for the private sector, the tide may be turning toward “building back better” after the crisis.³

Moreover, lower interest rates may accelerate the deployment of new sustainable infrastructure, as well as of adaptation and resilience infrastructure—investments that would support near-term job creation. And lastly, the need for global cooperation may become more visible and be embraced more universally.

³ María Mendiluce, “How to build back better after COVID-19,” World Economic Forum, April 3, 2020, [weforum.org](https://www.weforum.org).

If past is prologue, both the probability of such shifts and their permanence are likely to be proportional to the depth of the current crisis itself.

Factors that may hamper and delay climate action

Simultaneously, though, very low prices for high-carbon emitters could increase their use and further delay energy transitions (even though lower oil prices could push out a number of inefficient, high-emission, marginal producers and encourage governments to end expensive fuel-subsidy regimes). A second crosscurrent is that governments and citizens may struggle to integrate climate priorities with pressing economic needs in a recovery. This could affect their investments, commitments, and regulatory approaches—potentially for several years, depending on the depth of the crisis and hence the length of the recovery. Third, investors may delay their capital allocation to new lower-carbon solutions due to decreased wealth. Finally, national rivalries may be exacerbated if a zero-sum-game mentality prevails in the wake of the crisis.

What should be done?

In this context, we believe all actors—individuals, companies, governments, and civil society—will have an important role.

For governments, we believe four sets of actions will be important. First, build the capability to model climate risk and to assess the economics of climate change. This would help inform recovery programs, update and enhance historical models that are used for infrastructure planning, and enable the use of climate stress testing in funding programs. Second, devote a portion of the vast resources deployed for economic recovery to climate-change resiliency and mitigation. These would include investments in a broad range of sustainability levers, including building renewable-energy infrastructure, expanding the capacity of the power grid and increasing its resiliency to support increased electrification, retrofitting buildings, and developing and deploying technologies to decarbonize heavy industries. The returns on such investments encompass both risk reduction and new sources of growth. Third, seize the opportunity to reconsider existing subsidy regimes that accelerate climate change. Fourth, reinforce national and international *alignment and collaboration* on sustainability, for inward-looking, piecemeal responses are by nature incapable of solving systemic and global problems. Our experiences in the weeks and months ahead could help inform new paths toward achieving alignment on climate change.

For companies, we see two priorities. First, seize the moment to decarbonize, in particular by prioritizing the retirement of economically marginal, carbon-intensive assets. Second, take a systematic and through-the-cycle approach to building resilience. Companies have fresh opportunities to make their operations more resilient and more sustainable as they experiment out of necessity—for example, with shorter supply chains, higher-energy-efficiency manufacturing and processing, videoconferencing instead of business travel, and increased digitization of sales and marketing. Some of these practices could be expedient and economical to continue, and might become important components of a company-level sustainability transformation—one that accompanies the cost-efficiency and digital-transformation efforts that are likely to be undertaken across various industries in the wake of the pandemic.

When it comes to resilience, a major priority is building the capability to truly understand, qualitatively and quantitatively, corporate vulnerabilities against a much broader set of scenarios, and particularly physical events. In that context, it will also be important to model and prepare for situations where multiple hazards would combine: it is indeed not difficult to imagine a pandemic resurgence coinciding with floods or fires in a given region, with significant implications for disaster response and recovery. The same holds true for public entities, where resilience thinking will have to take greater account of the combination and correlation of events.

For all—individuals, companies, governments, and civil society—we see two additional priorities. First, use this moment to raise *awareness* of the impact of a climate crisis, which could ultimately create disruptions of great magnitude and duration. That includes awareness of the fact that physical shocks can have massive nonlinear impacts on financial and economic systems and thus prove extremely costly. Second, build upon the *mindset and behavioral shifts* that are likely to persist after the crisis (such as working from home) to reduce the demands we place on our environment—or, more precisely, to shift them toward more sustainable sources.

By all accounts, the steps we take in the decade ahead will be crucial in determining whether we avoid runaway climate change. An average global temperature rise above 1.5 or 2°C would create risks that the global economy is not prepared to weather. At an emission rate of 40 to 50 gigatons of CO₂ per year, the global economy has ten to 25 years of carbon capacity left. Moving toward a lower-carbon economy presents a daunting challenge, and, if we choose to ignore the issue for a year or two, the math becomes even more daunting. In short, while all hands must be on deck to defeat the coronavirus and to restart the economy, to save lives and livelihoods, it is also critical that we begin now to integrate the thinking and planning required to build a much greater economic and environmental resiliency as part of the recovery ahead. Q

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