

## THE FUTURE IS THERE: CLIMATE MITIGATION, ADAPTATION, AND DESPERATION

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In early 2020, COVID-19 rose to the top of the global agenda and a year later—that is to say, 123 million cases and 2.7 million deaths later—it is still there. If COVID-19 had not had such a dramatic global impact, however, then considerably more attention might have been focused on the challenges of climate change. Because in 2020—from a record-breaking Atlantic hurricane season, through massive flooding in countries such as the Philippines and Afghanistan and swarms of locusts causing famine in the Horn of Africa, to record-setting fires in Australia and the United States—millions of people around the world experienced devastating and often unprecedented climate-related events. Indeed, even COVID-19 might ultimately fall into this category as analysts are exploring links between climate change and the pandemic. In any case, while the effects of COVID-19 might diminish in the next few years, those of climate change are poised to increase.

Later this year, the Intergovernmental Panel on Climate Change (IPCC) will release its Sixth Assessment Report, a distillation of the best climate science in the world, and it is likely to add considerable support to the fear that we are rapidly headed towards a much warmer world than previously expected. An average increase of 4-5 degrees centigrade now seems plausible to many and virtually certain to some. This would produce a climate reality last experienced some 15 million years ago due to intense volcanic activity that took place over the space of a millennium. Unique to the 21st century is the possibility that in the span of a single lifetime we could move into a climate regime that would be fully outside all human experience, a climate regime that would dramatically transform the world. With sea level perhaps 120 feet or more higher than today, much groundwater contaminated, ice gone from the antipodes and replaced by forest, desert expanding north from Africa into Southern and Central Europe, and unlivable conditions of high temperatures and relative humidity in the equatorial belt, the planet would largely be unrecognizable to a contemporary observer.

In this future scenario, admittedly built on science that is rigorous and compelling but also imperfect, perhaps the most important lesson we can learn from countries and cities in the frontlines of climate change impacts today, countries and cities located mainly between the Tropics, is that if climate mitigation and climate adaptation fail, then the next phase for humankind may well be climate desperation.

Mitigation has three fundamental components: reducing greenhouse gas emissions, increasing carbon storage, and transitioning to more benign, often renewable, forms of energy. Within each of these components is a world of possibility. Emissions, for example, are reduced when demand is curbed, efficiency is improved, carbon is captured and so on, broad strategies which themselves contain many different sub-strategies. But at the end of 2020, PBL, the Dutch equivalent of the US Environmental Protection Agency, which releases the only annual estimate of all (not just CO<sub>2</sub>) greenhouse gas emissions worldwide, reported that, “Global greenhouse gas (GHG) emissions have increased, on average, by 1.1% per year, from 2012 to 2019, which is a

markedly lower growth rate than those seen in the first decade of this century (2.6%, on average).” Lower, yes, but still increasing.

There was some good news at the Climate Ambition Summit held in December 2020, which brought together some 70 world leaders ready to expand or detail their Paris Agreement mitigation commitments. In particular, Chinese President Xi Jinping pledged to decrease China’s emissions to at least 65% of 2005 levels by 2030—a lesson for us in global leadership. Moreover, an additional ten countries promised to achieve net zero emissions, typically by 2050, joining the 25 countries that had already taken this position. Still China was largely alone in announcing ambitious goals for 2030, suggesting many countries do not have short-term commitments in place and may drag their heels for another decade. And the countries of grave climate concern—such as Canada, India and the United States—made no significant pledges at all. Looking beyond our borders, there is certainly movement in other countries on the mitigation front, and they are working within the framework of the Paris Agreement. This makes it very clear where we could fruitfully bring leadership, resources, metrics and targets. Nonetheless, there remains ample support for cynicism about mitigation efforts. The pace of emissions is slowing but the concentration is growing.

According to the United Nations Framework Convention on Climate Change (UNFCCC), “Adaptation refers to adjustments in ecological, social, or economic systems in response to actual or expected climatic stimuli and their effects or impacts.” In this regard, the possibilities for adaptation are limited only by human ingenuity and the laws of physics. In 2019, the Global Commission on Adaptation released a report entitled *Adapt Now: A Global Call for Leadership on Climate Resilience*. The US did not join this prestigious and influential group; the country was present, however, through Bill Gates, one of the Commissioners and a vocal advocate of a more aggressive response to climate change. While the report notes that examples of climate adaptation “are taking root and beginning to spread” worldwide, it concludes that “so far the response has been gravely insufficient.” Among its somber findings, if we do not quickly and generously invest in climate adaptation, 100 million people will be pushed into poverty by 2030. By 2050, 500 million small farms around the world could be adversely affected, and the number of people experiencing water insecurity could grow to 5 billion from today’s 3.6 billion.

There are moral and prudential reasons for making this investment and, according to the report, there are also enormous economic benefits awaiting investors. Specifically, placing \$1.8 trillion into key areas (early warning systems, infrastructure, agriculture, mangrove protection and water) over the next decade could catalyze \$7.1 trillion in ROI. The lessons are also clear—first, the mantle of leadership has shifted to other countries, but, second, concrete action is still inadequate and thus there is another opportunity for the US to add its leadership and resources to the mix.

While both the tone of urgency and the financial analysis are compelling to many—and investors like Frederic Samama, the Deputy Global Head of Institutional Clients at Amundi Asset Management and founder of the Sovereign Wealth Fund Research Initiative, have demonstrated that low-carbon/no-carbon portfolios can dramatically outperform the market—the on the ground reality remains that much of humankind is not adapting quickly enough to the growing challenge

of severe climate-related events. And in this regard, the lesson emerging from the countries currently assailed by these events is a lesson about what climate desperation looks like.

At the end of 2019, a record setting 79.5 million people had been forcibly displaced from their homes and livelihoods, some by war, but the overwhelming majority by climate stresses and shocks—which also amplify the displacement pressures war creates. Peering into the future of population movements is as much art as science, but a growing body of predictions are uniformly alarming and bleak. In its pioneering Groundswell report, the World Bank put climate-related internal migration at 143 million in Sub-Saharan Africa, Latin America and South Asia by mid-century. In 2018, the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES) estimated that 50-700 million people could be displaced by land degradation and climate change by 2050. In a 2019 report, the Secretariat of the United Nations Convention to Combat Desertification (UNCCD) predicted 135 million people could be displaced by drought by 2045. And the 2020 Ecological Threat Register concludes there are about 1.2 billion today who are extremely vulnerable to climate-related impacts. The world has not been able to adequately support and resettle the 79.5 million people surviving in formal and informal settlements today; increased population flows could easily trigger significant health setbacks, poverty, violence and suffering.

I call this climate desperation, the condition that emerges when climate mitigation and climate adaptation fail. Today climate desperation is evident in countries close to the equator where climate impacts are severe and intersect with general conditions of vulnerability such as poverty, weak government and inequality. Examples include Haiti, in the middle of the Atlantic Hurricane Basin, Yemen facing severe drought, the Philippines experiencing an unusual barrage of severe weather events, and small island states such as Kiribati, which has purchased land on the island of Fiji in anticipation of a mass exodus caused by sea level rise. As climate impacts intensify beyond the tropics, moving north, for example into Europe and across Mexico and into the southern United States, they may also intersect with conditions of heightened vulnerability, socio-economic division, and gridlocked government. They may also trigger climate desperation— and a flood of health challenges, displacements, violence and suffering.

Avoiding this scenario requires deepening investments into climate mitigation and adaptation at home and abroad. 2050 is not a lifetime away; it is half a career away.

## REFERENCES

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