



Research Paper

A New Baseline for Greater Collective Action

The Impact of Covid-19 on our Environment and Climate Change

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Covid-19 forced a global reduction of emissions

In the first quarter of 2020, the world was shocked with a global pandemic of historic proportions. Covid-19 started spreading from China to every country across the globe, causing fear, widespread illness, deaths, and resulting in major economic disruptions.

The human toll is yet to be seen, but forecasts point to a one-in-a-generation pandemic. The Economist Intelligence Unit (EIU) estimated that up to 3% of people worldwide could die by the end of this outbreak; this is more than half of the population of the entire Middle East and North Africa (MENA) region¹. Epidemiologists from Imperial College London projected that 2.2 million in the US alone could die by the end of this outbreak, a figure that is higher than the populations of Estonia and Iceland combined. Many nations have already responded with unprecedented lockdowns, including China, Italy, India, Jordan, and some US states. Some countries closed their borders, others imposed curfews, offices and factories took weeks off work, and the global aviation network came to a virtual standstill.

This sudden reduction in all forms of production, transportation, and consumption had an immediate and visible effect on our environment. Images showing a 'healing earth' spread on social media.

This started a global conversation. Does solving climate change require such a drastic shock to our lives? A shock that could cause the death of millions, the destabilization of entire economies, and increased unemployment, and overwhelm poor countries that lack the resources to survive such epidemics. The answer should be no! However, it should be clear that despite the length of time it takes for the impact of each scenario to set in

¹ <https://www.cnbc.com/2020/03/18/coronavirus-will-infect-half-the-global-population-eiu-predicts.html>



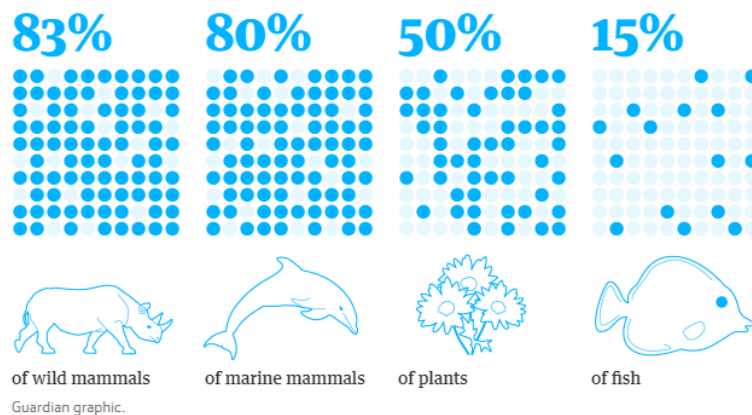
(Covid-19 being immediate and climate change a decade), both have the same negative effect on human beings, with climate change potential being harsher, more devastating, and possibly irreversible.

The Covid-19 pandemic will eventually pass, but it should be a wake-up call to all of humanity on how complex the climate challenge is and how greater global collective action is needed. We should not waste this crisis.

Climate change as an eminent danger

Over the millennia, humans have fundamentally changed the make-up of our planet. In its starker numbers, climate change has already significantly decreased the animal population. Some 10,000 years ago, humans made up 1% of the animal population, while wild animals were at around 99%. In 2011, humans and livestock (non-wild animals which were used to feed humans) accounted for 99% and wild animals only 1%². Since the rise of human civilization, 83% of wild mammals have been lost³.

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However, given the long-term nature of these numbers, climate change is treated by many as a danger whose effects are decades away. This is, unfortunately, a misguided view. In fact, its consequences are affecting hundreds of millions worldwide today, but it is just hard to visualize our destiny in comparison to the short-term impact of Covid-19.

² <https://populationmatters.org/sites/default/files/0817.pdf>

³ <https://www.theguardian.com/environment/2018/may/21/human-race-just-001-of-all-life-but-has-destroyed-over-80-of-wild-mammals-study>



According to the World Health Organization (WHO), air pollution kills seven million people every year. To put that in perspective of today's global panic, as of April 23, 2020, the Covid-19 virus killed at least 183,000 people.⁴ In China alone, the two months of reduced pollution have likely saved the lives of 4,000 children under the age of five and 73,000 adults over the age of 70⁵. However, unlike the virus, air pollution does not draw the same attention because it does not cause immediate deaths, and the media is not reporting the illnesses and mortality on a live, daily basis. In 2018, more than 60 million people suffered due to extreme weather and climate change in Europe, Japan, the US⁶, and some African countries⁷. Hurricanes Florence and Michael inflicted US\$24 billion worth of damage on the US economy as per the World Meteorological Organization (WMO)⁸.

The UN estimates that the world has less than 10 years to prevent a 1.5°C temperature rise above pre-industrial times⁹. This could mean that certain species could be driven to higher altitudes and be exposed to diseases to which they have little to no immunity. Global warming and the destruction of the natural world for farming, mining, and housing have forced more contact between animals and people. This brings an eminent danger to humanity, given that 75% of all emerging infectious diseases come from wildlife¹⁰. According to the Zoological Society of London (ZSL), the emergence and spread of Covid-19 was not only predictable, it was predicted there would be another viral emergence from wildlife that would be a public health threat. A 2007 study of the 2002-03 SARS outbreak concluded that the presence of a large reservoir of SARS-CoV-like viruses in horseshoe bats, together with the culture of eating exotic mammals in southern China, is a timebomb¹¹. Other infectious human diseases that originated from animals were Ebola with a 50% fatality rate, the Nipah virus with 60%-70% fatality rate, in addition to bird flu, Zika, and Middle East Respiratory Syndrome (MERS)¹².

⁴ <https://edition.cnn.com/world/live-news/coronavirus-pandemic-04-23-20-intl/index.html>

⁵ <http://www.g-feed.com/2020/03/covid-19-reduces-economic-activity.html>

⁶ https://library.wmo.int/doc_num.php?explnum_id=5789

⁷ <https://www.theguardian.com/world/2019/mar/19/cyclone-idai-worst-weather-disaster-to-hit-southern-hemisphere-mozambique-malawi>

⁸ <https://public.wmo.int/en/media/press-release/state-of-climate-2018-shows-accelerating-climate-change-impacts>

⁹ <https://www.theguardian.com/environment/2018/oct/08/global-warming-must-not-exceed-15c-warns-landmark-un-report>

¹⁰ <https://www.ncbi.nlm.nih.gov/pubmed/11516376>

¹¹ <https://www.theguardian.com/world/2020/mar/25/coronavirus-nature-is-sending-us-a-message-says-un-environment-chief>

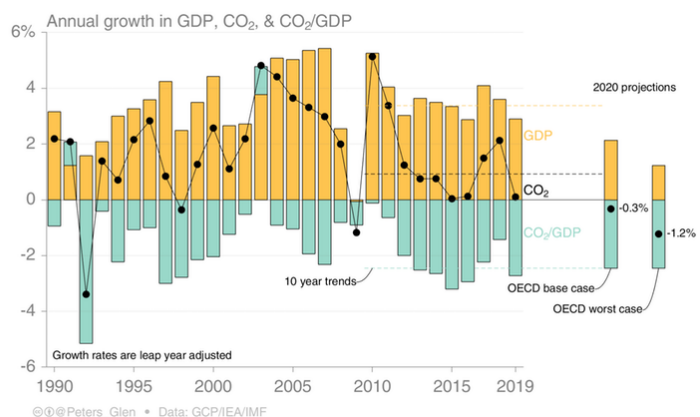
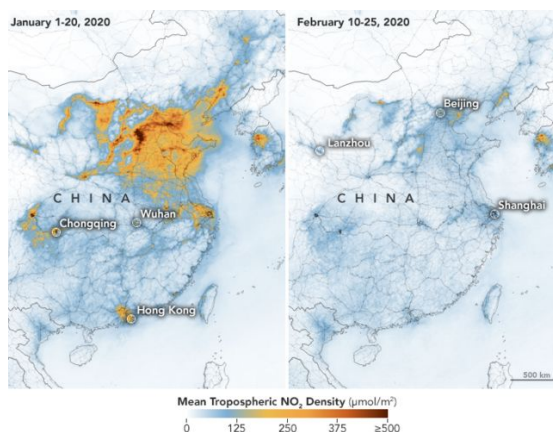
¹² <https://www.theguardian.com/world/2020/mar/25/coronavirus-nature-is-sending-us-a-message-says-un-environment-chief>



It took a global pandemic to reduce air pollution, what can we make of that?

The coronavirus has caused global economies to shut down and, at the time of writing, more than half of the world's population is under some form of restrictions. India, China, France, Italy, New Zealand, Poland, the GCC region, and the UK have implemented the world's largest mass quarantines. Saudi Arabia has put the two holy cities (Mecca and Madinah) on lockdown too¹³ for the first time in history. Schools and universities have closed, and many countries have adopted work from home and social distancing policies. In Jordan, after several days of complete lockdown, the government has decided to allow citizens between the age of 16 and 60 to visit small local grocery shops, bakeries, and pharmacies, although not by car and not in groups¹⁴. Russia has imposed a paid 'stay at home' holiday¹⁵. Almost all global travel plans have been shelved, major events (including the Intergovernmental Panel on Climate Change) are either being canceled or moved to virtual platforms¹⁶, and large global gatherings, like the Tokyo Olympics, have been delayed for a year.

This shutdown of most human production and transport activities has caused carbon dioxide (CO₂) emissions to decrease in several countries around the world. Such a drop has not been witnessed since the financial crisis in 2009. The Organization for Economic Co-operation and Development's (OECD's) post-coronavirus growth projections imply that CO₂ emissions may decline by 0.3%-1.2% in 2020¹⁷. In China alone, the National Aeronautics and Space Administration (NASA) satellite images showed that emissions



¹³ <https://www.businessinsider.com/countries-on-lockdown-coronavirus-italy-2020-3>

¹⁴ <https://www.bbc.com/news/world-middle-east-52020261>

¹⁵ <https://www.businessinsider.com/countries-on-lockdown-coronavirus-italy-2020-3>

¹⁶ <https://www.sciencealert.com/the-pandemic-might-actually-help-us-tackle-climate-change-here-s-how>

¹⁷ <https://oecd.coscope.blog/2020/03/02/tackling-the-fallout-from-the-coronavirus/?print=pdf>



reduced by 25% over the four weeks of lockdown^{18, 19}. The Centre for Research on Energy and Clean Air (CREA) estimates that this amounts to 200 million tons of CO₂, which is equivalent to half of Britain's annual emissions²⁰.

To slow down the spread of Covid-19, WHO estimated that human behavior changes can reduce the spread of the virus by up to 80%, a difference between healthcare sectors being overwhelmed and continuing to function²¹. This promoted a short-term 'experiment' of mass lockdowns, which demonstrated the extent of our impact as humans on the environment. The change in human behavior, supply chains, and transport due to Covid-19 lockdowns already resulted in positive effects on the climate. Companies transformed everyday operations by allowing employees to work from home, including giant international companies like Twitter, Google and Facebook²², as well as major organizations in the Middle East like Majid Al Futtaim. Ipsos, a global leader in market research, has conducted a survey in the MENA region to understand attitudes, behaviors, and future expectations of citizens after the outbreak of Covid-19. Findings showed that the majority of people across the region are spending more time at home, with an increase in ecommerce²³. This is a trend that is expected to continue long after the outbreak has slowed down.

¹⁸ <https://www.atlanticcouncil.org/blogs/new-atlanticist/the-implications-of-the-coronavirus-crisis-on-the-global-energy-sector-and-the-environment/>

¹⁹ <https://www.bbc.com/news/world-asia-51691967>

²⁰ <https://www.nytimes.com/2020/03/27/opinion/sunday/coronavirus-climate-change.html>

²¹ <https://www.who.int/ihr/publications/outbreak-communication-guide/en/>

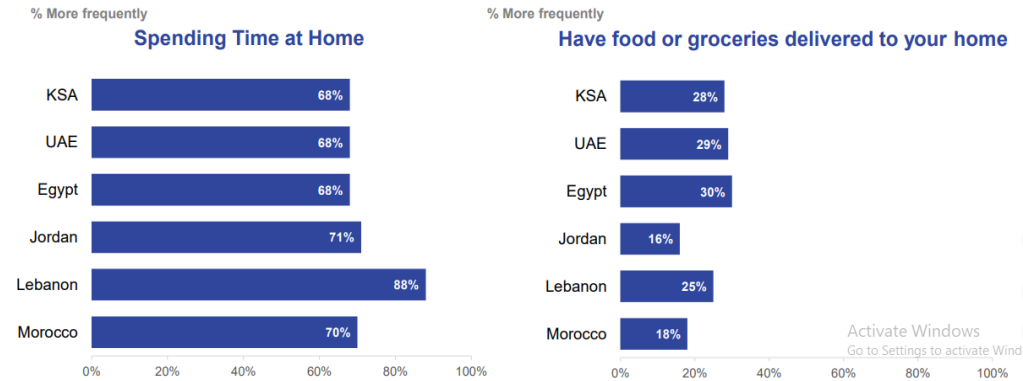
²² <https://www.bbc.com/news/business-51700937>

²³ https://www.ipsos.com/sites/default/files/ct/news/documents/2020-03/covid-19_mena_consumer_sentiment_tracker_wave_1_regional_report_0.pdf



SUBSTANTIAL INCREASES IN TIME SPENT AT HOME. DELIVERY OF FOOD AND GROCERIES ONLY SLIGHTLY UP, LESS SO IN JORDAN AND MOROCCO.

Thinking now about your day to day activities, would you say you are doing each of the following more frequently or less frequently compared to one month ago?



There was also a direct impact on supply chains, which could ultimately positively affect climate change. Many companies around the globe, including Tesla and Apple, are witnessing damages to supply chains (due to overreliance on the supply chain of a single country – China). In fact, 94% of Fortune 1000 companies are seeing supply chain disruptions²⁴. This could have long-lasting impacts on businesses, as they will have to redesign supply chains to increase resilience and minimize such risks. These alterations could contribute to reducing the negative impacts associated with climate change²⁵, as a large number will be related to onshoring.

The virus could also have more direct short- to medium-term impact on many environmental factors, especially as the world heads into an economic recession. This corresponds with past recessions, which reduced energy use, consumption of fertilizers that harm freshwater quality, and greenhouse gas emissions²⁶. However, what could make this recession different are the restrictions on commuting and the anticipated lower levels of global travel, which have already caused improvements in air quality. This has never been witnessed before²⁷. In some US cities, a significant drop in air pollution happened after only five days of reduced air travel and local transport. Particulate matter levels decreased in San Francisco, New York, and Seattle by 40%, 28%, and 32% respectively.

²⁴ <https://fortune.com/2020/02/21/fortune-1000-coronavirus-china-supply-chain-impact/>

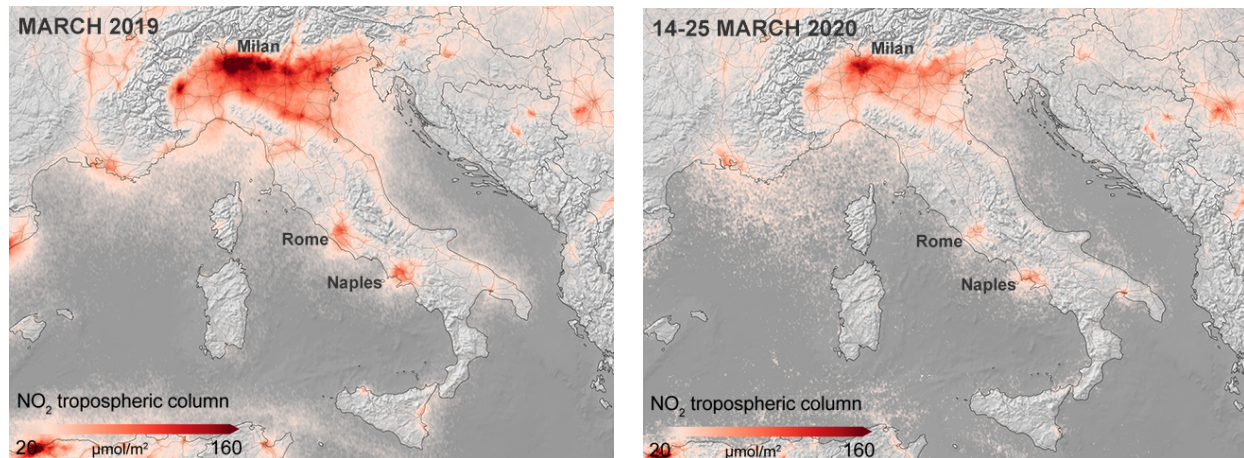
²⁵ <https://www.birmingham.ac.uk/research/perspective/covid-19-climate-change.aspx>

²⁶ <https://www.newsweek.com/coronavirus-major-impact-environment-co2-air-quality-animals-1493812>

²⁷ <https://www.newsweek.com/coronavirus-major-impact-environment-co2-air-quality-animals-1493812>



European and Asian cities are also witnessing the same drop in nitrogen dioxide (NO₂) emissions. The Royal Netherlands Meteorological Institute (KNMI) has produced maps for Spain, Italy, and France²⁸ that are a visual depiction of the difference a few weeks can make.



There are signs visible to the naked eye in some cities like Venice. Several people on social media reported that Venice's canals are clearer and provided pictures too. However, experts say that lack of boat traffic makes sediments stay on the bottom of the canals; traffic stirs them up and makes them float. These canals could be clearer now, but they are not cleaner.

It is not all good news

Covid-19 can be a double-edged sword when it comes to climate change. While the virus has led to a temporary decline in global CO₂ levels, experts warn that toxic chemicals could go up to higher levels than before the epidemic hit once the outbreak is over and countries restart their economies. China has already had a precedent with this bounce-back effect – or, as some call it, 'revenge pollution' – when its government launched a US\$586 billion stimulus package in response to the 2009 financial crisis. In the years following the move, the country witnessed a significant increase in pollution, leading to a public outcry and, ultimately, the development of Chinese government's first national air pollution action plan in September 2013²⁹. China is already indicating that it will modify

²⁸ <https://www.bbc.com/news/science-environment-52065140>

²⁹ <https://edition.cnn.com/2020/03/16/asia/china-pollution-coronavirus-hnk-intl/index.html>



environmental supervision of firms to boost post-coronavirus recovery³⁰. Additionally, current decline in air pollution could also encourage a false impression that global emissions have declined in the long run.

Moreover, the coronavirus outbreak could weaken climate change action. It is already disrupting key UN summits on climate and biodiversity. UN Climate Change has postponed COP26, which represents the culmination of five years of negotiations since the 2015 Paris Agreement³¹. It is worth noting that more than 100 presidents and prime ministers were expected to attend this event in Glasgow, Scotland, in November³², and given the 10-year deadline the UN has set, this meeting was more crucial than ever. Similarly, the EU-China summit, which was supposed to be held in September, was also postponed; this summit was critical to persuade China to take a greener approach³³.

In addition, governments will need to shift the attention away from climate change, at least for some time, to respond effectively and quickly to the pandemic and its negative impact on the economy. The Prime Minister of the Czech Republic has already said that the European Green Deal, a new policy package that commits European Union member states to zero emissions by 2050, should be set aside for the time being³⁴. Climate activists will also find it challenging to meet and organize their demands and actions to advocate for climate change. Meanwhile, climate change research has been affected with the cancelation of research flights to the Arctic and having NASA on mandatory telework. No one knows when research will resume³⁵.

Critically, the trend of transitioning to cleaner energy could be compromised. If governments decide to go back to the status quo after the end of the outbreak, and ignore the risks of climate change, transition to cleaner energy will slow down; after all, “employment trumps environment in politics”³⁶. Leading clean energy analyst BloombergNEF has already downgraded its forecast for global solar demand by 16% this year, as well as battery and electric cars markets, as more attention is given to economic stimulus measures. Solar manufacturers are being met with production and project

³⁰ <https://www.reuters.com/article/us-health-coronavirus-china-environment/china-to-modify-environmental-supervision-of-firms-to-boost-post-coronavirus-recovery-idUSKBN20X0AG>

³¹ <https://www.france24.com/en/20200401-united-nations-climate-change-summit-coronavirus-cop26-glasgow-scotland>

³² <http://www.ipsnews.net/2020/03/time-postpone-2020-climate-summit/>

³³ <https://www.reuters.com/article/us-health-coronavirus-eu-china/eu-china-summit-postponed-by-coronavirus-eu-commission-says-idUSKBN2141D8>

³⁴ <https://www.nytimes.com/2020/03/27/opinion/sunday/coronavirus-climate-change.html>

³⁵ <https://www.nytimes.com/2020/03/27/opinion/sunday/coronavirus-climate-change.html>

³⁶ <https://www.cnbc.com/2020/03/13/coronavirus-could-weaken-climate-change-action-hit-clean-energy.html>



delays³⁷. Coupling this with global oil price decrease due to a price war between Saudi Arabia and Russia, clean energy markets could be hit even harder³⁸. Cheaper energy leads to less efficient use by consumers, and it also depresses electric vehicle markets³⁹. Clean energy firms will face challenges in getting the needed funding in this context. The US has recently launched its US\$2 trillion stimulus bill, the largest fiscal stimulus package in modern American history, and it does not include relief for renewables, such as crucial tax credit extensions for solar and wind⁴⁰.

The lessons we learnt from Covid-19

As tragic as these past few weeks have been, the pandemic has taught humanity crucial lessons how to curb climate change and survive.

“If one of us falls, we all fall.” Humans are neither immune to the coronavirus nor climate change. We are only as safe as the most vulnerable of us. In our modern world, geography will not stop global challenges from spreading. These challenges will require systemic changes, not only by governments or companies but also individuals⁴¹. They will need global collective action, which is, unfortunately, an excuse for inaction. People have not been abiding by public health warnings around the world, which has had, and is still having, a disastrous impact on the spread of the coronavirus. Similar to Covid-19, each ton of greenhouse gas contributes equally to the problem of climate change. Even if one country or continent enacts laws to curb this threat, there will be little benefit unless everyone does the same⁴².

“Prevention is better than cure.” A 2012 report by the OECD stated that implementing climate change mitigation measures sufficient for limiting the temperature increase to 2°C would only slightly affect future economic growth compared to inaction, as illustrated in the figure below⁴³. This is a very small ‘prevention price’ to pay, especially when considering the potential cure we need for the climate change impact. We might simply not be able to afford it when the time comes. Prevention is critical today, and so is early action. Covid-19 has shown us that.

³⁷ <https://www.greenbiz.com/article/coronavirus-dampens-2020-outlook-clean-energy-and-electric-vehicles>

³⁸ <https://www.greenbiz.com/article/coronavirus-dampens-2020-outlook-clean-energy-and-electric-vehicles>

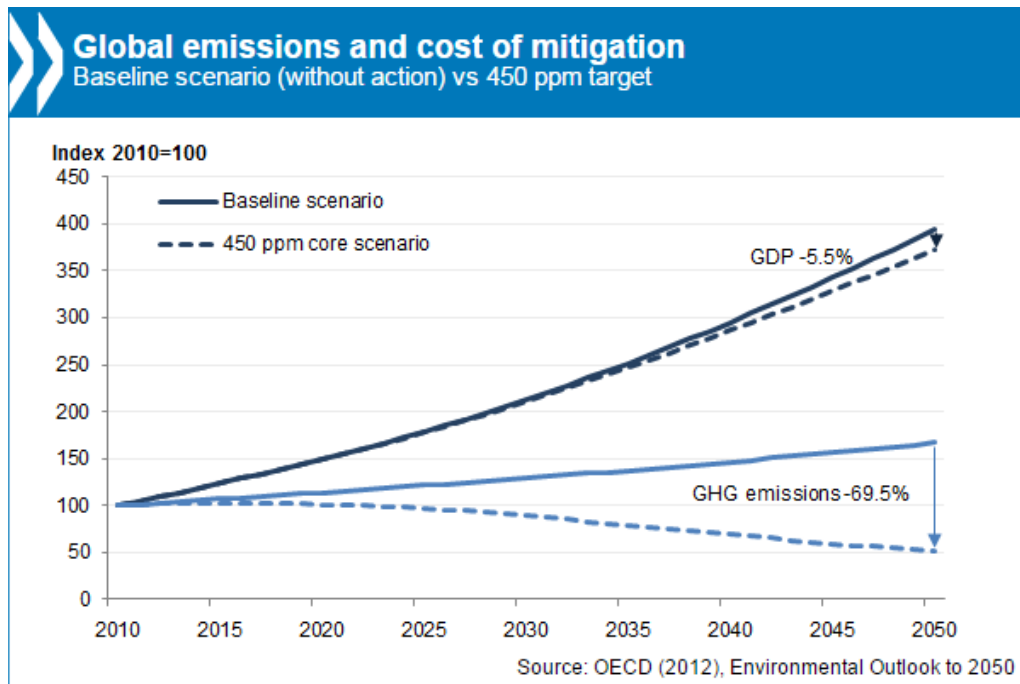
³⁹ <https://www.nytimes.com/2020/03/27/opinion/sunday/coronavirus-climate-change.html>

⁴⁰ <https://www.nytimes.com/2020/03/27/opinion/sunday/coronavirus-climate-change.html>

⁴¹ <https://time.com/5808809/coronavirus-climate-action/>

⁴² <https://foreignpolicy.com/2020/03/27/coronavirus-pandemic-shows-why-no-global-progress-on-climate-change/>

⁴³ <https://www.oecd.org/statistics/climate-change-consequences-of-inaction.htm>



The public needs to understand and learn about the gravity of the situation. Bill Gates, during his 2015 Ted Talk, said: “If anything kills over 10 million people in the next few decades, it is most likely to be a highly infectious virus... We should be concerned. But, in fact, we can build a really good response system.”⁴⁴ The importance of understanding the gravity of the coronavirus has been vital in curbing the spread of the outbreak in some countries. During the SARS epidemic in Hong Kong, people canceled all gatherings and practiced social distancing before the government even asked them to do so; this shows people understood the associated risks⁴⁵. A Bloomberg collation of polls in 2019 revealed global disparities on how people view the importance of tackling climate change. A Eurobarometer survey found that 43% of European Union respondents (minus the UK) are concerned about climate change. The issue was prioritized behind economy and growth, youth employment, and immigration. 69% of Americans and 74% of Canadians believe it is a priority. However, only 21%, 17%, 10%, and 1% of respondents in Australia, Norway, Russia, and Brazil respectively indicated that the environment is a major concern. Climate change did not even feature as one of the priorities in South Korea, Israel, and Argentina. Surprisingly, a 2017 survey showed that

⁴⁴ <https://www.weforum.org/agenda/2020/03/covid-19-climate-change/>

⁴⁵ <https://foreignpolicy.com/2020/03/27/coronavirus-pandemic-shows-why-no-global-progress-on-climate-change/>



90% of Chinese supported the Paris Agreement⁴⁶. With these levels of public awareness and concern, global action is almost impossible.

The power of global focus. If governments can take extreme actions to shut down workplaces and restrict movement, surely they can take similarly drastic steps to change how we produce and consume energy. Measures do not have to be as abrupt or as severe, but concerted global action is indeed possible. The coronavirus showed us a level of global coordination that has not been witnessed before, whether from governments, institutions, or social networks. With similar actions, nothing is impossible.

Trust the experts. People from across the globe are anxious to hear about new remedies to fight the coronavirus and the advice of epidemiologists to prevent them from getting infected. Likewise, governments and individuals need to start listening to climate change experts and join the fight to ‘flatten the curve’ of a certain future threat if no action is taken.

Change behaviors. The world has acknowledged that people will need to change their behaviors to curb the number of cases infected with Covid-19. This ranges from avoiding handshakes and working from home to using bikes to commute from one place to another. This presents a great opportunity for a larger shift to a ‘greener’ behavior too.

We have a baseline! The world now has a new baseline for what we can achieve. Governments and individuals understand the power of technology and online presence in telecommunication, education, retail, and other sectors⁴⁷. This opens many future opportunities to address climate change.

We can, and should, imagine options for a sustainable future

“We’ve seen all too terribly the consequences of those who denied warnings of a pandemic. We can’t afford any more consequences of climate denial. All of us, especially young people, have to demand better of our government at every level and vote this fall.” (Former US President Barack Obama’s Twitter, March 31, 2020). As governments are designing stimulus packages to tackle the economic downturn due to Covid-19, we should advocate for these to be green packages. All homes and businesses should be insulated, creating jobs, cutting fuel poverty, and reducing emissions⁴⁸; electric car charging points can be mandated across all countries; single-use plastics can be banished forever; cities should be rewired for walking; renewable energy could be doubled; clean air should be a

⁴⁶ <https://www.bloomberg.com/news/features/2019-06-26/here-s-how-climate-change-is-viewed-around-the-world>

⁴⁷ <https://www.newsweek.com/coronavirus-major-impact-environment-co2-air-quality-animals-1493812>

⁴⁸ <https://www.theguardian.com/commentisfree/2020/mar/05/governments-coronavirus-urgent-climate-crisis>



basic human right; clean electricity could dominate the energy sector; and the circular economy should become the new economy⁴⁹.

Tackling climate change should not require a global pandemic that kills hundreds of thousands and puts millions in financial and mental distress. The virus should be considered a wake-up call to every government and every individual on this earth. The way we globally cooperate and respond to Covid-19 should determine how we address climate change, which will eventually shape our future. We surely can do better.

⁴⁹ <https://www.weforum.org/agenda/2019/10/future-predictions-what-if-get-things-right-visions-for-2030/>