IJCRT.ORG ISSN : 2320-2882

INTERNATIONAL JOURNAL OF CREATIVE RESEARCH THOUGHTS (IJCRT)

An International Open Access, Peer-reviewed, Refereed Journal

Climate Change under Covid19 Shadow

Sandeep Bhasin, Ph.D., Associate Professor, Amity University Uttar Pradesh

Abstract

With the governments across the globe now trying to register the fall in the economy with whichever method they deem right, the issue of climate change has taken a hit. Even though the internet is abuzz with the positive impact of lockdown on the environment, this paper looks at the past and builds a scenario for the future, taking into consideration the immediate reaction from the governments and the industry.

The Past:

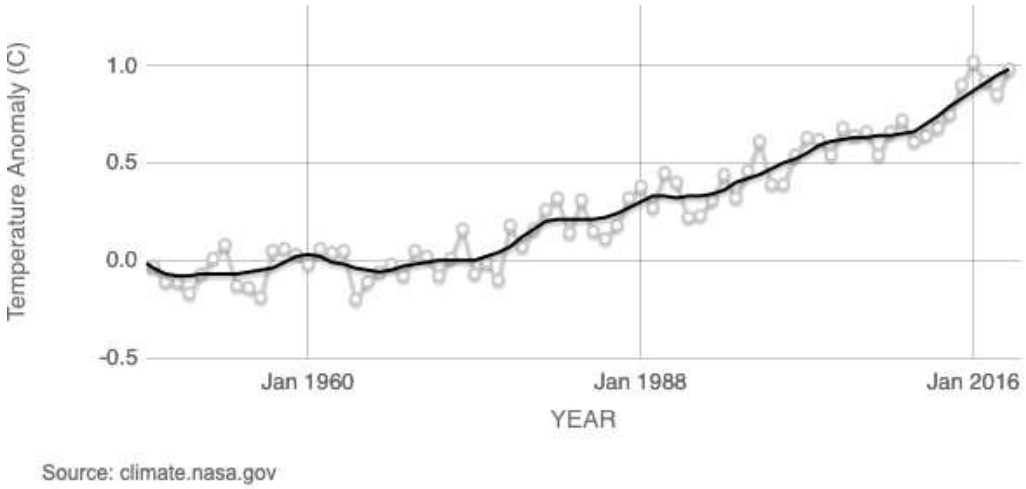
The findings of The Intergovernmental Panel on Climate Change (IPCC), set up by the World Meteorological Organization (WMO) and United Nations Environment Programme (UNEP) to provide an objective source of scientific information on climate change, have been the prime basis for the governments across the globe to plan for the issues related to climate change. The findings of IPCC include:

- Climate change is real and human activities are the main cause,
- The concentration of greenhouse gases in the earth's atmosphere is directly linked to the average global temperature on Earth,
- The concentration has been rising steadily, and mean global temperatures along with it, since the time of the Industrial Revolution
- The most abundant greenhouse gas, accounting for about two-thirds of greenhouse gases, carbon dioxide (CO_2), is largely the product of burning fossil fuels.

According to IPCC study published in April 2020, global warming is *likely* to reach 1.5°C between 2030 and 2052 if it continues to increase at the current rate. Of 105,000 species studied, 96% of insects, 8% of plants and 4% of vertebrates are projected to lose over half of their climatically determined geographic range for global warming of 1.5°C[1].

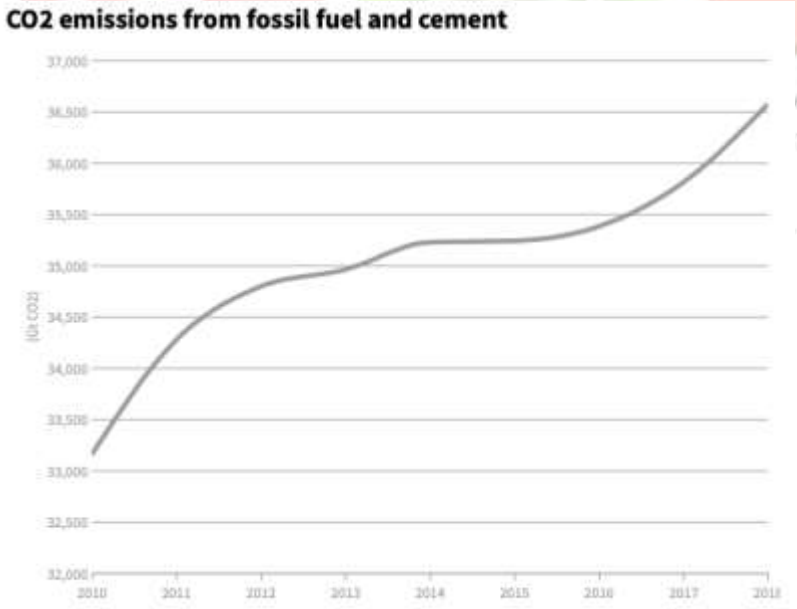
[1] Source: IPCC.cn

This following graph illustrates the change in global surface temperature relative to 1951-1980 average temperatures. Nineteen of the 20 warmest years all have occurred since 2001, with the exception of 1998. The year 2016 ranks as the warmest on record[2]. Since India's independence, the average temperature has gone up by almost 1°C on the surface of earth.



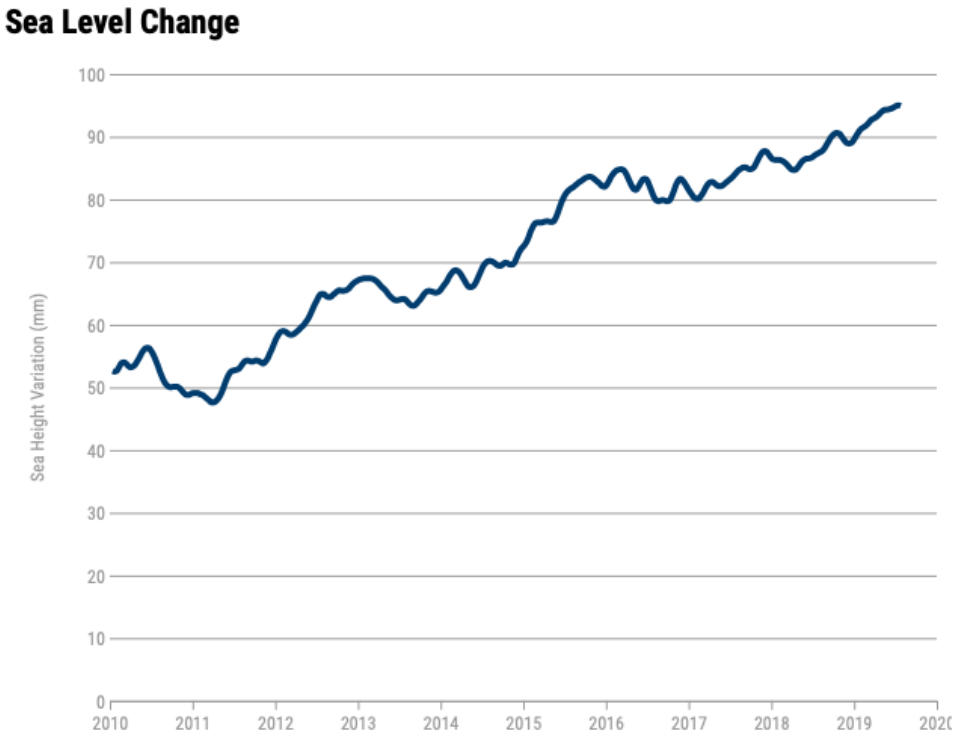
Source: climate.nasa.gov

Leaving aside the change in the temperature, in the last decade, CO_2 emissions from the fossil fuel and cement has gone up by close to 10%. The latest climate science suggests that our best chance of limiting warming to 1.5°C to 2°C will require emissions to peak no later than 2020 and drop to net-zero by mid-century[3]. Scientists have said that to limit global warming to 1.5 degrees C relative to preindustrial levels, global annual emissions would need to fall by about 7.6% each and every year until 2030[4].

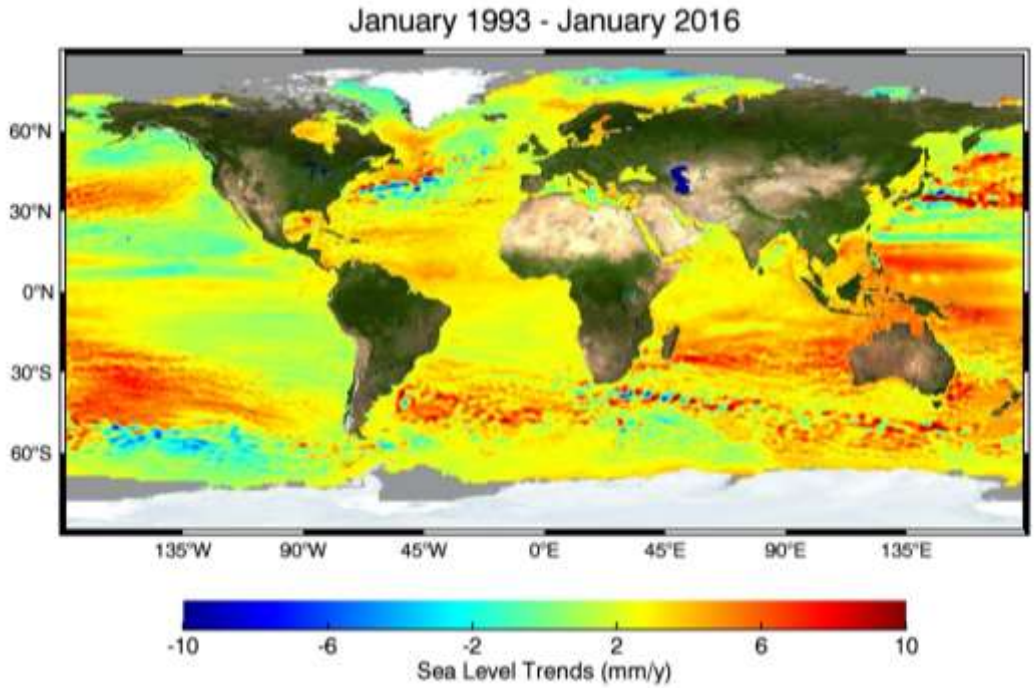


[2] Source: NASA
[3] Source: Climate Watch and World Resource Institute
[4] S&P Global

Global mean Sea level rise was roughly 3.3 millimeters (mm) per year (0.13 inch/year) between 1993 and the present. This trend has been observed to have accelerated significantly the last decade: Between 2010 and 2018, sea level rise grew to about 4.4 mm/year (0.17 inch/year), rising almost 2 inches overall in the past decade. In 2018, global mean sea level was the highest in the satellite record[5].



For over 20 years, satellite altimeters have measured the sea surface height of our ever-changing oceans. This image shows the 20-year trends of rising seas across the globe from 1993 to 2016[6].

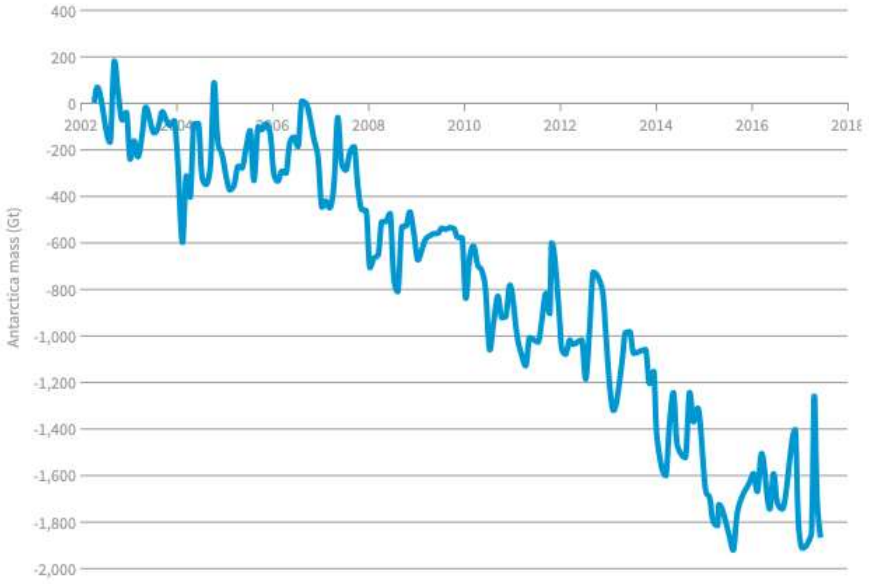


[5] World Resource Institute and NASA

[6] Jet Propulsion Laboratory (JPL), California Institute of Technology, under the NASA MEaSUREs program

In urban settings along coastlines around the world, rising seas threaten infrastructure necessary for local jobs and regional industries. Roads, bridges, subways, water supplies, oil and gas-wells, power plants, sewage treatment plants, landfills are all at risk from sea level rise[7].

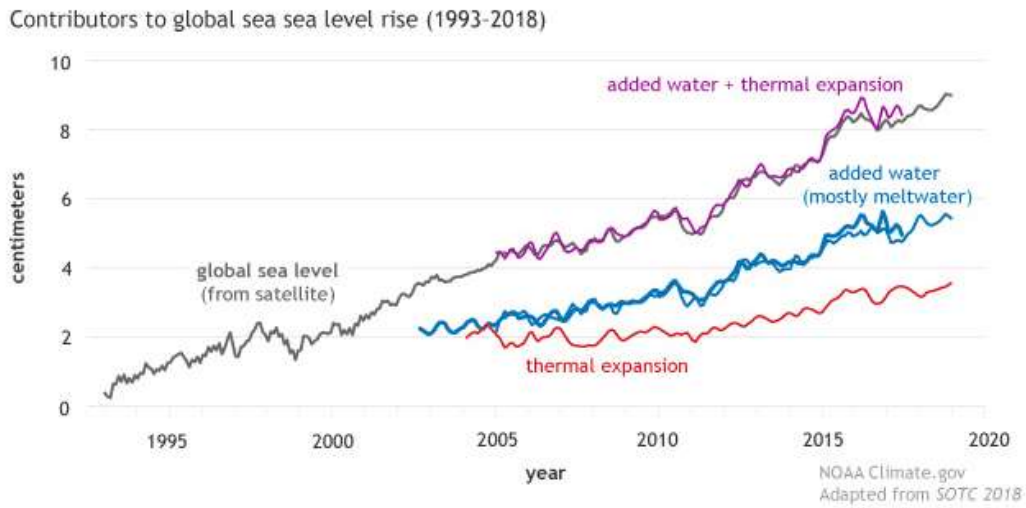
Sea ice extent is smallest in September every year. The rate of September sea ice decline has been 13% per decade relative to the 1981-2010 average. During this past decade, Arctic sea ice minimum reached its lowest level since at least 1979, the year record-keeping began. Ice sheets in Greenland and Antarctica have also been losing mass, with an acceleration of loss in just the last decade.



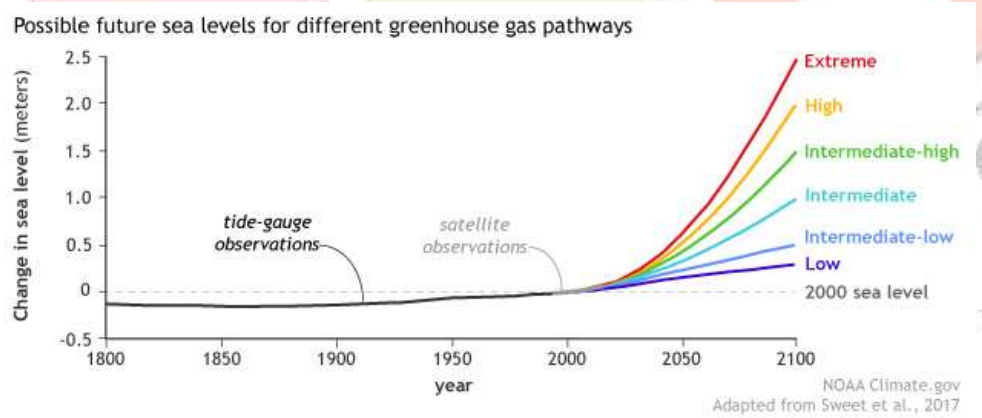
Since the early 1990s, sea level has been measured from space using radar altimeters, which determine the height of the sea surface by measuring the return speed and intensity of a radar pulse directed at the ocean. As global temperatures continue to warm, sea level will continue to rise. How much it will rise depends mostly on the rate of future carbon dioxide emissions and future global warming. The pace of sea level rise accelerated beginning in the 1990s, coinciding with acceleration in glacier and ice sheet melting[8].

[7] Source: climate.gov

[8] Source: Climate.gov



In 2012, The National Oceanic and Atmospheric Administration (NOAA) scientists conducted a review of the research on global sea level rise projections and concluded that even with lowest possible greenhouse gas emission pathways, global mean sea level would rise at least 8 inches (0.2 meters) above 1992 levels by 2100. Both the low-end and "worst-case" possibilities were revised upward in 2017 following a review by the U.S. Interagency Sea Level Rise Taskforce. Based on their new scenarios, global sea level is very likely to rise at least 12 inches (0.3 meters) above 2000 levels by 2100 even on a low-emissions pathway. On future pathways with the highest greenhouse gas emissions, sea level rise could be as high as 8.2 feet (2.5 meters) above 2000 levels by 2100[9]. The scenario so built by NOAA present a depressing scene on climate change over the next eighty years.



Governments across the year have been working towards finding a workable solution to the problem of climate change with negotiating on realistic targets, especially with regards to reduction of CO_2 emissions.

Covid19 in 2020:

The spread of Covid19 across the globe has virtually put a break on commercial activities across the markets. With over 3.56 million affected and over 248,000 dead, this pandemic has virtually shaken the global markets. As the governments across the globe got worried of the spread of Covid19 at community levels, most of the nations opted for partial or complete lockdown, thus completely or partially stopping the commercial activities. India led the biggest

[9] Course: Climate.gov

lockdown, which will last for close to a month and half with limited or no commercial and manufacturing activities to support the economy.

With limited or no commercial and manufacturing activity and roads empty in almost all of the globe, the Nature took a reverse route to repairing itself. In Venice, for example, the water in the canals is running clear, offering glimpses of fish swimming against the current. Around the world, levels of toxic air pollutants are dropping as places go into lockdown in an attempt to curb the spread of Covid19. Emissions of greenhouse gases are following a similar pattern. One example of pollution falling is that satellites looking down on China's large cities have witnessed a dramatic drop since January in levels of nitrogen dioxide, a gas generated by machinery. This fall coincides with the imposition of a countrywide lockdown and travel restrictions[10].

We can observe a similar patterns across the globe, with the spread of the virus. Satellite data from Italy showed a decline in nitrogen-dioxide concentrations. South Korea also saw a drop, starting in mid-February. NASA satellite data showed a 30 percent drop in nitrogen dioxide above the north-eastern U.S. In the northern region of India, Air Quality Index levels improved to their best in decades[11]. Let's take the case of Europe, which has come to a virtual standstill, with the majority of countries in some kind of lockdown. There is a general feeling that this lockdown in major European countries is good for the environment. In fact, when we look at the data from the Sentinel-5P satellite, we can observe that Nitrogen Dioxide air pollution levels have plummeted across Europe since the pandemic.

It helps to look into the past to predict the future. A similar economic downturn happened in 2009 immediately after the world economy experienced recession. In that year, worldwide CO_2 emissions from fossil fuels and cement production dropped by 1.4%. A year later, however, they were growing again by 5.8-5.9%—faster than they had done since 2003. What is to be noted here is that by 2010, annual emissions were greater than they had ever been in the history of the world. We can safely conclude that the financial crisis made little difference to the quantity of CO_2 in the atmosphere. What is to be noted here is that the rise of emissions after the 2008 crisis was caused predominantly by rapid growth of China and India.

We can expect similar trend in the near future, even as the world economy tries to skirt the recession-like situation triggered by the spread of the virus. We can already see governments across the world trying to revive the economy with a financial stimuli for certain industries. Canada, for instance, is preparing a multibillion-dollar bail-out for its oil and gas industry. Airlines across the developed markets have already started asking for a stimuli to help them survive this downturn. Many of the Chinese provinces have announced plans to go on a $3.5 trillion construction-spending spree. The Chinese have already started nudging the prospective car buyers in the country with special

[10] The Economist, March 26, 2020

[11] The Economist, April 11, 2020

discount vouchers. All of this would help specific industries to regain the growth trajectory, but the impact on the policies for climate change may take a hit. The pandemic has also highlighted how even when the world shuts down and fossil fuel usage and air and water pollution plummet as a result, those reductions are not enough to achieve the goals of the Paris Agreement on climate change on a long-term basis.

The U.S. Energy Information Administration has forecast that emissions in the U.S. will decrease by 7.5% in 2020 as the result of the slowing economy and restrictions on business and travel activity related to COVID-19. However, the EIA noted that the sharp reductions may not last long, and as the economy rebounds and people return to normal daily activities energy-related carbon dioxide emissions could increase by 3.6% in 2021[12].

Case in point is the analysis by BloombergNEF, a clean-energy-research firm. The analysis predicts that the solar power initiatives may take a hit in the times to come, as governments are already preoccupied with fighting Covid19 and this might postpone decisions to commission new solar powered plants, which is still in the nascent stage. China has already deferred an auction for the right to build many of the large-sized solar farms. As a result, we can expect a lower capacity installation this year over the past years. The world leaders are so pre-occupied with the virus issue that there is a very high possibility of shifting COP26, the 2020 United Nations Climate Change Conference to 2021.

How have the organizations reacted:

Even as the large and small organizations were working to skirt the recession-like situation emerging from Covid19, a number of companies have made new climate-related pledges during the pandemic. Royal Dutch Shell PLC announced a new net-zero emissions target; the Bank of Montreal committed to source 100% of its electricity usage from renewables; Morgan Stanley pledged to no longer directly finance oil and gas exploration in the Arctic, new coal-fired power plants or thermal coal mines; and Citigroup Inc. said it would stop financing thermal coal projects by 2030. Microsoft Corp. in mid-April committed to conserving more land over the next five years than it currently operates on, according to Axios. Also, some EU leaders aim to establish green-focused coronavirus exit strategies from the pandemic[13].

[12] Source: S&P Global

[13] S&P Global study on Climate change

The Present:

With the spread of Virus and stalling of the industrial activities across the dominant developed and developing nations, the short-term air pollution, which lasts for a few hours or a few days in the atmosphere, has dropped. However, despite this economic slowdown, "greenhouse gases are still being emitted"[14]. The whole accumulation of CO_2 in the atmosphere since pre-industrial times is the actual concern. In other words, the reduced emissions in a particular year are highly unlikely to have an impact on global long-term levels of carbon dioxide. This short-term positive impacts on the climate looks temporary, because these impacts come on the back of a severe economic slowdown. The long term impact of the spread of virus on climate, specifically on the accumulation of CO_2 in the outer atmosphere would depend on the reduction of fossil fuel usage by about 10 percent around the world, and would need to be sustained for over a year to observe any clear reduction in carbon dioxide levels. We need to understand that only long-term systemic shifts in our consumption pattern will change the trajectory of CO_2 levels in the atmosphere. This pandemic gives us an excellent opportunity to relook at our priorities as a policy maker, working consciously towards building and designing an economic stimulus with green packages of renewable energy investments. The key to a better future is by building a better strategy to manage nature. According to me, the most important aspect of the post-COVID recovery plan should be towards designing and implementing ambitious, measurable and inclusive *climate change* framework(s), with a special concentration on keeping nature rich, diverse and flourishing and treating it as a backbone of human's survival.

The Future:

As the manufacturing activities restarts across the globe, we must work towards building an economy that pays due care not only to the betterment of the climate but also help build an ecosystem that takes care of the health of the citizen in general. The outcome of covid-19 for the climate will depend on three factors: The duration of the pandemic, how the government responds to the pandemic, and how the corporates and employees adjust to the new normal.

By a conservative estimate, the citizen, in general will have to live with the threat of Virus for another two years. If we consider the commercial impact of this scenario, it could be substantial enough to change the trajectory on which corporate profitability would move. It may have an impact on the overall consumption pattern followed by the consumers, which would impact the profitability of the corporates. The immediate reaction from the corporates has been on reducing the costs and predominantly, this cost reduction comes from reducing the workforce. With limited or no income to support consumption, we can expect profitability drop in the short-to-mid-term for the corporates. This, in turn would lead to less tax collection, resulting in deficit budget.

[14] Oksana Tarasova, Head of Atmospheric Environment Research Division at the World Meteorological Organization

With virtually no action for almost two months and specific industries facing uncertain future for almost 18 months into the future, the drop of close to 10% in GDP is expected across developed and developing economies[15]. If this becomes a reality, we can expect governments across the globe to give climate change a miss, at least till the time the economics recover. The revival plan, in the present scenario, is expected to be more commercial than ideal, with minimum weightage given to newer initiatives that were designed to have a better, positive impact on the climate. Former US President Al Gore said recently "The scientists have warned us about the coronavirus and they've warned us about the climate crisis, and we've seen the dangers of waiting to late to heed the warnings of the doctors and scientists on this virus. We should not wait any longer to heed their warnings about what we're doing to radically destabilize the earth's climate. And perhaps that connection is obvious, but some things you think are obvious take some time to become [obvious] to elected government officials." Only if responsible governments consider his advice seriously.

Works Cited

AuthorSurname, FirstName. *Title of the Book Being Referenced*. City Name: Name of Publisher, Year. Type of Medium (e.g. Print).

Surname, First, Middle. "Article Title." *Journal Title* (Year): Pages From - To. Print.

[15] The Economist, May 2nd, 2020 issue cover story