

# THE ENVIRONMENTAL MANAGEMENT AND COVID-19: LESSONS FOR THE FUTURE

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## ABSTRACT

*The relations between Covid-19 and environmental management are indeed significant. Both are current global problems. This paper tries to understand how these are connected. The environmental discrepancy has huge impacts on human life and infectious disease, and existing literature has identified the profound relationship between climate change and transmissible diseases. This paper explores the relations between Covid-19 and climate change in three ways. Firstly, it shows that the Covid-19 is a result of climate change and due to Covid-19, environmental degradation has been reduced. Secondly, it examines how Covid-19 has been contributing to environmental harm and finally, the lesson, if any, we can learn from Covid-19 to reduce environmental degradation in the future.*

**KEYWORDS:** Pandemic, COVID-19, Environment, Management, Climate

## INTRODUCTION

Environmental degradation is often considered a global problem. Since environmental problems do not respect national borders (Fair brother, 2016), they have transnational features, as some countries are placed at risk because of environmental pollution occurring in other countries of the world (Peel and Lin, 2019). Realistically, progress on environmental issues can be made globally, despite which sometimes it is difficult to ensure effective international cooperation in such cases (Balint, et al., 2011). There are several reasons behind this. Firstly, the issue of the environment has turned into an ideologically and politically controversial issue (Death, 2013). There is a conflict of opinion on Global South and Global North about the intensity of environmental problems, their nature and the strategy for their resolution, as the environmental priorities create conflict with economic activities. Debates between the global north and south exist in the global environmental politics on issues like whether environmental problems could be solved within the existing socio-economic facilities (Uddin, 2017; Ranganathan, and Balazs, 2015). Despite an alarming prediction on the consequences of failure to resolve climate change challenges, the collective global efforts, therefore, are painfully slow and half-hearted.

Every year since 1974, we have been religiously observing the World Environment Day on 5<sup>th</sup> May, which is the most important event among the environmental programs in the world. The theme for the 2020 Environment Day is Biodiversity. Biodiversity is the very basis of the existence of all life, indicating how the activities and behaviour of an animal influence the behaviour of others. Imbalance in

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biodiversity hampers human life in many ways and huge changes appear in the behaviour of the biological world. Biodiversity imbalance also has a detrimental impact on human health. Corona virus disease (COVID-19) is the main concern of global public health at present, but it has multiple effects on human life. Besides health, COVID-19 has significant and manifold effects on the global economy (vIbn-Mohammed et al., 2020) and the environment (Chakraborty, and Maity, 2020). Natural viruses and diseases have a profound relationship with climate change (Wu, et al., 2016; Parkinson, and Evengård, 2009). Infectious diseases and viruses are related to the environment and biodiversity. Thus, environmental imbalance affects human life in many ways and may give rise to terrible consequences. Environmental scientists show various relationships between the natural pandemic and environmental elements. This paper explores the relations between Covid-19 and climate change in the following ways. Firstly, COVID-19 is the result of climate change. Secondly, it shows that Covid-19 has positive impacts on the environment. Thirdly, it examines how Covid-19 has been contributing to environmental degradation. Finally, it identifies the lesson to be learned from Covid-19 to reduce environmental degradation in future.

## CLIMATE CHANGE AND COVID-19

Human activities are mainly responsible for destroying biodiversity and environmental imbalance (Khairullina et al., 2019). The activities of human beings are responsible for destroying wildlife for meeting human needs, industrialization, etc. Humans destroy the habitations of wildlife, putting the natural environment at threat. The man-made imbalance of the environment poses a serious threat to

human life as well. However, in the real sense, when we destroy the environment, we ignore and neglect the consequences thereof. It would appear that all viruses like the Corona virus are the result of biodiversity destruction (Vidal, 2020; Hassan, Nandy and Roberts, 2020). Major infectious diseases like Ebola, Bird flu, Nipah virus, Rift valley fever, shortness of breath, blue virus, Zika virus and now the corona virus affecting the human body are global phenomena, many of them transmitted through animals. These diseases are related to the adverse behaviour of human beings towards the environment (Liang and Gong, 2017). The outbreak of Ebola in Western Africa was due to wildlife loss caused by the destruction of closed forests for human settlements (Olivero et al., 2017). Avian influenza was linked to poultry farming (Dietze et al., 2018) and the Nipah virus outbreak occurred through pig farming and fruit production in South and Southeast Asian countries (Deka, and Morshed, 2018). The question now is how the COVID-19 outbreak is associated with environmental degradation. Recently, scientists and researchers have conducted many studies to identify the association between COVID-19 and climate change, and the direct and indirect impacts of COVID-19 on the environment (Manzanedo, and Manning, 2020; Newell, and Dale, 2020; Zambrano-Monserrate, Ruano, and Sanchez-Alcalde, 2020; Shakil, et al., 2020; Eroğlu, 2020; SanJuan-Reyes, et al., 2020; Wang, and Su, 2020; Saadat, Rawtani, and Hussain, 2020; Lokhandwala, and Gautam, 2020; Ching, and Kajino, 2020).

However, the exact source of Coronavirus has not been conclusively discovered till now. The controversies regarding the source of this COVID-19 still exist. Some say the virus spread from bats, while others aver that it was created at a biological research centre in the Chinese city Wuhan. Whether it is natural or human-created, the corona virus has an intrinsic relationship with the destruction of biodiversity and imbalance of the environment (Rondeau, Perry, and Grimard, 2020; Khetan, 2020; Lorentzen, et al., 2020). The association of human beings or animals with wildlife bears the risk of expanding potential pathogens, which create viral pandemics affecting human life. Environmentalists claim that the current pandemic is the result of cruel environmental catastrophe caused by human beings (Lorentzen, et al., 2020). Wildlife and biodiversity have gradually decreased because of human-induced adverse environmental changes (Hautier et al., 2015; Garant, 2020). As a result, various alarming changes have appeared in the environmental system and such infectious diseases attack human beings from time to time

Human-made environmental destruction is a regular happening in many ways. Global temperature is also increasing day by day. Animals are forced to find new habitats and to escape high temperatures, which increases the

possibility of various germs hidden in the animals' bodies spreading to the human body. Some may claim that there is no direct evidence of any influence of climate change on the spread of the corona virus. On the contrary, some even argue that many parts of the world obtained some relief from increasing air pollution and environmental disasters due to the Covid-19 pandemic (Lokhandwala, and Gautam, 2020). Though this epidemic is a great threat to human beings, they consider this pandemic as a blessing in disguise for the environment (Muhammad, Long, and Salman, 2020). Covid-19 lockouts have provided the world with fresh air, less carbon emission and freedom for wildlife.

### AFFIRMATIVE EFFECTS OF COVID-19 ON ENVIRONMENT

Though COVID-19 is responsible for the large scale destruction of human lives, economies and societies, it is claimed to have affirmative impacts on the environment, as environmental pollution has reduced considerably (Chakraborty and Maity, 2020). Governments in all countries have imposed strict restrictions on the movement of people. Covid-19 outbreaks have ruined human life and livelihoods, forcing people around the world to stay at home and wildlife too seems to have changed its lifestyle. Governments imposed severe constraints on the movement of people vehicles, and industrial activity at the time of lockdown due to COVID-19 (Zambrano-Monserrate et al., 2020). The outcome of these restrictions has been environmentally incredible. Many studies reveal that environmental pollution, for example, greenhouse gas emissions, water pollution and air pollution have come down considerably due to lockdown (Chakraborty and Maity, 2020; Saadat et al., 2020; Zambrano-Monserrate et al., 2020). Tourist-free sea beaches of Thailand attracted a record number of rare turtles for breeding; Penguins are appearing and loitering on the abandoned roads of South Africa; in Italy, deer and bears have appeared in large cities and towns (Zambrano-Monserrate et al., 2020). Due to the suspension of production and the tourism sector during this pandemic, carbon emission has been reduced drastically; the blue sky has become visible, as the poisonous black smoke emission from industrial cities has vanished. Wastage has been reduced and the canals of Venice are filled with clean water (Saadat et al., 2020). Carbon emissions dropped during the lockdown in many countries in the world, as did air pollution levels in Barcelona, Spain by 50% and black carbon (BC) rates by 45–51% (Tobías et al., 2020), while a drop in carbon emission in China during the lockdown was 25% (Wang and Su, 2020). Wild animals are visiting locked down towns fearlessly. Environmentalists are noticing a slow recovery and rejuvenation of our environment, with pure air and fresh elements, due to many industries and businesses shutting down, a significant reduction in mass transport on the roads and a severe curtailment in flights around the world, all

due to the pandemic situation. Pollution has been reduced by 40% during last January and February in China (Zambrano-Monserrate et al., 2020).

World media claim that pollution level has decreased by about 50% in New York City alone. Production of greenhouse gas and environmental pollution impose a great threat, as has already been proved, on human health. According to information from the World Health Organization, around 3 million people, most of them have been living in towns; have died of diseases caused by environmental pollution. The situation is more acute in lower-income countries like Bangladesh, where most of the city is affected by air pollution. Researchers have found that the possibility of asthma or chronic lung disease is more in polluted cities, due to contaminated air. And this could also pose a serious risk of coronary heart disease. Some studies have found a significant influence of climate change on COVID-19 spread and death rate and claimed an important association of COVID-19 spread and casualty with some climate change indicators such as temperature, air pollution and humidity (Ma et al., 2020; Pirouz et al., 2020; Qi et al., 2020; Şahin, 2020; Zhu et al., 2020). Some studies have identified air pollution as a vital climate change indicator that has significant effects on the COVID-19 spread and death rate (Abdullah et al., 2020; Carrington, 2020; Muhammad et al., 2020). Northern Italy is an example in this regard. Due to the highest level of air pollution, tackling COVID-19 was relatively hard in Northern Italy and the incidence and mortality rate of Covid 19 were significantly higher (Carrington, 2020). Air pollution has huge impacts on human health and a large number of human casualties because air pollution is regular. Globally, 4.9 million people died in 2017 due to air pollution, with low-income economies being hit harder (Global Burden of Disease Collaborative Network, 2018). However, a remarkable drop was found in air pollution due to nitrogen dioxide (NO<sub>2</sub>) and carbon dioxide (CO<sub>2</sub>) emissions during the lockdown, with its restrictions on industrial activities and movements of people and vehicles (Dantas et al., 2020; Tobías et al., 2020; Paital, 2020). In Italy, the USA, and China, air pollution dropped considerably because of the decrease in fossil fuel consumption during lockdown (Paital, 2020). A study identified that NO<sub>2</sub> levels dropped between 40 and 50% in major Indian cities, and CO<sub>2</sub> was expected to be reduced by 390 million tonnes in Europe, during the lockdown (Wright, 2020). Carbon emissions too dropped significantly, by around 40% in the USA during the lockdown, as a result of the restrictions on traffic (Paital, 2020). COVID-19 also helps in repairing some other environmental damages such as water pollution, noise pollution and pollution in beaches (Chakraborty and Maity, 2020; Saadat et al., 2020; Wang and Su, 2020; Zambrano-Monserrate et al., 2020). Lockdown restrictions all over the

world due to COVID-19 have improved air quality and quality of life (Chakraborty and Maity, 2020; Zambrano-Monserrate et al. 2020). COVID-19 also has controlled the extensive sound pollution caused by transportation and industrial activities, through the lockdown. Sound pollution is very harmful to public health and is responsible for damaging natural ecosystems (Zambrano-Monserrate and Ruano, 2019

Unfortunately, the reduction of carbon emission due to covid-19 may last only as long as the virus does. Once the pandemic situation is over, the carbon emission will be increase manifold due to the increased production and human needs, even without the pandemic ending, with the lifting of lockdown restriction and restoration of normal economic activity, pollution levels are climbing to their original high levels (Shakil, et al., 2020; Wang and Su, 2020). For instance, carbon dioxide was reduced in 2008 due to the economic crisis, but after economic recovery, CO<sub>2</sub> has increased more rapidly (Peters et al., 2012). The question now is whether we call upon a virus-like corona for fighting against climate change or to broker a fresh understanding between the environment and humans. After all, the corona virus will have no lasting effect on climate change. Structural changes are required. For preventing environmental disasters, a large scale change in our living standards is also required. At the same time, a global epidemic like Covid-19 cannot be considered a deliberate strategy for bringing about environmental change (Wang and Su, 2020). Distance and online education due to COVID-19 is another development in many educational institutions in the world (Zhou et al. 2020), which has reduced carbon emissions through restrictions on student mobility. Further, with scientific, academic and political events beginning to be held online, online shopping, and working from home, carbon emissions have decreased worldwide (Rohwer-Kahlmann 2020). According to Jribi et al. (2020), “individuals whose social activities were restricted during the Covid-19 outbreak were conscious of food waste, they tried to reduce waste, and they displayed behaviours to prevent food waste”. Communication campaigns for increasing environmentally positive behaviours of people have picked up.

#### **ADVERSE EFFECT OF COVID-19 OUTBREAK ON ENVIRONMENT**

On the other hand, Covid-19 is also a cause of environmental disasters now. As a result of the pandemic, medical wastage has increased at a huge rate, imposing great pressure on the wastage management system. During this pandemic situation, the huge demand for disposable medical supplies like unitary hand gloves, surgical masks and empty IB bags has caused mountainous medical wastage. When the pandemic situation was at its peak in Wuhan, China, medical wastages had increased by 40 to 240 tons in a day (Zuo 2020),

which is also the situation in all countries of the world. Due to the rapid increase in medical wastage, air pollution and other pollution are severe in countries with a weak wastage management system. Besides, the production of these medical supplies has increased manifold (CDP 2020; Robert 2020). How rapidly people use masks and throw them away is still unknown. The increment of solid medical wastages has happened simultaneously in almost all countries of the world (CDP 2020; Robert 2020). Corona virus-generated wastages are not only an environmental problem but also pose a significant risk to the health of workers appointed for collecting and disposing of wastages. Along with this, during the corona virus epidemic, the popularity of plastic packaging has increased, eclipsing the demand for recyclable packaging (Eroğlu, H., 2020). Reusable polythene bags have been banned in the US states of New Hampshire, Illinois and Massachusetts. Republicans are working in Washington, New York and New Jersey to ban plastic bags in their respective states. Their logic is that reusable bags are riskier in case of corona virus spread. In online shopping, lots of polythene bags are being used. The usage of polythene or plastics has increased manifold, along with the increase in online shopping since the corona virus pandemic. Due to the pandemic effect, the sales of Amazon has increased to such levels as to necessitate the employment of 100000 new workers appointment, for meeting the burgeoning demand. The huge increase in packaging wastage is assumed from this information. The UN predicts that there would be more plastic wastage than fish in the oceans, by 2050. The corona virus pandemic has accelerated this tendency of increasing wastage.

### CONCLUSION AND POLICY LESSON FROM COVID-19

Since the corona virus pandemic started, an idea that has gained currency online is that the world is rebuilding itself, with the return of wildlife, the sight of wild animals loitering on metro streets, etc. Many recent studies have found that carbon emission, air pollution and water pollution have decreased during the Covid-19 pandemic. However, there is no possibility of this process lasting long. After the pandemic situation ends and when everything returns to *status quo ante*, there is no indication that people's habits of travelling and consumption would change permanently. However, some environment-friendly practices developed during the lockdown and COVID 19 can be followed permanently, to reduce future environmental threats.

As the use of zoom, Microsoft Teams and Skype has increased for virtual communication and conducting official activities, it is expected that employees will be encouraged to work staying at home, even after this pandemic situation ends, which would be a way of decreasing carbon emission in the post-pandemic period. If we can retain our reformatory

thoughts and implement this idea after the pandemic, we can be more to be eco-friendly in our daily life. Those activities which can be done from staying at home should be done that way. By this, we can reduce the use of public transport and cars. Unnecessary shopping should be curtailed and taking a lesson from this pandemic, people can be more economical. We can try to consider the positive side of the corona virus, which is making us understand how we can reduce wastage and carbon emission, which we can take as a lesson, for making it a habit for the future. To implement the eco-friendly positive changes, it is not mandatory to make the whole world stable. However, the lifestyle of the people around the world should be changed to be conducive to the environment. Through this, we can make the process of attaining a sustainable world smoother. If we do not care about this, our future will be fraught with danger. The strategy we applied at the start of covid-19 is considered a success in preventing an environmental disaster till now. For sustaining such success and managing this accordingly during the post-pandemic period, a discussion can be organized in a specified forum for global environmental governance, on the possibility of formulating a policy. It is possible to decrease environmental pollution by reducing public transportation and this can be achieved by permitting a portion of employees to work staying at home by rotation every week. The idea of pursuing office work staying at home generated during the pandemic period can play an important role in protecting environmental pollution, can minimize administrative expenses and certainly reduce the negative environmental impact on the globe as well. To overcome the environmental crisis created or being created, every individual and business institution has to change their behaviour towards the environment. We must work together and can play a vital role in reducing the environmental pollution. We have been trying to reduce our negative impact on the environment by using electric cars, renewable energy, durable paper products and recyclable products. We know that we can do more for preventing environmental pollution and can inspire those who are involved with us in protecting the environment. International seminars and discussions being conducted online during the corona virus epidemic have shown us that physical presence is not required. With environmental pollution reduced so much due to pursuing official activities at home, online shopping and less travelling, one can see the real colour of the sky for the first time in a long time, instead of fog or smog. Hence, the habit of working virtually should be retained for preventing environmental disasters. Though there is an apprehension of productivity being lost due to off-site working, this may be correct, provided a proper monitoring system is developed. There would thus be no negative impact on business. Alternative ways of organizing international seminars and events should be identified to encourage

participation through virtual presence. These measures would go a long way in reducing the environmental pollution.

However, it is not possible to conduct all official work from home, nor do we propose that. Our logic is that we will be able to reduce environmental pollution by performing those official tasks which are possible of performance online or without travelling to the workplace. As a whole, I think that the corona virus has taught us a lesson of great importance and if only we can sustain the innovative functioning occasioned by the pandemic, we would have contributed significantly to the reduction of environmental pollution.

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