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CHAPTER

7

Effect of COVID-19:
An environmental
point-of-view

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7.1 Introduction

The Coronavirus, for example, is a zoonotic virus that jumped from animal to human, wreaking havoc on our modern-day society. The way humanity has reacted to the virus then turns around and affects our immediate surroundings. In this way, COVID-19 affects the environment. However, this relationship also works the other way around: the environment too, has profound effects on the infection rate of COVID-19. Humanity is caught in the middle of this web, and even now, half a year after the epidemic went global, the general public still has only vague ideas about how this interconnectivity functions.

Perhaps the most important issue about COVID-19 and the environment is the question of how COVID-19 is affecting the present environment. As people all over the world settle into quarantine, traffic levels decrease and nonessential businesses close temporarily. In addition, lockdown will decrease overcrowding and the concentration of human activity, particularly in urban areas. The decrease in human activity is changing the air we breathe as CO\textsubscript{2} and other emission levels go down. Decrease in travel will also play quite a large role in changing air quality and emission of levels of air pollutants. In short, COVID-19’s impact on the human population’s lifestyle choices will cause changes in every aspect of the environment that
human activity is tied to. This includes not only air pollution levels, but also water quality and wildlife biodiversity.

The memory of the fear associated with the virus, as well as the habits that people picked up during the shift to quarantine will linger long after the pandemic abates. Humanity’s outlook of the future is rapidly changing as the pandemic continues, and there seems to be more good than bad to this difference.

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Environmentally, the COVID-19 outbreak also has constructive effects. Studies started in the home environment during the outbreak increased Home Office applications. This will have an effect that will reduce carbon dioxide emissions by reducing the mobility of people in their external environment. Many countries in the world have switched to distance education due to corona virus (Zhou et al., 2020). Social mobility, which causes many carbon emissions, such as student services, has also decreased with distance education. In addition, since the scientific events, meetings and political events started to be held in the form of a remote conference, environmental emissions have decreased globally. In this context, those who are accustomed to the efficiency of teleconferencing and distance education are expected to increase the number of these activities after the outbreak [1]. In most countries, there has been a lockdown with people not allowed to move around leading to a reduction in greenhouse gas emissions. In the course of the Covid-19 outbreak, the greenhouse gas emission reduction is observed during the restrictions of the states, such as China and Italy [2]. A reduction of approximately 25% of carbon emission is reported in China [3]. It is also reported that air pollution (such as nitrogen dioxide and carbon dioxide emission) is reduced in many regions [4].

8.2 Observations

8.2.1 Positive impact of COVID-19 on the environment

Get better air quality through reducing CO2 emissions by reducing the mobility of vehicles by individuals. A worldwide reduction of nearly 25% of carbon (C) emission is reported.

A decline in greenhouse gas emissions such as nitrogen dioxide (NO2) and carbon monoxide (CO) is reported.

Increase in ozone (O3) level (probably due to lower titration of O3 by NO) has been reported.

Decline air pollution but there were significant differences between the pollutants. It has been observed that the most significant reduction amounts are in black carbon and nitrogen dioxide (NO2), while a low decline occurs in the particulate matter with a diameter of less than 10 (PM10).
Ecosystems are being significantly recovered. In many big cities the residents are experiencing a clear sky for the first time in their lives.

8.2.2 Negative impact of COVID-19 on the environment

- Increased medical wastes resulting from the increased medical activity: It was stated that for the period when the outbreak peaked in Wuhan, an average of 240 tons of medical waste was produced daily in hospitals and this value was 6 times higher than normal value.
- Masks made of polypropylene, a type of plastic, and it is very difficult to get lost in nature.
- Increase demand for online shopping for home delivery. Consequently, organic and inorganic waste generated by households has increased.
- Reduction in waste recycling

Often, there has been an increased demand for personal protective equipment (PPE). The demand has forced companies to work overtime to keep up. The increased factory use has increased the pollution they create. As well, the materials the masks are made out of are harmful for the environment. Many people have chosen to use single use masks over cotton and reusable ones which have added to the clinical waste in our oceans. This has a negative impact on our marine ecosystems, endangering the animals and plants that live in them. There also has been more water usage, people have started to wash their hands more often, take longer showers, and wash their clothes/dishes more often. Water is a finite resource and it is important to use it responsibly. It is predicted that water usage will return to normal once the lockdown rules are lifted.

Perhaps the most important effect of the pandemic on human activity is how the pandemic is changing industries. There has been an increase in robotics use and automotive equipment. As many workers were forced to work from home and as factories were shut down companies started to look for alternatives and replacements. Many have turned toward Industry 4.0 technology; this includes 3D printing and artificial intelligence. Before the pandemic the shift toward using more robots had already begun but COVID-19 has acted as a catalyst pushing it forward faster. One industry making major changes is the mining industry, companies such as Resolute Mining have started to shift their entire production to automated machines controlling them through a central control center. Another industry is the medical industry, making hospitals have looked into using robots in order to maintain sanitation and decrease the spread of the virus.

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Abstract
Global spread of COVID-19 in a very short time has brought a remarkable drop off in maximum vehicle, industrial traffic tourism activities. Restricted anthropogenic interaction with nature and natural resources during this pandemic time has appeared as a golden opportunity for nature and environment to flourish and grow in their own way. National Aeronautics and Space Administration (NASA) developed a computer models to generate a COVID-free 2020 for comparison, scientist found that since February 2020, pandemic lockdown have reduced worldwide nitrogen dioxide (NO2) concentrations by nearly 20%. Authentic information were gathered from extensive communication with local inhabitants and field visits, documentation reveals that forest areas of Uttarakhand Himalayan region (UHR) showing increased regeneration status for floral species and better water storage capacity of traditional water resources that is, ‘Naula’ due to less human interference in these forest patches

Keywords
COVID-19; Uttarakhand Himalayan Region (UHR); Natural resources; Anthropogenic interaction