

# IMPACT OF COVID-19 ON THE ENVIRONMENT

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## ABSTRACT

With the spread of the Coronavirus pandemic, numerous cities in the world, imposed quarantines or launched public awareness campaigns encouraging people to avoid traveling unless absolutely necessary. The decrease in urban movements has significant environmental consequences, such as reduction in pollutant emissions and an increase in household and hospital waste. COVID-19 is spread mostly through large gatherings and close contact. In social events or at work, the WHO recommends keeping a social distance of 6 feet. The majority of COVID-19-affected nations have implemented required countermeasures, such as lockdown, to counteract the virus. Hotspots have been completely locked down and sealed, which has decreased needless movement. Furthermore, full lockdown in the nation (India) along with social isolation aided in breaking the COVID-19 transmission chain. By eliminating person-to-person interaction, the complete lockdown has been determined to be the most effective measure in preventing COVID-19 transmission. In this paper, we have discussed some major effects of COVID 19 on the environment in India.

## **INTRODUCTION**

During the early stages of COVID-19 dissemination, the Indian government imposed a four-step countrywide lockdown from March 25 to May 31, 2020<sup>i</sup>. During this time, the Indian government imposed restrictions on a variety of economic activity, transportation, and tourism destinations. It also stopped the unnecessary movement of people.

India, being a heavily populated country with few medical resources, was forced to implement a lockdown policy. The global economy is in a slump, and India is no different. The impact of COVID-19 on the Indian economy would be enormous, both because of the country's own lockdown, which was essential to control the spread of the coronavirus, and because of India's interconnectedness with the rest of the globe.

The water quality of rivers such as the Ganga and Yamuna improved because of restrictions on numerous industrial activities during the lockdown. Due to the restricted movements of motor vehicles and the closure of coal and gas-fired power plants, noise and air pollution were also decreased throughout the lockdown period. The breakout of COVID-19, as an extraordinary occurrence, has severely harmed world economic growth and had an environmental footprint.

COVID-19's rapid global expansion has resulted in a significant reduction in industrial activity, vehicle traffic, and tourism. During this period of crisis, little human engagement with nature has looked to be a godsend for nature and the environment. According to reports from throughout the world, environmental conditions, such as air quality and river water quality, have improved since the emergence of COVID-19, and wildlife has flourished.

## **IMPACT OF COVID 19 ON INDIAN ECONOMY**

The Indian economy shrank by 7.3 percent in the April-June quarter of 2020<sup>ii</sup>, according to official figures issued by the ministry of statistics and program implementation. This is the worst fall since the government began recording GDP statistics quarterly in 1996.

Following the enforcement of the lockdown, an estimated 10 million migrant labourers returned to their home countries in 2020. What was really shocking was that neither state nor the central governments had any information on the migrant workers who had lost their

employment and their lives as a result of the lockdown. Apart from establishing a digital-centralized database system, the government provided assistance to migrant workers who returned to their hometowns during the second wave of the corona.

The second wave of Covid-19 has severely revealed and exacerbated the Indian economy's underlying weaknesses. Except for some critical services and activities, India's \$2.9 trillion economy remains closed throughout the lockdown. The lockdown had a disastrous effect on the economy, slowing it down as stores, cafés, factories, transportation services, and commercial premises were closed. The worldwide epidemic has had the greatest impact on the informal segments of the economy. If the informal sectors are included, India's GDP decline between April-June might be more than 8%. Except for agriculture, all of the major sectors of the economy were severely impacted. Much before the onset of the second wave, the Indian economy was encountering headwinds. Along with the humanitarian situation and the government's silence, the covid-19 has revealed and aggravated existing inequities in the Indian economy.

MSMEs are being forced to close their doors as a result of the economy. Hundreds of jobs have been lost forever, putting a damper on consumer spending. The government should be prepared to invest billions of dollars to combat the health crisis and hasten the economic recovery from the covid-19-caused recession. The government's injection of billions of dollars into the economy is the most effective path out of this crisis. In reaction to the centre's no-notice lockout, GDP growth had plummeted by 23.9 percent. In 2020-21, India's GDP fell by 7.3 percent. This was India's poorest year since independence in terms of economic performance. India's GDP growth rate is now expected to be less than 10%.

## **IMPACT OF COVID 19 ON INDIAN SOCIETY**

COVID-19, which is reported to have originated in Wuhan (China), has had a significant influence on practically every civilization on the planet. Because of the widespread effects of this health disaster, the World Health Organization (WHO) has labelled it a worldwide pandemic. Not only that but because of its widespread, countries were obliged to halt international travel and shut themselves up. Furthermore, the lockdown has been acknowledged

as the only way to stop the spread of the epidemic, and almost every country has implemented it.

Everyone has witnessed the problems that migrant workers endure; will they remain the same when Covid-19 ends? Obviously not. Migrant workers rely on daily wages and have few resources to fall back in case of an emergency.

Apart from financing and other financial incentives, the necessity of the hour is to assist organizations, businesses, and economic activity in resuming normal operations. The economic effect of the COVID-19 epidemic is enormous, and it will need a massive effort from the government, industry, civil society, and other major stakeholders to guarantee that the Indian economy recovers enough and quickly.

Although social distancing is the only way to reduce Covid-19's influence, and it should be encouraged, we need to understand how this epidemic has affected society and how it has resurrected social discriminating behaviors. Covid-19 has had a wide-ranging impact, on society as a whole. From the standpoint of economics, both rural and urban areas have suffered.

Multiple challenges linked to social, educational, economic, political, agricultural, psychological, and other levels have been seen in Indian society, which has had a catastrophic influence on the lives of the people.

With each epidemic or scenario that has a broad influence on society, there is the issue of psychological trauma. The lockdown has demonstrated that "man is a social being," as the initial four-month-long lockdown has had a psychological impact on individuals, with women and children bearing the brunt of the strain in the form of domestic violence<sup>iii</sup>. During the lockdown, many calls were received on the helpline number set up for persons experiencing domestic abuse. Because India is known for its diversity, the influence of Covid-19 is diversified. However, when we look at the opposite side of the coin, COVID-19 has had an influence on our culture.

"Crisis gives birth to changes that have been pending for many years," as it has been said, and it was rightly proved during the period of Covid-19. Things have changed in order to suit the requirements of society, which the government has been working hard to achieve for many years. Whether it's online education or the judiciary, the Covid-19 crisis has enabled these huge

changes in education and the judiciary. However, due to our country's digital connectivity deficit, the advantages of these transitions will be restricted.

## **EFFECTS OF COVID 19 ON CLIMATE CHANGE**

In the early 'lockdown' months of April to July, WhatsApp groups were flooded with ephemeral photographs of dust-free air, crystal-clear river bottoms, and stunning mountain views. Many saw them as examples of nature repairing itself after years of destruction by human actions on the environment, flora, and animals as a direct result of the pause in economic activity.

Concerns are being raised about whether the reaction to the epidemic had any lessons for industry on how to manage climate change risks as economic activity picks up after the 'lockdown' restrictions were gradually lifted.

Although there is no clear link between climate change and the origin or spread of the Covid-19 virus, the World Health Organization acknowledges that any delay in reacting to risks, whether from pandemics or climate change, raises human and economic costs<sup>iv</sup>.

Experts concur that any obvious environmental advantages as a result of the Covid-19 reaction are at best transient, and are likely to revert if previously damaging economic activities get traction. It's also worth noting that, up until now, nations and corporations have avoided discussing climate change owing to commercial concerns. The pandemic has shown us that climate change is a disaster waiting to happen, and the industry is underestimating the cost of remedial actions versus preventative ones.

## **CHANGES IN AIR QUALITY DUE TO COVID 19**

According to the World Health Organization, 4.6 million people die each year as a direct result of air pollution. However, NASA scientists monitoring pollution satellites detected a drop in air pollution during China's two-week lockdown. There was a 25% reduction in carbon dioxide emissions and a 40% reduction in nitrogen oxide emissions<sup>v</sup>. During the self-isolation period in Italy, similar developments were noted.

With a large population, heavy traffic, and polluting industry, India has traditionally been a pollution hotspot, with high air quality index (AQI) values in all major cities. However, following the announcement of a COVID-19 lockdown, air quality began to improve, and all other environmental metrics, such as river water quality, began to show signs of recovery.

More than 7 million people have died as a result of air pollution throughout the world, with 1.4 million in India. Due to the lockdown, it has been significantly diminished. Travel restrictions resulted in the non-movement of planes and automobiles all over the world. As a consequence, hazardous emissions in the atmosphere have decreased. Because of the restriction in the usage of non-renewable energy sources during the lockdown, NASA satellite images indicated a 70% drop in nitrogen oxide levels. The concentrations of carbon monoxide and aerosols were also lowered.

The effects of lockdown and unlocking phases on ambient atmosphere quality variables throughout India evaluated air pollutants exhibited a significant drop in AQI levels during the lockdown compared to the reference period (2017–2019). While the data is average for northern, western, and southern India, a 30–50 percent drop in AQI was reported for PM<sub>2.5</sub>, PM<sub>10</sub>, and CO, and a maximum reduction of 40–60 percent for NO<sub>2</sub> was recorded. SO<sub>2</sub> and O<sub>3</sub> levels increased in a few cities while decreasing in others.

During the lockdown, the highest drop in PM<sub>2.5</sub> (49%) was seen across north India. Furthermore, variations in pollution levels revealed a considerable decrease in the first three phases of lockdown, followed by a gradual increase in the succeeding lockdown and unlock periods.

## **EFFECTS OF COVID 19 ON AQUATIC LIFE AND WATER QUALITY**

Nutrient contamination in waters might be caused by air pollutants in the environment. Acid rain, for example, is formed when NO<sub>2</sub> reacts with other chemicals, causing destruction to freshwater ecosystems such as streams, rivers, lakes, and watersheds. Acidification of water, along with a decline in acid neutralization capability, has resulted in negative changes in water quality. Concerning the previously indicated reduction in air pollution, a decrease in acid rain generation is projected, resulting in increased worldwide freshwater availability.

During the pandemic, water ecosystems in many regions of the world showed indications of recovery. During the lockdown, the water quality of the Ganga River, India's "National River," improved, particularly in industrial clusters and urban areas. Increased dissolved oxygen, decreased biological oxygen demand, and nitrate content were all indicators of the impact. The self-cleaning characteristics of rivers were boosted as the water quality increased.

Large amounts of effluent from home and industrial wastes typically enter the river untreated or poorly treated, resulting in significant water quality degradation. Several government projects have cost the government millions of dollars over the previous two decades with little to show for it. Around 1300–1340 million litres of industrial effluent per day was reduced throughout the lockdown period<sup>vi</sup>. Several human activities such as social and religious ceremonies, waterway transportation, fishing, and so on were also forbidden, resulting in reduced solid waste dumping and littering along the river's banks by locals and visitors.

## **NEGATIVE IMPACT OF COVID 19 ON THE INDIAN ENVIRONMENT**

Many experts have theorized about the pandemic's positive environmental implications. Curfews have a significant impact on the environment due to the restricted activities of mankind. Scientists, on the other hand, temper their enthusiasm, stating that it is unclear how our ecosystem will look once the epidemic is over. Some of the negative effects of COVID 19 on the environment are discussed below.

### ***Medical waste***

The medical waste caused by the COVID-19 crisis, which includes garbage generated in hospitals where COVID-19 patients are being treated, waste from quarantine zones, and throwaway personal protective equipment extensively utilized by the majority of Indians, is a serious concern.

Many disposable goods, including gloves, face masks, and shoes, are manufactured of materials that are difficult to decompose in nature, making medical waste a potential threat<sup>vii</sup>. It may amass in our environment if not properly disposed of, providing a new hazard to all the natural elements.

### ***Chemicals in the environment***

Another potential negative impact is from the extensive use of sanitizing and disinfecting products in the environment, which include dangerous chemicals. Their increased production and usage increased the use of hard-to-decompose plastics in sanitization/hygiene bottles and packaging. Furthermore, owing to the curfew, agricultural imports appeared to be suspended, resulting in increased pesticide and chemical use by farm families who are under pressure to deliver more than intended.

### ***Pollution***

Inequality and vulnerability are inextricably linked. The people who are most affected by pollution are also the ones who are most likely to acquire severe COVID-19 effects. As a consequence, their pre-pandemic environmental vulnerability produced by existing disparities continues to imperil their health and sustainability even as COVID-19 spreads.

This is also connected to gender inequality, which frequently exposes women to the negative consequences of a damaged environment. Furthermore, because India has a historically high number of women working in care occupations in several states, their viral exposure is thought to be particularly high.

Although COVID-19 had a few good benefits on the environment, these were mostly short-term effects brought on by the nationwide lockdown. Indeed, the pandemic is predicted to have long-term negative consequences for the ecosystem. Chemicals (soaps, detergents, and other chemical cleaning agents), pharmaceuticals, and plastics (gloves, masks, PPE kits, syringes, and so on) are predicted to become more widely used, resulting in a higher degree of pollution.

## **CONCLUSION**

The COVID-19 epidemic has wreaked havoc on the global economy over the last two years. Repeated outbreaks of infections, supply shortages, and, more notably, inflation, have made policymaking extremely difficult. Dealing with these issues, India's first response was a slew of welfare systems to absorb the impact on the country's most vulnerable citizens and businesses. It then accelerated through a significant increase in public investment to re-



establish medium-term demand, as well as vigorous supply-side measures to position the economy for a long-term boom.

What type of the world are we going to witness after Covid-19? Scattered? Distorted? We're not sure, but we'll have to get back up and encourage one another. To make our country a better place on the planet for its residents and humanity, we'll have to accept the ideals expressed in our Constitution's Preamble, namely "Equality, Fraternity, and Integrity."

COVID-19 has put India's pandemic readiness to the test in terms of health infrastructure, technical capabilities, and policy initiatives. The initial impact of one of the strictest lockdown procedures was noted to impede the virus's transmission. Simultaneously, it aided the country's preparation of crucial medical infrastructure, human resources, and technical advancements. In terms of case fatality and recovery rates, the COVID-19 pandemic in India was quite mild compared to many other developing nations<sup>viii</sup>. The crisis, on the other hand, has exacerbated the country's pre-existing risks of economic slowdown, while the underfunded public healthcare system has wreaked havoc on the country's pandemic management plan.

All in all, the outbreak has served as a wake-up call, and India is now actively considering long-term strategies to establish a proactive, sustainable, and resilient healthcare system.

## ENDNOTES

<sup>i</sup> Available at <https://journals.ametsoc.org/view/journals/eint/25/1/EI-D-20-0017.1.xml>

<sup>ii</sup> Available at <https://timesofindia.indiatimes.com/readersblog/shreyansh-mangla/impact-of-covid-19-on-indian-economy-2-35042/>

<sup>iii</sup> Available at <https://www.thebridgechronicle.com/news/coronavirus/social-impact-covid-19-india-49313>

<sup>iv</sup> Available at <https://www.fortuneindia.com/enterprise/climate-change-lessons-from-covid-19/104942>

<sup>v</sup> Available at <https://www.nature.com/articles/s41598-021-83393-9>

<sup>vi</sup> Available at <https://www.frontiersin.org/articles/10.3389/frwa.2021.603531/full>

<sup>vii</sup> Available at [https://www.arabstates.undp.org/content/rbas/en/home/presscenter/articles/2020/covid-19-and-the-environment--impact-and-response.html?utm\\_source=EN&utm\\_medium=GSR&utm\\_content=US\\_UNDP\\_PaidSearch\\_Brand\\_English&utm\\_campaign=CENTRAL&c\\_src=CENTRAL&c\\_src2=GSR&gclid=Cj0KCQiAjJQQBhCkARIsAEKMT016hZcCvGmIKMHWDdgpOWBEAPJY8\\_P90Dg8B0YA0974CKo3J8EviIAaAkR4EALw\\_wcB](https://www.arabstates.undp.org/content/rbas/en/home/presscenter/articles/2020/covid-19-and-the-environment--impact-and-response.html?utm_source=EN&utm_medium=GSR&utm_content=US_UNDP_PaidSearch_Brand_English&utm_campaign=CENTRAL&c_src=CENTRAL&c_src2=GSR&gclid=Cj0KCQiAjJQQBhCkARIsAEKMT016hZcCvGmIKMHWDdgpOWBEAPJY8_P90Dg8B0YA0974CKo3J8EviIAaAkR4EALw_wcB)

<sup>viii</sup> Available at <https://www.sciencedirect.com/science/article/pii/S2211883720301465#:~:text=Conclusions,to%20upscale%20critical%20medical%20infrastructure.>