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IMPACT OF COVID-19 ON ENVIRONMENT

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ABSTRACT

The coronavirus disease (COVID-19), is a variant of Severe Acute Respiratory Syndrome Coronavirus-2 (SARS-CoV-2) originated in Wuhan city of China and has now transmitted over the globe. Several vaccines are available now. The upper infection rate in India has challenged several medical facilities like availability of medical oxygen, ventilators and absence of COVID-19 medicines in the hospitals. The COVID-19 pandemic has impacted every aspect of human life and the global economy. The number of latest cases and deaths is increasing at an alarming rate with no signs of control yet, making the estimates of its economic and other impacts uncertain. Reckoning on the extent of COVID-19 impact in each country, yet as country-specific situations and capacity, the world's Governments are adopting different levels of interventions, including travel restrictions and lockdown to stop the expansion of the virus. Worldwide lockdown was initiated to limit gathering, transport and industrial activities. Lockdown thanks to COVID-19 showed reduction in environmental pollution. The standard of air and water improved in metro cities and in rivers during COVID-19. This research paper is not covering only the latest updates about covid-19 relating to environment, including air, water and biomedical waste and sustainable development at global level but also it covers the fundamental mechanism of COVID-19 transmission.

Keywords: *Lockdown, Pollution, Biomedical Waste, Sustainability, Environment Recovery.*

Introduction

Governments have restricted several activities like outing of individuals, transportation and industrial processes by imposing lockdown. The environmental pollution (air, water, soil and noise pollution) has decreased because of COVID-19 induced lockdown. The emission of greenhouse gases, dioxide and black carbon has dropped substantially. Several industrial units have clean up during lockdown period which is accountable for reduction in pollution. A decrease in sound pollution because of restriction in movement of vehicles has been reported. Besides this, the quantity of biomedical waste has increased in the COVID-19 pandemic due to tremendous hospitalization of COVID-19 patients. In the pandemic period, sizable amount of quarantine centers were constructed for confirmed and suspected COVID-19 patients. the massive amount of biomedical waste like mask, gloves and other COVID-19 safety materials were discarded from these quarantine centers During COVID-19 lockdown, people stayed in their home and preferred online shopping to routine one which was liable for the generation of waste like plastic waste (packaging material).

Objectives of Study

The Research has been undertaken with the subsequent objectives:

- To make an analysis of effect of Covid 19 on Environment.
- To make an analysis of and highlight our ability and strength to cover up the deficiencies occurred due to Covid 19 Crisis,
- To evaluate India's role in making global environment better and to back at pre- covid position.
- To suggest strategies and proposals this could be adopted by all of us to bring the situation normal.

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Rationale of Study

The environment certainly has both positive and negative effects due to covid-19. This may continue till improvements in environment are noticed whenever there's downward movement in severity. Hence a continuing effort has to be made to estimate the impacts of the pandemic on economy and environment. No study can estimate the impact accurately. This study is undertaken to debate the current impacts of pandemic on the environment with estimation of its impact for future in line with the trend of Covid position in the country and also the current impact of the same at global level.

Review of Litreature

Praveena and Aris (2021) investigated the effect of COVID-19 on air, water and pollution. Authors collected environmental data from Southeast Asian region before and through COVID-19. Authors reported an improvement in air and water quality, lower background level and reduction in the surface land temperature. However, this pandemic was also to blame for the decline in oil exploration and overall improvement in environmental quality.

Dr. Debdas Rakshit1 and Ananya Paul (June, 2020) The Researchers has briefly explained the history of Novel Corona virus together with the detailed discussion on impact of corona virus on industries individually. This is often probably the sole paper which has discussed the impact on overall industrial performance together with the industry specific analysis. The research paper covers impact on Primary, Secondary and service sector. In each sector, further discussion has been made for various category of sub sectors. Another part is additionally covering the positive side effects of emerging corona pandemic.

Sneha Gautam (june 2020) highlighted the major negative effects of covid-19 on the social and surrounding environment, however positive effects have been observed with respect to air quality. Secondary results taken from National Aeronautics and Space Administeration (NASA) indicated significant reduction in air quality of Indian region.

Environmental Impacts of Covid 19

Mass gathering and close contacts are the foremost causes for COVID-19 transmission. The whole lockdown and sealing of hotspots have reduced unnecessary movement. The lockdown has been found to be the foremost effective step in reducing the COVID-19 transmission by minimizing person-to-person interaction. The Indian Government enforced country wide lockdown in four steps from 25th March, 2020 to 31st May, 2020 during the first stage of COVID-19 transmission. In this period, the Indian Government restricted several industrial activities, transportation and sealed tourist places similarly as needless movement of individuals. During lockdown period, the water quality of rivers including Ganga, Yamuna improved because of shutdown of the many industrial processes. The noise and pollution was also reduced during lockdown period due to restricted movement of automobiles and shutdown of coal and gas-fired power stations. It's been reported that the extent of greenhouse gases decreased for the primary time during lockdown after World War II. In the industrial cities, there has been a decrease in pollution during lockdown period. This pandemic is responsible for better air and water quality together with several negative waves like generation of tremendous volume of hospital and household waste with disturbed solid waste recycling process. As we said that in the lockdown several human and industrial activities remained suspended to attenuate human to human interaction. Several positive effects of lockdown because of COVID-19 on environment like reduction in pollution, improvement in water quality and minimum sound pollution were observed.

- **Air Quality Improvement**

The industries, vehicles and corporations were closed during lockdown and this was chargeable for the sudden drop of gas emission. In Newyork, the pollution was reduced up to 50% in 2020 as compared to 2019 due to COVID-19 induced lockdown. NO2 is generated from burning of fossil fuels (diesel and petrol). NO2 present in the atmosphere is the major reason for air pollution and is to blame for human respiratory diseases. N2O and CO emission were also observed to be decreased worldwide during COVID-19 lockdown because of closure of the foremost of the industries. In China, N2O and CO emission was reduced up to 50%. The NO2 level in the Ontario (Canada) was also reduced. The NO2 level in the Delhi (India) decreased up to 70% during nationwide lockdown.The concentration of PM2.5, PM10, NO, NO2, SO2, CO and toluene decreased and ozone concentration was found to be enhanced up to standards of CPCB. The rise in ozone concentration was attributed to reduction in NO2 emission during lockdown. The general NO2 emission in India was found to be 50% less during nationwide COVID-19 lockdown. We compared the air quality data of normal situation with lockdown period and reported that PM10, PM2.5, CO, NO2, O3, and SO2 emission decreased during lockdown period from March 2020 to June 2020.

- **Reduction in Water Pollution**

The supply of H_2O may be a big challenge worldwide. The industrial and domestic wastewater is discharged into the rivers and other water sources without or with partial treatment. During COVID-19 pandemic, most of the industries were completely closed up. This was a significant reason for improvement in the water quality. For example, water of a number of the key rivers in India just like the Ganga and Yamuna achieved an honest purity level. Sangam, Prayagraj is one in all the foremost popular religious and tourist places in India where sizable amount of pilgrims visit throughout the year. When COVID-19 lockdown was implemented, the tourist and temple places were totally closed for people. This resulted in the reduction in pollution in the river Ganga. Water quality data obtained from real time monitoring stations of Uttarakhand Pollution Board (UPCB), India, showed that the pH (7.4–7.8), total coliform microbes (40–90 MPN/100 mL), DO (9.40–10.60 mg/L) and BOD (0.60–1.20 mg/L) of the Ganga river were much below the permissible limit as demarcated by the Indian Government during lockdown. In the Grand Canal city of Italy, the water quality improved substantially and lots of rare aquatic species reappeared during lockdown. The water and soil quality also improved because of absence of waste food at tourist places.

- **Reduction of Noise Pollution**

Noise pollution causes annoyance, sleep disturbance, hypertension, and psychiatric disorders. The pollution is responsible for hearing impairment in about 300 million people worldwide. WHO reported that one among the most important pollution source is road traffic and around 40% European population suffers from high sound pollution. It's observed that the reduction in sound pollution from March to June 2020 in the City of Madrid. Authors reported 4–6 dB amplitude was reduced during lockdown period as compared to unlock period. One in all the researcher investigated effect of COVID-19 mediated lockdown on sound pollution level. In India, the impact of road traffic noise on risk of high annoyance and sleep disturbance was found to be lower during lockdown as compared to pre-lockdown and unlock phase. The annoyance level in residential zone reduced from 86.23% in pre-lockdown period to 41.25% in the lockdown phase. The risk of sleep disturbance in this zone reduced from 37.96% during pre-lockdown to 14.72% during lockdown phase.

Some of the Negative Environmental Effects

- **Increase of biomedical waste generation:** Biomedical waste consists of pathogenic microbial consortia. Several medical facilities and equipment are required for COVID-19 patients during their treatment, which end in the generation of varied kinds of biomedical waste like disposable PPE kits, gloves, masks or various samples taken from human body. India suffered because the second most affected country with COVID-19 after USA. A number of the foremost populated cities of India like Delhi, Chennai, Mumbai, Bangalore and Hyderabad showed maximum COVID-19 cases. On the premise of report published on September 18, 2020, India generated biomedical wastes quite 180 tons/day.
- **Safety equipment use and haphazard disposal:** From saving ourselves we all are using mask, PPE kits and hand gloves. Due to this the environment soon are full of lots of such hazardous medical waste. **People** don't have any knowledge regarding disposal of such waste and their management of infectious wastes, and hence they dump it publicly places. This may puddle and environment pollution at the foremost dangerous level.

Conclusion

COVID-19 may be a worldwide global health emergency which is chargeable for sizable amount of deaths. Together with its lethal effect, COVID-19 brought positive environmental impacts which may function an example and inspiration for future behavior of human towards nature. This pandemic showed a right away relationship between level of environmental pollution and economic activities like transportation, energy production and industrial operations. The pandemic taught us that eco-friendly energy based system is much more beneficial and waste materials should be of biodegradable type. The reduction in pollution level, ecological restoration and climatic change could be a global issue that is considered under political boundaries. So, strengthening of worldwide cooperation may be a part of 2030 agenda of the SDGs. Moreover, learning from current COVID-19 related experiences, management system and policies are lessons learned for addressing the climate and environmental issues. The 2030 agenda of SDGs for environmental sustainable development, which covers sustainability altogether forms, are often a useful agenda to create guidelines for sustainable ecological future. It's the requirement of the hour that important strategies like sustainable

industrialization, use of renewable energy sources and international cooperation should be adopted for environmental sustainability. The state wise lockdown was observed as a good choice to stop transmission of pandemic due to lack of therapeutic facilities of COVID-19 during initial transmission phase. The lockdown period minimized environmental pollution, which improved the water and air quality and brought reduction in sound pollution because of close up of business process. The environmental sustainability will be achieved by using green and clean energy, sustainable industrialization, well organized waste management system, wastewater treatment and its reuse.

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