

## **Significant Improvement in Air Quality Across India Due to Corona Virus Lockdown**

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### **Abstract**

The pollution refers to any substance that negatively impacts the environment or organisms that live within the affected environment. The five major types of pollution include:-air pollution, water pollution, soil pollution, light pollution & noise pollution. "The major sectors contributing to air pollution are transport, industries, power plants, construction activities, biomass burning, road dust resuspension and residential activities. In addition, certain activities such as operation of DG sets, restaurant, landfill fires, etc. also contribute to air pollution," the pollution watchdog said. "As a result of stringent travel restrictions and shutting down of non-essential activities including those of air polluting sectors, air quality improvement has been noted in many towns and cities across the nation," it added.

### **Keywords:**

Covid-19, Lockdown, Environment, Pollution, Health, Air quality, Pollutant, PM 2.5.

### **Introduction:**

The nationwide "Janata curfew" followed by lockdown to prevent the transmission of Corona Virus led to a significant reduction in pollution occurs. During lockdown the private & public transportation restricted, reduction in human interaction enhancing the social distancing & imposing a curfew with in entire city. The major sectors of air pollution contributions are construction activities, biomass burning, Industries, Transport & power plants. According to the report, on March 21 (a day before the Janta Curfew) a total of 54 cities recorded 'good' and 'satisfactory' air quality while on March 29 as many as 91 cities recorded minimal pollution. India is currently under the biggest lockdown with around 130 crore people asked to stay home in view of the coronavirus outbreak, which has claimed 50 lives and infected over 1,900 people in the country. Since the lockdown was imposed, the air quality all around the country has shown drastic improvement due to eradication of local pollutants generated due to construction activities and vehicular traffic among others. The CPCB has released a report on the impact of 'Janta Curfew' and lockdown on the air quality.

### **Air pollution: -**

A major source of air pollution result from the burning of fossil fuels, vehicle & factory emission are common sources of air pollution. The burning of fossil fuels contributes to the formation of smog, a dense layer of particulate matter that hangs like a cloud over many major cities & industrial zones. Air pollution contributes to respiratory problems such as asthma, bronchitis, & other lung ailments. Nitrogen & sulphur oxides in the air contributes to acid rain which harms forest, species that live in water bodies & degrades outdoor statues, mountains & buildings.

### **Water pollution: -**

Major source of runoff from agriculture fields, industrial sites or urban areas. Raw sewage is the another types of water pollutant. When sewage is the another type of

water pollutant. When sewage gets into the drinking water supply serious stomach & digestive issues may result including the spread of disease such as typhoid or dysentery.

**Soil pollution: -**

Soil can become polluted by industry sources or the improper disposal of toxic chemical substances. Common source of soil pollution include asbestos, lead, & overuse of pesticides / herbicides.

**Light pollution: -**

Light pollution refers to the large amount of light produced by most urban & heavily populated areas. Light pollution prevents citizen from seeing features of night sky & has also been shown to impede the migration patterns of birds & activities of nocturnal animals.

**Noise pollution: -**

Noise pollution typically refers to human made noises that are either very loud or disruptive in manner. This impact on the movement of sea mammals. Such as Dolphins & Whales & also impact the nesting success birds.

The rapid spread of covid-19 is global public health challenge. To prevent its transmission India locked down cities with shutdown of public transport, business centers, social interaction points & educational institute. The air pollution is a global problem. The Covid-19 lockdown measures some remarkable positive effect on natural environment by improving the air quality with few weeks. This reduction in pollution occurs due to limited social and economic activities.

The air pollution refers to release of harmful contaminates into the earth's atmosphere. The NO<sub>2</sub>(Nitrogen Dioxide) is a highly reactive pollutant. The major source of NO<sub>2</sub> emission is traffic pollution which causes respiratory problems. The big improvement in the air quality during lockdown is mainly for deduction in Nitrogen Dioxide level in major cities such as Pune, Mumbai, Nagpur & Solapur. The fall in NO<sub>2</sub> level is mainly due to decrease in fossil fuel combustion in industrial & transport sectors during lockdown. The air quality index & PM 2.5 concentration during brought-down.

Due to lockdown the reduction in transport & lower oil demand results significant impact on environmental quality. The improvement in air quality is due to reduction in Nitrogen Dioxide(NO<sub>2</sub>) level. The NO<sub>2</sub> pollution is caused due to high motor vehicle traffic. The Travel Restrictions & closure of industries helps to reduce the pollution level. In Mumbai & Pune the transport pollution levels decreased by three fourth between the March 24 & April 25 as compared to period between February 20 & March 20 revealed analysis by the system of Air Quality Weather forecasting & research(SAFAR). good. Airoli was the only area in the list whose air quality deteriorated during Lockdown. The list of the areas and difference in their air quality is mention below.

<b>Area</b>	<b>Air Quality on April 1</b>	<b>Air Quality before a month</b>	<b>Quality Index</b>
Chandrapur	62	93	Satisfactory
Mumbai, Colaba	69	100	Satisfactory
Mumbai, Santacruz	54	149	Satisfactory
Nagpur	71	73	Satisfactory
Nasik	67	87	Satisfactory

Navi Mumbai, Neral	101	147	Medium
Airoli	101	94	Satisfactory
Pune	49	100	Good
Solapur	61	80	Satisfactory

Fig.2. Table of some areas and difference between their air qualities during lockdown.

The figures were shared by the Pollution control board (PCB). Due to temporary shutdown of majority of industrial work no cars on the road of the state lead to cleaner & fresher air.

All pollutant reduction observed due to restriction on construction activity, less road dust resuspension and to some extent crab on industrial activities.

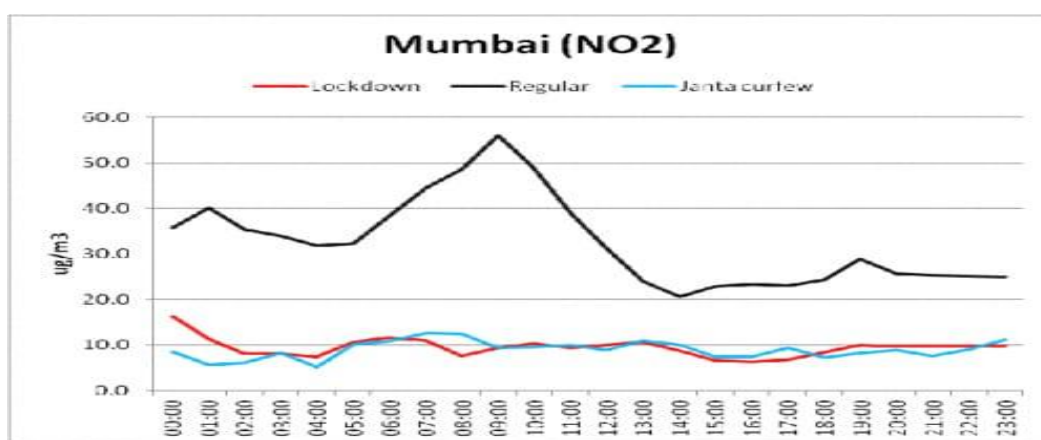


Fig.3. Graphical presentation of Air Quality of Mumbai

The pollutant measuring indicators Air Quality Index(AQI) in Mumbai was '37' while in Pune '47' recorded, both are under the 'good' category. The overall 18% reduction in NO<sub>2</sub> recorded in petroleum products. The highest reduction in Nitrogen Dioxide (NO<sub>2</sub>) levels for Pune 70% followed by Mumbai 69%, Delhi 33% & Ahmedabad 30%. The Central pollution control board give the Mumbai Air quality analysis with reduction 40% in PM 2.5, 43% in PM 10, 77% in NO<sub>2</sub>, 59% in benzene level & 50% in Sulphur Dioxide level.

Lockdown shown that we can achieve breathable air & clear skies with reduction in emission through vehicles, industries and power plants. The Central Pollution Control Board states that in the country 91 cities air quality in good and satisfactory category on March 29.



Fig.1. Air quality improved during lockdown

“Thanks to the Lockdown, the air quality improves alot in Maharashtra”. (India)

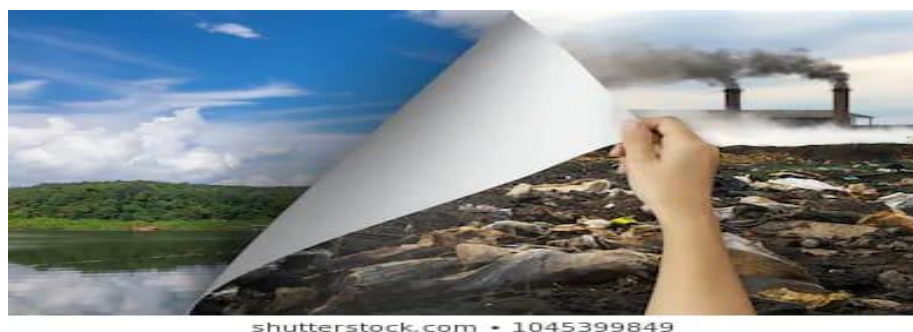


Fig.2. Figure shows air pollution difference between before & after lockdown

Since the Corona virus pandemic, the lockdown is announced on March 24. During the Lockdown, everyone other than people working in essential services directed to stay at home. The come of the lockdown is the air quality improved a lot in Maharashtra.

Across the Maharashtra the major cities suffered from bad air quality have recorded & improvement in their air quality during lockdown. This includes Mumbai, Pune, Thane, Chandrapur, Solapur & Nagpur. The big difference in the air quality before & after Lockdown was observed in Pune & Thane. The air quality index shifted from medium to

### **Conclusion:**

The Covid - 19 is a global pandemic & dangerous to human health which stops the economic activities. However the positive impact on environment is reduction in pollution. The vehicular emissions play major role in air pollution. The reduction in pollution can be done by enhancing the public transportation by walking & cycling. This impact is temporary but all of us should learn from this lockdown how to reduce pollution returns the beauty of nature. So this lockdown is considered to be a "Blessing in outfit."

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