

## Environmental changes during lockdown

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### ABSTRACT

The Corona virus, which originated in December 2019 in the Chinese city of Wuhan, has spread around the world. Known by various names such as Novel Coronavirus Pneumonia, Wuhan Coronavirus, Wuhanvirus, Wuhan Pneumonia, Wuhan Flu as well as commonly known as Corona. The World Health Organization (WHO) has declared the 2020 Corona virus outbreak an international public health crisis. By March 7, 2020, the Corona had spread to 6 different countries across the continent. On March 11, 2020, the World Health Organization declared it an epidemic. The saying applies here that "a coin has two sides." There are two negative and negative aspects of corona. The whole human race is endangered due to corona virus and it has proved to be helpful for the environment. Lockdown has been declared in India in two phases. The first lockdown is 21 days and the second lockdown is 19 days. As a result, small and large factories, industries, transportation delays have had a positive impact on the environment.

**Keywords:** Corona, Lockdown, Environment, Air Pollution

“The side of a coin” is no longer understood by those people, but narcissism is that there is no tragedy in the world, but the world has changed in the last month or so. Write water People are getting sick. The virus of this core has been engulfed in devastating Punjab. There is a fear of the grip of the bus community. The idea is that the virus first appeared in December 2019 in the Chinese city of Wuhan. Which currently pays pervasive throughout the world. Who is facing the catastrophe of the whole world.

The deadly virus originated in Wuhan, which has scattered the entire world and destroyed the world's economy. In Italy, the impact of the Corona became very serious, resulting in 1,75,927 people being caught in the transition, of which 23,227 people lost their lives and 44,927 were killed in the battle that came out of the mouth (dated 19 April 2020 4:10 AM). It is for the first time since World War II that Italy has had such a devastating impact. Which has the opposite effect on the entire economy.



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India is also trapped in this epidemic. A student from Wuhan in Kerala was infected with the corona virus. Gradually, the effect was felt all over India, for the control of which the Government of India declared a lockdown in two phases, first from 24/03/2020 to 14/04/2020 for 21 days. Also, another lockdown has been announced for 19 days from 15/04/2020 to 3/05/2020. As a result, all the people have been imprisoned in their homes. Cinema halls, malls, all religious places, tourist destinations, infrastructural facilities as well as all air transport in particular were canceled. Industrial units have come to a standstill and the economy has been hit hard. As well as forcing all people to distance themselves from each other, all these efforts are being made to curb the growing number of corona outbreaks as well as to reduce the number of deaths.

Looking at some of the global statistical data of this global epidemic, it seems that today, during the period April 19- 4:15, there were 23,3,099 coronary viruses infected in the world with 1,60,952 people lost their lives and 5,98,584 infected people. Has won against Corona. The most recent impact is found in the United States, where a total of 7,40,746 infections have been reported and 39,158 people have lost their lives and 66,676 are reported to have been cured. As well as Yemen is the only country with the lowest number registered in the country. In India, there are 15,7,12 infected cases out of which 507 have died and 2,231 have survived the global epidemic. The statistics of the first ten states in India can be seen as follows.

### *Information on the top 10 states in India.*

**Table**

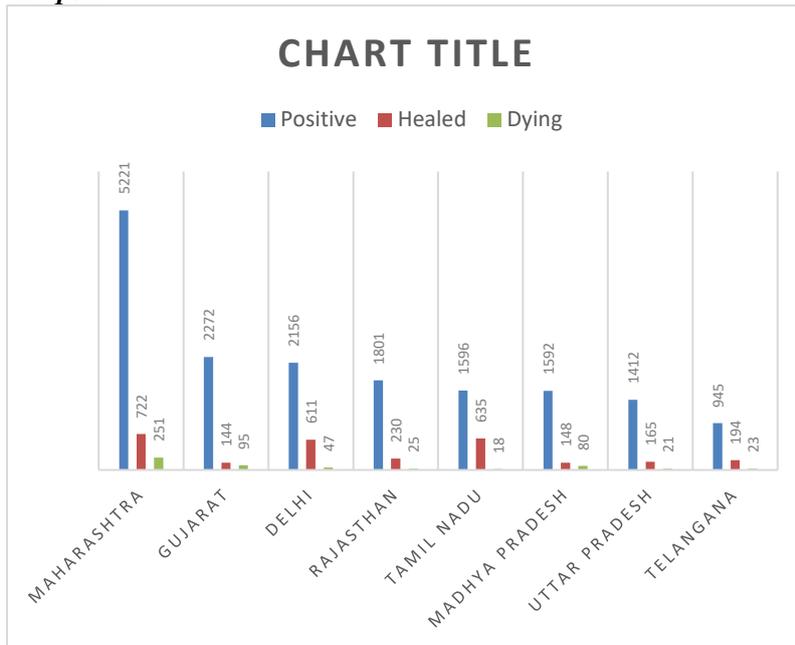
S. No.	State	Positive	Healed	Dying
00	India	20471	3960	652
01	Maharashtra	5221	722	251
02	Gujarat	2272	144	95
03	Delhi	2156	611	47
04	Rajasthan	1801	230	25
05	Tamil Nadu	1596	635	18
06	Madhya Pradesh	1592	148	80
07	Uttar Pradesh	1412	165	21
08	Telangana	945	194	23
09	Andhra Pradesh	813	120	24
10	Kerala	427	323	03

*(Reference – Aarogya Setu Date :23 April 2020 Time:09:00AM)*

According to the above table, the information of the first 10 states of India is recorded. According to which a total of 20471 people have been infected in India and 3960 have been cured and 652 deaths have been reported. .144 people have recovered and 95 people have died as well as the top ten in the top ten Kerala has 427 infected and 323 protected Is and 03 people have died.The explanation of this matter can be clearly understood from the graph given below.

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### Graphs



### Meaning of Pollution

“Pollution is an unavoidable and irreversible change that affects the physical, chemical, or biological characteristics of air, soil, water, as well as human beings. In general, definitions of pollution include air, land, water, organisms, industries, cultural buildings, remnants of Indus or other river cultures.”

### Air Pollution

The main components of air are oxygen, carbon dioxide, nitrogen and water vapor. The mixture of gases in the atmosphere is called 'air'. The weather contains about 21% oxygen, 78% nitrogen, 0.03% carbon dioxide, 0.9% argon gas as well as a small amount of helium, krypton and other inert gases.

Lockdown is a boon to nature. Which has resulted in a significant reduction in pollution. What we have done about the earth's environment in the blind run of development has been a worrying question for the last four decades. For the last few years, the entire country, especially the developing countries, has joined the anti-environmental development. It is estimated to spend 20 thousand crores a year.

Thus, despite spending hundreds of crores of rupees, the breakthrough has not been achieved by giving a 21-day lock-down to avoid the impact.

Industrial growth rate has dropped from 7.50% to 2%. Thus, the economy is in grave danger. But the fragrance blends into the beauty of the environment.

The poison of pure air that made human survival through industries, factories, road vehicles etc. Whose 21-day lockdown has changed. According to the latest data from the Central Pollution Control Board New Delhi, there were good signs of environmental improvement during the Janata Curfew March 22. In Delhi, the air quality index (AQI) was between 101 and 250 on that day. As well as a 2.5% reduction in risk counts.

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Nitrogen and sulfur dioxide in some parts of Delhi have declined by 34% and 51% respectively as compared to March 21. There have been significant improvements in the statistics and air quality of the first week of lock downloads.

*Air quality calculations are known as indicators of air quality. In which depending on the amount of air pollutants,*

1. Air quality is considered good when AQI is 0 to 50.
2. Satisfaction is considered when AQI is 51 to 100
3. Medium level is considered bad when AQI is 100 to 200
4. AQI is considered bad when it is 201 to 300.
5. AQI is considered extremely bad when it is 301 to 400.

Based on the Central Pollution Control Board's statistics, good and satisfactory air quality indicators were found in 54 cities on March 21, good air quality (out of 30) and satisfactory (out of 91 cities in India) this year as compared to poor air quality indicators in 9 cities. No air pollution was found in any city on March 21 and in many cities like Kanpur, Lucknow, Muzaffarnagar, Singrauli, Guwahati, the level of P.M 2.5 was definitely weak from March 25 to March 28 due to local reasons.

In the first week of lock-down in Delhi this year, from March 25 to April 1, P.M 2.5 received only 16-42 micrograms per cubic meter, which is 72-187 lighter than in 2019, 72 to 171 in 2018 and 49 to 116 micrograms in 2016, much less than in cubic meters. Water pollution has also dropped significantly due to lockdown. The pollution levels in the Yamuna and Kanpur in Delhi and Varanasi have dropped significantly. According to the Uttar Pradesh Control Board, the amount of soluble oxygen in the Ganges in Varanasi during this period was 8.3-8.9 grams per 8 liters, which is more than the minimum level of seven grams per liter of clean water. According to the Water Board and Citizens, lock down has significantly improved pollution of Yamuna.

Corona's impact on Gujarat's fastest-growing Ahmedabad has been environmentally beneficial. In the normal days the AQI was 150 which has been reduced to 106-108 in one day after the mass curfew.

Ahmedabad had the highest AQI of 314 13 on February 26. Which fell to 22 March AQI 117. Which recorded the lowest AQI of 37 on March 27 which is currently recorded in the April 19 AQI paper<sup>2</sup>

Carbon emissions in New York City in the United States have decreased pollution by 50% this year compared to the previous year.

Carbon emissions are reported to decrease by 25% to 30% in China. The consumption of cucumbers has decreased by 40% at the end of 2019 in China's Big 60 power plants. As well as reduced nitrogen dioxide emissions.

This is not the first time in history that there have been so many events in history, such as the 14th-century Black Death in Europe, which also saw a decline in carbon emissions in 2008-09 as a result of the general recession.

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<sup>2</sup>(Reference - Air real time AQI)

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Researchers at the Max Planck Institute in Germany have released a new report on air pollution, which shows that air pollution reduces life expectancy by three years. According to one estimate, India is the most polluted country in the world.

According to research cars from Columbia University, carbon monoxide emissions have dropped by about 50% for a few days during this period, mainly due to cars and trucks.<sup>3</sup>

Anand city in the state of Gujarat is a fast growing city surrounded by many small enterprises. The air pollution of Anand city has dropped significantly due to lock down. AQI-124 on March 22, AQI-64 on 27 March, AQI-91 on 19 April and AQI-53 at least 20 April.

### Objectives

1. To check the situation of AQI before and after curfew in Gujarat.
2. To Out of the seven major cities selected in Gujarat, which city has the highest AQI and which city has the lowest?
3. To Study Really imposing curfew reduces AQI. Find out if the status quo can be applied in the future.
4. To be aware of how much pollution can be reduced if a public curfew is imposed on certain days of the year or months.

### *Comparative AQI Status – 22nd March, 2020 at 7am (Before Start of Janta Curfew) and 23rd March, 2020 at 7am (capturing impact due to Janta Curfew)*

S.No	State	City	AQI on 22nd March, 2020 at 7am (JantaCurfew imposed)	AQI on 23rd March, 2020 at 7am	Change on 23rd in comparison to 22nd March, 2020
01	Gujarat	Amedabad	138	113	-25
02		Ankleshwr	84	82	-2
03		Gandhinagar	88	87	-1
04		Nandesari	128	124	-4
05		Vapi	84	105	+21
06		Vatva	120	119	-1
07		Anand	124	123	-1

*(Reference – Central Pollution Control Board)*

The above table presents the AQI data of the effect before and after the public curfew considering the five major cities of Gujarat. Based on which it is clear that the maximum debt is seen in the AQI. That is, the reduction is noted. Before the commencement of the public curfew in Ahmedabad, the AQI was 138 at 7 AM on March 22, which has come down to AQI 113 at 7 AM on March 23. L is. Which is a very good thing for the residents of Ahmedabad. Also, before the commencement of public curfew in Ankleshwar, the AQI was 84 at 7 AM on March 22, which has come down to AQI 82 at 7 AM on March 23. Thus, the difference remains at -2. The difference is minimal. In Gandhinagar, AQI has been reduced from 88 to AQI 87 as per the above corresponding time and date. In which only -1 has been

<sup>3</sup>(Reference - BBC News 19 March 2020)

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reduced. In Nandeshwari, AQI 124 has been reduced from AQI 128 thus, a difference of -4 has been noted.

The AQI was 84 at 7 AM on March 22 before the start of the public curfew in Vapi, which increased to 105 at 7 AM on March 23. Thus, an increase in AQI is recorded at +21. Which is an inappropriate thing for the residents of Vapi. The AQI was 120 at 7 AM on March 22 before the start of the public curfew in Vatva, which dropped to AQI 119 at 7 AM on March 23. And in Anand, it has dropped from 124 to 123. Similar differences are observed in Vatva and Anand-1. Based on the complete information, it is clear that there has been a significant reduction in AQI. As a result, the public has seen a positive aspect in terms of the environment.

### FINDINGS

In the seven major cities selected in Gujarat, curfew was not imposed before 7 am on March 22. At that time in Ahmedabad it was 138 which on 23rd March at 7 am the AQI dropped to 113. That means 18.11% favorable change can be seen in it.

Nandeshwari had an AQI of 3.12% and Vapi had an AQI of 25%. The exact causes of which need to be known. Vatva has seen a positive improvement of 0.88% and Anand has seen a positive improvement of 0.80%. Based on which it can be said that as a result of lock down, pollution is reduced and air is purified. However, the picture in Vapi city is slightly different and AQI has increased.

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### Conflict of Interest

The author declared no conflict of interest.

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