

# India's Response to COVID-19: Pros and Cons

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**Abstract:** *The rapid spread of Coronavirus like wildfire throughout the world is posing a serious threat to mankind. This study is aimed at analysing the response by India towards tackling the outbreak of Coronavirus and take stock of the current situation, and the steps that are being taken to control the outbreak with the least possible damage. This study analyses the effects of the nationwide lockdown in controlling the pandemic, and the adverse effects faced by people. It also analyses the environmental impact in major Indian cities after enforcing the nationwide lockdown.*

**Keywords:** COVID-19, Lockdown and PPEs

## 1. Introduction

The outbreak and prevalence of infectious diseases pose a serious threat to human health and life. Some infectious diseases have high mortality and fatality rates, and some of these diseases lack treatments or vaccines. Therefore, it is important to monitor disease occurrence and to give timely early warnings of potential disease outbreaks. These measures generate sufficient information on disease epidemics, reduce infectious disease outbreaks, and control the effects of the disease on specific populations [1].

Coronavirus, commonly referred to as COVID-19 is a virus that was first detected among patients in Wuhan, China on 31<sup>st</sup> December 2019. The name "Coronavirus" is given by scientists due to their 'crown' like spikes observed on the virus surface membrane when viewed through a microscope [2].

Most of the Individuals affected by COVID-19 in India are asymptomatic. However, people who have a previous history of diseases, and are affected by the virus are prone to be at higher risk and might require more attention in the ICU (Intensive Care Unit). Only a small section of the affected people may need a ventilator for life support.

As people with infections arrive in countries or areas without ongoing transmission, efforts are being made to halt transmission, and prevent potential outbreaks [3].

With India closing to stage III of the virus outbreak, i.e. community transmission, this paper summarizes the efforts made by the Indian government to reduce the transmission chain. It also assesses the environmental impact of COVID-19 throughout India.

## 2. India's response to tackle Covid-19

Our nation has geared up to combat the pandemic with proactive measures in line with global approaches and guidelines from the Ministry of Health and Family Welfare, and the Ministry of Home Affairs. In the unifying spirit of participation, the government is engaging with all the citizens to combat the virus [4]. With the rise in the number of Coronavirus cases at an alarming rate in China in January 2020, India had not yet been affected by this deadly virus.

India recorded its first COVID-19 case on 30<sup>th</sup> January 2020 in the state of Kerala. Indians were advised to avoid shaking hands, but instead do 'Namaste'. Isolation wards in many hospitals were set up as it was the onset of the deadly virus in India.

On 3<sup>rd</sup> March, India was seeing a gradual rise in the number of cases. The government adopted **contact tracing, tracking and quarantine for 14 days** as the means to stop COVID-19. State governments began laying the roadmap to strengthen the medical facilities.

In an unprecedented move, India put restrictions on the export of drugs and medicines such as common antibiotics and metronidazole to ensure that there was no shortage of medicines for the next few months.

The government suspended all visas (temporary and permanent) granted before 3<sup>d</sup> March to citizens of South Korea, Japan, Iran and Italy, as those countries were the worst affected.

On 4<sup>th</sup> March, the Health Minister Dr. Harshvardhan announced that the Indian government began screening of passengers (by using thermal sensors) as a preventive measure at International airports in 7 major Indian cities.

On 6<sup>th</sup> March, the Indian Army joined hands in the fight against COVID-19 to set up isolation facilities with an additional 1250 bed quarantine units.

With fear mounting among citizens, many companies stopped the use of biometrics to record attendance indefinitely.

On 11<sup>th</sup> March 2020, the World Health Organization (WHO) declared that COVID-19 can be characterized as a **Pandemic** [5].

On 12<sup>th</sup> March, India recorded its first COVID-19 death in Kalburgi, Karnataka.

On 13<sup>th</sup> March, with the **first COVID-19 death**, the Karnataka government ordered shutdown of educational institutions, shopping malls, hotels, bars and night clubs. This saw lesser users of public the metro, busses and cabs

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and the public transport department started incurring losses. On the same day, Delhi announced India's second Covid-19 death. The number of people affected throughout the country at that time was just 82.

The cash rich Indian Premier League (IPL) was also postponed to April 15<sup>th</sup> to stop the surge in the number of cases. With the IPL postponed, there was also an air of uncertainty among athletes who had qualified for the Olympics.

The country saw a rise in the number of testing labs and increase in the number of Covid-19 dedicated hospitals.

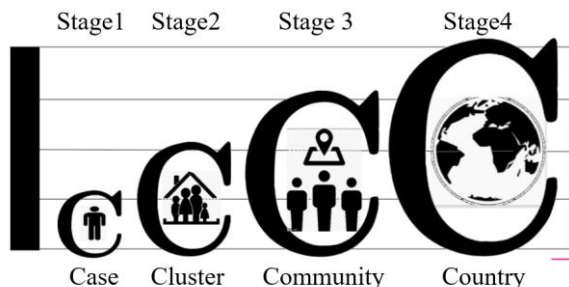
On 15<sup>th</sup> March, the Indian government declared Covid-19 as a **Notified Disaster**. This gave license to state governments to use the State Disaster Relief Fund (SDRF) to meet the supply of essentials like food, water and accommodation.

The public transport facilities started sanitizing vehicles throughout the country on a frequent basis to avoid the spread of coronavirus.

On 17<sup>th</sup> March, the WHO classified how the pandemic occurs. First, we are dealing with the "Four Cs" scenarios of the outbreak:

- 1) No case
- 2) First case
- 3) First cluster
- 4) First evidence of community transmission.[11]

#### 4 Cs OF THE PANDEMIC



**Figure 1:** The 4 Cs of a pandemic according to the WHO

On 18<sup>th</sup> March, the government launched an email address and helpline number regarding travel restrictions that were imposed on foreigners i.e. 011-23978046 and ncov2019@gov.in .

As the number of cases were increasing extensively in Italy, it came as a wake-up call to the whole world. Italy had recorded 31,506 cases. Italy, a country that is known for its world-renowned health facilities seemed to be taking a beating. A country with just over 6 crore people was in such a bad situation. The message was clear that India had to lay out a concrete plan as we are the world's second most populated country with 137 crore people, and are at a higher risk if we are negligent in the initial stages.

On 19<sup>th</sup> March, while addressing the nation on the coronavirus outbreak, the Prime Minister announced a

'Janata (public) curfew' on March 22<sup>nd</sup> from 7am to 9pm. During the Janata curfew, people were requested to avoid public spaces and stay home for 14 hours in the view of coronavirus outbreak [6]. After this move by the central government, many states announced a lockdown till 31<sup>st</sup> March. In response to this, many companies and institutions introduced the concept of **Work from Home** and started functioning with only 50% staff.

On 22<sup>nd</sup> March, with the rise in demand of sanitizers and N95 masks and shortage of supply, the government fixed the prices of sanitizers and masks as prices were increasing constantly." Keeping in view that surgical masks, N95 Masks and hand sanitizers are being available at great difficulty or at exorbitant prices, the government has declared these items as essential commodities by amending the schedule of the essential commodities act 1955" [7].

On 24<sup>th</sup> March, in an unprecedented measure, the Prime Minister announced a **Nationwide lockdown** for the next 21 days all across the country, during his second address on the COVID-19 pandemic [8]. However, the people were told not to do any panic buying or hoarding of essential goods as the food supply chain and medical facilities would not be stopped. The lockdown was announced to stop the spread of the deadly virus. Citizens were advised to practice **Social Distancing** and to use masks to prevent the virus from entering the nose or mouth. The government ordered the suspension of domestic commercial flights on 24<sup>th</sup> March, as it moved towards enforcing a complete lockdown to contain the rapidly spreading Covid-19 outbreak [9]. On 24<sup>th</sup> March, there were 519 confirmed cases [10] with 13 deaths.

For a nationwide lockdown to be successful, it has to happen with coordination and maintenance of law and order. It was a major task for the state police departments and other law enforcing authorities to ensure that all the rules were being followed, and to see to it that the lockdown will effectively serve its purpose of flattening the curve. The government started the **usage of drones** to track people who were violating the lockdown.

From 25<sup>th</sup> March, disinfection of areas that witnessed Covid-19 cases began in a large scale throughout the country.

With the lockdown imposed for 21 days, many daily wage workers were worried about their future. Many of them were stuck in different states without food and shelter

On 26<sup>th</sup> March, the Union Finance & Corporate Affairs Minister Smt. Nirmala Sitharaman announced **Rs 1.70 Lakh Crore relief package under Pradhan Mantri Garib Kalyan Yojana for the poor to help them fight the battle against Corona Virus**. While addressing the press conference, Smt. Sitharaman said "Today's measures are intended at reaching out to the poorest of the poor, with food and money in hands, so that they do not face difficulties in buying essential supplies and meeting essential needs" [12].

The major announcements of Pradhan Mantri Garib Kalyan package included:

**I. Insurance scheme for health workers fighting COVID-19 in Government Hospitals and Health Care Centres**

- Safai karamcharis, ward-boys, nurses, ASHA workers, paramedics, technicians, doctors and specialists and other health workers would be covered by a Special insurance Scheme.
- Any health professional, who while treating Covid-19 patients, meet with some accident, then he/she would be **compensated with an amount of Rs 50 lakh under the scheme.**
- All government health centres, wellness centres and hospitals of Centre as well as States would be covered **under this scheme approximately 22 lakh health workers would be provided insurance** cover to fight this pandemic.

**II. PM Garib Kalyan Ann Yojana**

- Government of India would not allow anybody, especially any poor family, to suffer on account of non-availability of food grains due to disruption in the next three months.
- **80 crore individuals, i.e, roughly two-thirds of India's population would be covered under this scheme.**
- Each one of them would be provided double of their current entitlement over next three months.

**Pulses:**

- To ensure **adequate availability of protein** to all the above-mentioned individuals, 1 kg per family, would be provided pulses according to regional preferences for next three months.
- These pulses would be provided **free of cost** by the Government of India.

**III. Under Pradhan Mantri Garib Kalyan Yojana,****Benefit to farmers:**

- **The first instalment of Rs 2,000 due in 2020-21 will be front-loaded and paid in April 2020 itself under the PM KISAN Yojana.**
- It would cover 8.7 crore farmers

**IV. Cash transfers Under PM Garib Kalyan Yojana:****Help to Poor:**

- A total of **20.40 crores PMJDY women account-holders** would be given ex-gratia of **Rs 500 per month for next three months.**

**Gas cylinders:**

- Under **PM Garib Kalyan Yojana, gas cylinders, free of cost**, would be provided to 8 crore poor families for the next three months.

**Help to low wage earners in organised sectors:**

- **Wage-earners below Rs 15,000 per month in businesses having less than 100 workers** are at risk of losing their employment.
- Under this package, government proposes to pay **24 percent of their monthly wages into their PF accounts for next three months.**

**Support for senior citizens (above 60 years), widows and Divyang:**

- Government will give them **Rs 1,000 to tide over difficulties during next three months** [12].

On 27<sup>th</sup> March, the Reserve Bank of India announced that it will give Rs. 3.7 Lakh crore to fight the virus. It made loans cheaper, payment of credit card dues were deferred from March 1<sup>st</sup> to 31<sup>st</sup> and the major highlight included No EMIs for the next 3 months. This came as a major relief to businessmen who had taken loans and did not have money to repay it to the banks [13].

With a large number of migrant workers stranded without food and shelter, they were desperate to go home. It is a challenging task by the state police departments to ensure that they are safe. Many police officials began cooking and packing meals for the migrant workers and the poor. This was done to see to it no one is starving in difficult times.

While the government was ensuring that the lockdown is enforced effectively in India, in the meantime, the government was also doing its best to get back Indians who were stranded in other countries like China and Iran to name a few.

By the end of March, the number of cases in India had crossed 1300. When things looked to be coming under control, a religious event that took place in mid-March in Delhi saw almost 200 people testing positive. This came as a nightmare to government officials. The attendees of this religious gathering had spread all across the country. This saw a steep rise in the number of cases in India.

Tracking these people, quarantining them, and also tracking the people who they had contact with and putting them also in isolation proved to be a herculean task.

After this religious event, the government made it very clear that all religious places like temples, mosques, churches and gurudwaras be closed until the situation comes to normalcy.

On 28<sup>th</sup> March, the government set up the PM CARES fund (Prime Minister's Citizen Assistance and Relief in Emergency Situations Fund). In times of need, many big names in the country like renowned businessmen, film stars, sportspersons and the well settled people of society started donating money to the fund, and even sponsored for many migrant worker's their basic requirements.

On 31<sup>st</sup> March, there were more than 1.37 lakh cases in USA. The measures being taken in India were yielding good results, and the number of affected people in India were relatively low.

The first half of April saw migrant workers struggling to meet ends. It was such a big task to locate all the workers, provide them with shelter, and three meals a day. The schemes announced by the central government could be utilized by the ration card holders only.

To provide relief to the people who do not have ration cards

was the biggest challenge the government faced. The government sought the help of NGOs and volunteers to efficiently provide ration to the poor and needy.

It is a long battle, and a battle that has to be won. In bringing the nation together, the Prime Minister asked all citizens to clap their hands, or ring bells on March 22<sup>nd</sup>, in appreciation of the efforts of doctors, nurses, health workers and the all the corona warriors.

On 3<sup>d</sup> April, the government issued a statement detailing its plans to procure 6.2 million PPEs (Personal Protective Equipment) that are desperately needed across the country. 17 companies were asked to help meet 38 million-unit PPEs [14]. With PPEs being exported till March, it looked like the government should have stopped the export of PPEs earlier. The Indian Railways started production of PPEs to meet the demand.

As doctors faced shortage of PPEs, many doctors decided to work for extended hours without lunch or tea breaks, to use the available PPEs judiciously. In the meantime, big industries like Reliance, Maruti Suzuki and Mahindra started production of ventilators. This came as a welcome step to the government. They also placed orders for the import of ventilators, before experiencing a shortage. This was a well-planned move by the Indian government.

On 5<sup>th</sup> April, the Prime Minister asked the nation to turn off all the lights at 9 pm for 9 minutes, and light diyas or candles as a symbol of unity in the nation in the fight against coronavirus.

With the continuous efforts to ensure that the lockdown is going smoothly, the citizens of the country showed great coordination. Festivals like Ram Navami, Good Friday and Easter were celebrated indoors, without large gatherings.

On 7<sup>th</sup> April, the number of COVID-19 cases stood at 4789. Many states started discussions on extending the lockdown as the number of cases were increasing very fast.

The central government suspended funds for Members of Parliament Local Area Development Scheme (MPLADS) for the next 24 months. As per this scheme, every MP is allotted 2 crore rupees for developmental works in his/her constituency. This might help the cause to curb the virus now, but for the next two years, the planned projects of streetlights, public parks, footpaths and other works will be halted.

On 9<sup>th</sup> April, the Central government announced a **15000-crore package to ramp up health infrastructure to fight COVID-19**. The government said an amount of Rs 7,774 crore out of the package will be utilized for immediate response to the pandemic while rest of it will be spent in the medium-term (1-4 years) under mission mode approach [15].

On 11<sup>th</sup> April, Prime Minister Modi had a discussion with all the Chief Ministers regarding the situation to decide the next step after the 21-day lockdown.

The situation had got worse, as coronavirus was knocking the door at Dharavi slum in Mumbai. With 3 deaths and 12 active cases, it was emerging as a hotspot. In the south, Tamil Nadu had seen a large spike in the number of cases and was almost in Stage III of the pandemic.

After extensive review of the situation, **the central government decided to extend the nationwide lockdown for another 19 days up till 3<sup>d</sup> May**. The Prime Minister announced it on the last day of the lockdown. As the number of on April 14<sup>th</sup> was at a shocking 10,814, the government had to take this extreme measure of precaution. The systematic plan to slowly come out of the lockdown is to be decided. There will be a review of the situation on 20<sup>th</sup> April, and certain relaxations will be provided in areas where there are lesser number of cases.

The central government came up with the **Arogya Setu App**. The key objective behind the app is to notify users if they come in contact with any COVID-19 positive person at any given point, and whether there are chances to get infected. It also provides tips to protect from coronavirus. The app uses phone location and Bluetooth sensors to detect user movements, keep track, and notify if they come in contact with a carrier of coronavirus infection. It also provides precautionary measures they can use to stay safe. It also includes information related to the virus, help centers, Self-Assessments Tests and more [16].

On 11<sup>th</sup> April, an incident in Patiala, Punjab saw a police officer's hand being chopped off by a group of people in a vegetable market. The attackers hid in a gurdwara for 2 hours, before surrendering to the police. Credit has to be given to the police force, for their coordinated effort in seeing through that situation did not get worse as the attackers had weapons with them. The officer underwent a 7.5-hour successful surgery, and is in the process of recovery.

On 20<sup>th</sup> April, certain restrictions were relaxed. Farming operations, procurement activities and *mandis* organized by the state will be operational and pharmaceutical research activities and manufacturing of drugs, medical devices will be operational [17]. As on 23<sup>rd</sup> April. The number of cases in Maharashtra kept on increasing exponentially. The number of cases in Maharashtra on 21<sup>st</sup> April was 5649. There are talks that the lockdown might be extended in Mumbai and Pune after 3<sup>d</sup> May.

As on 25<sup>th</sup> April, the number of coronavirus cases in India has increased to 24,506, including 775 deaths, the Union Home Ministry said today, adding that 1,429 cases and 57 deaths were reported in the last 24 hours. An improvement has been recorded over the last week in the recovery rate which indicates the number of people who have successfully fought off the illness, the government data shows it is 20.66% [18].

The doubling rate has slowed down from 3.5 days before the lockdown to 10 days. This is a positive sign for the citizens of India.

These are the steps that have been taken by the Indian government. The Finance minister and Prime minister are finalizing the second relief package to be announced for the benefit of the underprivileged.

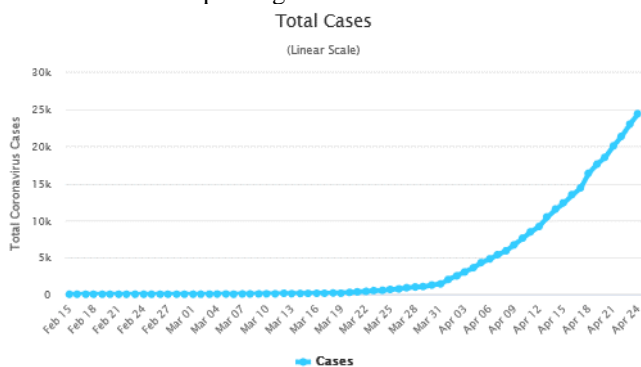


Figure 1: Total number of cases in India till 24<sup>th</sup> April [19]

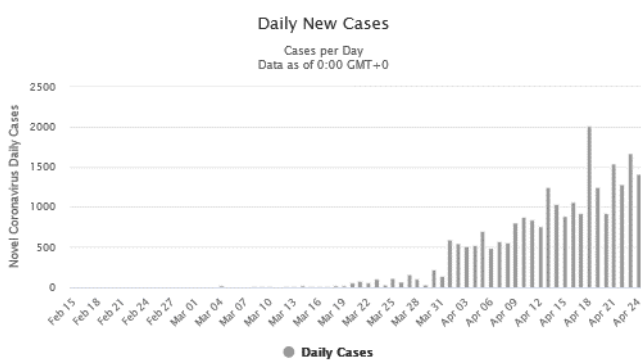


Figure 2: No. of cases that are recorded on a daily basis [19]

### 3. Environmental impact in major Indian cities

- With the lockdown enforced, there is no vehicle movement, and currently no industries are working. Thus, the NO<sub>2</sub> emissions have reduced across the country. The AQI (Air Quality Index) has also improved, and people are inhaling air free from pollutants.



Figure 2: Bangalore on 5<sup>th</sup> February and 22<sup>nd</sup> March [22]



Figure 4: Taj Mahal, Agra on 3<sup>d</sup> January and 16<sup>th</sup> March [23]



Figure 5: New Delhi, as seen from the Yamuna River on 21<sup>st</sup> March 2018 [24]



Figure 6: New Delhi, as seen from the Yamuna River on 8<sup>th</sup> April [24]

- The rivers and lakes have slowly starts rejuvenating without human interference. The GANGA and YAMUNA water is becoming fresh due to shutdown of industries [20].
- As people are at home, this implies that there is purchase and consumption of only essential items. Thus, the solid waste production will naturally reduce. In many cities, the solid waste production has reduced drastically (in tonnes). In Rajkot, where an average of 600 tons of waste

was generated on a normal day, the quantity has now reduced by 100 tones. In Vadodara, the garbage has reduced from 1000 tones/ day to 700 tones /day. As the construction activities had been stopped completely, the construction waste produced was 0. However, the biomedical waste has increased throughout the country [21].

- With fishermen not being allowed to fish in the seas, the fish population would have increased enormously.
- Birds which were not seen so often in Bangalore, can be seen now.
- The noise levels have dropped, the honking of vehicles, the sounds of drilling and other construction activities have all stopped.
- The power consumption has reduced as the industries are not working. However, water consumption has gone up as people are more hygienic and wash their hand frequently.
- As farming activities had also stopped, the agricultural lands have replenished their soil fertility.
- As there is no human intervention in wildlife sanctuaries and national parks, poaching activities have reduced.
- The extensive drug use in Punjab has stopped thanks to the National Lockdown.

**Table 1:** Air Quality Index in different cities before and after lockdown. [25]

CITY	AQI on 26 <sup>th</sup> March 2020	AQI on 25 <sup>th</sup> April 2020
New Delhi	110	82
Pune	95	63
Bangalore	58	50
Chandigarh	75	63
Chennai	60	27
Guwahati	250	78

**Table 2:** Air Quality Index severity [25]

AQI Range	Severity	Illustration
0-50	Good	Green
50-100	Moderate	Yellow
100-200	Poor	Orange
200-300	Pink	Pink
300-400	Severe	Purple
400-500+	Hazardous	Red

#### 4. Conclusion

With constant efforts, the Indian Government has seen to it that India is still in Stage II of transmission, and has not reached community transmission. Overall, the country is in the front seat in terms of controlling the virus outbreak. The government started taking action even before the virus affected India. The Prime Minister has shown that he is open to suggestions from opposition party leaders also. This was seen when he called prominent leaders from other parties to take their views. With the gesture of lighting diyas/ candles, the whole country showed that we are united in the fight against coronavirus.

With another 8 days left in the lockdown, the country is slowly showing signs of improvement. The doubling rate has

gone up to 10 days, which was 3.5 days before the lockdown.

In this fight against COVID-19, the lockdown has helped improve the environmental conditions in India. Nature is regaining its lost beauty.

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