

Identification of Causes and Impacts of COVID-19 on Civil Engineering Projects

Shivam Dwivedi

Global Nature Care Sanghathan group of Institutions Jabalpur, Madhya Pradesh, India

Abstract: *This paper presents the causes and impacts over projects under civil engineering due to the pandemic, COVID-19 which is caused due to the SARS-CoV-2. Nowadays in every county construction industry contribute a huge percentage in the economy and to raise the graph of GDP of that country, that's why civil engineering needs proper time, technologies, good constructions material, transportation facility, legal permissions by the higher authorities to make it safe towards society, labours and many more major components. But due to the COVID-19, all the essentials get affected adversely which caused the growth declination in civil engineering work.*

Keywords: Construction; Coronavirus; Environment; Lockdown; Projects; Pollution

1. Introduction

The construction sectors by civil engineers contribute about 13 percentage in world GDP. PricewaterhouseCoopers (PwC) said that Just seven countries - China, India, the United States, Indonesia, Canada, Russia and Australia - will account for 65 per cent of the growth in global construction to 2020 (PwC Report), and India will become worlds third-largest construction market as per PwC. In 2020 the budget declared by Finance ministry of India made the expenditure of 100 thousand crores. It's when we're faced with a pandemic such as we're confronting with the coronavirus that we seem to wake up to the fact that the construction market is facing sharp declination nowadays.

No labour can work due to maintaining the social distance to break the chain of this pandemic. All industries including those industries which is responsible for making raw materials get shutdown.

There are so many challenges that occur due to the crises in front of India and globally. Some construction projects have been delayed. In some projects labours are not able to show their availability whereas some projects are stopped due to the lack of construction material and transportation system which is also affected during this war with an invisible enemy.

This COVID-19 breakout created a chain reaction for the downfall of all the sectors including the construction market. The focus of firms owner, government and higher authorities shifted towards, how we can overcome with this breakout and also in this way civil engineering projects shut down in middle.

2. How COVID 19 Started a Chain Reaction of the Downfall of the Construction Market

2.1 Activities Break-off

Construction projects are generally supported by many factors to support it and all these factors are interlinked with each other to make any project successful. During monsoon,

the construction activity slows down and the period between March to June is ideal for it, but due to the COVID-19 outbreak more than half of the year will not show any remarkable progress and contribution is the recovery of GDP growth. Unlike this sectors requires the physical presence of large workforce skilled and unskilled both along with technological integrity. But the balance of all the supporting factors of the construction market has become untenable in this pandemic situation.

2.2 Manpower Mitigation

In India there are over 28 billion labours works in a construction sector including skilled and unskilled labour. As we know that India is the developing country so per-person income is very less. About 70 per cent of these labours work due to poor or pitiful condition. In this pandemic, all these labours are facing a lot of struggle to maintain the availability of needs and for survival. Over 60 to 65 per cent are in reverse migration mode and 30 to 35 per cent on lockdown at the site in a labour camp (KMPG).

2.3 Construction Material Availability

India imports tonnes of construction material from overseas countries. Last year India imports the construction material of 20.7 USD million which shows the growth of 28.99 per cent from the previous year (Material Import Report). After the agriculture sector, building material industry is the second largest employer in India. It contributes 8 per cent in GDP. Due to the lockdown situation, all these figures are facing downfall simultaneously affects civil engineering projects.

2.4 Halt of Transportation

India's energy demand falls to 11 per cent in March 2020, due lockdown situation in all over the country (TERI Report). In consequences, the demand for transportation system adversely affected. Generally, the transportation network in civil engineering projects plays a most important role from start to end.

3. Impact on Private Firms

The medium and small scale firms in the construction market are in loss and some are in major risk. These firms generally sign a contract with the government and other authorities for the construction projects under the time limitation, in lockdown situations these firms experiencing the poor financial condition. These firms are completely depended on the payments based on the work progress. And if we talk about large constructions firms then these firms shows a sharp dip in share market due to COVID-19 outbreak.

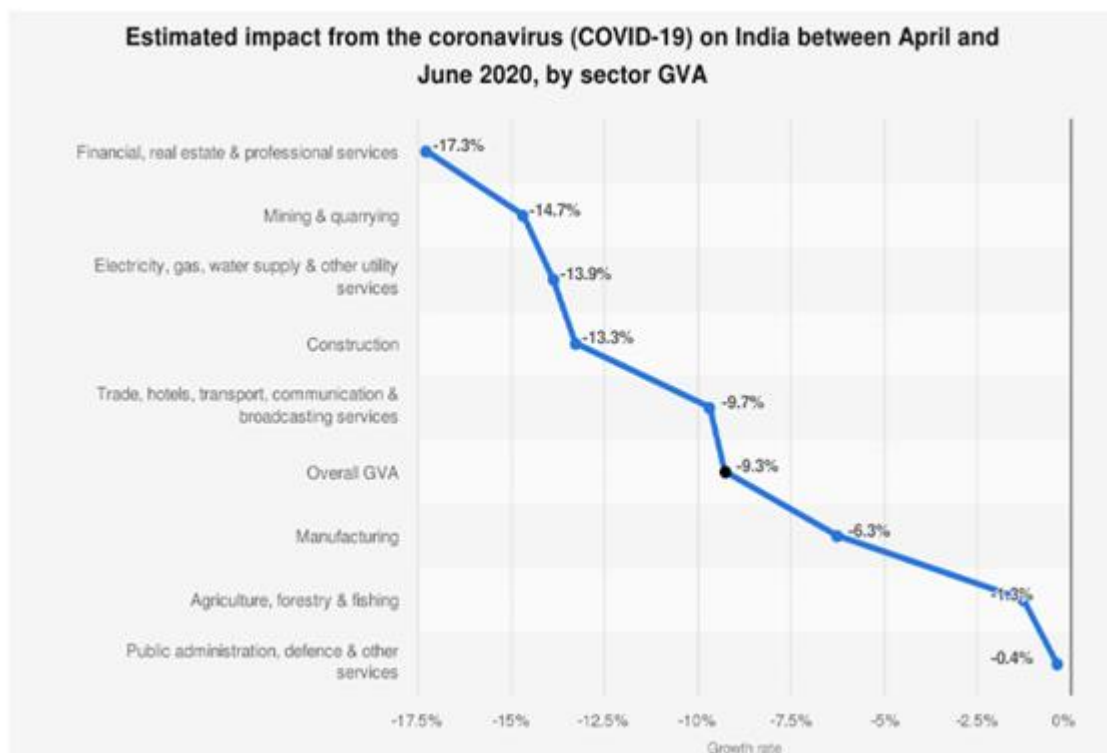
4. Repercussions on Government Policies

Before the pandemic finance ministry of India and the ministry of housing and urban affairs made so many policies for the development of infrastructures of different sectors in 2020. Even huge amount of budget is also proposed by the

finance ministry for smart city projects, railway infrastructures, airbase, construction projects of the defence sector, housing sector etc. but in the effect of lockdown all the projects stopped for the welfare of the country and sanctioned policies are terminated due to the situation came in front of the country by the emergency shutdown in war level.

5. Economy Demolishment

The coronavirus impact set the clock backward on the development progress of the overall globe. In the comparison of other countries India is not that much infected like other countries, but as the precautionary measure lockdown is necessary by which some major industries- with finance, real estate and professional services bearing an estimated loss of 17.3 per cent,



Estimated Impacts from coronavirus (COVID-19) on India between April and July 2020

6. Government Action Plan

The Indian government is continuously working to create policies to regain the GDP growth and to stabilize the economy of India. To do this government announced a relief package of 20 lakh crore which is approximately 10 per cent of Indian GDP. This relief package has a major focus of micro, small and medium enterprises.

3.5 crores construction workers will get the benefit of this relief package.

For contractors, the government provide an extension of 6 months to cover the obligation of contractors to complete the construction projects.

Central government directed the state government to invest

31,000 crores to protect the construction workers against any economic disruption (relief package report).

7. Conclusion

COVID-19 is the invisible is the more and this biological war is responsible for thousands of deaths more than the world wars. The war can only be stopped by medical science by developing effective vaccination and through social distancing practice. In between all this Michel Ryan, chief executive director of WHO state that India has tremendous ability to deal with this outbreak, even the stepwise lockdown process also showed the reduction rate of COVID-19 patients and the government trying to give a boost to the Indian economy, it has been predicted by the experts that construction sector will be on track in between August to October month

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