International Journal of Scientific Research in Engineering and Management (IJSREM)
Volume: 04 Issue: 09 | Sept -2020 ISSN: 2582-3930

Pre and during covid situation and impact of Covid-19 on CSR activities undertaken for environment and sustainability

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ABSTRACT:

The current pandemic (Covid-19) has certainly contribute in the improvement of the natural environment state, over the air quality, water quality etc. The year 2020 started off on the wrong foot due to the outbreak of corona virus in the world. In the end of year 2019, a novel infectious disease COVID-19 was identified in Wuhan China, which now has turned into a global pandemic. Due to this the world has to face a temporary dramatic measure such as locking down entire cities, restricting all forms of transportation, imposing lockdowns, maintaining social distancing etc. Due to this enhancement in air quality and water quality has been seen. This paper discusses the impact of Covid-19 on environment and sustainability. On June 5 (World Environment Day) different experts has gave a summary on several environmental factors that saw improvement in India as a result of lockdown such as in air and water quality, noise pollution etc due to the shutdown of the industrial and human activities. This research paper will give an overview of the impact and effect of covid-19 on environment and sustainability.

Introduction

Each and every day comes up with new inventions and discovery and behind this lies number of experiments by researchers worldwide. This new discovery fulfills the day to day demand of growing population as something new is required every day. But each and every experiment does not guarantee success. The same thing happened in China where researchers were dealing with their projects and there was outbreak of a certain kind of virus known as Corona virus, leading to a severe disease. World health organization (WHO) stated that this disease is caused by a SARS-CoV, a new kind of virus. The disease involves the symptoms such as high fever, dry cough, tiredness, aches, sore throat, headache, etc. But the major problem is that this disease spreads very soon from the person suffering in contact. Started in early 2020, this disease changed many things all around; millions of cases in china arouse making the conditions drastic. Slowly this disease started to spread in nearby countries amongst that Italy got highest number of cases. Overloading of hospitals led to very serious problems and many patients lacked proper facilities. The death rate became high than the recovery rates.

In recent times, India became a major victim of this virus where people got infected and deaths in millions occurred. This disease not only affected the health of people but also the economy. Due to severe spread people had to maintain the distances between them so government came out with lockdown where day to day work was stopped and hence poor people who depends on daily wages were affected the most. From the well known companies to small scale industries everything was shut down. Due to lockdown many people were stuck in different cities as transportation facilities were also not allowed. Schools and colleges came out with online classes and examinations. Treatment of this disease became expensive which can't be afforded by everyone. The overall effect of this disease left the people with a lot of problems where people are still trying to cope with it, and further also this condition may remain for longer period of time as spread is more and a proper vaccine is required yet.

The World Health Organization (WHO) authenticated the fact related with the contagious nature of Corona virus through human globules inhalation during January 2020. WHO has declared that the COVID-19 is a sixth Public Health Emergency of International Concern because of the enormous aftermath of this fatal disease throughout the world. Many relevant studies revealed that COVID-19 is a

severe respiratory infectious disease which can attack the whole respiratory system and lungs of human being. In India, Maharashtra, Tamil Nadu and Delhi are the leading states in terms of total confirmed cases, whereas Meghalaya, Sikkim and Mizoram witness very few numbers of COVID-19 cases.

A monthly fall of 15% in carbon emissions was noted during March, followed by a 30% drop in April. Measures taken to combat the impact of Covid-19, an economic slowdown, falling consumption of coal and oil, and increasing renewable energy generation have all contributed towards this fall. The growing body of evidence shows a low-carbon and climate-resilient growth would yield lasting benefits. Sustainable infrastructure should receive the required attention and investment from governments. Sustainability as a concept has been in a turmoil over the last 35 years. Sustainability has been advancing as a concept of developmental strategies in a number of destinations and organizations. With the United Nations Sustainable Development Goals aiming to showcase progress towards sustainability by 2030, a number of stakeholders have been working hard to make such goals achievable and a step towards their completion.

As there is no vaccine/antibody officially available till date, the governments and local authorities in numerous countries have imposed/proposed lockdowns to restrict the movement of people and maintain physical distancing. There has been significant drop in India in particulate matter or aerosol levels after the COVID-19 lockdown over most parts of the country. There has been seen a lot of effects in air and water quality, less waste, very low noise levels, and the wildlife that came out of hiding. The lockdown has also resulted in effects like the gradual repair of the ozone hole. Large reduction in air-traffic resulted in a significant reduction in particulate matter and greenhouse gas emissions in the upper atmosphere, some of which shows to impact the stratospheric ozone layer. As in many parts of the world where people have been living in lockdown, traffic has nearly stopped and nitrogen dioxide emissions have dropped, according to NASA. More specifically, air pollution, in India has improved substantially; also a drastic change in air quality and water quality has been observed due to the lockdown. The main objective of the study is to examine the implications on environment and sustainability due to Covid-19 undertaken as CSR activities.

Literature Review

According to ElAlfy Palaschuk, Bassiouny, Wilson and Weber in their study of "Scoping the Evolution of Corporate Social Responsibility Research in the Sustainable Development Goals Era" stated that the global adoption of the United Nations' Sustainable Development Goals has shifted what society should expect of companies in their communities and their role as leaders in the global sustainability transition. Nevertheless, it should be clear that organizations are still among the largest contributors to issues of sustainability. Despite known profitability and mounting evidence pointing to the multiplicity of direct and indirect benefits, there remains a lingering reluctance to undertake strategic CSR initiatives. The field of management sciences has made notable strides in supporting corporate transitions toward more sustainable futures, led by an ambitious action-oriented research agenda. Emerging as a functional response to the innate difficulties in managing the sustainability paradox and making progress on sustainability targets, management sciences, as a field of research, holds the potential to ground practitioner decision-making processes in empirical evidence. While it is acknowledged that this scoping review falls short in establishing causality between the evolution of CSR research trends and progress on the SDGs, this paper should serve as an entry point for future scientific inquiry.

According to Szegedi, Behringer in their research of "The Role of CSR in Achieving Sustainable Development" stated that the concept of Corporate Social Responsibility and that of Sustainable Development progressed separately for a long time and it was not explicit what relationship was between the two. After summarising the definitions and reviewing the development process of Sustainable Development, it can be concluded that CSR is a business model which promotes business contributions to sustainable development i.e., it creates a balance between economic interests, environmental needs and social The interaction between the conceptions of CSR and sustainable development has strengthened in recent years; CSR is considered to be an integral part of sustainable development (World Business Council for Sustainable Development, 2000). Corporate sustainability is the company version of sustainable development, while CSR is a voluntary managerial approach to sustainable development.

According to Arora, Mishra in their study of "COVID-19 and importance of environmental sustainability" stated that

incidences of zoonotic spill over are increasing rapidly and mainly driven by environmental degradation, because humans are trespassing natural habitats and deliberately coming in contact with wildlife. Climate change that includes rise in temperatures, sea levels, change in pH of oceans, and altering patterns of rainfall/droughts are also impacting the incidences of zoonotic diseases. A slight increase in global temperature is expected to upsurge the risk of vector-borne diseases in new habitats/regions. Frequency of droughts has also increased due to climate change and this has resulted in increased dependency on meat from livestock and wild animals. Ever increasing levels of pollutants in the ecosystems is resulting in fast pace of mutations in microorganisms including human pathogens. Due to the unprecedented release of recalcitrant and xenobiotic pollutants, including radiations, microbial pathogens can mutate or evolve very quickly.

According to in their study of "Corporate Social Responsibility and Environmental Sustainability" stated that Sustainable development is an integration of social, economic and environment aspects and has emerged as an important topic of discussion amongst various units of society like corporate, government, media, non-profit organizations, and consumers. The placement of sustainability in the objective function of government in the Twelfth five year plan of India christened 'faster, sustainable and more inclusive growth' is indicative of the efforts that would be directed towards achieving this goal. Environmental sustainability is necessary for sustainable development. Firms are an important stakeholder of environment and their behaviour influences environmental sustainability in significant ways. With the growing importance of environmental threats, firms have responded at group level; by forming associations to interact with institutions and individual level.

Research design

This is a descriptive study examining the impact and effect of Covid-19 on environment sustainability. Descriptive analysis involves gathering of information that describes the events and so organizes, tabulates, depicts, and describes the data collection. A secondary data has been used for gathering of information.

COVID-19 and its Effects on Environment

Due to the unusual outbreak of COVID-19, almost every big and small city and village is under partial or total lockdown for a long period of time ranging from a few weeks up to a few months. Air pollution affects climate and may induce drastic changes on ecosystems, which can also exacerbate infectious diseases outbreaks by affecting pathogens, hosts, vectors, and transmission dynamics. Covid-19 outbreak pandemic, which restricts the daily mobility of people with its increasing effect worldwide, caused the closure of the factories, the stopping of education and training, the halt of social mobility and the reduction in greenhouse gas emissions in industrial countries. Besides serious limitations in international travel, entertainment, sports, hospitality, tourism, transportation, manufacturing and many other sectors were also affected by the outbreak. . Such a wide outbreak pandemic, of course, has environmentally destructive effects. A change in the atmosphere air pollution is through transport, industries, power plants, construction activities, biomass burning, road dust resuspension and residential activities. Under the nationwide lockdown, all transport services – road, air and rail were suspended with exceptions for essential services. As a result, air quality improvement has been noted in many towns and cities across the world.

The beneficial effects of Covid-19 outbreak on the environment

Environmentally, the Covid-19 outbreak also has constructive effects. Studies started in the home environment during the outbreak increased Home Office applications. This will have an effect that will reduce carbon dioxide emissions by reducing the mobility of people in their external environment. Many countries in the world have switched to distance education due to corona virus. Social mobility, which causes many carbon emissions, such as student services, has also decreased with distance education. In addition, since the scientific events, meetings and political events started to be held in the form of a remote conference, environmental emissions have decreased globally. In most countries, there has been a lockdown with people not allowed to move around leading to a reduction in greenhouse gas emissions. In the course of the Covid-19 outbreak, the greenhouse gas emission reduction is observed during the restrictions of the states, such as China and Italy. It is also reported that air pollution (such as nitrogen dioxide and carbon dioxide emission) is reduced in many regions.

Due to non-functioning of industries, industrial waste emission has decreased to a large extent. Vehicles are hardly found on the roads resulting in almost zero emission of green-house gases and toxic tiny suspended particles to the environment. Due to lesser demand of power in industries, use of fossil fuels or conventional energy sources have been lowered considerably. Ecosystems are being greatly recovered. In many big cities, the inhabitants are experiencing a clear sky for the first time in their lives. The pollution level in tourist spots such as forests, sea beaches, hill areas, etc. is also shrinking largely. Ozone layer has been found to have revived to some extent. The pandemic has displayed its contrasting consequence on human civilization, in the sense that, on one hand, it has caused worldwide panic situation, but created a very positive impact on the world environment on the other.

Harmful effects of medical wastes to the environment

Such a wide outbreak pandemic, of course, has environmentally destructive effects. One of these is medical wastes resulting from the increased medical activity. Plastic-based medical masks used worldwide are an environmental problem.

Tracey Read, founder of the non-plastic organization called "Seas without Plastic", stated that masks are made of polypropylene, a type of plastic, and it is very difficult to get lost in nature. Medical masks collected from the sea by a group of environmentalists in India.

Environmental Changes witnessed in India during lock down period

Due to the lockdown under the Covid-19 pandemic two monumental impacts has been seen on our environment, which is the improvement in the air and water quality dramatically, and slashed our material consumption, water usage and waste production.

Several reports state that the Dhauladhar range in Himachal Pradesh is being clearly visible from Jalandhar due to less air pollution and change in atmosphere, which is 200 km away. Mt. Kanchenjunga from Siliguri and Mt. Everest from parts of Bihar was also been seen clearly during the lockdown. This happened after 30 years highlights just how long we have battled severe air pollution.

Because of the nation-wide lockdown, there has also been reduced in the municipal solid waste. Pune's daily tonnage of MSW has fallen by 29 per cent, while Chennai's and Nagpur's have dropped by 28 per cent and 25 per cent, respectively. In Delhi and Mumbai, we can expect the dropdown owing to a shift in consumer demand and behavioral changes towards sustainable consumption.

Impact on air quality

The Air quality index (AQI) in all the states of India is now in two figures (indicating moderately good quality of air) after this lockdown. Not only air but the rivers of India like Ganga, Yamuna, and Cauvery etc. have become clean and clear and marine life is visible. After reviewing various reports as cited earlier, it can be summarised that undoubtedly COVID-19 has brought a fearful devastating scourge for human being but it has emerged as a blessing for natural environment providing it a "recovery time". We have also learnt that the environmental degradation caused by humans is not totally irreversible. In a period of just 1–2 months, "recovery of nature" is being witnessed by everyone. This is a signal for us to understand and react. Government and Policy makers should take necessary steps so that this healing process does not become a temporary thing. The research focuses on the changes in air quality during the lockdown period.

Studying the impact on air quality using AQI: Effect of COVID-19 on air quality was also studied through Air Quality index (AQI) which is one of the important tools to measure the level of pollution due to major air pollutants. It is an overall scheme proposed by Central Pollution Control board (CPCB) which transforms the weighted values of seven air pollutants ($PM_{2.5}$, PM_{10}, CO, NH_3, NO_2, SO_2 and Ozone) in to a single number or set of numbers. It categorizes the air quality into six categories from Good (with AQI ranging from 0 to 50) to Severe (with AQI more than 401).

Reduce carbon dioxide and green house emissions

This will have an effect that will reduce carbon dioxide emissions by reducing the mobility of people in their external environment. Many countries in the world have switched to distance education due to corona virus .Social mobility, which causes many carbon emissions, such as student services, has also decreased with distance education. In addition, since the scientific events, meetings and political events started to be held in the form of a

remote conference, environmental emissions have decreased globally, a reduction of approximately 25% of carbon emission.

Outbreak on the renewable energy sector

In the renewable energy sector, the industry is suffering due to problems such as delays in the supply chain, problems in tax stock markets and the risk of not being able to benefit from government incentives ending this year .There is also a serious drop in energy demand due to the outbreak

On the other hand, clean energy and its spread were also affected by the outbreak. The first noticeable effect on the current situation; renewable energy investments; and incentives place in the second plan due to the large number of incentives put into practice by countries in the fight against the Covid-19 outbreak.

Impact on river quality

There is improvement in the quality of number of rivers of India including Ganga, Cauvery, Sutlej and Yamuna etc. The primary cause is lack of industrial effluents entering the rivers due to lockdown situation under this pandemic situation. The DO levels of river Ganga as per reports has gone above 8 ppm and BOD levels down below 3 ppm at Kanpur and Varanasi which ranged around 6.5 ppm and 4 ppm in 2019 respectively Many other factors have also contributed in enhancing the quality of the rivers like high snowfall now melting with summer, reduction of irrigation water demand, above average rainfall and also human born factors including reduction of religious and cultural activities like puja, bathing, cremations on the banks of the rivers.

River Yamuna also in most parts of Delhi is appearing clearer, blue and pristine after years. The toxic foam caused due to mix of detergents, chemicals from industries and sewage has vanished clearly in southeast Delhi's Kalindi Kunj. Also in Karnataka the water quality in Cauvery and tributaries like Kabini, Hemavati, Shimsha and Lakshamanathirtha was more clearer as it was before decades. The pollution discharge has drastically fallen sharply in Buddha nullah which carries effluents from 2423 industrial units into Sutlej River in Punjab during this lockdown.

Analysis and interpretation

Worldwide, the outbreak caused by Covid-19 gave a rise for people to have limited social freedom. It causes serious environmental waste due to medical mobility in the environmental sense. On the other hand, it also leads to a decrease in household waste since people who are isolated at home are afraid of waste due to their sociological concerns. On the other hand, reductions in greenhouse gas emissions were observed due to significantly reduced road transport, reduced industrial, educational and other activities, but it was demonstrated that this was not enough to curb air pollution for all pollutants. The outbreak caused very serious problems in the renewable energy sector, such as delays in the supply chain, difficulties in tax stock markets and the risk of not being able to benefit from government incentives ending this year. Investors act unstable due to the uncertainty in the sector. Therefore, countries need to demonstrate very serious clean energy incentives. In this study, the relationship between Covid-19 outbreak, environment and renewable energy sector in a global sense was discussed and a detailed literature review was conducted that could be useful for planning further researches on the subject.

Observations

- It is presented that Covid-19 outbreak has serious environmental impacts such as increased environmental/medical waste.
- Covid-19 outbreak provides a reduction in greenhouse gas emissions. According to air quality index (AQI), India is now indicating moderately good quality of air, water.
- India has also reported drastic environmental changes in its atmosphere. It is also reported that air pollution (such as nitrogen dioxide and carbon dioxide emission) is reduced in many regions.
- There are serious dismissals and discontinuities in the energy sector. The pollution level in tourist spots such as forests, sea beaches, hill areas, etc. is also shrinking largely.
- In order to reduce the negative impact of the outbreak on the renewable energy sector, governments should urgently make the necessary interventions.

Conclusion

Covid-19 and its associated lockdown have given us a rare opportunity to step back and assess our impact on the environment. The condition is still uncontrolled and with no proven cure for the virus. Locking down in homes and social distancing is the only preventive step that the entire country is following. Factories, transport, vehicles and aviation have all ground to a halt. Carbon emissions have decreased and the quality of air has seen an unprecedented improvement. The Air quality index (AQI) in all the states of India is now in two figures (indicating moderately good quality of air) after this lockdown. Not only air but the rivers of India like Ganga, Yamuna, and Cauvery etc. have become clean and clear and marine life is visible. After reviewing various reports it can be summarized that undoubtedly COVID-19 has brought a fearful devastating scourge for human being but it has emerged as a blessing for natural environment providing it a "recovery time". We have also learnt that the environmental degradation caused by humans is not totally irreversible. We are witnessing clean air, water and livable cities that we have demanded for so long precisely because we have been shut away. Thus, before we resume life as usual, we should make commitment to instill the principles of sustainable development in our social behavior, life style and public policy making to make our environment clean and sustainable. The report focuses on the changes in air quality, water quality, renewable sector during the lockdown period and the effects and impact of Covid-19 on environment. This study may also be used as a reference document to analyze post covid condition as well to analyze effect of reduced pollution.

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