

# Sustainable Development after Covid-19: Environmental Issues and Challenges

Dr. Anupa Singh

Associate Professor, Department of Economics, Deva Nagri College, Meerut, INDIA

Corresponding Author: anupasingh2@gmail.com

## ABSTRACT

In a few short months, COVID-19 has morphed from a dangerous regional health threat to an all-consuming global pandemic and economic disaster. The COVID-19 pandemic is considered as the most crucial global health calamity of the century and the greatest challenge that the humankind faced since the 2nd World War. In December 2019, a new infectious respiratory disease emerged in Wuhan, Hubei province, China and was named by the World Health Organization as COVID-19 (coronavirus disease 2019). According to the report of the World Health Organization (WHO as of May 26, 2020), the current outbreak of COVID-19, has affected over 5,404,512 people and killed more than 343,514 people in more than 200 countries throughout the world. COVID-19's rapid spread has had far-reaching implications on the everyday lives of people posing enormous health, economic, environmental and social challenges to the entire human population. To some extent COVID-19 outbreak may be considered as an indirect consequence of global environmental changes. The environmental consequences of the crisis have been both positive and negative. Overall, the crisis may thus have no permanent environmental effects. Attention must be given to threats on the environment and natural resource bases as a result of the coronavirus pandemic and consequential social and economic impacts. Effective responses and recovery plans will therefore need to take into account the pandemic's multiple dimensions, as well as its deep roots in environmental stresses and global mobility. This paper describes the impact of COVID-19 on the global environment, and the global strategies for the prevention and control of the disease by not only prioritizing social, economic and environmental concerns but also ensuring that sustainability post COVID-19 encompasses healthy living for all.

**Keywords--** COVID-19, Pandemic, Global Health, Environment, Social, Economic

## I. INTRODUCTION

The COVID-19 pandemic is considered as the most crucial global health calamity of the century and the greatest challenge that the humankind faced since the 2nd World War. In December 2019, a new infectious respiratory disease emerged in Wuhan, Hubei province, China and was named by the World Health Organization as COVID-19 (coronavirus disease 2019). A new class of corona virus, known as SARS-CoV-2 (severe acute respiratory syndrome coronavirus 2) has been found to

be responsible for occurrence of this disease. According to the report of the World Health Organization (WHO as of May 26, 2020), the current outbreak of COVID-19, has affected over 5,404,512 people and killed more than 343,514 people in more than 200 countries throughout the world.

The COVID-19 crisis was caused by a combination of harmful interactions between humans and wildlife, and the ubiquitous and accelerated movement of people and goods across borders – a feature of modern globalisation. While the former set of factors allowed for the transmission of the COVID-19 virus from animals to humans, the latter has enabled its subsequent spread to pandemic proportions.

## II. IMPACT OF COVID-19

COVID-19 tends to have a greater effect on the elderly, and those with underlying health conditions, while poorer or marginalised segments of society are more likely to be disproportionately affected. The pandemic may therefore increase socio-economic inequality. Till now there is no report of any clinically approved antiviral drugs or vaccines that are effective against COVID-19. It has rapidly spread around the world, posing enormous health, economic, environmental and social challenges to the entire human population. The coronavirus outbreak is severely disrupting the global economy. Almost all the nations are struggling to slow down the transmission of the disease by testing & treating patients, quarantining suspected persons through contact tracing, restricting large gatherings, maintaining complete or partial lock down etc.

Compared to other diseases and their respective burdens, COVID-19 is likely to cause as much or greater human suffering than other contagious diseases in the whole world. In addition, other global environmental changes such as soil degradation, ozone layer depletion, pollution, and urbanization, changing environment creates an indisputable threat to our planet and human health. Global warming has its roots in industrial development, with the huge release of CO<sub>2</sub> during the industrial revolution and beyond, finally allowing the greenhouse effect to take place. To some extent COVID-19 outbreak may be considered as an indirect consequence of global environmental changes.

More than 200 countries/regions have reported confirmed COVID-19 cases, including China, Italy, Iran, S. Korea, India, Switzerland, Taiwan, USA, Sweden, Singapore, Sri Lanka, France, Australia, Malaysia, Spain, United Arab Emirates, UK, Nepal, Finland, Netherlands, Japan, Belgium, Russia, Thailand, Philippines, Cambodia, and Germany. . As far as the number of COVID infected patients is concerned, USA is at the top of the list. The emergence and spread of COVID-19 from Asia to the Americas, Africa and the Europe represent a global pandemic threat. (Chakraborty and Maity, 2020)

#### **COVID-19 and Global Environment**

From the very beginning of civilization, human beings gradually started manipulating the nature for its own benefit. In order to satisfy the demand of increasing population industrialization and urbanization became inevitable, and the obvious significance was proved to be detrimental on the global environment. Further, environmental concerns include air pollution, water pollution, climate change, ozone layer depletion, global warming, depletion of ground water level, change of biodiversity & ecosystem, arsenic contamination and many more (Bremer et al., 2019; Coutts et al., 2010). Global warming is a result of the increasing concentration of greenhouse gases (CO<sub>2</sub>, CH<sub>4</sub>, N<sub>2</sub>O etc). While the origin of the outbreak and its transmission pathway are yet to be asserted, we know diseases passed from animals to humans (zoonotic diseases) are on the rise, as the world continues to see unprecedented destruction of wild habitats by human activity.

But, due to the unusual outbreak of COVID-19, almost every big and small cities and villages in the affected countries like China, Taiwan, Italy, USA, France, Spain, Turkey, Iran, Germany, S Korea, U.K, India, Australia and many more, is under partial or total lockdown for a long period of time ranging from a few weeks up to a few months.

#### **Positive Impact on Environment**

Meanwhile, efforts to restrict transmission of the SARS-CoV-2, by restricting the movement have had an outstanding environmental effect. Due to non-functioning of industries, industrial waste emission has decreased to a large extent. Vehicles are hardly found on the roads resulting almost zero emission of greenhouse 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.

#### **Slashed Greenhouse Emissions**

While these developments have inflicted substantial economic and social shocks as global production, consumption and employment levels dropped precipitously, they have also been associated with significant reductions in air pollution and greenhouse gas emissions. As a result, air quality levels in the world's major cities improved dramatically in March, April and May. Air quality improved largely because of a reduction in factory and road traffic emissions of carbon dioxide (CO<sub>2</sub>), nitrogen oxides (NO<sub>x</sub>) and related ozone (O<sub>3</sub>) formation, and particulate matter (PM). During the same period, global air traffic dropped by 60%. Taken together, these emissions reductions have led to a temporary dip in CO<sub>2</sub> emissions from their pre-crisis levels. The pandemic has displayed its contrasting consequence on human civilization, in the sense that, on one hand it has executed worldwide destruction, but created a very positive impact on the world environment on the other hand.

So long as the coronavirus crisis keeps economic activities reduced, emissions will remain relatively low. However, it would be short sighted to conclude this is a durable environmental improvement as emissions will most likely rise to previous levels when economic activity picks up as the crisis resolves.

#### **Negative Impact on Environment**

But not all the environmental consequences of the crisis have been positive. Volumes of unrecyclable waste have risen; severe cuts in agricultural and fishery export levels have led to the generation of large quantities of organic waste; maintenance and monitoring of natural ecosystems have been temporarily halted; and tourism activity to natural areas has ceased.

Local waste problems have emerged as many municipalities have suspended their recycling activities over fears of virus propagation in recycling centres.

Food retailers have resumed using plastic bags at checkout points citing health concerns over consumers' reuse of paper bags. In addition, due to stay-at-home policies, many consumers have increased their consumption of take-away food delivered with single-use packaging.

Because this waste is left to decay, levels of methane (CH<sub>4</sub>) emissions, a greenhouse gas, from decaying produce are expected to rise sharply in the crisis and immediate post-crisis months.

As exports of agricultural and fisheries products have declined, production levels have plummeted, causing unemployment levels in both sectors to grow substantially. Many post-harvest processing workers in these sectors are women supporting households, causing extreme hardships, particularly for low-income women in developing countries where social safety nets are not in place.

#### **Ecosystems at Risk**

Natural ecosystems and protected species are at risk during the coronavirus crisis. The absence of environmental protection workers at national parks and

land and marine conservation zones in lockdown, leaving these areas unmonitored, has resulted in a rise of illegal deforestation, fishing and wildlife hunting.

The stoppage of ecotourism activity has also left natural ecosystems at risk of illegal harvesting and encroachment. In addition, rising unemployment caused by the crisis may lead many households to harvest resources from fragile ecosystems unsustainably as they seek alternative means to provide their households with food and income. (Hamwey, UNCTAD, 2020)

The pandemic and resultant lockdowns have posed a number of challenges for the delivery of weather and climate services. It has also raised many questions as to whether environmental correlations with the virus exist and how the lockdowns and resultant reductions in fossil fuel emissions will affect long term climate change. (Ionesco & Chazalnoel, 2020)

Many of the environmental challenges caused by the coronavirus crisis will gradually resolve on their own once the crisis comes to an end and previous levels of economic activity resume. But it is also true that the benefits of air pollution reductions will also be erased. Overall, the crisis may thus have no permanent environmental effects.

### III. THE GLOBAL STRATEGY FOR COVID-19 PREVENTION AND CONTROL

COVID-19 is a global threat that requires a global response involving all countries. Governments should be responsible for providing exact information to help the public face this novel infection. To decrease the damage connected with COVID-19, public health and infection control actions are immediately necessary to limit the global spread of the virus. Some global strategies are discussed below for prevention and control of COVID-19 disease.

#### 1. Restricting Mass Gathering

COVID-19 is spreading from person to person through direct contact. Thus, the spread of respiratory illnesses during the mass gathering is a major public health concerns with the potential of distribution of these infectious diseases. So, restricting mass gathering could be the primary preventive strategy for COVID-19.

#### 2. Medicine

So far, there are no exact antiviral treatments or vaccines for COVID-19 disease. Therefore, it is an urgent necessity of time to develop a safe and stable COVID-19 vaccine. So, research will continue to play an important role to discover new drugs or vaccines to prevent and control the COVID-19 infections.

#### 3. Forestation

According to World Wildlife Fund, forests cover more than 30% of the Earth's land surface. The unstoppable growths in human population leads to deforestation for resources, industries and land for agriculture or grazing. Rising average temperature and

ocean levels, and increased rate of extreme weather events affect not only the global land and ecosystem, but also human health (Ruscio et al., 2015). . But we are neglecting the primary tools of prevention such as forestation and respecting wildlife habitats. It is therefore very much important to encourage afforestation as much as possible throughout the world.

#### 4. Controlling Human Population Growth

Environment change is likely to have various impacts on human health. A very important factor is rapid human population growth, which has been accompanied by enormous economic development and increasing sources of pollution such as vehicles and polluting industries. Revealing exceedingly vulnerable populations to new pathogens by increased human relocation to previously isolated areas may bring together infectious diseases. Control of population growth is therefore very essential in this regard.

#### 5. Global Ban on Wildlife Trade

The starting point of COVID-19 outbreak was Hunan seafood market, Wuhan, China. . 60% of emerging transferable diseases originate from animals, and 70% of these are supposed to originate in wild animals. So, the unrestricted wildlife trade might enhance the risks of emerging new viruses. Therefore, considering the national security, biosafety, and public health, it is essential to globally ban wildlife markets and trades.

#### 6. Waste Management

With COVID-19 pandemic continuing to spread, national and local governments are urged to treat waste management, including medical, household and other hazardous waste, as an urgent and essential public service in order to minimise possible secondary impacts upon health and the environment.

#### 7. Water Management

For the water-heavy industries of pharmaceuticals, paper, food and beverage, adopting best practices in minimising water consumption would progress them towards Zero Liquid Discharge (ZLD). Bio-treatment of industrial effluents such as chemicals, detergents and toxic sludge are also well within our capacities, and compliance needs to be mandated to keep our rivers clean.

#### 8. Plastic (and reusable items)

Plastic does not inherently make something clean and safe. Experts are proposing to bring back the bring-your-own-cup scheme.

#### 9. Impact on Wildlife

COVID-19 is having an impact on animals. Great apes, of which seven species are already threatened by extinction, are potentially vulnerable to this new virus. Lockdowns and the loss of tourism revenue also create challenges for protecting wildlife.

#### 10. Manufacturing with Bio-Composites

Bio-composites are an exciting new solution to the ever-increasing demand for industrial raw materials. These are structures that have naturally occurring

minerals woven together into a matrix of natural fibres, such as cellulose and lignin. Because of their strength, lower weight and recyclability, bio-composite products are being used as environmentally superior alternatives to traditional raw materials such as wood and plastic. (Tripathi & Hait, 2020)

### **11. Biodiversity Crisis**

2020 was expected to be 'Super Year for Nature,' with a number of international meetings and negotiations leading to the a global biodiversity conference that would agree on a decade-long 'Post-2020 Biodiversity Framework', and the acknowledgment of nature-based solutions for climate change mitigation and additional benefits. Their postponement brings worries as we are losing critical time to address the biodiversity crisis.

### **12. Greening Economies**

Leaders and experts around the world are calling for a profound, systemic shift to a more sustainable economy that works for both people and the planet. (Geneva Environment Network, 2020)

### **Need for Action**

Attention must be given to threats on the environment and natural resource bases as a result of the coronavirus pandemic and consequential social and economic impacts.

Many rural and coastal populations rely on the sustainable use of the local environment and its natural resources whether they be small-holder farmers, small and medium-sized enterprises (SMEs) and micro, small and medium-sized enterprises (MSMEs) involved in the production of Bio Trade, forestry and fishery products and ecotourism services.

If the crisis is prolonged, many will be forced to abandon existing sustainable production in order to generate income quickly in domestic markets, potentially resulting in further poverty and over-exploitation of natural resources and ecosystems. Helping rural and coastal producers to adapt to crisis market conditions and take actions for recovery and improved performance in post-crisis markets is a top priority.

UNCTAD's Sustainable Trade and Environment Programme stands ready to assist stakeholders from governments, producer associations, SMEs, MSMEs, independent producers (including women entrepreneurs) and civil society to elaborate coronavirus adaptation and resilience strategies.

Actions taken by producers pursuant to such strategies can help maintain subsistence income levels, while ensuring the sustainable management of agricultural, forestry, marine and biodiversity-rich ecosystems. Such strategies are expected to be based on enhanced collaboration by affected producers and public support entities in order to adjust to new market realities. To be effective, such assistance needs to be implemented as soon as travel restrictions are eased. Follow-up activities will later be provided to assist countries to restore their businesses when the crisis comes to an end.

Effective responses and recovery plans will therefore need to take into account the pandemic's multiple dimensions, as well as its deep roots in environmental stresses and global mobility. The recovery process serves as a critical occasion to materialise much-needed transformative change toward a sustainable society. As such, IGES (Institute for Global Environmental Strategies) has conducted a preliminary analysis to understand the environmental and sustainability challenges associated with the crisis, and their potential solutions, by categorising core issues requiring attention in the "short-term", "medium-term", and "long-term".

### **Short-term Measures: Addressing Urgent Concerns**

1. Management of Medical Waste
2. Managing the Adverse Impacts of Air Pollution
3. Uptake of Sustainable Workstyles and Lifestyles

### **Medium-term Measures: Paving the Way for Post-Crisis Green Recovery**

4. Promotion of Green Recovery

### **Long-Term Measures: Creating a Resilient and Sustainable Society**

5. Sustainable and Integrated Approaches
6. Sound Urban Environmental Measures in Developing Countries
7. Measures for Climate Adaptation Planning
8. Measures to Control Global Risks

## **IV. CONCLUSION**

Environment change is one of the biggest and most vital challenges of the 21st century. In spite of all their efforts to restore the nature during the last few decades, humans could only move a few steps forward. But during the last few months, consequences of the pandemic have successfully recovered the environment to a large extent that should definitely set positive impact on global climate change. The Covid-19 emergency and the lockdown – despite the hardships they have caused – have scrubbed our environment clean and handed us the opportunity for a restart. Yet, if conscious action is not made to adopt nature-based solutions, the country will soon be back to pre-lockdown levels of pollution and possibly be vulnerable to the next crisis. Therefore, going forward it's important that we adopt behavioural changes towards a less resource-intensive lifestyle, and our industries pay as much attention to long-term sustenance as to economic growth for a truly successful recovery.

Whatever be the cause or origin, the occurrence of COVID-19 has emphasized to improve the mutually-affective connection between humans and nature. At this point of time, it is indispensable to control the source of disease, cut off the transmission path, and use the existing drugs & means to control the progress of the disease proactively. Like all the preceeding disasters on the earth, let all be optimistic enough that, human beings will definitely win over the pandemic in due course of time, but they should know the limits to which they can



thrust nature, before it is too late. COVID-19 is not the last of viral infections that the world might see and with the right foresight and effective action we can ensure that we are better prepared for the uncertain future. Hence, it is imperative that we not only make sure to prioritize our social, economic and environmental concerns while fighting the pandemic but also ensure that sustainability post COVID-19 encompasses healthy living for all. Together, we can navigate this crisis and build a better, more sustainable world.

## REFERENCES

- [1] Chakraborty Indranil & Maity Prasenjit. (2020). COVID-19 outbreak: Migration, effects on society, global environment and prevention. *Science of the Total Environment*, 728.
- [2] Ionesco Dina & Chazalnoel Mariam Traore. (2020). More than a health crisis? Assessing the impacts of covid-19 on climate migration. *IOM Migration, Environment and Climate Change Division*.
- [3] Hamwey Robert. (2020). Environmental impacts of coronavirus crisis, challenges ahead. *UNCTAD*.
- [4] Tripathi S.N. & Hait Subrata. (2020). Rediscovering sustainable development through a Covid-19 lockdown lens. *The Indian Express*.
- [5] Geneva Environment Network. (2020). Update covid-19 and the environment. *Geneva Environment Network*.
- [6] IGES Position Paper. (2020). Implications of covid-19 for the environment and sustainability. *Institute for Global Environment and Sustainability*.