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Positive and Negative Indirect Effects of COVID-19 on the Whole World Environment

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Abstract: ***This research article mainly focused on the positive and negative indirect effects of COVID-19 on the environment in most affected countries such as China, USA, Italy, and Spain. Our research shows that there is a significant association between contingency measures and improvement in air quality, clean beaches and environmental noise reduction. But on the other hand, there are also some negative secondary aspects such as the reduction in recycling and the increase in waste, endangering the contamination of physical spaces (water and land), in addition to air. Global economic activity is expected to return in the coming months in most countries so decreasing Green House Gas (GHG) concentrations during a short period is not a sustainable way to clean up our environment.***

Keywords: COVID -19, Pandemics, Environment, GHG, Positive and Negative effects

1. Introduction

The new Coronavirus (SARS-CoV2) has an unprecedented impact in most countries of the world. The virus has affected almost every country on the planet (213 in total), spread to more than 2 million people, and caused around 1,30,000 deaths.

COVID-19 is the greatest threat to global public health of the century which is being considered as an indicator of inequity and deficiency of social advancement. As is implied in the name COVID-19,'CO' stands for' corona,' 'VI' for 'virus,' and 'D' for disease, and 19 represents the year of its occurrence.

Coronavirus is a single stranded RNA virus with a diameter ranging from 80 to 120 nm. The first modern COVID-19 pandemic was reported in December2019, in Wuhan, Hubei province, China and most initial cases were related to source infection from a seafood whole sale market. Since then, the disease rapidly circled the globe and has affected every continent except Antarctica. It has been categorized as a pandemic by the World Health Organization. International Committee on Taxonomy of Viruses (ICTV) named the virus as severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2). Currently, most countries have tried to fight the spread of the virus with massive COVID-19 screening tests and establishing public policies of social distancing. It is clear that the priority revolves around people's health.

For this reason, the indirect impact of the virus on the environment has been little analyzed. The first studies estimated a positive indirect impact on the environment. Climate experts predict that greenhouse gas (GHG) emissions could drop to proportions never before seen since World War II. This outcome is mainly due to the social distancing policies adopted by the governments following the appearance of the pandemic. For example, in Hubei province (China), strong social distancing measures were implemented in late 2019. These measures affected the country's main economic activities.

Air pollution has reduced since governments ordered citizens to stay at home to contain the spread of the new coronavirus. Main industries as well as other regular activities have ground to a halt. For instance, car use has reduced which caused GHGs to decrease. The social distancing measures adopted by most governments have caused many beaches around the world to get cleaned up. Therefore, the reduction in waste generated by tourists who visit the beaches. Similarly, noise levels have fallen significantly in most countries. The decrease in the use of private and public transportation, as well as commercial activities, has caused a reduction in noise.

With the positive indirect effects on the environment, the new Coronavirus has also generated negative indirect ones. In the USA, some cities have suspended recycling programs because authorities have been concerned about the risk of spreading the virus in recycling centers. On the other hand, in the European nations particularly affected, sustainable waste management has been restricted. Italy has prohibited infected residents from sorting their waste. On the other hand, some industries have seized the opportunity to repeal disposable bag bans. Companies that once encouraged consumers to bring their bags have increasingly switched to single-use packaging. For example, a popular coffee company announced a temporary ban on the use of reusable cups. Finally, online food ordering has increased. These growths are resulting in the increase of domestic waste, both organic and inorganic.

This research focused on the positive and negative indirect effects of the SARS-CoV2 coronavirus on the environment. After analyzing each indirect effect, objective conclusions on the subject are presented.

Positive indirect effects of COVID-19 on the environment

Air quality is essential for people's health. However, 91% of the world population lives in places where poor air quality exceeds the permissible limits. Due to air quality degradation are manifested in a significant percentage of global mortality each year. In 2016, World Health Organization (WHO) report indicates that air pollution contributes to almost 8% of total deaths in the world; the most affected countries are found in Africa, Asia and part of Europe. China implemented strict traffic restrictions and

self-quarantine measures to control the expansion of SARS-CoV2. These actions generated changes in air pollution. Due to quarantine, NO2 was reduced by 22.8 µg/m3 and 12.9 µg/m3 in Wuhan and China, respectively.

Beaches are one of the most important natural capital assets found in coastal areas. They provide services that are critical to the survival of coastal communities and possess intrinsic values that must be protected from over exploitation. The lack of tourists due to the new coronavirus pandemic, has caused a notable change in the appearance of many beaches in the world.

Environmental noise is defined as an unwanted sound which could be generated by anthropogenic activities, the transit of engine vehicles, and melodies at high volume. Environmental noise is one of the main sources of discomfort for the population and the environment, causing health problems and altering the natural conditions of the ecosystems. The imposition of quarantine measures by most governments has caused people to stay at home. Therefore, the use of private and public transportation has decreased.

Negative indirect effects of COVID-19 on the environment

The generation of organic and inorganic waste is indirectly accompanied by a wide range of environmental issues like soil erosion, deforestation, air, and water pollution. Consequently, organic waste generated by households has increased. Medical waste is also on the rise. Hospitals in Wuhan produced an average of 240 metric tons of medical waste per day during the outbreak, compared to their previous average of fewer than 50 tons. In USA, there has been an increase in garbage from personal protective equipment such as masks and gloves.

Waste recycling has always been a major environmental problem of interest to all countries. Recycling is a common and effective way to prevent pollution, save energy, and conserve natural resources. As a result of the pandemic, countries such as the USA have stopped recycling programs in some of their cities, as authorities have been concerned about the risk of COVID-19 spreading in recycling centers.

2. Discussion

This research article aims to expose both the positive and negative indirect effects of COVID – 19 on Environment. The positive indirect effects revolve around the reduction of PM 2.5 and NO2 concentrations in China, France, Germany, Spain, and Italy. Precisely the high concentrations of these gases are one of the greatest environmental problems of developed countries .Also, the quality improvement of the beaches and the reduction of environmental noise were highlighted as positive indirect effects. On the other hand, among the negative indirect effects, the increase in domestic and medical waste were mentioned. The restriction to recycle waste in countries like the USA and Italy has been another negative indirect effect of SARS-CoV2. It is essential to mention that although the emissions of some GHGs have decreased as a result of the pandemic, this reduction could have little impact on the total concentrations of GHGs that have accumulated in the atmosphere for decades. For a significant decline, there should be a long-term structural change in the countries' economies. This result can be achieved through the ratification of the environmental commitments made. Furthermore, the decrease in GHG emissions currently observed in some countries is only temporary. Since once the pandemic ends, countries will most likely revive their economies, and GHG emissions will skyrocket again. On the other hand, the safe management of domestic waste could be critical during the COVID-19 emergency. Medical waste such as contaminated masks, gloves, used or expired medications, and other items can easily be mixed with domestic waste. However, they should be treated as hazardous waste and disposed of separately.

Finally, it is concluded that COVID-19 will produce both positive and negative indirect effects on the environment, but the latter will be greater. Decreasing GHG concentrations during a short period is not a sustainable way to clean up our environment. Furthermore, the virus crisis brings other environmental problems that may last longer and may be more challenging to manage if countries neglect the impact of the epidemic on the environment.

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