

Positive and Negative Consequences of Covid 19 Towards the Environment State

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ABSTRACT

The COVID-19 epidemic has had an impact on every aspect of human life, including the physical environment. The efforts required to stop the virus from spreading and the resulting halt in economic activity have had a substantial impact on the environment. Hence, this study intends to explore the positive and negative environmental impacts of the COVID-19 pandemic, by reviewing the available scientific literature. According to this research, the pandemic condition improves air quality in various cities throughout the world, reduces gas emissions, reduces water pollution and noise, and relieves pressure on tourist attractions, all of which may aid in the ecological systems rehabilitation. Besides the positive impacts, there are also some negative environmental impacts caused by COVID-19 pandemic, such as increase of medical waste, careless use and disposal of disinfectants, surgical/medical masks, and gloves; and the burden of untreated wastes continuously threaten our environment. Along with the economic activities which will return soon after the pandemic, the situation might change. This study also outlines possible ways to achieve long-term environmental benefits in order to reach environmental sustainability.

Keywords: COVID-19, CO2 Emission, Water Quality, Medical Waste, Environmental Sustainability

1. INTRODUCTION

The coronavirus disease-2019 (COVID-19) outbreak originally surfaced at the end of December in a Hunan seafood market in Wuhan, China, and was quickly labeled an international public health emergency by the World Health Organization. It's an infectious disease caused by the coronavirus-2 that causes severe acute respiratory syndrome (SARS-CoV-2). The virus has killed more than 1.6 million and sickened more than 76 million over the last year. According to the WHO's first situation report, the first confirmed cases outside of mainland China occurred in Japan, South Korea, and Thailand. The first confirmed case in the United States occurred the following day in Washington State, when a man in his 30s began to experience symptoms after returning from a vacation to Wuhan. [1].

Pandemic has certainly had a significant influence on

human life in various aspects. Human lifestyle has undergone many changes. COVID-19 pandemic. The COVID-19 pandemic requires humans to adapt to new normalities, such as carrying out more activities from home. Human mobility has been limited since the COVID-19 pandemic hit the world. Most activities, including work and study, should be done online and remotely.

The rapid lifestyle changes that are happening today have impacted our global environment, in both positive and negative impact. Environmental parameters that tend to improve during a pandemic include reducing CO₂ and NO₂ emissions, improving urban air quality, and maintaining biodiversity.

2. METHOD

The literature review includes a summary of the theory,

findings, and other research materials gathered from reference materials to serve as the foundation for study. The purpose of this literature review is to create a clear foundation for thinking. The purpose of this literature review is to create a clear foundation for thinking. The literature review is usually included at the beginning of the chapter and provides reviews, summaries, and author's perspectives on a variety of library sources (articles, books, slides, information from the internet, etc.) about the themes presented. As a comparison to the results of the research that will be tested here, the results of other researchers' research can also be added. All remarks and/or study findings that are not the author's must be mentioned as sources, and the technique for referring to library sources must adhere to the set rules.

3. RESULTS AND DISCUSSION

3.1. Positive Consequence

3.1.1. Level of CO2

In response to reducing COVID-19 transmission, stay at home advice is increasingly being encouraged. Many countries have taken very strict policy rather than only prompt their citizens. This restriction is to reduce outdoor activities which are the result of online school learning activity, work from home, and also lockdown [2]. From [3], lockdown is proven to reduce cases. The average rate of increase of case was 0.113 per day before implement lockdown, then after implement it was 0.047 per day. Besides due to the lockdown the case addition is decreasing, the air quality in most countries is increasing fortunately. It is indicated by the CO₂ emission. Prior to the COVID-19 pandemic in 2020, carbon dioxide emissions had been increasing at a rate of around 1% every year for the previous decade 1–3, with no rise in 2019 [4].

According to [5] In U.S on from January - March the CO₂ emission was reduced -13.3%, then in April reached -25.4% until June achieved -26.4% then in May it was reduced by -14.8%. Meanwhile, in EU27 & UK in the first half of the year it was reduced by -12.7%, in April it was 26.3%, 21.6% in May and -6.9% in June. Although in India, the CO₂ emission in January-March is -15.4%. But then, in April it reached -44.2%, then -27.6% in May and -15.0% in June. In Russia from January- March, it attained -5.3%, then -10.9% in April, -8.4% in May and -5.1% in June. Whereas in Brazil, the reduction of emission starts from -7.5% in the first half of the year, -10.3% in April, 17.2% in May and -7.6% in June. Last, in Japan from January-March it gained -12.9%, then -31.3% in April, 26.0% in May, and -12.6% in June.

By early April 2020, daily worldwide CO₂ emissions had fallen by -17 percent (-11 to -25 percent) relative to the mean 2019 values, owing mostly to improvements in surface transportation. Individual country emissions fell by -27 percent on average at their peak. The impact on 2020

yearly emissions is dependent on the confinement's duration, with a low estimate of -4% (-2 to -7%) [6].

The ground transportation sector is the main cause of decreasing CO₂ emission. There is a reduction of -613.3 Mt CO₂ by 18.6% or 40% of the total decrease. This is due to the lockdown requiring people to stay at home and reduce mobility and there is a reduction in the use of vehicles, whether public or private [7].

On the other hand, the power sector overhauled ground transportation as the biggest decreasing CO₂ emission sector. Power sector gained -341.4 Mt CO₂ (-5.0%) or 22% of the total decrease. Based on [6], this is because during the lockdown there are a lot of curtailment in many activities such as transportability, business activity, construction and production which create the lowering of global energy demand.

The CO₂ emission in the industry sector also got affected. It decreases by -263.5 Mt CO₂ (5.5%) or 17% of the total decrease. Lockdown restricts industry activity which results in reduction of industry emissions. Industry emissions from fossil fuel combustion and the cement production process contribute to the amount of CO₂ emission in the world.

At the same time the CO₂ emission from the aviation sector decreases by -200.8 M CO₂ by -43.9% or 13% of total decrease. Likewise, lockdown also limits the travelling activity. Several countries have strict requirements of flight which Several airlines and airports have declared bankruptcy. Due to decreasing of usage of airplane, CO₂ production from aviation also descend [8]

In the international shipping sector, the CO₂ emission is diminished by -89.1 Mt CO₂ (-52.4%) 6% of the total decrement. It is not a significant influence because shipping is not too affected by the negative impact due to its big role. Based on [9] shipping acts as a key role to deploy essential commodities, quarantine supplies, daily necessities and industrial products especially during a pandemic.

Lastly, the residential sector also does not have significant changes in the CO₂ emission level. The residential sector only decreases by -42.5 Mt CO₂ (-2.2%), 2% of total decrease In this research CO₂ emission of residential is measured by the CO₂ emission by the natural gas that is consumed by houses. As it is known the lockdown forces us to stay at home which does not decrease the residential activity.

3.1.2. Water Quality

The Covid 19 causes pollution to be reduced with improved air quality. This happened since the environment of industries and transportation shut down. This positive impact is also felt on the marine sector because shipping worldwide is also shut down.

Believe it or not, the Covid 19 pandemic makes our earth cleaner and gives positive impacts for the environment. Human movement is limited because of the lock down or in Indonesia we call it PPKM (*Pemberlakuan Pembatasan Kegiatan Masyarakat: Enforcement of Restrictions on Community Activities*) and non-human realms the world rumbles liberated. Despite being notoriously filthy, the

world's lakes and rivers now appear cleaner, the air fresher, the factory or car smog has dissipated, and wildlife has flooded the open spaces. Suddenly, all forms of industries, vehicle movement, and people's activities came to a halt. Since the industries and activities were shut down for a year, the current conditions in the aforementioned environmental spheres are projected to improve. This pandemic demonstrated the improvement in surface water quality in terms of suspended particulate matter [10].

During The Covid 19 Lockdown the water quality in rivers or any water bodies is improving in a good way. The cessation of the discharge of industrial effluents and other wastes into water has resulted in an apparent improvement in water quality. According to the [11], the real example which is a positive impact of covid is the Holiest River Ganga has been one of the most polluted rivers in the world showing 40-50% good improvement in the water quality. The quantitative parameters monitored were the dissolved oxygen of the Ganga River was less than 2 mg/L, total coliform levels was 50000 per 100 ml [12] and pH meters of the Ganga River was between 6,5 and 8,5 [13]. These quantitative parameters show that the Ganga river is a river that is quite healthier than before. The research also shows that the water of Ganga River has become fit for drinking. This phenomenon not just happens to the Ganga River but also happens in other rivers in the hemisphere like Yamuna River, Venice, Citarum River and Ciliwung River. Clean rivers have a significant positive impact for marine biotic life. Since the lockdown was imposed, many creatures have returned to their native habitats.

The shutdown of industrial and commercial facilities has reduced pollution levels around the world; numerous cruise ships have been suspended; tourism has been slowed; and all other maritime activities have been suspended; marine biological species have benefited from this break from pollution. Because the commercial fishing industry has ceased operations, the recovery of fish stocks and other marine organisms will be hastened, allowing us to achieve conservation goals more quickly [14].

3.2. Negative Consequence

3.2.1. Medical Waste

The COVID-19 pandemic has triggered an increase in marine pollution from plastic waste used for personal protective equipment (PPE). Based on a report from the South China Morning Post, on Saturday (9/8/2020), since the COVID-19 outbreak, the plastic waste crisis has become increasingly volatile. This use is marked by the large amount of medical waste once in the sea. Not only medical waste, online shopping tourism and food delivery are also suspected to be the cause of the increase in plastic waste in the sea during the pandemic.

The Indonesian Institute of Sciences (LIPI) conducted research on waste, especially plastic waste in the ocean during the pandemic. As a result, it is known that there is a significant increase in plastic waste, which is dominated

by medical waste. In another country such as Jordan. King Abdullah University Hospital in Jordan creates approximately 650 kg per day of medical waste from 95 Covid-19 patients, and it is tenfold higher medical waste than before the pandemic [16]. Also a significant increment occurs in other countries such as Catalonia, Spain, and China with an increase of 350% and 370% respectively [17]. From the results of research conducted by these experts, it was concluded that medical waste around Jakarta and flowing through river mouths has increased during the pandemic. The rivers in question are Marunda and Cilincing in North Jakarta. Some incidents regarding medical waste. In Malaysia, small monkeys can be seen chewing on mask straps that have become trash. This has the potential to make the monkey potentially choking. Then in England, a seagull was immobile for a week because its leg got caught in the straps of a disposable mask. The rope has tightened around the bird's leg, causing the joint to swell and hurt. In Brazil, a conservationist found a mask in the stomach of a dead penguin. In addition, there is also a puffer fish that died off the coast of Miami because it was trapped by a mask. Not much different, environmental activists in France found a dead crab trapped in a mask in a saltwater lagoon near the Mediterranean.

4. CONCLUSION

Due to the COVID-19 pandemic, the government established some policy to decrease the amount of cases. Those policies create some impacts based on positive and negative views through the environment. From a positive perspective, those impacts to the level of CO₂, water quality, and medical waste. The level of CO₂ is decreasing. The largest decrease happens in the US and the transportation sector gives a big influence. Also water quality is getting better due to the lack of activities, especially industry. It is proven in the Ganga river condition currently. In addition, the Yamuna River, Venice, Citarum River and Ciliwung River. It also is influenced by fishing activity. From a negative perspective, the medical waste is increased.

Such as it occurs in Jordan, Catalonia, Spain, and China. Also, many cases from medical waste which is harmful animal such as in Malaysia, England, Brazil, Miami, and France.

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