

ENVIRONMENTAL IMPACT AND RESPONSE OF COVID-19

Air Quality



Lia Silva (2015055)

TABLE OF CONTENTS

INTRODUCTION	1
Covid-19	1
IMPACTS	2
Air Pollution	2
China	4
Government interference	5
CONCLUSION	7
REFERENCES	8

INTRODUCTION

The year 2020 is marked by many events, the world faced a challenge that changed the dynamics of everything and everyone, the pandemic state of the Coronavirus "Covid-19", which was decreed by WHO (World Health Organization) on March 11th. When the world started to crash in response to the coronavirus pandemic, we all first looked inside, at the immediate ways in which our daily lives were changing. It was necessary to adapt what was happening in the world, which impacted on all sides and in all possible and impossible ways, from children, young people, the elderly, be they students, workers or retirees. A year of surprises, challenges, experiences, and unfortunately a lot of loss, sadness, fear, fear, anguish that covered the whole world

COVID-19

Covid-19 is a respiratory disease that presents as main symptoms fever, dry cough and breathing difficulties, which appeared in the city of Wuhan, China at the end of 2019, where it had a high spread that went viral all over the world. A highly infectious virus, which spreads easily and quickly, so it is important to follow the restrictions rules imposed by each government or city.

Impacts and Responses

IMPACTS

In the midst of chaos in which the world finds itself, with the coronavirus pandemic that has impacted thousands of people all over the world, mentally, physically, economically and politically levels, we are faced with positive impacts regarding to our environment. Due to the confinement and the reduced and rare circulation of people and vehicles, a radical decrease in the combustion of fossil fuel was observed in most countries, leading to cleaner air. It's known that we don't have much more of a solution for Climate Change and Air Pollution but in the other hand and it's a hope and good news in this grey time that Coronavirus is being.



Figure 1: Air Quality reaction during the Coronavirus Pandemic.

AIR POLLUTION

The planet itself experienced a huge drop in air pollution due to the decrease in travel (air, land, and water) and industrial work. According to the World Health Organization, more than 4.6 million people die each year from causes directly attributable to air pollution.

Each year, in the UK there are about 40,000 premature deaths due to traffic in the cities which is one of the main causes of air pollution ^[2]. With the reduction of air pollution during the coronavirus pandemic, it has saved thousands of lives from premature death worldwide ^[2]. Air pollution is not only responsible for deaths, but also for respiratory diseases that can lead to death if doesn't have medical follow-up.

An article written by Sandra Laville, about the death of a 9-year-old child from London due to illegal levels of air pollution was very reverberated, unfortunately the child died in February 2013 [], being the first case of this type in the UK, if not in the world, his mother took the case to court, demanding that the British government take action on the matter, since it was due to their negligence for authorizing or not inspecting the area , the high circulation of toxic air in your area or even in the country. Her death was due to heavy traffic in South London and taking into account that the child already suffered from a serious form of asthma. Having said this, however fragile a 9-year-old child may be and with a fragile immune system, it makes a huge difference today for thousands of people to decrease air pollution and toxic gases, and today there is a higher number of people developing respiratory diseases.

In several parts of the world, people have been advised to cut back on tobacco consumption, because the virus attacks the respiratory system in question and because they are negatively affected by air pollution, such as in California and Australia, one of the factors that most harms people's well-being is forest fires caused by climate change [3]; as well as living or breathing in Delhi which is compared to having smoked 6 cigarettes a day, so polluted that the air is ^[3].

According to a study by researchers at UCLA (Escola de Saude Publica), the more a patient with Covid-19 is exposed to polluted air,

the less chance they will have of surviving the disease ^[3]. According to an article made and published by the Italian Society of Environmental Medicine, it is implied that the rapid growth of cases of Covid-19 in which it has reached some areas of northern Italy may be due to air pollution and to have virus-carrying particles ^[3].

CHINA

The decrease or ban on travel, as well as quarantines, burning of coal and oil, which were tactics for preventing the virus, resulted in a 25% reduction in carbon emissions in China as reported by the Research Center for Energy and Clean Air during a period of 4 week in what resulted in a total of 6% of global emissions ^[3].

Discovered by researchers, in some areas of China there was a reduction of 20% to 30% and air pollutants from the surface where it was observed by satellites and computer gels of the atmosphere ^[3].

But this is a typical economic slowdown that occurs annually after the Chinese New Year as they are already returning to normal and economic activity is gradually taking place. Every year, in the winter, China celebrates the Lunar New Year, when they close "everything" for a week and in many cases the factories or industries stop working too, during this week there is always a reduction in air pollution and consumption of energy, with China being one of the biggest consumers or users of coal and its resource dominating energy consumption, the [figure 2](#) below shows the difference in the use of coal during the Coronavirus Pandemic in China and in previous years.

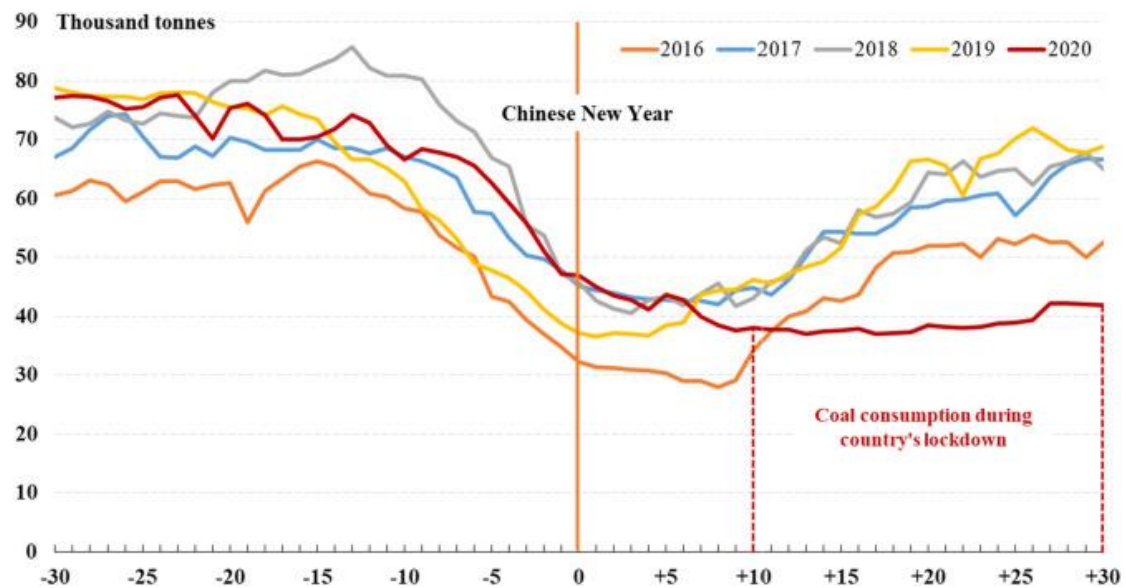


Figure 2: Coal utilization during Coronavirus Pandemic in China.

From December 19, 2019 to March 1, 2020, information on nitrogen dioxide in the troposphere was collected across China by the tropospheric monitor on ESA's Sentinel - 5 satellite. Because Wuhan entered into the state of emergency on January 23rd of 2020, it became the base day for a split of the study time, showing the difference in the amount of nitrogen dioxide in the atmosphere (figure 3). It was visible that during the month of February or less it was polluted than before.

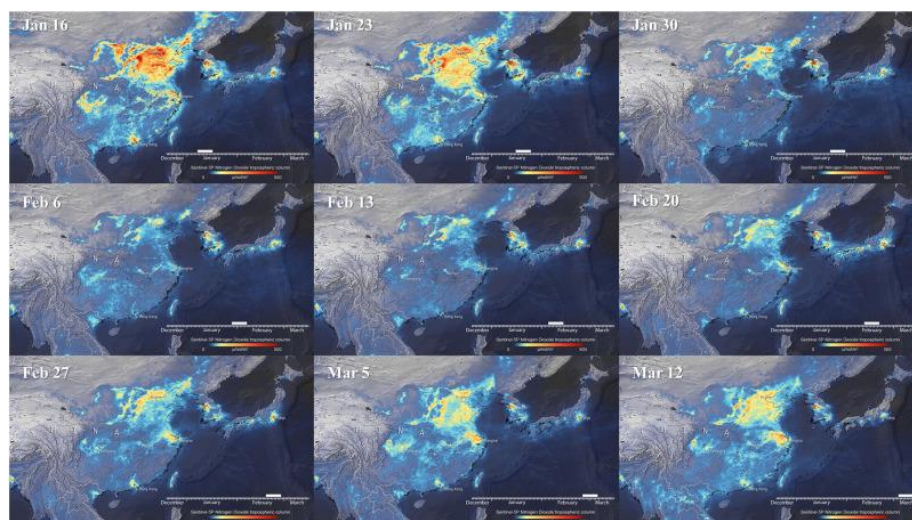


Figure 3: Nitrogen dioxide emissions in China before and during the Covid-19 Pandemic [2].

GOVERNMENT INTERFERENCE

The Coronavirus pandemic served in a way as an alert for leaders to be aware of what should be prioritized in their country, in the world with a focus on the environment, to what is around us, a difficult time that the world faces in which essential workers have come to be valued, appreciated for putting their lives at risk, that leaders know how to respond in this situation, help and show support (not only being fair in financial aid, since many people ended up running out of money or financial income due to a pandemic).

With the reduction of air pollution and climate change, several governments have taken advantage of this period to take advantage of and fade away the standards of clean air, as for example in South Africa, where there are about 3,300 premature deaths per year according to Life After Coal Coalition, the number decreased significantly due to the improvement of air pollutants ^[5].

It is the time when leaders must act in relation to the environment and with regard to improving the environment across the planet and for people that require who have conditions and health and suffers with air pollution. Invest and take a stand when it's time and time permit and do not let an illness or disaster arise in which we do not know what to do, react or behave. Invest in new, better and sustainable habits, such as renewable transport, which will drastically reduce air pollution and make all the difference for the future. Educate, use, channel, shape our thoughts and minds to know how important the environment is and how much it should be valued and cared for.

It is more difficult politically to invest or to have the desire to prevent future environmental calamities than act to what it may be happening now" commented by an associate professor in the Earth and Environmental Sciences.

CONCLUSION

The risks of climate change and infection with Covid-19 can be minimized by decreasing air pollution., ad it is more than clear that environment and human health are connected, human negative action influences or prejudice the environment that leads arming the human life itself.

Since the Second World War, there has been a debate that the Covid-19 Pandemic may be the biggest cause of one of the biggest pollutant reductions on the planet.^[5] The time to act and now, to outline plans and goals, to do differently, better and safer. Be polite and learn about the air you breathe and have always breathed.

REFERENCES

- [1] Duncan, C. (2020, March 24). *Independent*. Retrieved from independent.co.uk:
<https://www.independent.co.uk/environment/coronavirus-air-pollution-uk-lockdown-china-italy-covid-19-a9421291.html>
- [2] I., G. (2020). *World Economic Forum*. Retrieved from weforum.org: www.weforum.org/agenda/2020/03/emissions-impact-coronavirus-lockdowns-satellites/.
- [3] Kumar, A., Burston, J., & Karliner, J. (2020, April 15). *World Economic Forum*. Retrieved from weforum.org:
<https://www.weforum.org/agenda/2020/04/the-deadly-link-between-covid-19-and-air-pollution/>
- [4] Laville, S. (2020, November 30). *The Guardian*. Retrieved from guardian.com:
<https://www.theguardian.com/environment/2020/nov/30/landmark-inquest-to-rule-if-air-pollution-killed-london-pupil>
- [5] Qiang Wang, M. S. (2020). A preliminary assessment of the impact of Covid-19 on environment - A case study of China. *Science of the Total Environment*.
- [6] Shutterstock. (2020, June 4). *Shutterstock blog*. Retrieved from shutterstock.com:
<https://www.shutterstock.com/blog/environmental-impacts-of-covid-19>

