**ECOVISION**

**Greener. Healthier. Better.**

Our team chose the challenge ‘A One Health Approach’ which was about finding a connection between public health, air pollution and the effects COVID-19 pandemic had on them.

Polluted air causes heart diseases, asthma, lung cancer, COPD (chronic obstructive pulmonary disease), and many more illnesses, which lead to about an average of 7 million deaths annually.

Chart, line chart

Description automatically generated

The plot above shows premature deaths caused by air pollution in an interval between 2012 and 2020. This data suggests that there has been development in this area, even though the numbers are still high. \*Numbers on the left axis need to be multiplied by 10^6 before being used\*

This year there has been a slight improvement in air quality, and we have reasons to believe that the pandemic is one of the causes.

Chart, line chart

Description automatically generated

This plot shows the presence of NO2 in molecules per cm^2, for the dates 04, 14 and 24 in each month of 2020. We can see that NO2 has been reduced over several months in different cities of countries that differ on the number of population and climate.

These plots were made using the python libraries, NumPy, pandas and matplotlib. We gathered data from the resources that we could find on the official NASA spaceapps webpage, but also from other sources.

|  |  |
| --- | --- |
| Dataset | Source |
| data/world\_covid.csv | https://covid.ourworldindata.org/data/owid-covid-data.csv |
| data/Barcelona.csv | https://so2.gsfc.nasa.gov/no2/no2\_index.html |
| Data/Munich.csv | https://so2.gsfc.nasa.gov/no2/no2\_index.html |
| Data/New\_Delhi.csv | <https://so2.gsfc.nasa.gov/no2/no2_index.html> |
| Data/Stockholm.csv | <https://so2.gsfc.nasa.gov/no2/no2_index.html> |
| Data/Melbourne.csv | https://so2.gsfc.nasa.gov/no2/no2\_index.html |
| Data/air\_pollution\_deaths.csv | <https://ourworldindata.org/outdoor-air-pollution#:~:text=An%20estimated%203.4%20million%20people,%25%20of%20deaths%2C%20or%20higher>  https://who.int |

All of the plots can be found in the plot\_pictures folder.

So, the conclusion of our study was that because of the pandemic outdoor air pollution has decreased and deaths because of it also have. But because people have stayed inside during this time, indoor air pollution was bound to increase, so the risk didn’t just go away, but it manifested itself in a different habitat.

**But how can this be used to help study the effects of air pollution?**

Because outdoor air pollution has been reduced, deaths and illnesses because of it also have, so we can easily link them to each other, and we can suggest that finding more ecological ways to do things in the future will keep it that way.

Keeping our air clean, will be a preventer to many diseases.