



# CLIMATE DETECTIVES 2021 – 2022



Grupo investigación de 5º y 6º  
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## RESEARCH QUESTION

Can climate change affect the air quality of the city?

## SUMMARY OF PROJECT

In the months from JANUARY to APRIL 2022, we have taken air quality data by equipment with the TemTop meter and recorded them in the log books by dates, times and parameters. In the days when there were variations, both for and against, we consulted the MITECO – ICA website at the state level. These indicators gave us the first idea of which agents were affecting or improving the quality of our air. At the same time, we consulted data from the meteorological station of the educational center (IAVILS11) and in the end we looked for more data for those dates from the SENTINEL 5P satellite of the Copernicus project from EOBrowser.

## MAIN RESULTS

We found that the air quality index varies very quickly, even on the same day. Looking at MITECO graphs, we use NO<sub>2</sub> as a trace pollutant gas and particle density as values that indicate human activity in the city according to the hours. Its increased variation coincides with the start of the working day and the increase in traffic and industrial activity. Thanks to the SENTINEL 5P, we verified that these gases can accumulate until they reach the upper layers of the atmosphere. And that they can stay there moving from one side to another. Consulting the rainfall data from our weather station (IAVILS11) we have verified that whenever we have rainfall, the quality of the air in the city improves.

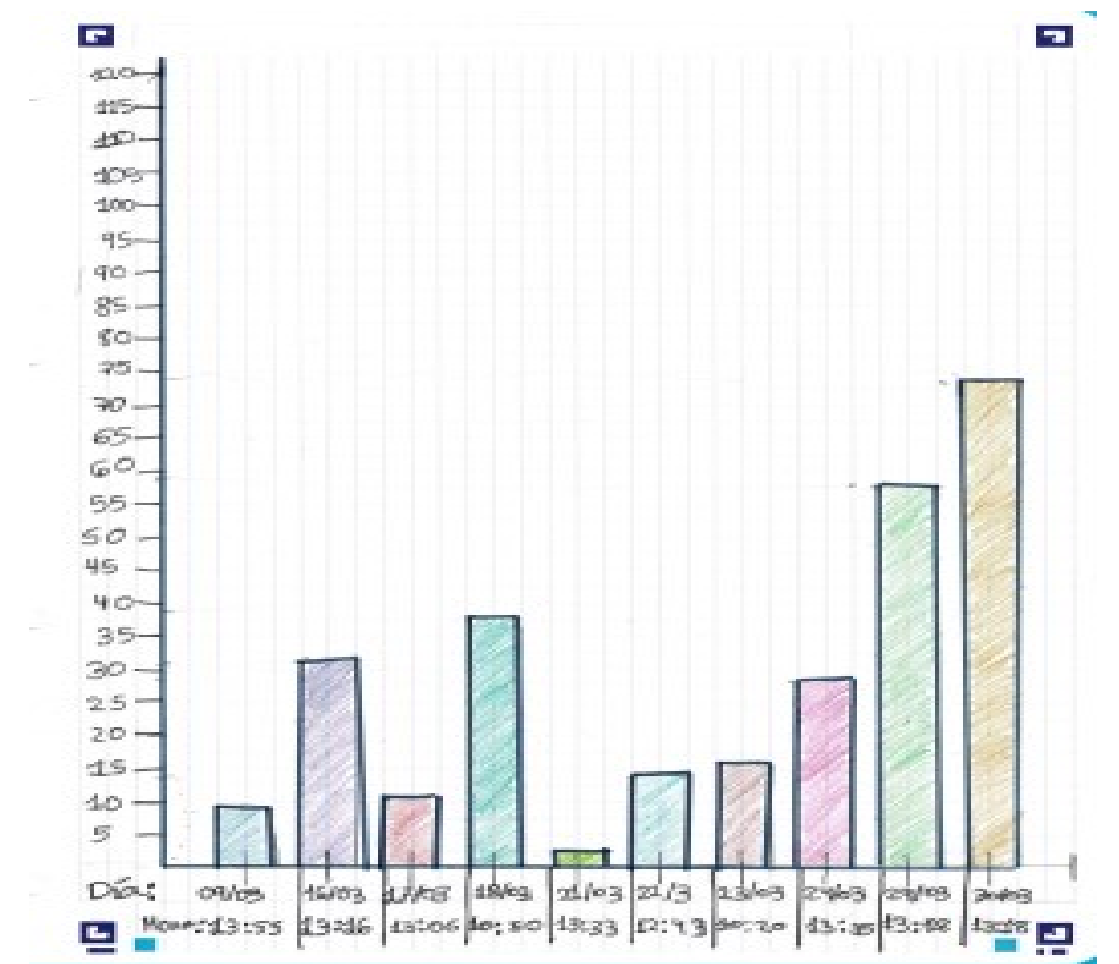


Figure 2: Examples of graphs of variations of the AQI value by dates

## ACTIONS TO HELP LESSEN TO THE PROBLEM

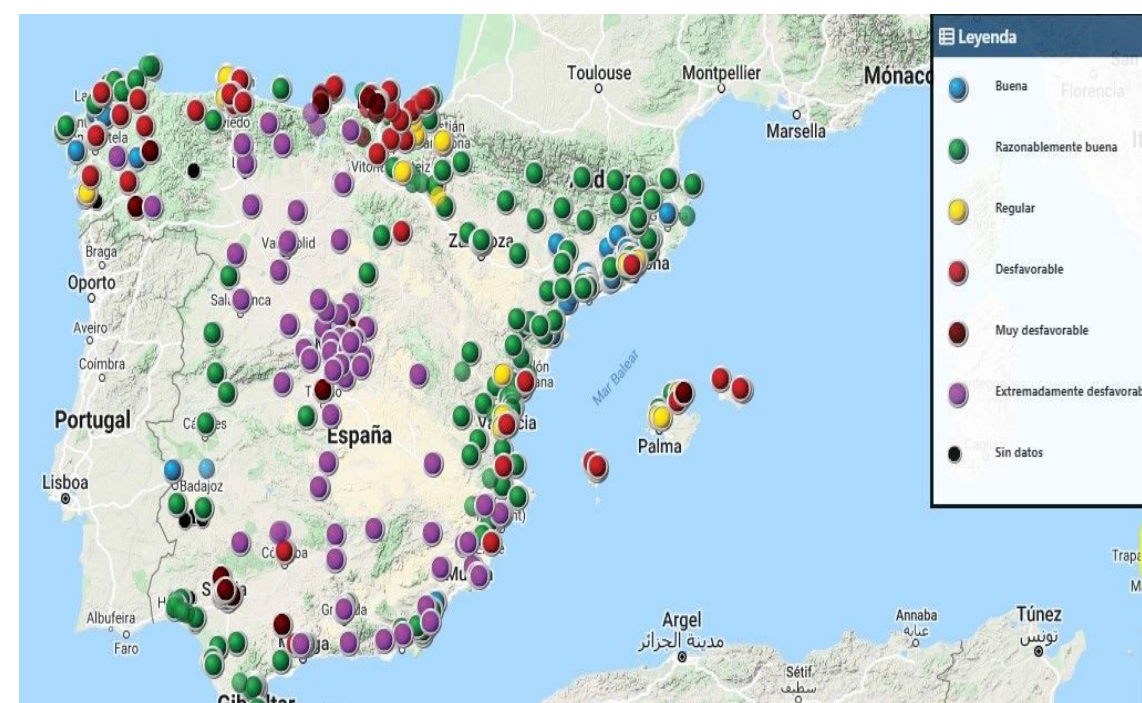


Figure 1: ICA air quality index, from MITECO (Ministry of Ecological Transition) 03/15/2022 – Calima episode,

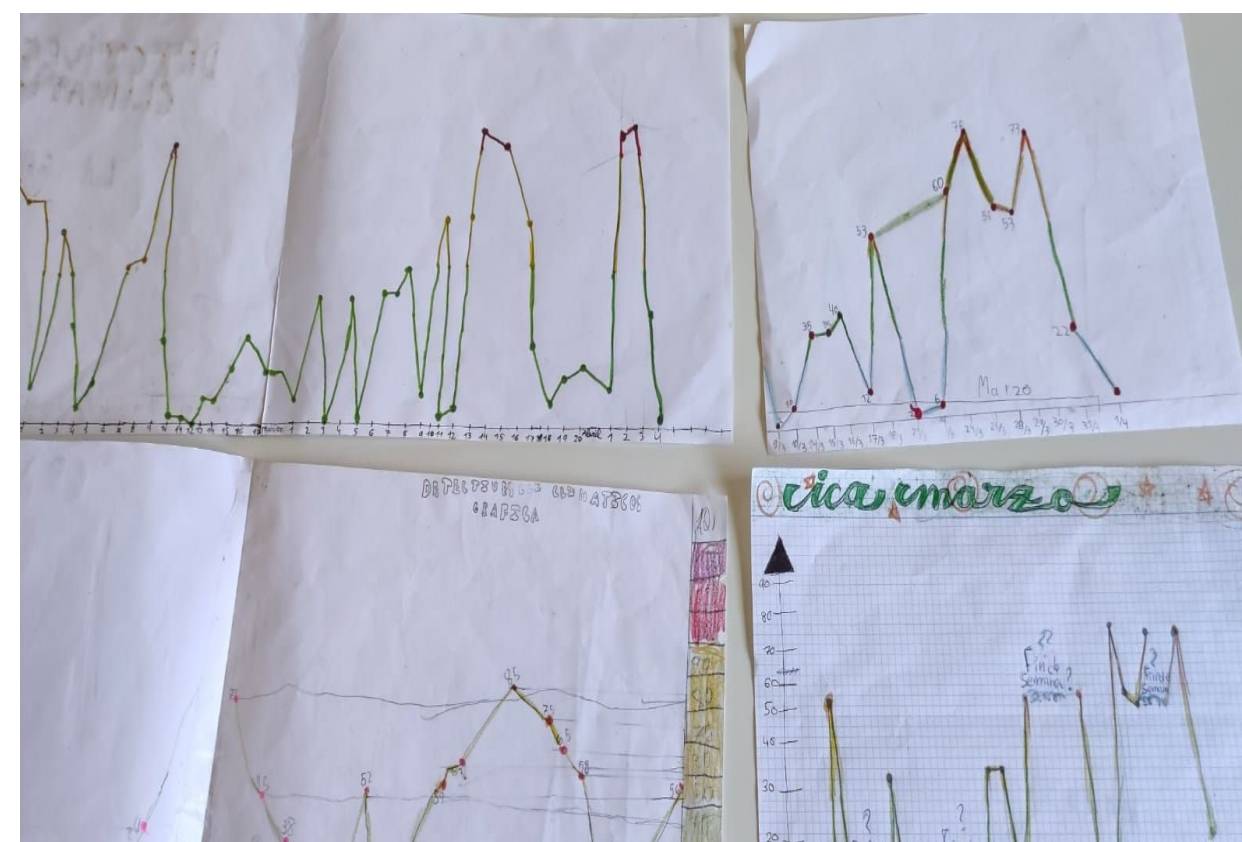


Figure 3: Examples of graphs of variations of the AQI value by dates

We must reduce polluting gases to have a better rate of air quality. It is very important to reduce car journeys in the city and use other less polluting means of transport. It would be useful to have information on air quality on panels for citizens and to have a system of warnings or alerts that prevent exposure to pollutants depending on the time or area. Promoting teleworking whenever possible improves air quality by avoiding travel. The most polluting industries should manage and filter their gases depending on the weather conditions. Having a greater knowledge of this problem in general and with awareness campaigns would improve air quality if the recommendations are followed to avoid adding more polluting agents.