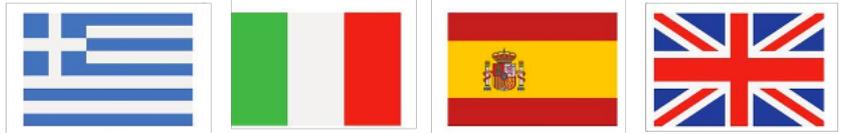


HOW TO INTERPRET CAMPAIGN RESULTS

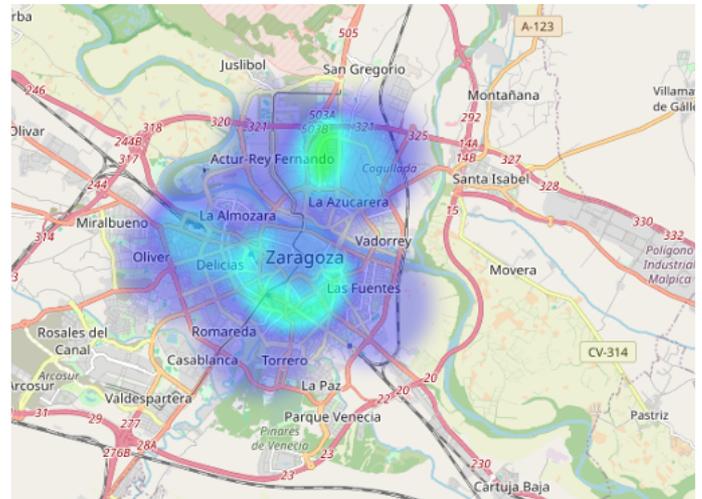


**used by:
(municipalities & beekeepers)**

What is an Air Quality Index (AQI) heatmap?

An Air Quality Index Heatmap is like a weather map but for air quality.

The map shows different colours to tell you how clean or polluted the air is in different areas.



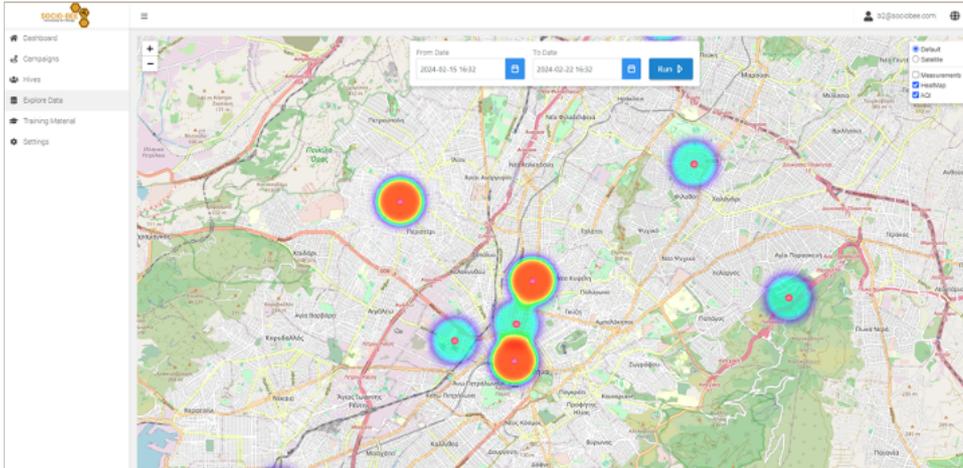
The colours help us understand air quality levels, and scientists use data from various monitors for accuracy.



These maps also guide policymakers in finding better ways to improve air quality.

Why Do AQI Heatmaps Matter?

See Air Quality easily: They show air quality in a simple way. Colours help you see if the air is clean or not in different places.



Know About Your Area: The map helps you to find out how clean the air is around you. It's like checking the weather before going out.

Help Make Better Policies:

Policy makers use these maps to make decisions. It helps make rules to keep the air clean.

Compare Different Things:

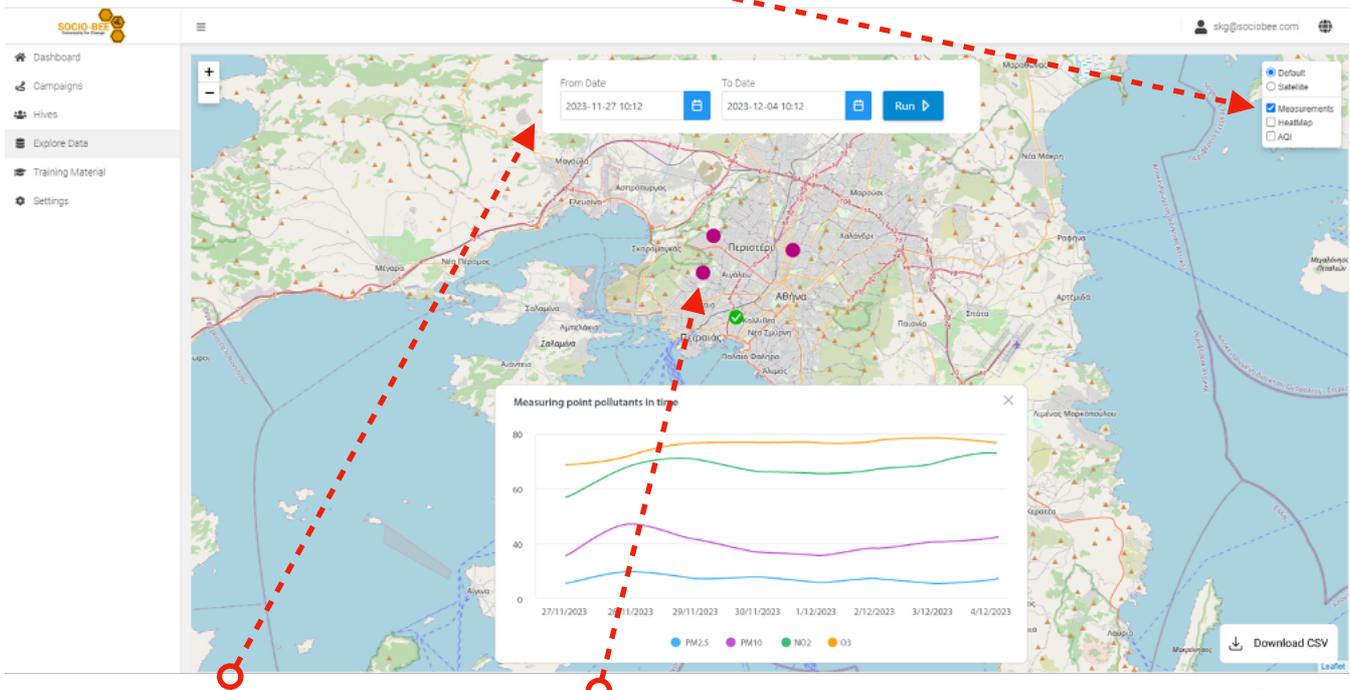
You can compare different times or places using the map. It shows if things are getting better or worse.



What does SOCIO-BEE's heatmap show?

SOCIO-BEE's heatmaps have two layers you can explore. One layer comes from the measurements taken by citizen scientists (that's you!) wearing wearables, and the other layer is from official reference air quality stations and open data repositories*.

To view the first layer open the “Explore Data” tab and select “Measurements”.



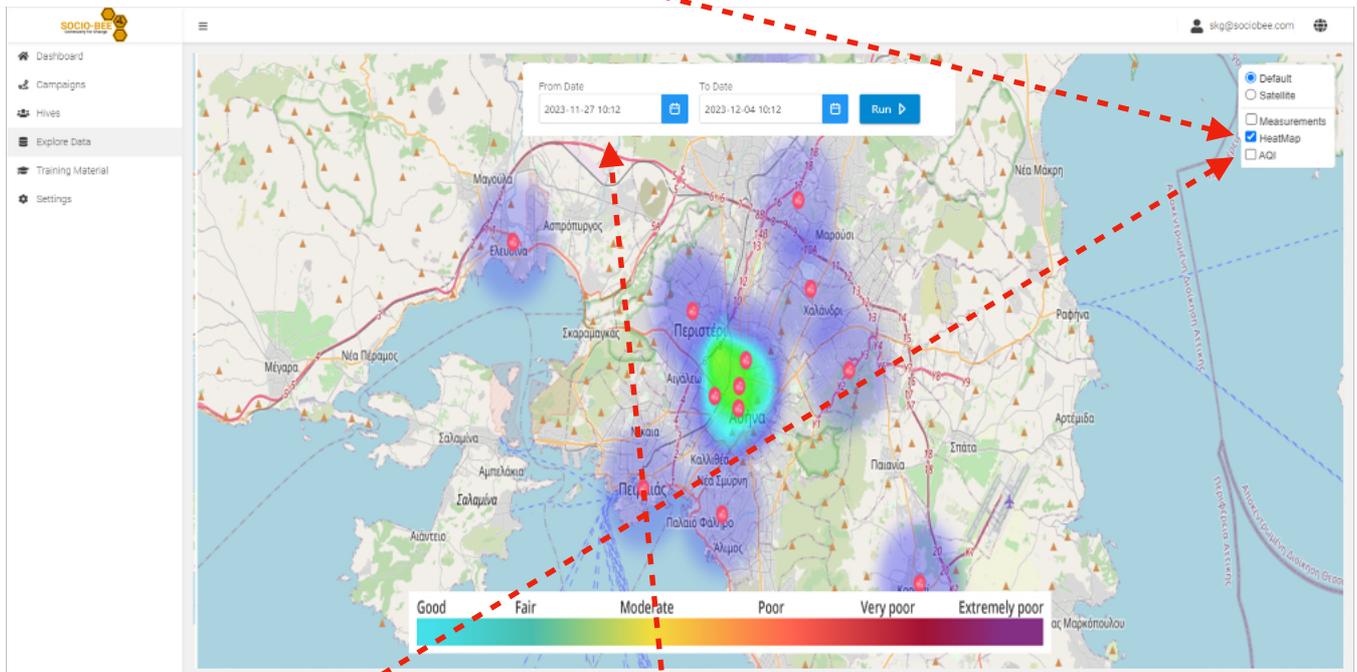
Set the time and select a point in the map to view the measurements of each pollutant over time.

You may also download the selected data in CSV.

* European Air Quality Portal, OpenAQ, OpenWeatherMap, Open-Meteo and Copernicus Atmospheric Monitoring Service.

What does SOCIO-BEE's heatmap show?

To view the heatmap with the data from the reference sources select “HeatMap”.



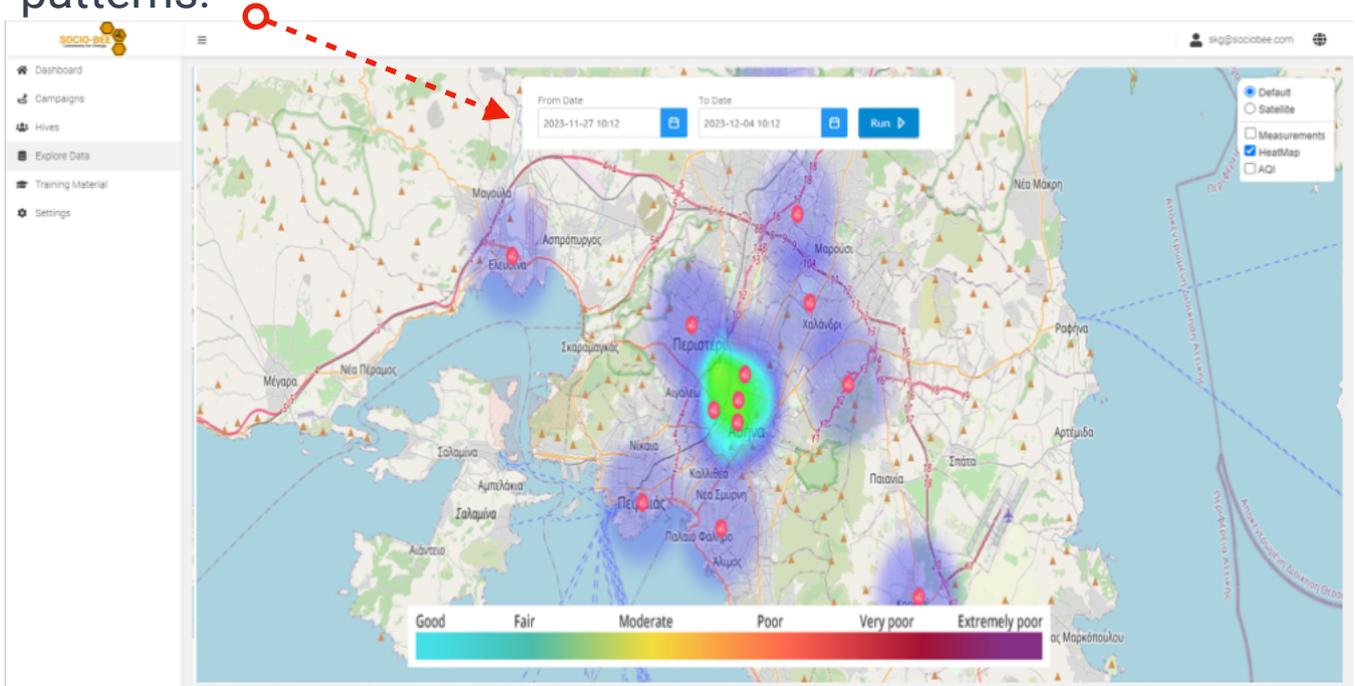
To overlay the locations of official reference stations select “AQI”.

The main elements of the heatmap are:

1. Color legend: a color legend that represents the level of pollutants;
2. Map: a geographical map where different features are geolocated
3. Time window selector: Allows users to choose a specific time frame for the displayed data.

What does SOCIO-BEE's heatmap show?

Check the Time: The map changes over time, set the date and time of interest and observe. It helps you see changes in the patterns.



You will have to learn the meaning of these colours in order to understand the quality of the air shown on the map. We will explain them later.

What does SOCIO-BEE's heatmap show?

The colours displayed on the map are based on the European Air Quality Index (EAQI).

The EAQI measures air quality based on five pollutants:

- Ozone (O_3) (measured by SocioBee sensor)
- Nitrogen Dioxide (NO_2) (measured by SocioBee sensor)
- Sulphur Dioxide (SO_2)
- Particulate matter (PM_{10})
- Fine Particulate matter ($PM_{2.5}$) (measured by SocioBee sensor)

The index ranges from 1 to 6, where:

1	Air quality is Good
2	Air quality is Fairly Good
3	Air quality is Moderate
4	Air quality is Poor
5	Air quality is Very Poor
6	Air quality is Extremely Poor





What does SOCIO-BEE's heatmap show?

Take note: each pollutant gets its own index, but the overall index shown on the map is the highest value among them!

For example, if O₃ is 1, NO₂ is **3**, SO₂ is 1, PM_{2.5} is 2, and PM₁₀ is 2, the overall hourly index is **3** (Medium).

The daily index is the highest value for that day!

Look at the color in your location and refer to the table below to quickly grasp the air quality in that area.

Pollutant	Good	Fair	Medium	Poor	Very poor	Extremely poor
O ₃	0-50	50-100	100-130	130-240	240-380	380-800
NO ₂	0-40	40-90	90-120	120-230	230-340	340-1000
PM ₁₀	0-20	20-40	40-50	50-100	100-150	150-1200
PM _{2.5}	0-10	10-20	20-25	25-50	50-75	75-800

What does SOCIO-BEE's heatmap show?

For each value of the European Air Quality Index, there are certain health recommendations defined by the European Commission:



Air quality is considered satisfactory and poses little to no risk.

Sensitive individuals may experience respiratory symptoms.

General public and sensitive individuals in particular, are at risk to experience irritation and respiratory problems.

Increased likelihood of adverse effects and aggravation of the heart and lungs among general public.

General public will be noticeably affected. Sensitive groups should restrict outdoor activities.

General public at high risk of experiencing strong irritations and adverse health effects. Should avoid outdoor activities.

What can I do with the heatmap?

Explore spatial trends in an easy way:

Identify pollution hotspots

- Find areas with higher pollutant levels indicating potential pollution sources.
- Check places like factories, busy intersections, or areas with lots of people.

Correlate air quality with area's surroundings:

- See how streets or green areas affect the air quality
- Tall buildings can trap pollutants, making levels higher in those spots.

Changes Over Time

- Watch how air quality changes over time.
- Compare day and night, seasons, or weekdays with weekends for interesting insights.

What Else Can I Do with SOCIO-BEE's Heatmap?

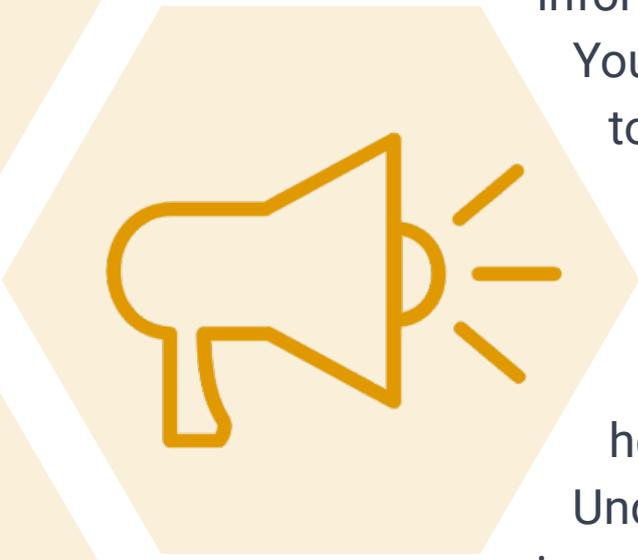
Citizen Scientists' Impact: Understand that your measurements matter. Your wearable data contribute to the first layer of the heatmap.

Raise Awareness: Share the heatmap with your community. Use it to start conversations about air quality and encourage others to contribute to citizen science.



Collaborate with Authorities: If you notice persistent high pollution levels in an area, inform local authorities.

Your data can contribute to informed decision-making.



Stay Informed: Keep an eye on the heatmap regularly.



Understand the air quality in your surroundings, so you can make informed choices for yourself and your community.



Conclusion

Congratulations! You've learned how to interpret and use SOCIO-BEE's AQI heatmap.

Remember, this tool empowers you to be part of a larger effort to understand and improve air quality. Your contributions as a citizen scientist make a meaningful impact, and by staying engaged, you're helping create a healthier environment for everyone.

The world of citizen science is vast. Stay curious and explore other projects and initiatives. Your involvement can lead to further discoveries and positive changes.

Thank you for being an active participant in SOCIO-BEE. Your dedication to monitoring and understanding air quality is valuable, and we appreciate your commitment.



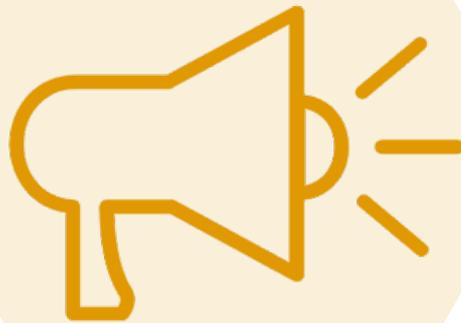
Get Involved Further

Join the Community: Connect with other citizen scientists and researchers. Share your experiences, insights, and learn from the community.

Participate in Campaigns: Keep an eye on upcoming campaigns within SOCIO-BEE. Your involvement in specific data collection efforts can contribute to targeted research.



Provide Feedback: Your feedback matters. If you have suggestions or encounter any issues, share your thoughts with the project team.



Spread the Word: Encourage friends, family, and neighbours to get involved. The more people engaged, the better our understanding of air quality and its impact on our communities.

