INDICATOR SHEET

1. Indicator name			
Suspended particles with a diameter of less than 2,5 micrometres ($PM_{2.5}$) concentration in the province of Girona			
Update date:	11-11-2024	Version:	v.1.

2. Field	
Main Area	Environment
Sub-Scope	Air quality

3. Definition

The indicator shows the average annual concentration of suspended particles with a diameter of less than 2.5 micrometers ($PM_{2,5}$) in micrograms per cubic meter (µg/m³). present in the air in a specific geographical area, specifically in the province of Girona at the municipal level.

4. Calculation formula

Not applicable. The indicator is based on modelling data provided by the Department of Territory, Housing and Ecological Transition.

5. Reading

This indicator makes it possible to compare $PM_{2.5}$ levels in micrograms per cubic metre (µg/m^3) between different municipalities or counties in the province of Girona. The information facilitates the analysis of temporal trends and the identification of areas with higher concentrations of $PM_{2.5}$, and with a greater potential risk to health. The higher the value, the worse the air quality and the greater the health risk.

In September 2021, the World Health Organization (WHO) published guidelines recommending that average annual levels of $PM_{2.5}$ should not exceed 5 µg/m^3; while Spanish regulations limit the values to 25 µg/m³

6. Periodicity

Annual

7. Source

Department of Territory, Housing and Ecological Transition.

8. Limitations

Geographical ☐	Temporary ☒	Statistical secrecy ☐

Description of limitations

With the support of:

Diputació de Girona
Generalitat de Catalunya
Unió Europea
Fons Europeu de Desenvolupament Regional

- **Geographical:** Not applicable. The indicator covers the entire province of Girona.
- **Temporary:** The data are available for the years 2021 and 2022.
- **Statistical secrecy:** Not applicable.
- **Description of limitations:** There are only 4 PM2.5 measurement stations that are part of the XVPCA (Monitoring Network for the Prevention of Air Pollution) in the province of Girona. (Girona, Begur, La Bisbal d'Empordà and Puigcerdà).

9. SDG

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
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SDG 3: Health and Well-being

Air pollution is one of the leading causes of respiratory, cardiovascular and other health problems. Measuring PM2.5 concentration is essential to monitor and reduce the risk of these diseases.

SDG 3 target 3.9 sets out to "substantially reduce the number of deaths and illnesses caused by hazardous chemicals, air, water and soil pollution".

SDG 7: Affordable and Clean Energy

PM2.5 emissions are in many cases the result of polluting energy sources (e.g. coal and petroleum derivatives). Moving towards clean and sustainable energy, as set out in SDG 7, can directly contribute to reducing the concentration of PM2.5.

SDG 11: Sustainable Cities and Communities

This objective seeks to improve the quality of life in cities, including the reduction of environmental pollution. Target 11.6 highlights the importance of "reducing the negative environmental impact per capita in cities, including special attention to air quality". Thus, reducing the concentration of PM2.5 is key to achieving healthier and more sustainable cities.

SDG 13: Climate Action

Although SDG 13 focuses primarily on climate change, particulate matter pollution such as PM2.5 is often associated with fossil fuel emissions, which contribute to global warming. Improving air quality is therefore compatible with efforts to reduce greenhouse gas emissions and the fight against climate change.

SDG 15: Life on Land

PM2.5 air pollution also has harmful effects on biodiversity, as it affects soil and water quality, as well as the health of terrestrial ecosystems. This SDG promotes the protection of terrestrial ecosystems and can be indirectly linked to the improvement of air quality.

Therefore, the average concentration of PM2.5 is an indicator that can be directly related to public health (SDG 3), urban quality of life (SDG 11), and global environmental sustainability (SDGs 13, 7, and 15).

10. Comments and observations

This indicator is used to assess air quality and its possible impacts on the health of the population.

- European and Spanish regulations establish an annual limit value for PM2.5 of 25 µg/m3.
- The World Health Organization (WHO) recommends a more restrictive value of 5 µg/m3 for the annual average of PM2.5.
- This indicator is important for air quality surveillance and public health, as exposure to PM2.5 has been linked to a variety of health problems, including respiratory diseases, cardiovascular diseases, lung cancer, and premature mortality.