

# Metadata on SDGs Indicator 11.6.2

## Indicator category: Tier I

**Goal 11** : *Make cities and human settlements inclusive, safe, resilient and sustainable*

**Target 11.6**: *By 2030, reduce the adverse per capita environmental impact of cities, including by paying special attention to air quality and municipal and other waste management*

**Indicator 11.6.2**: *Annual mean levels of fine particulate matter (e.g. PM<sub>2.5</sub> and PM<sub>10</sub>) in cities (population weighted)*

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World Health  
Organization

UN  HABITAT  
FOR A BETTER URBAN FUTURE

## 1. Definition and method of computations

The mean annual concentration of fine suspended particles of less than 2.5 microns in diameters (PM2.5) is a common measure of air pollution. The mean is a population-weighted average for urban population in a country.

## 2. Method of Computation

The annual urban mean concentration of PM2.5 is estimated with improved modelling using data integration from satellite remote sensing, population estimates, topography and ground measurements (WHO, 2016 forthcoming)

Regional aggregates:

The regional and global aggregates are population-weighted figures of the national estimates.

$$C_{agg} = \frac{\sum (C_{nat} \times P_{nat})}{\sum (P_{nat})}$$

Where,

$C_{agg}$  is the regional/global estimate,

$C_{nat}$  is the national estimate,

$P_{nat}$  is the country population.

The sum is done over the countries in the region (regional aggregate) or all countries (global aggregate).

Sources of discrepancies:

The differences between global and national figures are due to the fact that some estimates are based on modelling while others are based on annual mean concentrations obtained from ground measurements.

## 3. Rationale and interpretation

Air pollution consists of many pollutants, among other particulate matter. These particles are able to penetrate deeply into the respiratory tract and therefore constitute a risk for health by increasing mortality from respiratory infections and diseases, lung cancer, and selected cardiovascular diseases.

## 4. Disaggregation

The indicator is available by 0.1° x 0.1° grid size for the world. Disaggregation by location (e.g. intra-urban).

## 5. Sources and data collection processes

Sources of data include ground measurements from monitoring networks, collected for 3,000 cities and localities (WHO 2016a) around the world, satellite remote sensing, population estimates, and topography, information on local monitoring networks and measures of specific contributors of air pollution.



Severe air pollution in China © flickr/V.T. Polywoda.

## 6. Comments and limitations

Urban/rural data: while the data quality available for urban/rural population is generally good for high-income countries, it can be relatively poor for some low- and middle-income areas. Furthermore, the definition of urban/rural may greatly vary by country.

## 7. Current data availability/indicator tier

The indicator is available for 178 countries. Missing countries include mostly small states islands in the Western Pacific and in the Latin American and the Caribbean regions.

## 8. Responsible entities

World Health Organization (WHO)

## 9. Data Compilers and data release calendar

### 8.1 Calendar

N/A

## 8.2 Data providers

Ministry of Health, Ministry of Environment

## 10. Treatment of missing values

Treatment of missing values: At country level, missing values are left blank. At regional and global levels, missing values are excluded from the regional and global averages.

## 11. References

WHO (2016). WHO Urban ambient air quality database, WHO Geneva.

WHO (2016, forthcoming). Air pollution: a global assessment of exposure and burden of disease,

WHO Geneva.

[www.who.int/gho/phe](http://www.who.int/gho/phe)

## 12. Related indicators

3.9.1: Mortality rate attributed to household and ambient air pollution



Air pollution in a city © flickr/fredylp.



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