Executive Summary

Open Air Quality Data: The Global Landscape is the only global assessment of whether and how national governments are producing and sharing air quality data with the public.

Governments have a responsibility to address air pollution, a problem so ubiquitous that almost everyone (99% of the world's population) is breathing unhealthy air.[1] Air pollution is the second leading risk factor (and greatest external threat) for death, cutting lives short by an average of 1.9 years across the globe.[2] Exposure to air pollution starts in the womb and is associated with numerous poor health outcomes over a lifetime, as well as impacts on productivity and quality of life. The burden of air pollution is unequal, harming babies and young children in particular,[3] as well as residents of lower-income communities and countries where pollution tends to be higher.[4]

> *Air pollution is the greatest external threat for death, cutting lives short by an average of nearly 2 years across the globe.*

Reliable and open data on air pollution are fundamental to understanding and taking corrective action to improve air quality. Air pollution measurements are relevant not only to governments keen to improve the health of their citizenry and track progress over time, but also for everyone who breathes air and for those who can lend their skills to solving the problem, such as scientists conducting epidemiological studies, researchers determining the sources of pollution, communicators expanding awareness, and entrepreneurs building forecasting models. Rather than attempting to solve the problem of air pollution in isolation, governments that embrace open data policies can leverage the expertise of others to build more innovative and durable approaches to solving the air pollution crisis.

OpenAQ—an NGO that hosts the world's largest open-source, open-access database of real-time and historical outdoor air quality measurements—analyzed countries across the world to determine which have government-level air quality monitoring programs and whether and how those governments are opening their monitoring data to the public.

Trends and gaps in air quality monitoring

Just 64% of the countries we examined[5] conduct or sponsor continuous air quality monitoring at a national or subnational level in 2024, an increase of only 3% since our last report in 2022. In other words, 36% of countries are not currently monitoring air pollution, one of the greatest global health risks. Major gaps in monitoring persist, with many of the most populated, polluted countries still lacking government-coordinated air quality monitoring programs or conducting very limited monitoring, especially in the Global South.[6] In fact, nearly one billion people live across 71 countries where there is no evidence of government air quality monitoring, 9 out of 10 of whom live in low-income or lower-middle income countries, as classified by the World Bank. Furthermore, for the most populated of the countries whose national government is not monitoring air quality, air pollution is one of the top seven risk factors for death and disability in their country.

> *In 2024, 36% of countries are not monitoring air pollution, one of the greatest global health risks.*

> *9 out of 10 of the nearly one billion people whose government does not monitor air quality live in low-income or lower-middle income countries.*

> *In the most populated countries without a national government air quality monitoring program, air pollution is one of the top 7 risk factors for death and disability.*

Trends and gaps in air quality data sharing

We found that 55% of all countries surveyed share air quality data publicly; however, only 27% of all countries surveyed do so in a fully transparent way.

As one example, many countries share their data through an Air Quality Index (AQI), a good first step toward transparency. AQIs translate complex pollutant concentration data into a simple, understandable format that can alert the public about the immediate threat of polluted air, and AQI providers often share actions that people can take to reduce exposures. However, AQIs lack the detail necessary for most scientific inquiry, and, depending on the methodology used, may even be misleading. (See the OpenAQ AQI Hub to learn more about the benefits and limitations of AQIs.)

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[5] All 193 United Nations member states and 5 dependencies or disputed territories with populations greater than one million.

In short, barely over one-quarter of countries provide full and easy public access to maximally useful air quality data–data with the requisite detail to inform scientific inquiry, policies to reduce air pollution, air pollution forecasts, and other important "use cases."

Compared to 2022, there is a slight increase in the number of countries that share their air quality data publicly (up by 2%), and a slight increase in countries making the data fully transparent and accessible (up by 4%).

> *Barely over 1/4 of countries provide full and easy public access to maximally useful air quality data, missing out on the opportunity to leverage relevant expertise toward clean air solutions.*

Recommendations

Measuring and tracking air pollution levels is critical to understanding and developing solutions to poor air quality. Making air quality data open, easily accessible and freely available allows everyone across public, private and civil society to innovate, collaborate and apply effective solutions towards clean air.

To accelerate clean air progress, we recommend:

1. **All governments measure and track air quality.** Recognizing that resources are limited, a government just beginning to monitor should start by installing a reference-grade PM2.5 monitor as described in Our Common Air's 2024 report, "*Accelerating Country-led Air Quality Reporting to Achieve Clean Air*."

2. **All governments share the air quality data they generate in a fully transparent and accessible manner:** in physical units, with station-specific coordinates, in daily or sub-daily frequency, and in a format that is machine-readable.

3. **Funders, such as development banks and philanthropies, support less-resourced governments.** Countries where a relatively small investment would close a serious data gap and effect positive national-level change are identified in the EPIC report, "*The Case for Closing Global Air Quality Data Gaps with Local Actors: A Golden Opportunity for the Philanthropic Community.*"

4. **Funders include conditions for data transparency in funding agreements**. One example of an open data sharing requirement is the EPIC Air Quality Fund.