THE AFRICA AIR QUALITY BRIEF 2026

Africa Clean Air Network

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Air pollution is a global public health threat, with significant impacts on health, quality of life, food security, and productivity. In Africa, exposure to air pollution results in more than a million premature deaths and the disease burden in some countries is 2–5× higher than global averages (Figure 1) (more on health effects of air pollution). In addition, air pollution results in a 5%-10% loss of GDP equivalent annually across the region. Countries in East, West, Central and Southern Africa experience the highest global exposures to household air pollution as a result of cooking with solid fuels such as charcoal and wood; at the same time, traffic-related air pollution is a significant driver of urban air pollution across fast-urbanising cities in Africa. The health impacts are likely to be further exacerbated by climate change in the coming decades, e.g., due to the joint effects of air pollution and extreme heat.

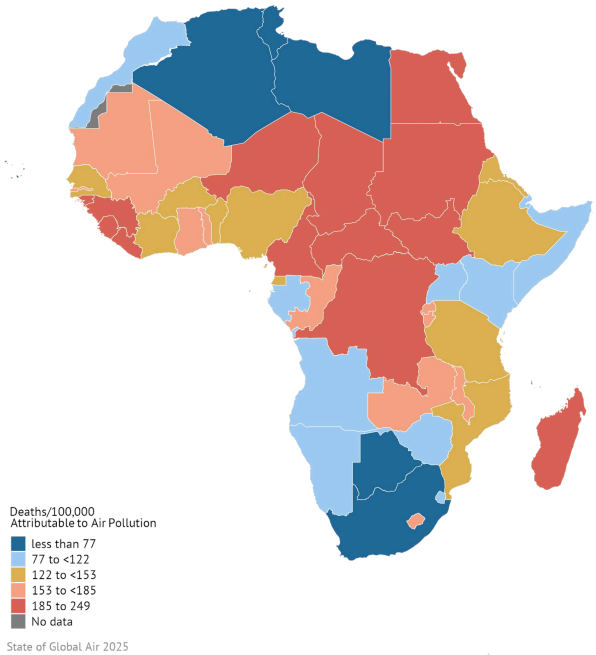


Figure 1: Age-standardized death rate for air pollution exposure in Africa in 2023

A limited number of African governments (national, sub-national, city) actively monitor air quality, and many countries do not yet have national air quality standards. Increasingly, monitoring initiatives by governments and projects led by researchers and civil society are expanding the availability of air quality data across the continent. There is also growing availability of modelled estimates which leverage earth observations, ground monitoring data and atmospheric models.

This brief, the first in the series, attempts to provide a continental overview of air quality, identify areas where progress has been made, spotlight successful actions, and outline future priorities. We draw on the Copernicus Atmosphere Monitoring Service (CAMS) dataset on global reanalysis of atmospheric composition to assess the status of air quality and historical trends across Africa. Data are analysed both for annual and daily exceedances to reflect both short-term and long-term exposure to air pollution and compared against the 2021 World Health Organization Air Quality Guidelines and Interim Targets (WHO-IT) (Table 1). We also provide two illustrative examples of how different sources can contribute to increases in $PM_{2.5}$ across different seasons using the CAMS global atmospheric composition forecasts. Note that these datasets rely on a combination of Earth observation data, ground monitoring data, and atmospheric models, which may result in uncertainties in the estimates especially where data are sparse.

Table 1: The World Health Organization Air Quality Guidelines and Interim Targets for $PM_{2.5}$ and PM_{10}. These guidelines serve as recommendations on air quality grounded in evidence from studies around the world. The interim targets are meant to facilitate gradual and meaningful improvements in air quality, especially in areas where the pollution levels may be high.

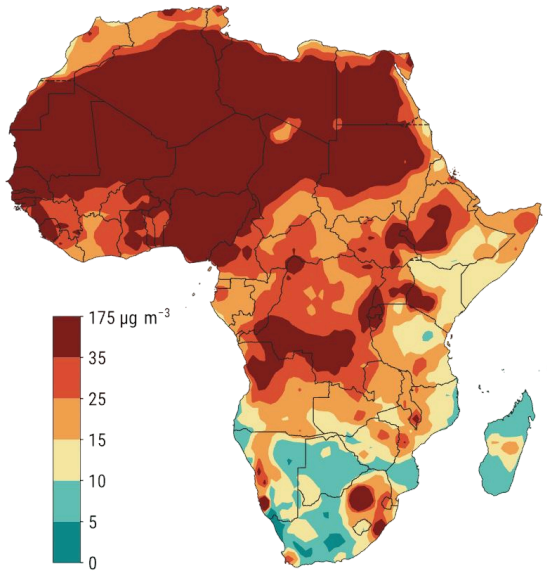
POLLUTANT	AVERAGING TIME	INTERIM TARGET				AQG LEVEL
		1	2	3	4	
$PM_{2.5}$, µg/m³	Annual	35	25	15	10	5
	24-hour[a]	75	50	37.5	25	15
PM_{10}, µg/m³	Annual	70	50	30	20	15
	24-hour[a]	150	100	75	50	45

99th percentile (i.e. 3–4 exceedance days per year)

In 2025, 30 countries across Africa met the least stringent annual $PM_{2.5}$ interim target of 35 µg/m³ set by the World Health Organization.

Countries with exceedances in annual average $PM_{2.5}$ were primarily in West Africa and the Sahel region, including Nigeria, Niger, and Senegal. In terms of daily exceedances ($PM_{2.5}$ concentrations above 75 µg/m³), 29 countries did not see any exceedances, whereas countries including Nigeria, Rwanda and South Africa saw more than 50 days of daily exceedances (Figure 2).

Annual Mean $PM_{2.5}$ in 2025



Data: CAMS global reanalysis (EAC4) • Credit: CAMS/ECMWF
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Number of days with mean $PM_{2.5}$ exceeding 75 µg/m³ in 2025

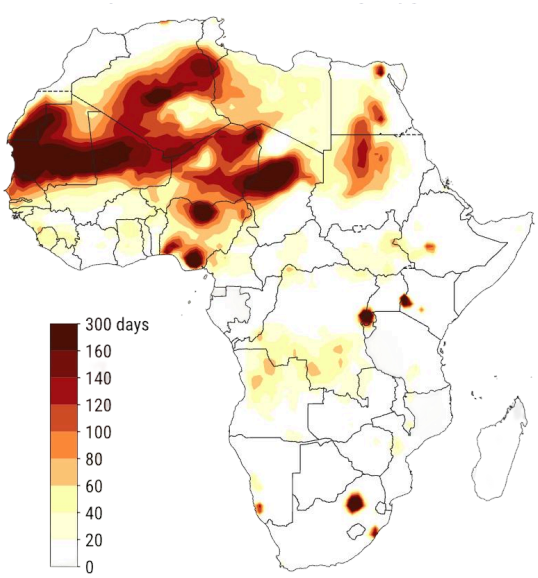

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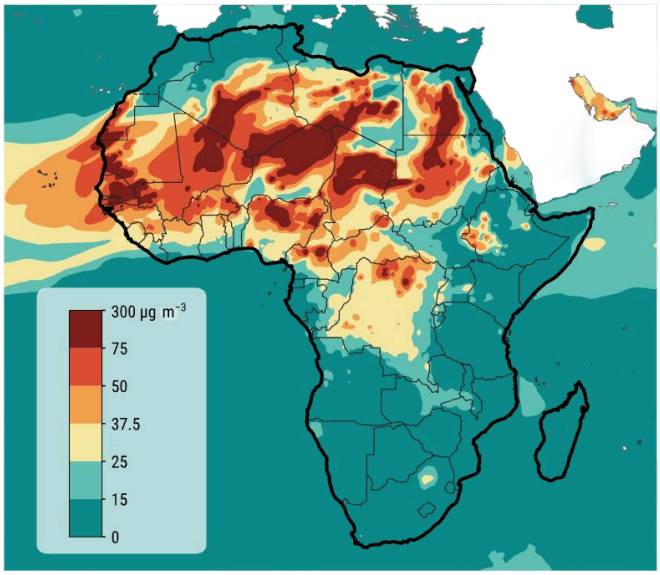
Figure 2: Annual average $PM_{2.5}$ concentrations for Africa separated by WHO Air Quality Guidelines and Interim Targets for 2025 (left), and number of days in 2025 where daily average $PM_{2.5}$ concentrations exceeded the WHO IT-1 of 75 µg/m³ (right).

In 2025, $PM_{2.5}$ levels across Africa were influenced by both human-made and natural sources.

Seasonal Saharan dust transport towards the Atlantic Ocean between January and June resulted in more than 120 days in West Africa where the daily $PM_{2.5}$ WHO IT-1 (75 µg/m^3) was not met (compared to 30 days in part of East and southern tropical Africa). The highest number of days experienced in countries downwind of the Sahara in West Africa (e.g., Senegal and Cape Verde; Figure 3).

Seasonal biomass burning in southern tropical Africa between June and October remains a persistent feature in the landscape impacting regional air quality. In particular, daily WHO IT-1 for $PM_{2.5}$ was not met for more than 30 days in southern regions of the Democratic Republic of Congo and northern regions of Angola. Figure 3 shows an example of the extent of daily mean $PM_{2.5}$ concentrations across the Democratic Republic of Congo and Angola, in relation to the WHO targets, on 25 August 2025.

Daily mean $PM_{2.5}$ on 23 February 2025



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Daily mean $PM_{2.5}$ on 25 August 2025

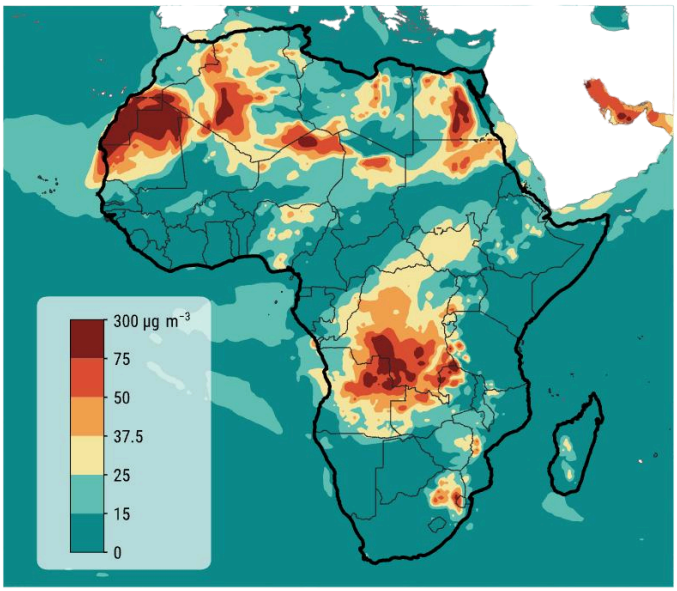

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Figure 3: Daily average $PM_{2.5}$ concentrations for Africa separated by WHO Air Quality Guidelines and Interim Targets for 23 February (showing Saharan dust impact across West Africa and Cape Verde) and 25 August 2025 (showing biomass burning in southern tropical Africa and anthropogenic emissions in South Africa).

Importantly, anthropogenic sources remain major contributors to $PM_{2.5}$ pollution in the most populated parts of the continent, especially in dense and rapidly expanding urban areas. The use of solid fuels, such as charcoal and wood for cooking, is responsible for a large share of $PM_{2.5}$ exposures in urban and rural areas. In cities, road traffic (both exhaust and non-exhaust) and waste burning are also important contributors. In some regions, such as Southern Africa, fossil fuel-based energy generation is also a significant contributor.

How have air pollution levels changed over the last decade?

Between 2015 and 2025 , annual average $PM_{2.5}$ concentrations have varied across the continent (Figure 4). Broadly, annual average $PM_{2.5}$ concentrations have:

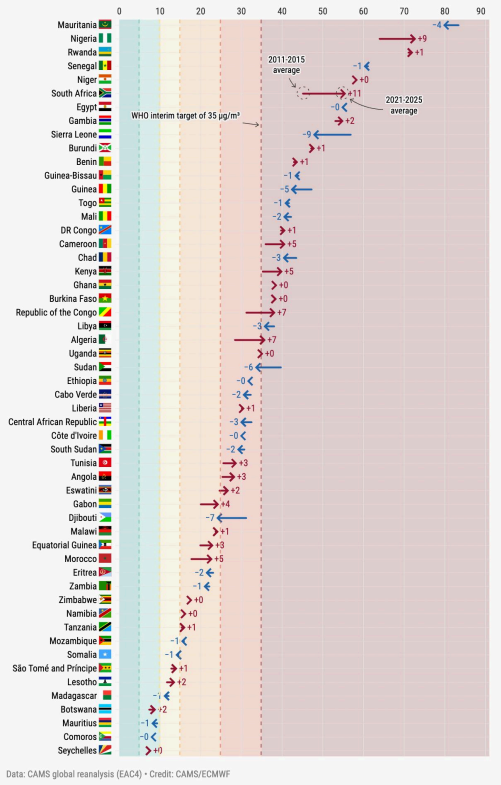
- Increased in 23 countries
- Decreased in 20 countries
- No change in 11 countries

During the same period, the number of days exceeding the WHO IT-1 of 75 µg/m³ have:

- Increased in 17countries
- Decreased in 25 countries
- No change in 12 countries

Population-weighted annual mean $PM_{2.5}$ across Africa (µg/m³)

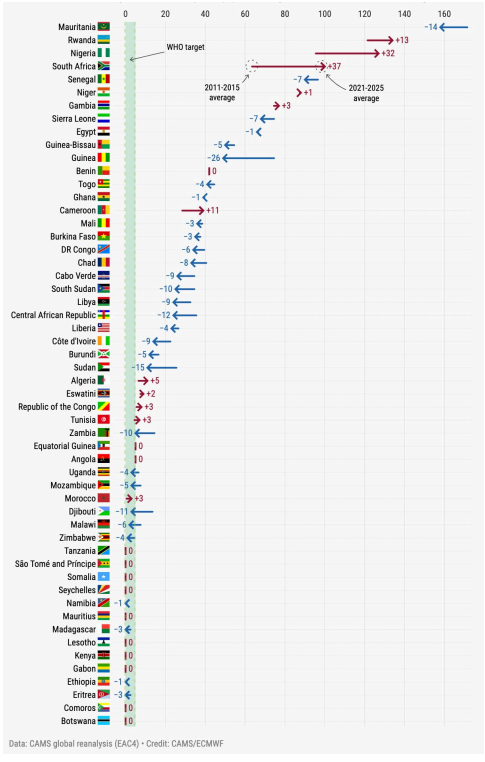
Arrow shows changes between the respective 2011–2015 and 2021–2025 averages



4(a)

Average number of days with daily mean $PM_{2.5}$ exceeding 75 µg/m³

Arrow shows changes between the respective population-weighted 2011 -2015 and 2021 - 2025 averages.



4(b)

Note that year-on-year changes in levels of air pollutants are driven not only by changes in emissions and the diversity of pollution sources, but also by local and regional meteorological patterns (e.g., temperature, wind speed, rainfall etc.). For some countries, the decadal changes in pollutant concentrations are marginal (Figure 4) and further detailed analyses using long-term air quality and meteorological data will be useful.

Figure 4: African countries ranked by population weighted annual average $PM_{2.5}$ concentration in relation to WHO Air Quality Guidelines and Interim Targets (highlighted in background shading) (left), and average number of days with daily average $PM_{2.5}$ exceeding the WHO IT-1 of 75 µg/m³ (right). The arrows in both charts indicate the relative change for 2025 relative to 2015.

Targeted interventions can deliver significant improvements in air quality.

Despite the uneven progress, there are several good news stories. Countries and regional blocs are implementing targeted interventions; efforts are also underway to bolster technical capacity, and enable access to data, technical expertise, and resources to undertake air quality management.

Rapid increase in air quality monitoring capacity; as a result, the data gaps are beginning to close.

- Togo, Malawi, and Liberia have launched air quality monitoring with support from philanthropies and international agencies.
- South Africa is scaling efforts to integrate data from low-cost sensors into the national monitoring network (SAAQIS).
- Uganda has deployed a network of 180+ low-cost monitors, enabling cities to develop local ordinances and action plans to strengthen governance.
- Kisumu, Kenya is scaling local air quality monitoring efforts.

Commitment towards adopting or tightening air quality standards.

- Ghana and South Africa are currently revising their air quality standards.
- Uganda adopted the national air quality regulations in 2024.
- The Gambia and Togo are in the process of developing national air quality standards.
- 11 of the 16 Member States of the Southern African Development Community (SADC) have transitioned to 50 ppm sulfur fuels; two countries have also introduced 10 ppm ultra-low sulfur diesel.

Implementation of action plans and use of market instruments.

- Lagos, Nigeria is implementing innovative market instruments, e.g., enforcing a pollution tax, and involving businesses in air quality monitoring.
- Kenya, Nairobi has launched an ambitious five-year air quality action plan.
- Ethiopia banned the import of internal combustion engine vehicles, and has since provided tax incentives to boost local electric vehicle manufacturing.

Investments towards strengthening capacity and knowledge exchange.

- Regional efforts such as the Africa Clean Air Programme (ACAP) are bolstering technical capacity and unlocking resources to undertake air quality management.
- The AQMx platform provides access to resources including stage-wise guidance across monitoring, modelling, legislation, and health impacts.
- The Africa Clean Air Forum provides a platform for sharing best practices.

Towards a clean air future for Africa

The African Union Agenda 2063 provides a vision for a healthy and vibrant Africa, and clean air actions directly advance these aspirations. There is strong momentum for clean air action, but much work remains to be done. The following priorities for the region have been identified through deliberations at the annual Africa Clean Air Forum and dialogue with key actors:

- Growing and strengthening air quality monitoring and modelling capacity, including local emissions inventories
- Scaling evidence-driven interventions on major sources
- Increasing public engagement and private sector participation
- Strengthening mechanisms for clean air financing, regional cooperation and knowledge exchange; including harmonisation of standards, and coordinated data governance

The Africa Clean Air Forum 2026 underscored air quality as a development imperative for Africa that should be integrated in public investment systems to protect human health, improve educational outcomes and strengthen economic productivity. We hope that the data presented here is an important first step to spark conversations and inspire sustained action at local, national and regional levels.

About

This brief is produced by Africa Clean Air Network in partnership with CAMS and State of Global Air. Contributors include; Mark Parrington, Sebastian Steinig, Laurence Rouil, Hlina Kiros, Sasha Nannyange, Pallavi Pant and Deo Okure.

The Africa Clean Air Network (AfriCAN) is an Africa-based collaboration platform bringing together partners across borders, disciplines and sectors; it was configured on the philosophy of strengthening Africa-led efforts towards clean air action. Launched in 2023, the network is building a shared framework to connect people, data, and solutions.

CAMS is a European programme implemented by the European Centre for Medium-Range Weather Forecasts on behalf of the European Commission. It delivers daily quality-controlled forecasts and reanalyses of air pollution indicators at the global scale, integrating earth observations and in-situ data in a full-operational and reliable modelling framework.

The State of Global Air is a research and outreach initiative to provide reliable, meaningful information about air pollution and its health impacts. All data and reports are free and available to the public.

Acknowledgements

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For queries, please contact network@cleanairafrica.org. We are also happy to generate curated datasets for specific countries or regions within Africa.

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