

## News

# Initiating activities to tackle the health impacts from air pollution in East Africa: bringing together research, policy and practice

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Air pollution is a global threat to human health, especially in low- and middle-income countries such as those on the African continent. In more than half of the countries across Africa, annual average concentrations of fine particulate matter (PM<sub>2.5</sub>) are over 35 µg/m<sup>3</sup>, the least stringent interim target set by the World Health Organization (WHO, 2021) (Figure 1). This indicates the drastic problem facing human health across Africa in relation to air pollution exposure and subsequent adverse health impacts.

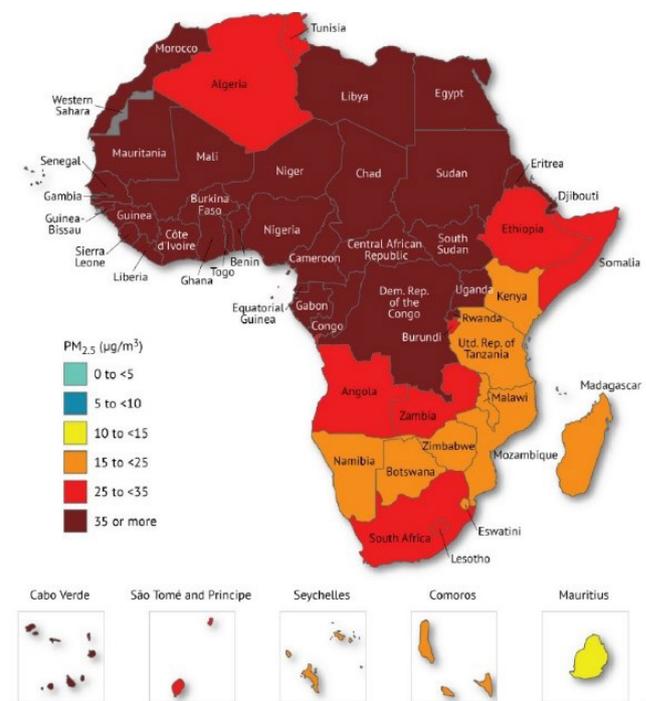
Countries in East Africa experience high levels of air pollution as well as significant health impacts from both outdoor and household air pollution. According to the *State of Air Quality and Health Impacts in Africa* (2022) report, published by the Health Effects Institute (HEI) in partnership with the Institute for Health Metrics and Evaluation (IHME), Eastern Africa has the highest proportion of the population (95%) relying on solid fuels for cooking. Furthermore, the levels of ozone in the region are steadily increasing (HEI, 2022). In good news, deaths linked to ambient and household PM<sub>2.5</sub> exposure in Ethiopia and Rwanda have been decreasing and steady over the past 5 years, respectively (Fisher et al., 2021). Public and governmental interest in the topic is growing in the region, and there is also a greater demand for data and evidence on air pollution levels and trends as well as associated health effects. There is also a growing focus on vulnerable groups such as unborn children, infants, children under 5 years of age, pregnant women, older people, people with pre-existing diseases and minority groups.

In this context, targeted interventions can play an important role in improving air quality and alleviating the associated public health impacts.

### Recent workshop held in Nairobi

Convened in March 2023, the *Workshop on Air Pollution and Health in East Africa* aimed to review the status of current data and evidence on air quality and associated health effects in the region and its interlinkage to current policy debate and actions. Discussions also aimed at coming up with concrete strategies for collaboration and strengthening technical expertise on air pollution and health in East Africa. The workshop was organized by Health Effects Institute in partnership with the Stockholm Environment Institute – Africa Centre (SEI Africa), World Resources Institute (WRI Africa), Eastern Africa GEOHealth Hub (Kenya) and AirQo.

The workshop was attended by more than 50 researchers, policy-makers, and other key researchers and practitioners from across the East African region (Figure 2). Dr. Alice Kaudia from the Climate and Clean Air Coalition spoke about the need for an integrated



**Figure 1:** Annual average PM<sub>2.5</sub> exposures in Africa in 2019 (HEI, 2022).

approach to addressing air pollution and climate change with a focus on improvements in public health and engagement across sectors.

Some pertinent messages were drawn out during the two-day workshop. Cost estimates of air pollution exposures on human health are needed to drive air pollution action; increased public understanding of air pollution and its health risks is a priority; and identifying viable, cost-effective pathways to meeting the WHO Air Quality Guidelines for criteria pollutants is important for the region.

The group also highlighted the need to include health as a central pillar in decision-making related to air pollution. Almost all organs, systems and processes in the human body are affected by air pollution. Air pollution-related health effects include respiratory, cardiovascular, and cardiorespiratory diseases, as well as trachea, bronchus and lung cancers, pre-term birth and low birth weight, type 2 diabetes, and dementia, among others (Schraufnagel et al., 2019). Short-term exposure to air pollution has been associated with aggravated asthma, ear, nose and throat irritations, and



**Figure 2:** Workshop group photo taken in Nairobi, Kenya. Credit: Paul Kaberere

increased emergency room visits (Manisalidis, 2020). Long-term exposure can lead to a range of outcomes including stroke, cataract, obesity, Alzheimer's disease and also death (Manisalidis, 2020).

Through group discussions as well as a breakout session, participants discussed themes and topics that are aligned to short- and long-term research and policy priorities in air pollution and health research in East Africa as well as what would it take to address them. For example, one suggestion for a medium-term goal was to establish an East Africa air pollution and health repository where both air pollution and health data are housed to facilitate easier access to data for assessing the situation against the East Africa Standard (EAS) 1047 (UNEP, 2022) which all Eastern African countries have adopted.

During the workshop, it was also evident that policymakers in the region are engaged on issues related to air quality and are keen to use research evidence for decision-making. A key theme in this context was the need for implementation-based science, and opportunities to address key questions being faced by policymakers rather than science for the sake of science.

### Next steps

The deliberations at the workshop will feed into a research agenda for the region and partnerships that will deliver cleaner for all living in these countries. We hope that the connections and conversations lead to a sharper focus on air quality policies and actions on those most beneficial to public health in the region. Materials from the workshop including slides, recordings and a workshop summary are available on the HEI website. HEI also invites suggestions and ideas from the broader community.

### Conflicts of interest / Declaration

Dr. Caradee Wright serves on the HEI Global Health Oversight Committee which provides advice and input into the work undertaken by HEI's Global Health program.

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