

## Participatory Air Quality Monitoring in African Cities: Empowering Communities, Enhancing Accountability, and Ensuring Sustainable Environments

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**Abstract :** Air pollution is becoming a growing concern in Africa due to rapid industrialization and urbanization, leading to implications for public health and the environment. Establishing a comprehensive air quality monitoring network is crucial to combat this issue. However, conventional methods of monitoring are insufficient in African cities due to the high cost of setup and maintenance. To address this, low-cost sensors (LCS) can be deployed in various urban areas through the use of participatory air quality network siting (PAQNS). PAQNS involves stakeholders from the community, local government, and private sector working together to determine the most appropriate locations for air quality monitoring stations. This approach improves the accuracy and representativeness of air quality monitoring data, engages and empowers community members, and reflects the actual exposure of the population. Implementing PAQNS in African cities can build trust, promote accountability, and increase transparency in the air quality management process. However, challenges to implementing this approach must be addressed. Nonetheless, improving air quality is essential for protecting public health and promoting a sustainable environment. Implementing participatory and data-informed air quality monitoring can take a significant step toward achieving these important goals in African cities and beyond.

**Keywords :** low-cost sensors, participatory air quality network siting, air pollution, air quality management

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