

# Akila Jayasundara, Sri Lanka – SOI, OpenAQ Community Ambassador Program

Below is my SOI (Statement of Interest), which contains details along with relevant hyperlinks.

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## Background and Why This Work Matters

I am an environmental officer with eight years of experience in the public sector, mainly working on air quality, noise, vibration monitoring, and data analysis. Much of my work focuses on keeping national monitoring systems running and improving how information is collected, managed and shared. I enjoy making data more useful for decision-making, especially when it helps protect public health. I am now looking for opportunities to learn from others and contribute to national and regional air quality work using my skills and experience.

Sri Lanka faces growing air quality challenges. While our air is cleaner during some parts of the year, we experience seasonal PM<sub>2.5</sub> episodes that raise public concern and highlight the need for reliable data across all regions.

National coverage is still limited. The Central Environmental Authority (CEA) operates about 15 sites, including two reference-grade stations. The National Building Research Organization (NBRO), working collaboratively with CEA, runs 30+ low-cost units, though many face power and internet interruptions. A few private groups also run sensors. At present, only one Sri Lankan device is listed on the [OpenAQ platform](#). With reduced support for/from the U.S. AirNow program, national & global data gaps may widen in the future.

These gaps matter because good data is essential for public health planning. Estimates suggest Sri Lanka could gain about **23.76 million total life years** if the WHO PM<sub>2.5</sub> guideline were met. Expanding monitoring, improving data quality and connecting Sri Lanka more strongly to global platforms like OpenAQ can make a real difference for research and policy.

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## My Journey

My work at the CEA since 2017 has given me experience across many practical and technical areas.

The work mainly involves air quality monitoring, handling public complaints, providing data, and offering technical support for policy-making. I usually share information by submitting both raw and quality-controlled data, preparing reports to help government agencies understand a specific situation ([Example Report](#)), and occasionally contributing to research publications (Google Scholar).

Back then, we had no system to automatically calculate sub-AQI or AQI, and no method to display real-time air quality data online. Using limited resources, I developed a spreadsheet-based semi-automated workflow to calculate sub-AQI and daily AQI, then published these results via online spreadsheets. I embedded a gauge chart on the CEA website so the public could view air quality in an accessible way. Recently, we launched a dedicated AQ website and established a [national monitoring network \(AirShare\)](#) that is now publicly accessible, though further improvements remain necessary. Integrating Sri Lanka's national network with OpenAQ would address many of the remaining limitations.

Sri Lanka previously had only a draft AQI framework, limited to breakpoints that followed the National Ambient Air Quality Standards, which are aligned with WHO's Interim Target 2 (IT2) for PM. Because widely used [AQI schemes](#), such as the AQI(US), do not align with WHO IT2, we decided to develop and publish a complete calculation method and guideline specifically for the country. I led the preparation of the "Air Quality Index for Sri Lanka: Calculation and Guideline ([AQI-SL](#))."  
Then, we also recognized that having an AQI alone would not sufficiently reduce exposure or related health impacts. To combat timely responses high during pollution episodes, we released the "Contingency Response Action Plan for Deterioration of Air Quality in Sri Lanka ([CRAP-DAQ-SL](#))."  
Implementing this plan requires a forecasting system, and developing a national air-quality forecasting method remains one of our upcoming priorities.

The Colombo Fort reference station had become largely manual and was in poor operational condition, and no funding had been allocated for new equipment. To address this, I developed a proposal to source a low-cost microsensor system through [Airparif](#) [AirLab](#) and [French Development Agency \(AFD\)](#) in France, who were

partnering with CEA on technology & capacity development. As a result, we secured a compact monitoring unit capable of measuring key air quality indicators along with essential meteorological parameters (Ellona WT1 Pro). I also requested to expand the setup with AirGradient sensors, an OpenAQ-supported and cost-effective option, which won an award in AirLab's low-cost sensor challenge, to capture background levels and transboundary influences for further studies. Unfortunately, the second phase could not be implemented.

Later, UNEP donated twelve low-cost sensors, and I contributed to preparing the national deployment plan. I was also directly involved in selecting sites and supporting their installation in the field. These sensors are now live and useful, but national coverage is still insufficient.

To scale further, I applied to the EPIC Air Quality Fund 2024; the proposal was not perfect as it was made during a very busy period in my professional schedule and was not selected amid strong competition. However, that experience motivated me to work with OpenAQ and EPIC again to refine and implement these ideas.

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## My Motivation for Joining, What I Hope to Learn, and What I Can Contribute

I want to join OpenAQ because the program is practical, collaborative, and closely aligned with Sri Lanka's needs. My previous work, including the EPIC application, showed me how much more is possible with strong technical guidance, shared experience, and better links between national and global systems.

We currently lack a proper forecasting system for the country, and the knowledge I gain through this work will help fill that gap. Since OpenAQ data also feeds into external forecasting models, such as NASA's GEOS-CF for global air quality predictions and the Predicting What We Breathe (PWWB) initiative, my contribution will ultimately help improve the accuracy of air quality forecasting.

I see the OpenAQ program as an opportunity to strengthen both my technical skills and Sri Lanka's air-quality data ecosystem. Many of our existing sensors are not yet integrated with OpenAQ because their data cannot be automatically linked via vendor cloud platforms. Through the program, I hope to learn practical methods for onboarding these devices, improving data coverage, and filling critical spatial gaps. Expanding national data on OpenAQ would directly support global modeling efforts by reducing interpolation errors, improving exposure assessments, and enabling more accurate forecasting.

I am also interested in advancing quality control and calibration practices. The program's collaborative environment, together with emerging AI-based calibration techniques, provides an ideal space to test and refine modern QC methods. Since I have access to reference-grade instruments, I can contribute to co-location studies and calibration/verification work that enhances the reliability of low-cost sensor data.

As Sri Lanka is currently represented by just a single device on OpenAQ, integrating even a few additional sensors would significantly strengthen the country's data presence.

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## Looking Forward

I care deeply about practical, real-world environmental work. Much of my professional life has been about finding solution with limited resources, often with limited tools, and still finding ways to improve the systems people rely on. The chance to work with OpenAQ would help me turn these small improvements into something larger, more connected and more sustainable.

I would be very grateful for the opportunity to learn, contribute and support better air quality information for Sri Lanka, the Region and the Globe.

It would be really exiting & meaningful to work with OpenAQ and EPIC, if I get the chance.

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Resources: Some related resources, files & links are be found at this web page (optional).  
<https://ggadash.github.io/OpenAQ/>

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