



PRESS KIT: Harnessing AI and Citizen Science to Combat Air Pollution in Nakuru

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Contact:

- **Prof. Wilkister Moturi (Egerton University) - wnyaora@egerton.ac.ke**
- **Elizabeth Mokobi (Egerton University) - lizmokobi@gmail.com**

Attachments (to be reached via [[website](#)]):

- **Set of pictures**
- **AngaWatch logo**
- **Supporting videos**

PROJECT SUMMARY: *A Smart, Integrated Approach to Air Quality Monitoring*

A new initiative is transforming how Nakuru monitors and responds to air pollution. The RESPIRA project is a collaboration between KU Leuven, Egerton University, the Nakuru Meteorological Department (KMD) and the Kenya Meteorological Society, sensors.AFRICA and the Stockholm Environmental Institute (SEI). They are supported by the Nakuru city and county management. Together, they are setting up an AI-driven monitoring system for air pollution.

By combining advanced AI-based forecasting with real-time community reporting, the project addresses climate change-induced air pollution. This is a major health and environmental challenge. In 2020 alone, air pollution contributed to 27,700 deaths in Kenya, highlighting the urgency of proactive monitoring and intervention.

“Climate change and air pollution are deeply interconnected. Our AI-based monitoring system will provide the Nakuru Meteorological Department with the tools needed to predict pollution



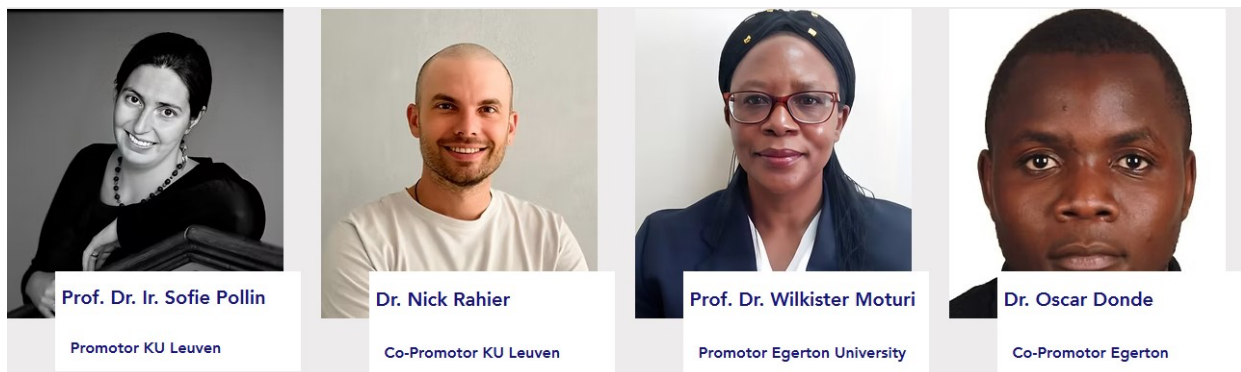
trends, while community participation through our online community tool “AngaWatch” ensures that real-life experiences shape solutions,” says Dr. Nick Rahier, Co-promoter of the project.

The initiative builds on existing efforts to measure air quality in Nakuru, acknowledging that while sensors have been deployed before, their data remains fragmented and underutilized. By centralizing this information and integrating citizen inputs, the project ensures that the data generated translates into effective policy actions.

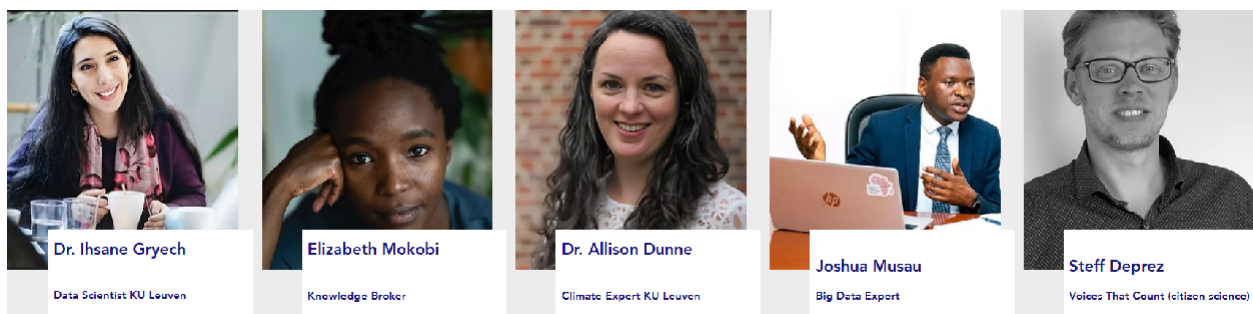
The project is funded by the Government of Flanders through the Flanders International Climate Action Programme.

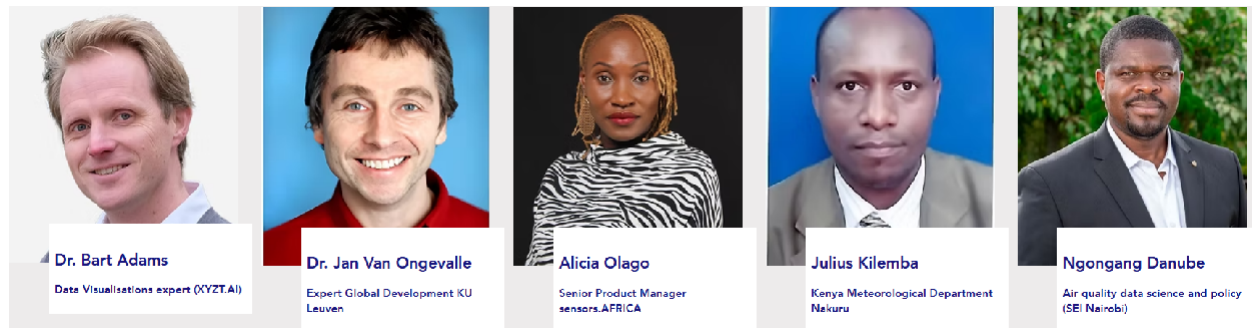
TEAM LEADS

This project is led by a team of experts from KU Leuven in Belgium, and Egerton University in Nakuru, Kenya.



Project Team





PROJECT OVERVIEW

The project integrates sensor-based data with qualitative insights from recruited citizen scientists through a community-driven initiative called “AngaWatch”.



What is AngaWatch?

AngaWatch is a **community-driven, human-based sensor network** designed to **empower Nakuru residents** by enabling them to report pollution events and share their **firsthand experiences** with air quality in their neighborhoods. Through a combination of **crowdsourced data collection and sensor data**, AngaWatch ensures that **local insights complement scientific sensor measurements**, capturing the nuanced ways in which air pollution affects different neighborhoods in the city. By participating, residents contribute to a **real-time, citywide database**, helping to **identify pollution hotspots, track trends over time, and support evidence-based policy interventions**. This initiative amplifies community voices in environmental governance and fosters a **sense of collective responsibility** in tackling air quality challenges.

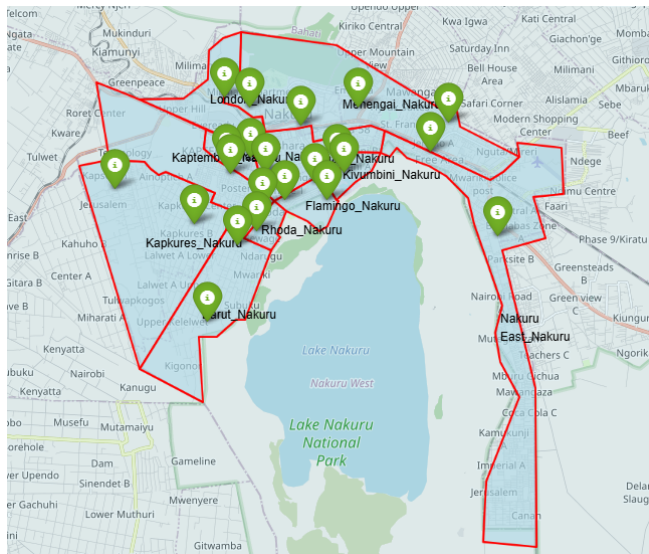
AngaWatch comprises two key components: the **Air Pollution Incident Reporting Tool**, a public platform accessible via <https://bit.ly/AngaWatch>, where residents can report real-time pollution events to identify hotspots and trends, and the **AngaWatch Community Observer Network**, or “*AngaWatchers*,” a group of citizen scientists who provide qualitative insights through surveys about their experiences with pollution in different parts of the city. Their firsthand observations provide crucial qualitative insights into the lived realities of air pollution.



“AngaWatch is more than just data collection. it is about equipping communities with the power to shape climate adaptation policies that directly impact their lives.”

Prof. Wilkister Moturi, Egerton University.

Bridging Science and Society: AI-Powered Insights for Policy Action

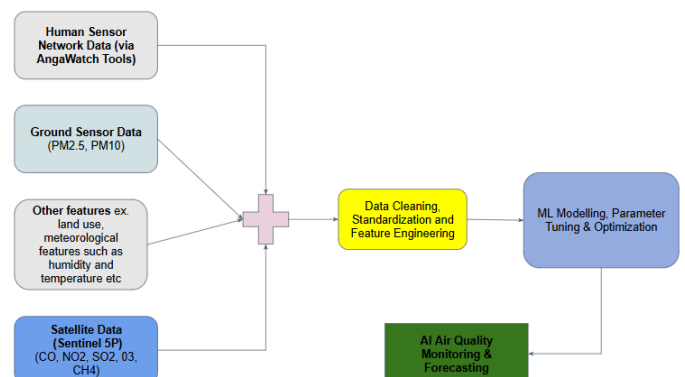


The AngaWatch data, combined with sensor-based measurements, will be integrated into an **AI-driven air pollution modeling system**, enhancing the city’s ability to monitor and respond to pollution in real time. The areas selected for **sensor installation**, as shown on the map, are selected based on various **social-economic and demographic factors** such as human traffic, population size and economic activity.

Daily **satellite data** from Sentinel 5P, which is part of the Copernicus program alongside other **meteorological and topographic features**, shall also be integrated into to improve the predictive capability of the AI models.

This **data fusion** will power an **Early Warning System**, hosted at the **Nakuru Meteorological Department**, providing **real-time alerts** to help communities and policymakers take proactive measures against deteriorating air quality.

Additionally, the insights generated will contribute to





data-driven policy recommendations, ensuring that environmental governance is backed by robust, evidence-based decision-making. The Kenya Meteorological Department is responsible for producing annual air pollution reports, yet it frequently faces challenges due to insufficient and fragmented data, limiting its ability to provide comprehensive assessments and policy guidance. This project addresses this gap.

Beyond policy impact, the AI-powered analysis will also support **public health interventions**, allowing authorities to **identify and target pollution hotspots**, thereby reducing **respiratory disease risks** and improving overall community well-being. Through this **innovative integration of technology and citizen engagement**, the project strengthens Nakuru's capacity to address air pollution challenges in a more **efficient, predictive, and responsive manner**.

"Our initiative is about making sure the data we collect is used to improve urban health and governance. By integrating AI and citizen engagement, Nakuru can develop a truly responsive climate action strategy."

Dr. Allison Dunne, HIVA, KU Leuven.

Key Stakeholder Quotes

Dr. Nick Rahier (KU Leuven), Project CO-PI (co principle investigator):

"We are not just collecting data but creating a system that puts air quality monitoring into the hands of citizens. AngaWatch strengthens community participation in environmental governance."

Prof. Wilkister Moturi (Egerton University), Project CO-PI (principle investigator):

"AngaWatch provides a direct line between scientific research and people's lived experiences. It ensures that climate and pollution policies reflect the realities on the ground."

Julius Kilemba, Nakuru Meteorological Department Representative:

"By integrating AI, sensor networks, and community observations, this project will revolutionize air quality management by KMD in Nakuru"



Media & Public Engagement Opportunities

For interviews, further information, or access to project materials, please contact our knowledge broker (lizmokobi@gmail.com)



Be part of the change! Join us in making Nakuru a cleaner, healthier city.