



Human Sensor Network approach for Citizen Science

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September 2026





VOICES THAT COUNT



MONITORING, LEARNING AND EVALUATION

How to understand change and make sense of impact?



IMPACT STRATEGY

How to bridge lived reality with planning and decision making?



IMPACT DRIVEN COLLABORATION

How to build collaboration grounded in learning?



PARTICIPATORY ACTION-RESEARCH

How to surface what matters and identify potential for action?

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Narrative inquiry and sensemaking



+



Patterns, trends, statistics,
but also the stories behind
the numbers!

Tell us about a very
specific moment
experience...

Prompting question

Self-interpretation, self-
analysing the story

Signifier questions

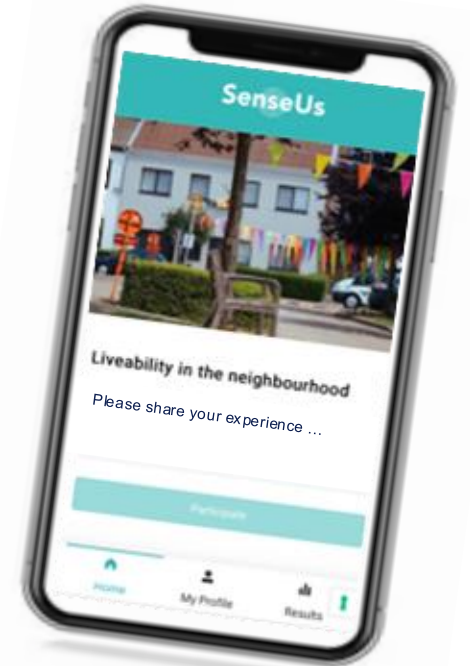


Human sensemaking
> Actionable insights

Human Sensor Network



- Capturing **lived experiences and observations** of citizens around a topic of interest
- From a selected **panel of people** committed to contribute on a regular basis
- **Real-time gathering / monitoring** of experiences and information
 - By invitation: Share experiences based on a set of questions
 - Self-initiated: Sharing information via a dedicated link
- Immediate **detection of patterns and trends**
- Rich data directly from people of particular group





Data innovation in strengthening climate resilience.

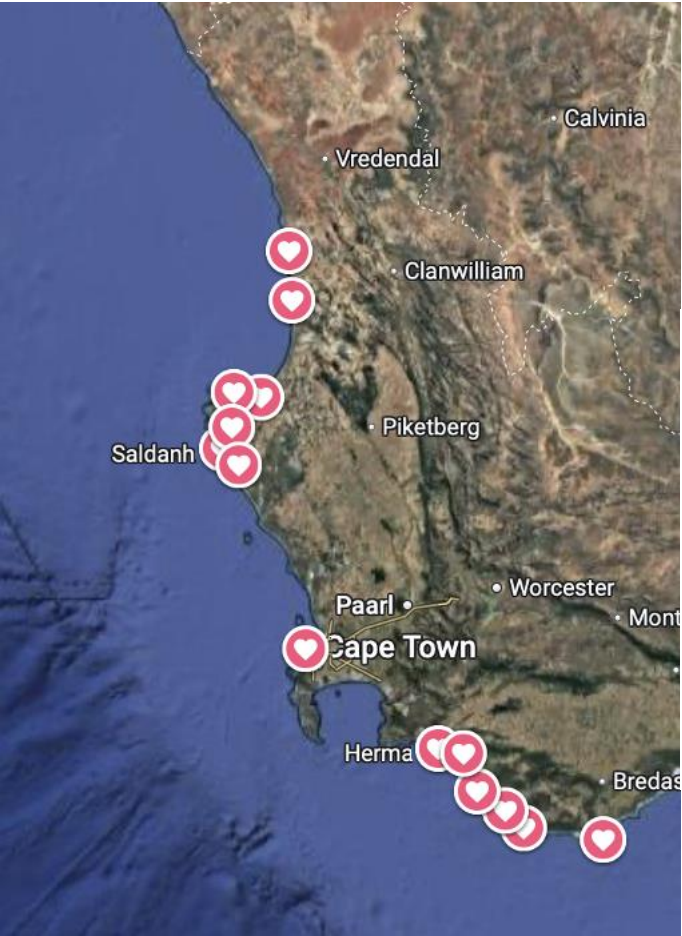
Empowering local fisher communities to collect, create and analyse diverse data.

Financed by

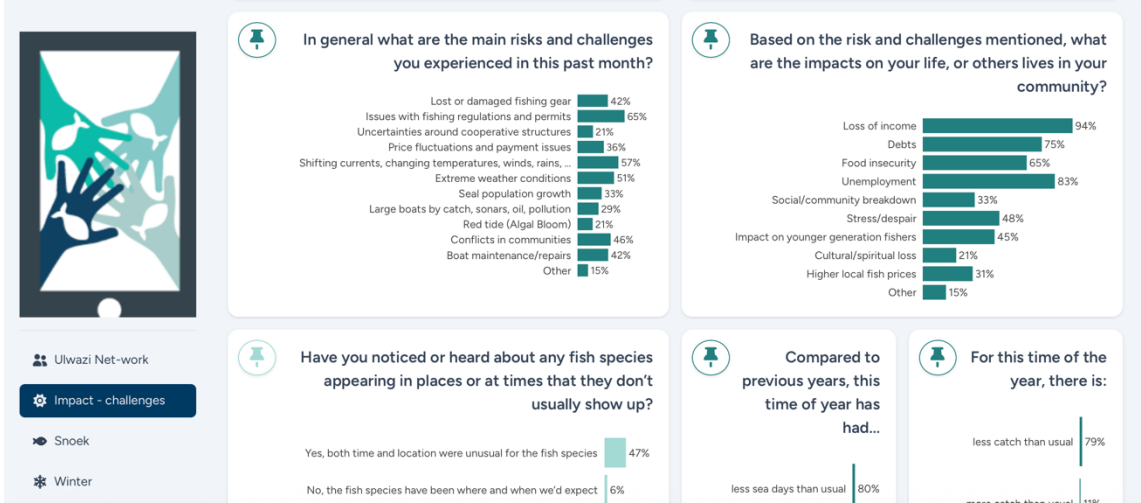


The Ulwazi Net-Work - A Human Sensor Network

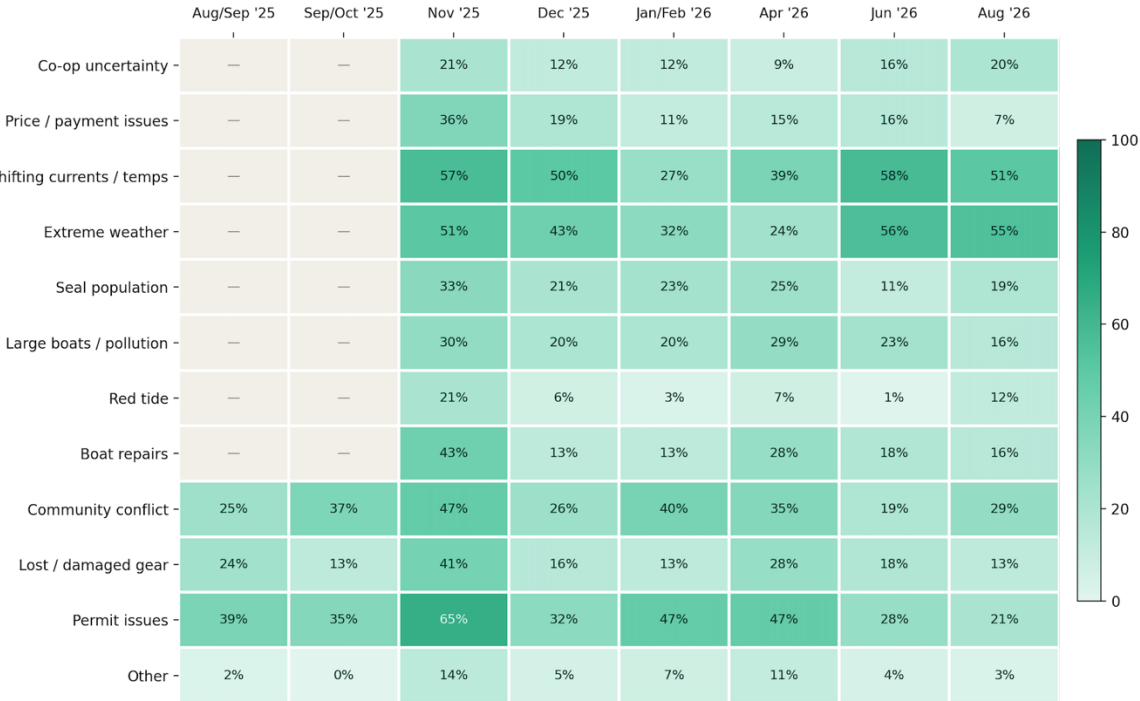
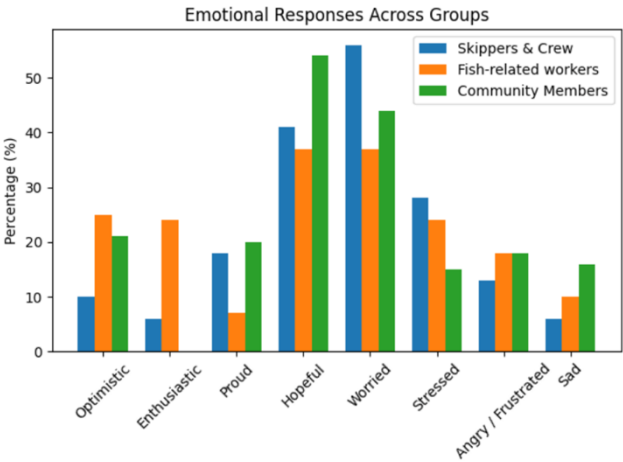
- Network of **small-scale fishers** along the coast of **South-Africa**
- We are all co-researchers: A network of “**eyes and ears**” and voices in the small-scale fishery sector
- A place where people you can share experiences, information, challenges and feedback
- **Monthly rounds** about topics that are relevant at that time (weather, climate risks, permits, fishing grounds, ...)
- **Story Catchers** harvest **200 stories** per round across fisher communities
- Real-time feedback - Trends and storylines over time
- Integrated into databank with quantitative fisher data (Abalobi)
- Results shared and discussed with farmers in community sessions
- Results shared with academics, government, cooperatives, CSO, ... through a COP



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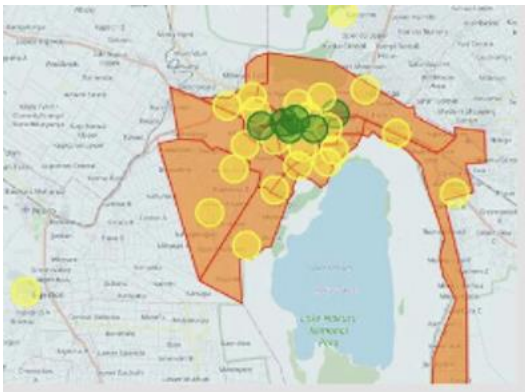
Challenges reported, by month



RESPIRA AFRICA – Nakuru City

Enhancing Capacity
for Climate Change
Resilience in Nakuru,
Kenya through AI-
based Air Quality
Monitoring

Financed by



The RESPIRA Air Quality Monitoring (RESPIRA-AQM) project aims to build Nakuru's resilience against the impacts of air pollution and climate change by integrating advanced forecasting technology with community-driven environmental monitoring.

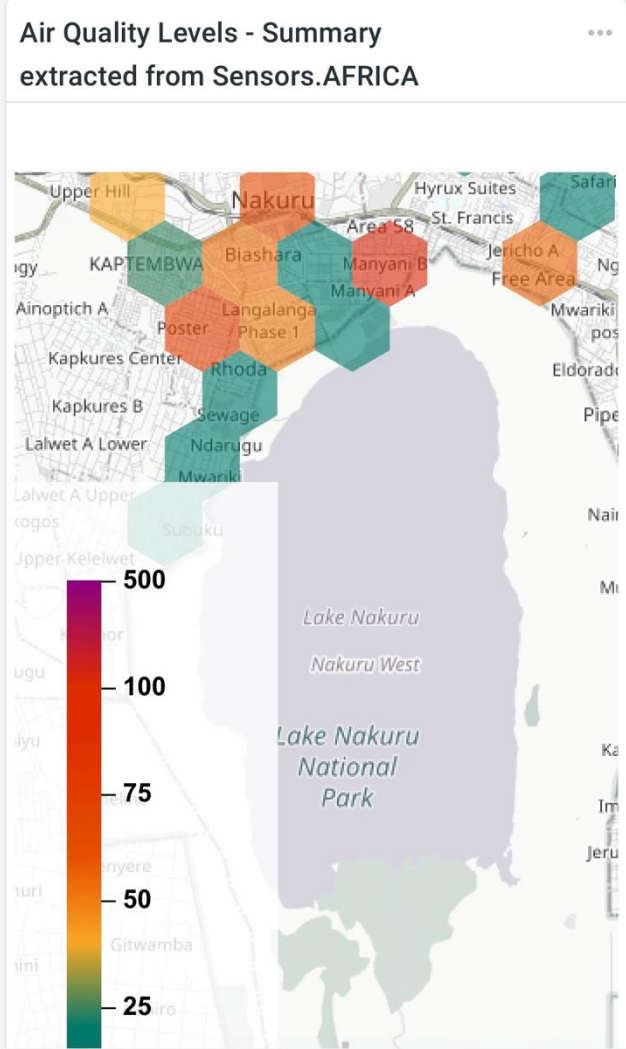
- Air quality sensors combined with humans sensors
- AngaWatch Ambassadors
- Regular collection of stories about air quality issues and incidents
- Overviews per ward
- Shared with local authorities
- Human sensor data is integrated into the air quality dashboards

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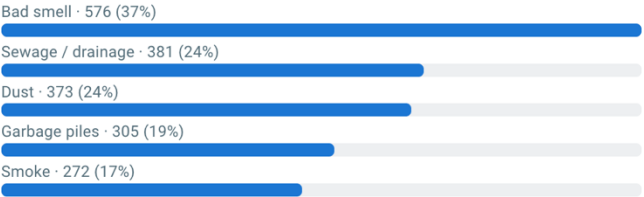
RESPIRA AFRICA – Nakuru City

NAKURU CITY AIR QUALITY DASHBOARD

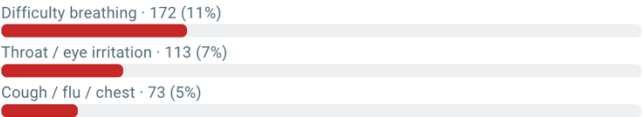


What people see and feel

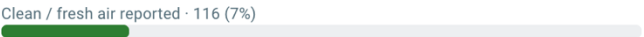
What people observe:



How it affects them:



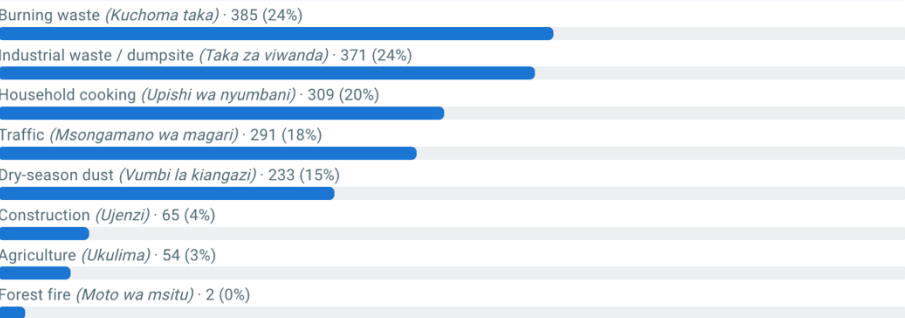
And sometimes, good news:



Counted from the words residents used in 1,576 free-text reports (English and Kiswahili); one report can mention several things.

Why is the air dirty? Citizens answer

1,576 reports from residents of 12 wards (Mar 2025 - May 2026), collected by AngaWatch community ambassadors. Sensors measure *how much* pollution there is - citizens explain *what they see causing it*. Other (*Mengineyo*) · 623 (40%)



What is hiding inside "Other"? Reading the 353 reports that ticked only "Other": 38% describe bad smells and 31% sewage or blocked drainage - a cause the survey form does not offer. Across all 1,576 reports, sewage/drainage comes up 381 times, which would rank it among the top causes.

Incidence Reporting Tool - AngaWatch



Filters

Date

Location

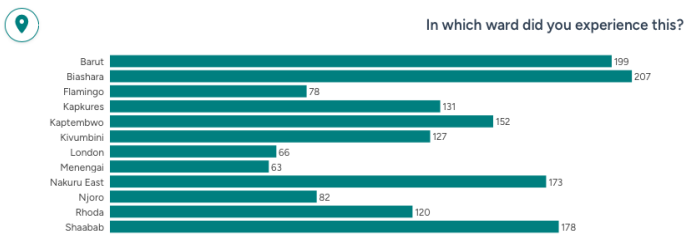
Reset filters

Year

Month

Ward

Changes to routine



Provide a description about what you observe: (1576)

The air was cool, it wasn't irritating since the those residing in this places are trying to keep the environment clean which makes the air to be in an acceptable way .

The air in Egerton University, Njoro found in Nakuru County is cool, it does not irritate since the residents around are trying to keep the environment clean and free from pollutants such as chemicals, indutrial wastes and smoke from burning of fossil fuels . This makes the air to be so cool .

Air Pollution from Waste Burning and Charcoal Stove

I have seen someone burning waste, causing significant air pollution, as thick smoke fills the surroundings. I have also witnessed a charcoal-lighting stove in use, emitting an excessive amount of smoke during ignition. The dense smoke created discomfort in the immediate area.

Yes, the air quality when burning tyres irritates me

Today's air was good, sky was clear

In kaptembwa, there is raw sewage released to storm water drainage. They stagnate in our gates and make the place not conducive due to bad smell and eye irritation as well as eye sore

Hali ya anga ipo shwari

Today, I noticed that the air smelled strongly of smoke, almost like something was burning nearby. There was a slight haze in the sky, and visibility seemed lower than usual. The air felt heavy, and after a few minutes outside, my eyes started to sting and my throat felt a bit dry and irritated. It was uncomfortable to breathe deeply, which made me think the air quality might be poor today.



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