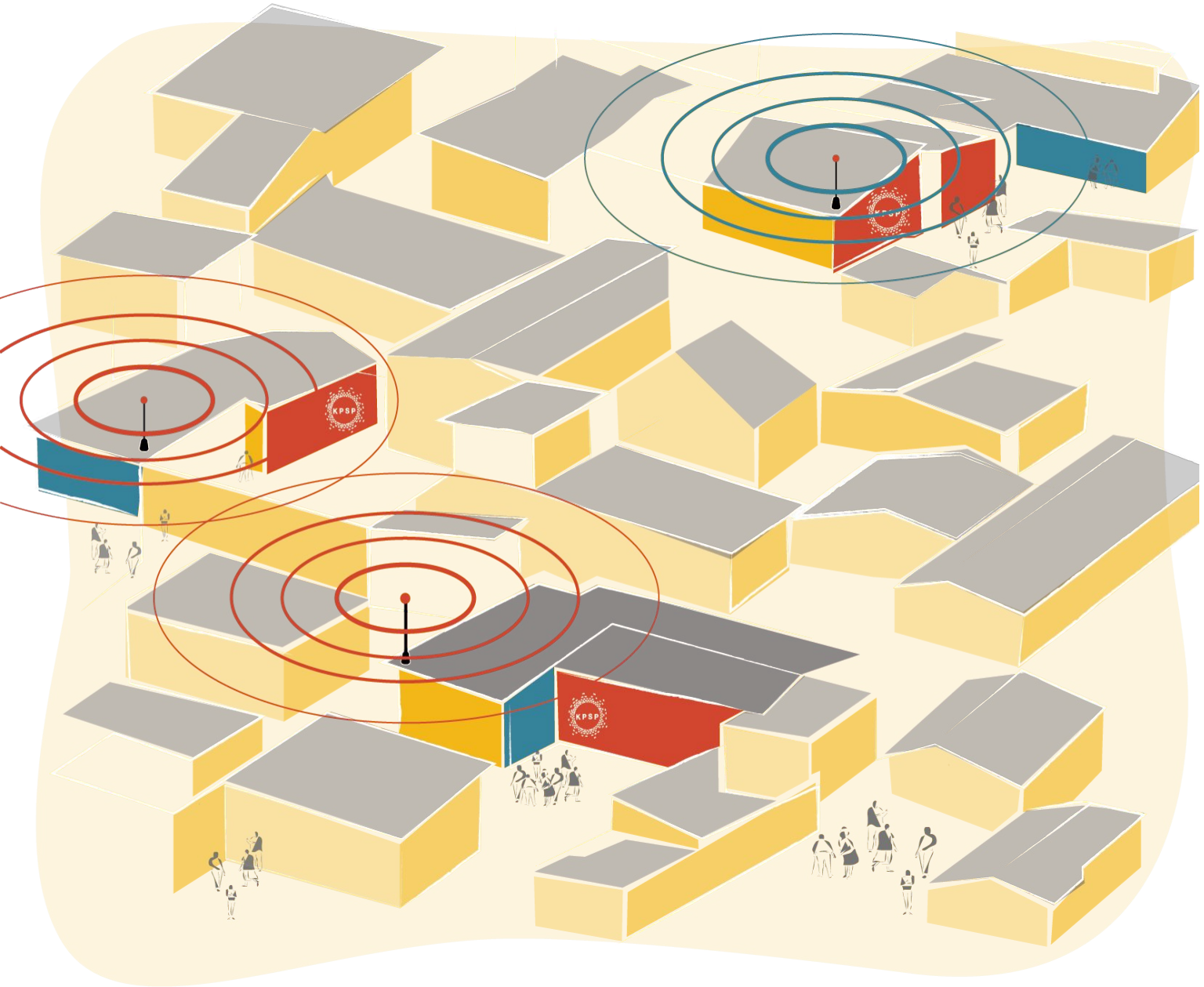


LIVING DATA HUBS

CIVIC DATA LAB

KDI

CITY INFRASTRUCTURE EQUITY LAB

Massachusetts Institute of Technology

Tunapanda

let’s introduce ourselves!!

talk to each other for 5 minutes and then introduce the other person:

- their name
- their CBO
- one interesting thing you learnt about them

What are the goals of this meeting?

By the end of the meeting, we hope to answer the following questions:

1. What is air quality and why is it important?
2. What are the most common pollution sources in Kibera?
3. How is air pollution affecting our community?
4. How can you collect, communicate and use AQ data?
5. What is the importance of collecting this data?
6. What can we individually and collectively do to improve air quality?

What are we going to talk about today?

1. Prayer by community elder
2. Participants/Icebreaker - let's get to know each other
3. Discuss agenda and meeting goals
4. Presentation and conversation: what is air quality?
5. Discussion: air quality sources in Kibera
6. Activity: ranking pollution sources
7. Discussion: residents experiences with air pollution (effects)

Break

8. Presentation: intro to AQ sensor
9. Presentation: Monitoring and communicating AQ data
10. Discussion: Why is data important?
11. Presentation: understanding actions to reduce air pollution
12. Brainstorming: community actions and advocacy to improve AQ
13. Final Q&A and thanks

Closing Lunch

air quality: what is it?


INDIA
ONLY
ENTRY
EXIT

what is pollution?
what are pollutants?

what is pollution?

what are pollutants?

Air pollution is contamination of the indoor or outdoor environment by any chemical, physical or biological agent that modifies the natural characteristics of the atmosphere. Household combustion devices, motor vehicles, industrial facilities and forest fires are common sources of air pollution.

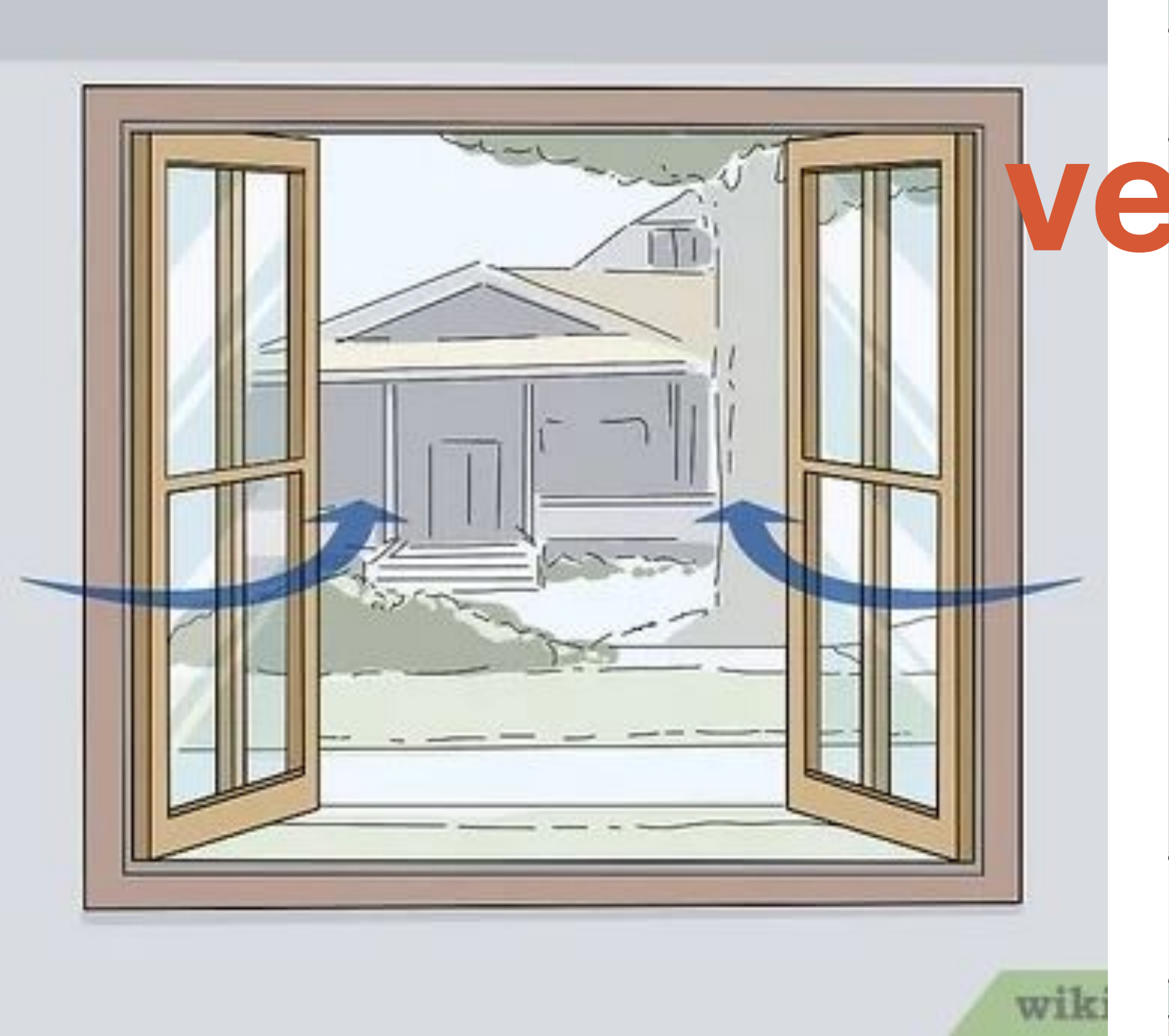
what are the main sources of air pollution in your community?

Main sources of air pollution in Kibera

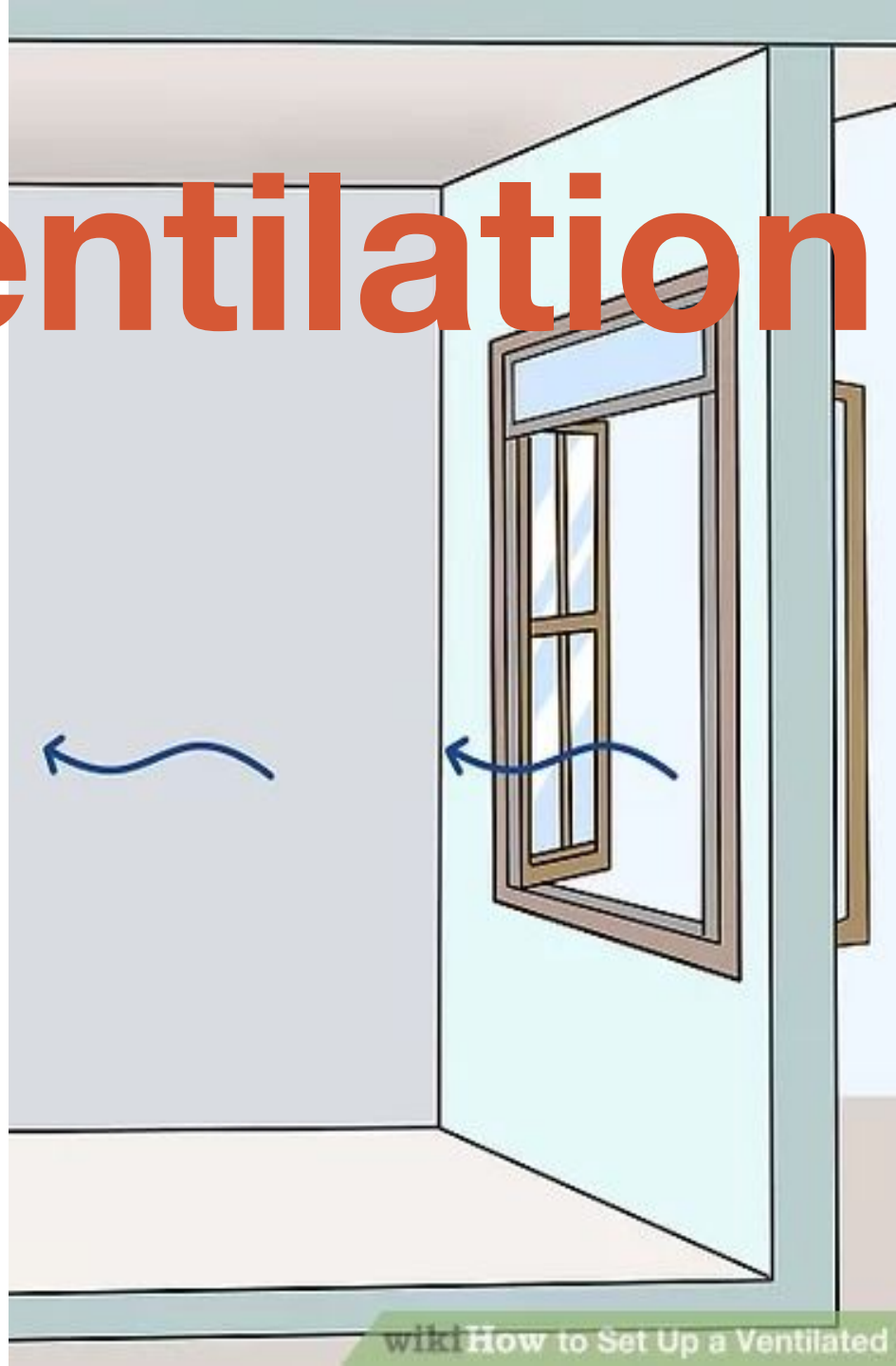
indoor?


parafin lamps,
kerosene,
candles


indoor cooking
with coal and
firewood



ventilation



outdoor?


dust from
construction
COUNTYPRESS.CO.KE


waste dumping in
river (foul smell)

fires


burning waste:
tyres, plastic
and rags


vehicular
emissions

posho mill emissions

let’s do an activity

Fig. 3 Photograph showing the results from a playful activity exploring air pollution sources with Mukuru residents at the Hood2Hood festival. Residents were asked to put counters into the 'top 3' sources of air pollution in Mukuru. The title translates as 'What pollutes the air most?". Initial options included were designed in partnership with community representatives.

effects of air pollution

short term


burning eyes


foul smell,
water pollution

fainting: carbon monoxide poisoning

long term

Air pollution and your health

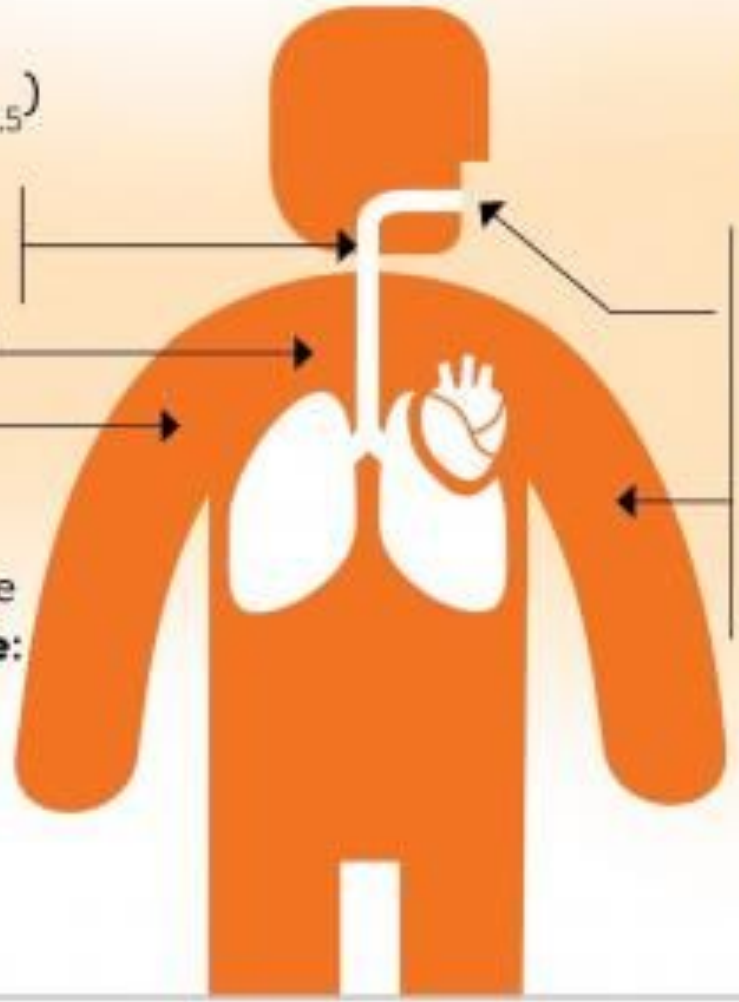
Fine particles and ground-level ozone (often called smog) are widespread pollutants linked to health effects.

Fine particles ($PM_{2.5}$) pollution can cause:

- Shortness of breath
- Wheezing, coughing
- Chest pain
- Fatigue

Fine particles can make these conditions **worse**:

- Cardiovascular and heart disease
- Asthma and COPD



Ground-level ozone pollution can cause:

- Difficulty breathing deeply
- Shortness of breath
- Sore throat
- Wheezing, coughing
- Fatigue

Ozone can make these conditions **worse**:

- Asthma and COPD
- Emphysema

lung diseases: asthma, TB, cancer

brain and
organ damage

healthcare expenses

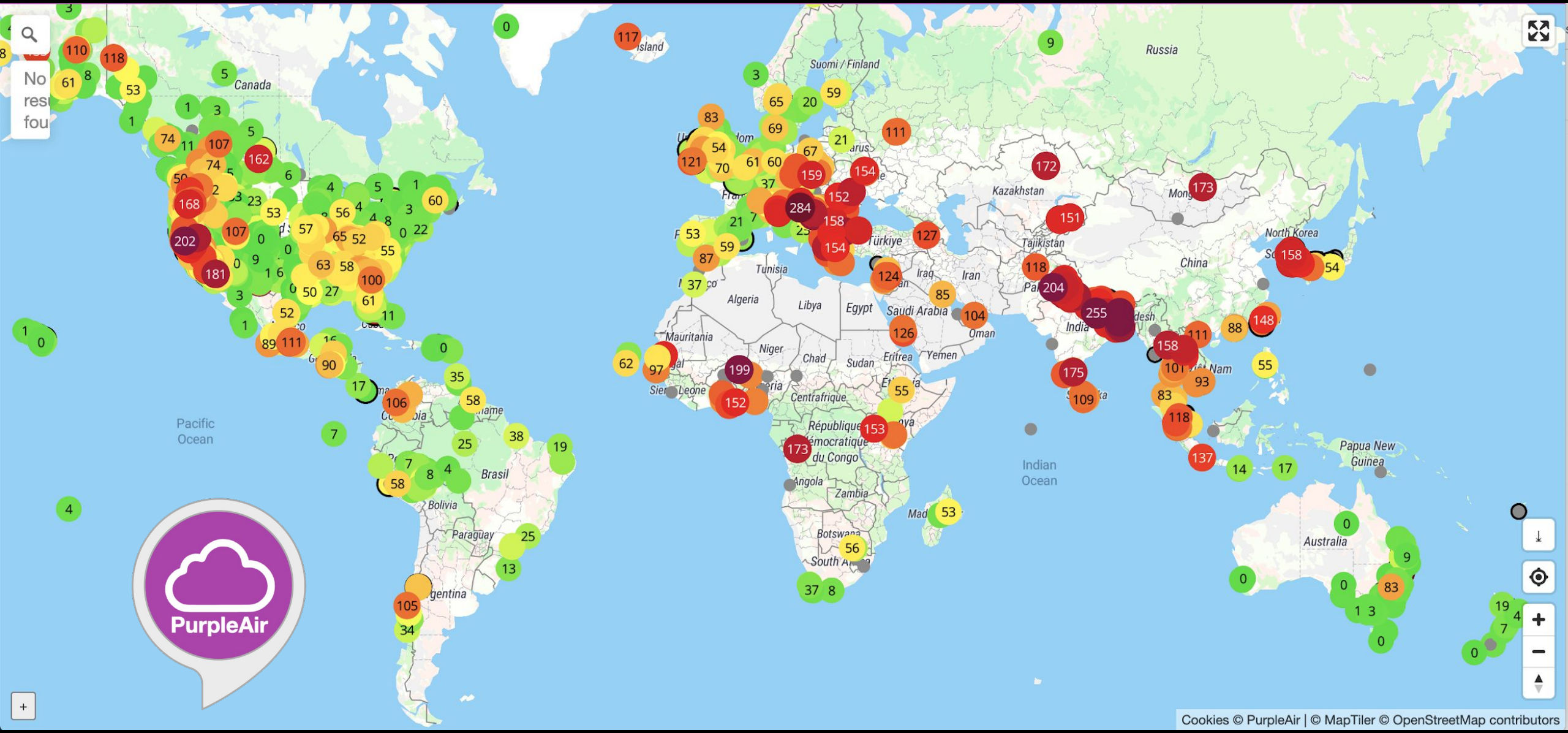
BREAK

what is air quality data?

why collect this data?

how can we measure, collect air quality


PurpleAir

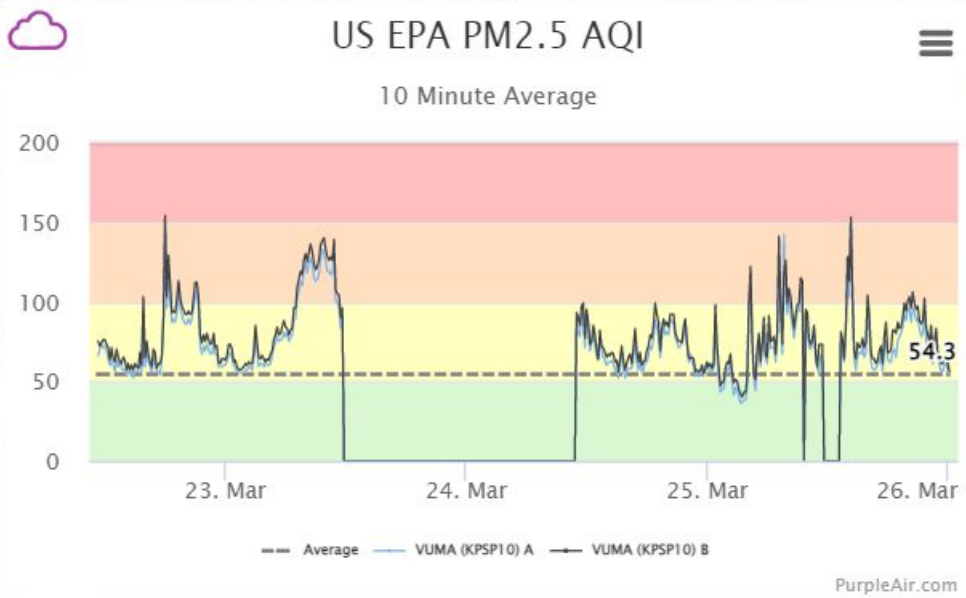

Canada
Russia
Suomi / Finland
Kazakhstan
China
North Korea
Tajikistan
Türkiye
Iran
Iraq
Saudi Arabia
Oman
Yemen
India
Algeria
Libya
Egypt
Tunisia
Mauritania
Niger
Chad
Sudan
Eritrea
Centrafrique
Angola
Zambia
Botswana
Brasil
Bolivia
Paraguay
Australia
Papua New Guinea
Pacific Ocean
Indian Ocean
PurpleAir
Cookies © PurpleAir | © MapTiler © OpenStreetMap contributors

visualization of air quality data

scan the QR code

(manual placed at each CBO)

Click & drag to zoom. Shift + click & drag to pan.



On March 26th, 2022, 12:20:47 AM GMT+0300

10 Minute Average US EPA PM2.5 AQI is now **58**

51-100: Air quality is acceptable. However, there may be a risk for some people with 24 hours of exposure, particularly those who are unusually sensitive to air pollution.

Now	10 Min	30 Min	1 hr	6 hr	1 Day	Week
58	58	64	71	76	82	90

Sensor: VUMA (KPSP10)

A B ✓100% PA-II 6.01

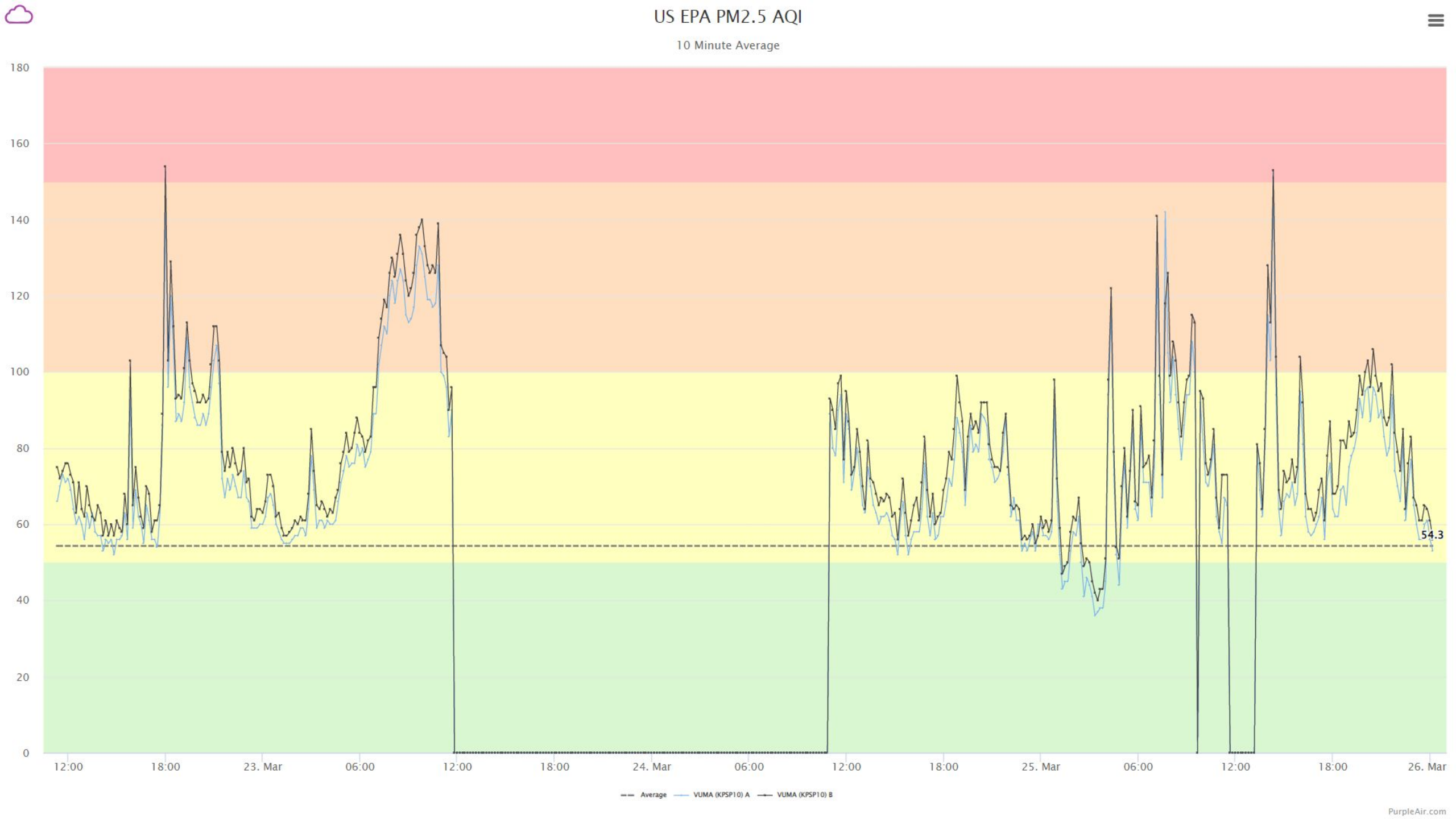
Get This Widget

Join our community of citizen scientists.
Get your own outdoor sensor just like this one.

No Data | 0 | 50 | 100 | 150 | 200 | 300

March 26th, 2022, 12:21:52 AM GMT+0300

When the AQI is in this range:	..air quality conditions are:
0 to 50	Good
51 to 100	Moderate
101 to 150	Unhealthy for Sensitive Groups
151 to 200	Unhealthy
201 to 300	Very Unhealthy
301 to 500	Hazardous


US EPA PM2.5 AQI
10 Minute Average
180
160
140
120
100
80
60
40
20
0
54.3
12:00
18:00
23. Mar
06:00
12:00
18:00
24. Mar
06:00
12:00
18:00
25. Mar
06:00
12:00
18:00
26. Mar
Average
VUMA (KPSP10) A
VUMA (KPSP10) B
PurpleAir.com

collective monitoring and collection of data

how can the you communicate with others in your community about pollution?
how does data help?

Daraja

WEATHER + ENVIRONMENT

+

Living Data Hubs

+

SMS

RADIO

WORD OF MOUTH

NETWORKS

DATA COMMUNICATION EXAMPLE

collective
community
actions to reduce
air pollution

Waste management

how can we include this aq data into your educational tools

how can the community use this data for their welfare?
how can KDI help them?
what can the govt do?

Future Plans

- advocacy groups
- research partnerships
- educational partnerships
- what would you like??

ASANTE!
(welcome to the lunch)