

# Pollution in place: Place-based perspectives inform air pollution priorities for clean energy transitions in Nairobi schools

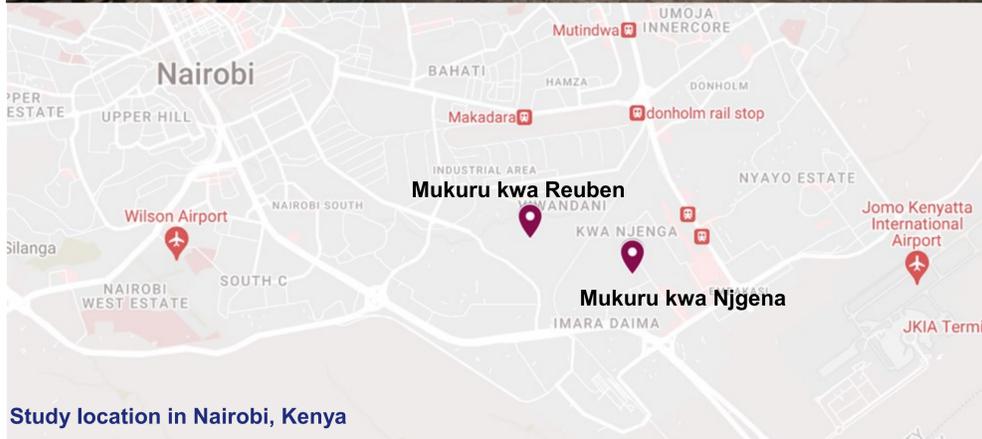
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## Study background & aims

- Traditional fuels (firewood, charcoal, kerosene, etc.) widely used across the Global South, generating air pollution hazardous for health > Transitions to clean fuels are estimate to significant co-benefits for health, environment and gender equality.
- We explored institutional cooking practices in schools in Nairobi, Kenya that depend on traditional fuels for catering, focusing on the potential for clean cooking transitions .
- Solutions need to be local appropriate and co-created to be successful, thus we aimed to explore local knowledge, perspectives and understandings on air pollution and clean cooking.

## Case study setting

- Study conducted in three schools located within Mukuru informal settlement.
- Mukuru is home to approximately 1million inhabitants and suffers from poor infrastructure and service, and limited access to water and sanitation.



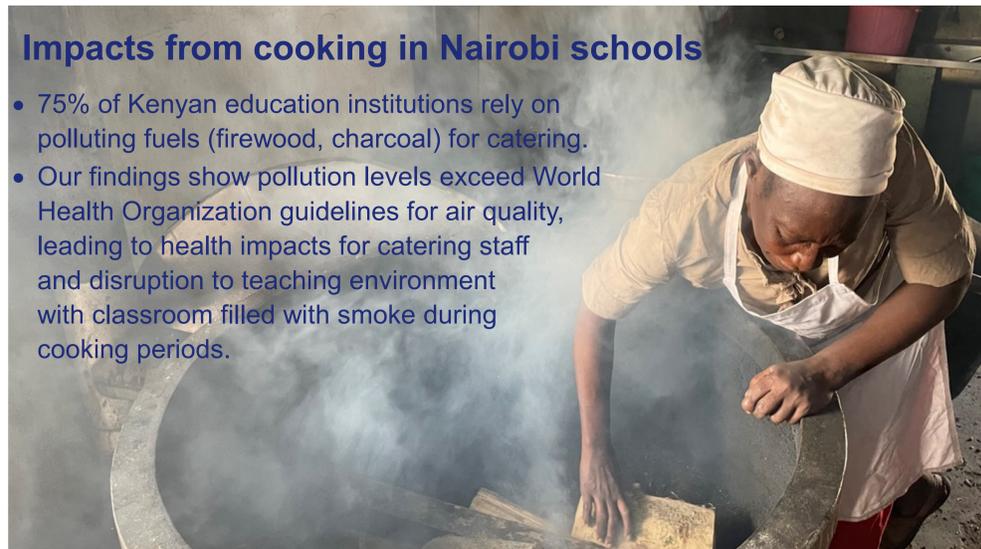
Study location in Nairobi, Kenya

## Methods

- Three schools investigated: *School 1— cooking with wood, School 2— cooking with charcoal briquettes, and School 3 — cooking with both Liquefied Petroleum Gas and wood.*
- Perceptions of air pollution and transitions to cleaner fuels were explored during: Focus group discussions (FGDs) (n=8) with catering staff, teachers and senior management & in-depth interviews (IDIs) (n=4) with decision makers.

## Impacts from cooking in Nairobi schools

- 75% of Kenyan education institutions rely on polluting fuels (firewood, charcoal) for catering.
- Our findings show pollution levels exceed World Health Organization guidelines for air quality, leading to health impacts for catering staff and disruption to teaching environment with classroom filled with smoke during cooking periods.



## Perceptions of pollution

- Pollution went beyond issues of air quality, and commonly included water, sewage, noise and other environmental pollutants and were strongly informed by senses (visual, auditory, smell) and sense of place, with the surroundings reported as very polluted due to local industry and informal settlement.

**“I consider the quality of air not to be at its best considering that we are at the centre of the slum....So, I'd consider it not a very good environment as far as pollution is concerned.”**

FGD School 2, Senior management

**“Outside the school compound, there is a lot of pollution—which is mad and sometimes it is from the sewage system. I have once been in the heart of the village and I noticed the sewage system there are those with pits which have not been sealed yet hence there is a lot of scent coming from those sewages. All those mixed up with the air cause pollution.”**

FGD School 1, Teachers

## Cited sources of pollution

### Internal sources

- Lighting & burning firewood for cooking
- Burning kerosene for lighting
- School waste burning
- Welding machines in practical workshops
- Knitting machines and dust in practical workshops

### External sources

- Food street vendors cooking with biomass
- Industries & Factories
- Poor waste disposal & burning of waste
- Poor sewage and draining system
- Smokers (cigarettes, bhang)
- Dirty rivers
- Noise in the informal settlement
- Traffic (cars, motorbikes & trucks)

## Conclusion

- Despite the polluted indoor environment, perceptions of air pollution were strongly linked to the external environment, and ascribed as a distant phenomenon toward which participants do not have agency or responsibility, highlighting how place informs sense-making.
- Building consensus on such issues will guide appropriate solutions and ensure clean energy solutions are a *real* priority for the given setting.



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