



## 2.1 billion people rely on polluting solid fuels and kerosene for household energy

### Health

- Household air pollution kills 3.2 million people each year (237,000 children under 5 years): 32% ischaemic heart disease, 23% stroke, 21% lower respiratory infection, 19% chronic obstructive pulmonary disease, and 6% lung cancer.
- 86 million healthy life years lost each year.
- Evidence that disease burden is greater (low birth weight, tuberculosis, cataracts, nasopharyngeal and laryngeal cancers).

### Deforestation/ climate

- Firewood and charcoal for cooking and heating responsible for 40% of global wood harvest.
- Cooking with solid fuels and biomass responsible for almost one third of total black carbon emissions and up to 8% of total anthropogenic climate impacts.

### Gender impacts

- Women and children, typically responsible for household chores including cooking and collecting firewood, bear the greatest health burden from use of polluting fuels.
- Women spend more than 40 hours per month collecting fuel (time poverty). Reliance on solid fuels has detrimental impacts on women's mental health and wellbeing.

# Clean modern energy for all

Benefiting health, society, environment and climate in sub-Saharan Africa to achieve the 2030 Sustainable Development Goals

## CLEAN-Air(Africa)

The NIHR CLEAN-Air(Africa) Global Health Research Unit will accelerate the understanding of air pollution related disease burden through a unique set of studies that will:

1. strengthen national health systems for community health prevention of HAP related disease and,
2. provide evidence-based recommendations for population transition to clean household and institutional energy.

### CLEAN-Air(Africa)'s Aims

**Aim 1:** To facilitate transition for vulnerable communities and public institutions to clean cooking

**Aim 2:** To evaluate and quantify chronic and hidden health burdens from polluting fuel use that can be addressed through clean cooking

**Aim 3:** To advocate for disease prevention from reductions in air pollution through health systems strengthening

**Aim 4:** To develop a sub-Saharan African Air Pollution Centre of Excellence (training and air quality monitoring)

**Aim 5:** Maximising impact through community and stakeholder engagement



### Why focus on sub-Saharan Africa?

**More than 920 million people** (79% of the region) rely on polluting fuels in Sub-Saharan Africa (SSA)- the highest dependence worldwide. This number continues to climb.

**683,984 deaths each year** (8.9% of total mortality) in SSA, more than deaths from malaria and HIV/AIDS.

**38 million healthy life years lost** each year (7.5% of total burden of disease).

**50% of forest degradation** in SSA from gathering wood for cooking and charcoal production.

## CLEAN-Air(Africa) Partnership

CLEAN-Air(Africa) is a partnership of experts from academic, research and clinical institutions from the UK, Cameroon, Kenya, Tanzania, Rwanda and Uganda.

By partnering with governmental stakeholders in our focus countries, including ministries of energy and health, we provide an evidence-base for policies to scale adoption of clean cooking fuels to help achieve SDG7.



### Partners

**Cameroon**  
**Kenya**

**Rwanda**

**Tanzania**  
**Uganda**  
**UK**

Douala General Hospital  
Kenya Medical Research Institute  
Moi University  
Rwanda Biomedical Centre  
Eagle Research Center  
University of Dar Es Salaam  
Makerere Lung Institute  
University of Liverpool

Jointly directed by:

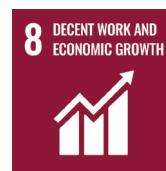


UNIVERSITY OF  
LIVERPOOL



## CLEAN-Air(Africa) and the SDGs

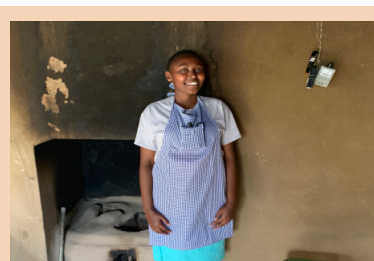
The work of CLEAN-Air(Africa) is closely aligned with the 2030 Agenda for Sustainable Development Goals (SDGs), contributing to:



### SDG7: "Clean, Modern, Reliable Energy for All" 2030 not on track

Unless rapid action is taken, over 70% of sub-Saharan Africa will be without access to clean cooking fuels by 2030 (IEA, 2023).

## CLEAN-Air(Africa) Impact



### Exposure to air pollution

- Setting up an Air Pollution Center of Excellence with a state-of-the-art laboratory for air quality assessment in Nairobi, Kenya
- Monitoring household air pollution and quantifying health impacts



Film about the Air Pollution Center of Excellence

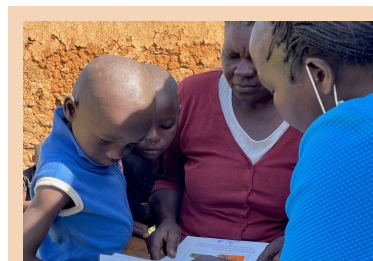


### Transition to clean cooking

- Identifying and addressing barriers to cooking with clean fuels in households and schools
- Informing clean energy policies in sub-Saharan Africa



Film about the transition in schools



### Strengthening health systems

- Training communities and their health workers in household air pollution, health and prevention for HAP related disease prevention across East Africa and Cameroon



Film about Community Healthcare Worker training

See our NIHR case study [here](#).

**For more information visit: [www.cleanairafrica.com](http://www.cleanairafrica.com)**

