



Clean household energy for the prevention of non-communicable disease through clean air in Africa

Information Sheet on the NIHR CLEAN-Air(Africa) Global Health Research Group

Household Air Pollution: An Invisible Killer

In Sub-Saharan Africa, 700 million people depend on solid fuel for cooking. The associated impacts are severe:

- Unsustainable harvesting of firewood and charcoal production (70% of deforestation),
- Detrimental impacts on climate (25% of global black carbon from residential solid fuel combustion).
- Adverse health from exposure to cooking smoke (393,000 premature deaths per year) and
- Economic costs of lost productivity (globally estimated at US\$37 billion per year) are largely borne by women/girls.

Research is needed to identify and overcome the challenges to achieve large-scale, equitable and sustained transition to clean fuels and to demonstrate the achievable gains for health, household finances and the environment, to inform national policies.

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CLEAN-Air(Africa) is a partnership between public health experts from the UK, Ghana, Kenya and Cameroon, aiming to provide policy-relevant evidence to address the global challenge of lack of access to clean household energy for the 4 billion people of the World's population.

CLEAN-Air(Africa) works closely with policymakers and stakeholders in sub-Saharan Africa to support achieving national ambitious clean domestic energy targets to meet the Sustainable Development Goal (SDG) 7 on universal energy access by 2030.

CLEAN-Air(Africa) is currently focusing on population transition from cooking with polluting solid fuels and kerosene to liquefied petroleum gas (LPG) (commonly known as bottled gas). This is because (i) LPG is currently the most realistic truly clean cooking option that can achieve rapid scale in the short to medium term to address the immediate burden of disease from household air pollution and (ii) many sub-Saharan African countries (including Kenya, Ghana and Cameroon) have made domestic scale of LPG a national priority with plans to significantly increase household adoption of LPG to 35-58% of the population by 2030 in order to reduce deforestation, achieve SDG 7 and promote better health.

CLEAN-Air(Africa) is supporting national clean household energy policies and programmes by identifying community derived barriers to attaining large-scale, equitable and sustained transition to LPG, and innovations/ interventions to overcome these barriers, whilst demonstrating achievable health, economic and environmental impacts.



CLEAN-Air(Africa)'s Four Goals

- inform policies to scale LPG use by evaluating influencing factors and testing interventions to address barriers and facilitate equitable adoption of LPG;
- model the health and climate impacts of reaching LPG adoption targets, providing evidence for policymakers;
- develop capacity, in partnership with WHO, through health workforce training in household air pollution (HAP) prevention and harm minimisation; and
- facilitate engagement in research between the general public and policymakers/ stakeholders through workshops and conference events.

CLEAN-Air(Africa) Consortium

The CLEAN-AIR(Africa) Global Health Research Group is a consortium of researchers established in 2018 through funding from the UK National Institute of Health Research (NIHR). The Group is hosted by the University of Liverpool.

We work closely with the World Health Organization (Air Pollution and Urban Health Unit) and Ministries of Health and other key Government stakeholders in each country.



Cameroon
Ghana

Kenya

Norway

USA

UK

Doula General Hospital
University of Ghana
Kintampo Health Research Centre
Moi University
Amref International University
Centre for International Climate and Environmental Research (CICERO)
Research Triangle Institute (RTI)
Global LPG Partnership (GLPGP)
University of Liverpool



CLEAN-Air(Africa) Approach

- Conduct innovative, mixed-methods research among vulnerable communities in each partner country, collecting data on the determinants of domestic fuel choices and drivers for transitioning away from polluting fuels.
- Evidence the impact of cooking fuel on household air pollution and people's health (women, children), measuring concentrations and exposure to pollutants, and estimating the potential reduction in the disease burden of the transition to LPG.
- Evaluate innovations that help resource poor households' transition to clean LPG (for example pay-as-you-cook smart meter technology and microfinance) working with commercial partners to inform clean energy policy.
- Develop and pilot training modules to strengthen the continuous professional development of the health workforce:
 1. Physicians (HAP as a risk factor for respiratory and cardiovascular diseases and patient care);
 2. Community health workers (primary care and secondary prevention of HAP and related diseases).

CLEAN-Air(Africa) Impact

Providing important evidence by working with communities in focus countries to:

- Inform policies and practices designed to expand LPG as a clean domestic fuel nationwide.
- Benefit people's health (reduction of exposure to pollutants in kitchen smoke) and the environment (reduction of black carbon emissions and deforestation).
- Generate greater social awareness of HAP as an important risk factor for family health.
- Strengthen the capacity of health professionals to communicate prevention strategies and advocate for the promotion of clean energy for cooking.

CLEAN-Air(Africa) and the SDGs

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



SDG 3, by facilitating reduction in non-communicable diseases and pneumonia in adults and children, through reduced exposure to harmful smoke.



SDG 7.1, by facilitating population access to clean cooking fuels in countries heavily reliant on solid fuels (charcoal, wood); and thereby delivering climate benefits.



SDG 13, by supporting populations to reduce reliance on solid fuels and consequent deforestation and emissions of black carbon.

Co-benefits include reducing economic inactivity due to ill-health and fuel gathering (SDG 8), disproportionately affecting women and girls' who experience higher exposure to cooking smoke and lost productive time due to domestic roles (SDG 5), thereby improving their opportunities for education and income generation (SDG 4).

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For more information, please visit www.cleanairafrica.com