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New £200k study to explore fuel choices in East and Central Africa

A new £200,000 study – led by the University of Stirling – is seeking to understand the fuel choices of those living in East and Central African communities in a bid to improve health.

The research – funded by the UK Research and Innovation Arts and Humanities Research Council – will examine the factors behind the use of solid fuels in cooking, which can be damaging to health, and develop practical interventions to help tackle the issue.

Focusing on communities living in informal settlements in Kenya and Malawi, the research will explore the cultures, behaviours and lived experiences of those who rely on solid fuels – such as wood, biomass waste, charcoal and animal dung – for cooking. Crucially, the team will use participatory and visual means to enable communities – where literacy levels may be lower – to contribute to the research.

The study will lead to a better understanding of the norms and beliefs around food preparation and – most importantly – the barriers to alternative fuel use. The findings are likely to have a wider impact, with three billion people worldwide cooking on solid fuels. Around 3.8 million deaths annually are attributed to household air pollution, which is responsible for half of pneumonia deaths in children under five, due to exposure while their mothers are cooking.

Dr Isabelle Uny, of the Institute for Social Marketing and Health (ISMH) at Stirling, is leading the multidisciplinary study, which involves partners across the UK and in Africa.

She said: “For around three billion people worldwide, solid fuels are the only available and affordable sources of energy, with around 840 million having no access to electricity. However, the smoke emanating from the burning of solid fuels is bad for people's health and those worst affected live in slums and informal settlements in low- and middle-income countries, where they cannot afford to connect to the electricity grid and have crowded living environments with poor ventilation.

“Previous studies have looked at this issue, however, have not sufficiently recognised the complex issues related to cooking behaviours, beliefs and cultures within communities. Too often, there is a lack of dialogue and engagement with the poorest and most affected communities around the issue.

“Understanding why people are choosing to use solid fuels will help us to create contextually appropriate and more effective interventions and, ultimately, improve lives. We will work with community members, community based organisation, traditional and religious leaders, government representatives, policymakers, academics and non-governmental organisations in Kenya and Malawi throughout the project and develop our partnership.”

Lusizi Kambalame, of The Polytechnic, University of Malawi, said: “Cooking using solid fuels is very much a part of everyday life in Malawi, with over three million households using wood or charcoal.

“Having a project that seeks to understand the multiplicity of factors that drive this behaviour from communities that depend on it for sustenance is a great starting point towards interventions that will limit household air pollution and health damages associated with the use of solid fuels.
“It is a project that will pay particular attention to some of the everyday concerns of women and girls and has the potential to improve their lives.”

Fred Orina, of the Kenya Medical Research Institute, said: “It is worrying when you imagine the extent of exposure to household smoke in urban informal settlement areas when meals are being prepared, considering wood and charcoal are the most common sources of fuel.

“This research is very important in attempting to tackle this issue.”

The health implications of solid fuel use are exacerbated in low- and middle-income countries where children are often malnourished and suffer musculoskeletal damage caused by fuel gathering – such as picking large bundles of wood. Fuel gathering also takes people away from income generation, schooling and socialising, and, as primary gatherers and cooks, women and girls are worst affected.

The research will focus on Mukuru slum in Nairobi, Kenya, and Ndirande informal settlement in Blantyre, Malawi. The research team will host partnership building events to discuss the issues with stakeholders, including community representatives, share knowledge and train local research assistants. Research methods will include using photographs taken by community members and walking interviews with those who prepare food to capture their daily experiences. Air pollution will also be measured during cooking, including through a technique known as 'dots photography’, to assess smoke concentration.

The data gathered will be summarised and communicated to the participating communities in a visual and interactive manner – for example, through pop-up exhibitions of posters and drawings from local artists, videos, and dots photography. The team will further develop intervention ideas through a range of participatory activities – including theatre, roleplay and storytelling – in a way that is relevant to the residents of the communities.

The final stage will see the team engage with partners in Kenya and Malawi to discuss the findings and next steps, with a view to co-constructing interventions in both communities to improve health.

Dr Uny added: “Energy poverty, gender inequality, food and nutrition are intimately related. By addressing the issue of solid fuels in cooking, we can tackle a number of the United Nations Sustainable Development Goals around reducing poverty, eradicating hunger, improving health and wellbeing, providing affordable and clean energy and creating sustainable cities and communities.”

The study – “From Fuel to Pot: an interdisciplinary partnership to address the role of solid fuel use in food preparation in the household in Kenya and Malawi” – is supported by Stirling colleagues Dr Sean Semple (ISMH), Dr Line Caes (Psychology), Dr Siân Lucas (Social Work), and Dr Heather Price (Environmental Sciences), as well as by The Polytechnic’s (University of Malawi) Limbani Kalumbi, Lusizi Kambalame, and Dr Moses Chamba, and the Kenya Medical Research Institute’s Fred Orina and Dr Hellen Meme.

The project was developed by early to mid-career researchers at the University of Stirling, as part of the Stirling Crucible – a leadership and development programme for members of academic and

research staff across the organisation. This work resulted in the publication of a scoping review, in Environmental International, which in turn led to the researchers travelling to Malawi and Kenya to hold meetings with potential partners and cement collaborations with informal settlement communities.

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Issued by Innes and Campbell Communications on behalf of the University of Stirling**.** Media enquiries to Corrie Campbell on corrie@innesandcampbell.co.uk / 07900 981 073.

Notes to editors

University of Stirling

The University of Stirling is ranked fifth in Scotland and 40th in the UK for research intensity in the 2014 Research Excellence Framework. Stirling is committed to providing education with a purpose and carrying out research which has a positive impact on communities across the globe – addressing real issues, providing solutions and helping to shape society.

Interdisciplinary in its approach, Stirling's research informs its teaching curriculum and facilitates opportunities for knowledge exchange and collaboration between staff, students, industry partners and the wider community.

The University's scenic central Scotland campus – complete with a loch, castle and golf course – is home to more than 14,000 students and 1500 staff representing around 120 nationalities. This includes an ever-expanding base for postgraduate study.

The University received a Queen's Anniversary Prize in the latest round of awards, in recognition of the quality and innovation exhibited by its Institute of Aquaculture. The University is the UK Sports University of the Year 2020, as conferred by The Times / Sunday Times Good University Guide.

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