SSA RESEARCH INITIATIVES

Lilongwe University Random-Controlled Trials on Household Economics of Improved Cookstoves

C-Quest Capital (CQC) has funded two studies in partnership with Dr. Charles Jumbe at the Lilongwe University of Agriculture and Natural Resources (LUANAR) in Malawi. Both pieces of research are ongoing with expected completion in September 2021.

Beginning this year, CQC changed the program model to two TLCRS per household across all countries in sub-Saharan Africa to reduce stove stacking and increase achieved health benefits. In late 2020, through a pilot program with Baylor College of Medicine – Children's Foundation Malawi (BCM -CFM) CQC distributed 10,000 TLCRS to 5,000 households in the Southern District of Balaka. CQC has conducted a pre-intervention questionnaire and is currently conducting a post-intervention questionnaire to gain a better understanding of time savings from fuel gathering and cooking as well as health benefits through the continued use of two improved cookstoves per household model.

In addition, CQC has just begun a randomized control trial (RCT) of thermal efficiency in charcoal cookstoves and fuel switching among households in the peri-urban areas of Lilongwe City. The main purpose of this research is to test the null hypothesis that realized charcoal savings in households using an imported improved cookstove (ICS) versus a local, traditionally made ICS are substantially less than laboratory efficiency differences due to the impact of real world, common practice cooking techniques while using charcoal. The thesis is that actual achieved savings in charcoal from using imported charcoal stoves is substantially less than either laboratory measured thermal efficiency tests and on-site water boiling tests (WBT) would suggest. If so, the often-touted solution to reducing charcoal consumption and the destructive impact of charcoal production on landscapes is not only invalid but simply squeezes out artisanal charcoal stove makers while sustaining the charcoal trade through more attractive charcoal using appliances. In the final phase, the study will gather market feedback in response to switching from a charcoal stove to our TLCRS and Jet-Flame Kit (JFK) combination (20W solar panel, 10,000mA Li Ion battery and 100Whrs daily of surplus energy for cell phone charging, lighting, radio etc) , while using a mix of sustainably produced bamboo and agroforestry sticks as fuel, that will provide insightful feedback to shift Lilongwe City away from the unsustainable and destructive reliance on charcoal.

Transformation Carbon

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