

TECHNICAL BRIEF: IMPROVED FIREWOOD COOKSTOVES

The USAID and UKaid co-funded Modern Cooking for Healthy Forests (MCHF) Activity designed the Rural Rapid Cooking Scan (RRCS) to better understand the status and trends in cooking energy and technology use in the rural parts of Malawi where the project operates. This technical brief is intended to disseminate findings that can inform approaches to scale and sustain the distribution of improved firewood cookstoves.

INTRODUCTION

In Malawi, rural households rely almost exclusively on firewood to meet their daily cooking and heating energy needs (the RRCS found that more than 98% of households surveyed, both at baseline and midline, relied on firewood as their primary source of cooking and heating energy). Historically, these rural households used an inefficient open “three-stone fire” which requires more firewood and results in more heat loss. In addition to increasing the actual cooking time, and the time and energy spent collecting firewood, cooking on a three-stone fire also exposes household members to increased health risks from smoke-induced respiratory illness (especially during the rainy season and winter when cooking often shifts indoors, to poorly ventilated kitchens) and from burns.



Chitetezo mbaula

Improved firewood cookstoves have been promoted in Malawi for more than two decades. These technologies are essential components of Government of Malawi’s cleaner cooking transition, enabling rural households to largely maintain established cooking practices while shifting towards fuel efficient technologies that reduce firewood consumption, cooking time and labor while at the same time reducing health risks.¹

The following RRCS findings provide key insights and guidance for government, donors, projects, carbon project developers and others keen to promote rural household adoption, and importantly sustained use of improved firewood cookstoves.

The MCHF Rural Rapid Cooking Scan (RRCS)

Objective: The RRCS established a baseline for cooking and heating energy and technology use, against which changes could be monitored over time.

Sample Population: 505 rural households living within a two-kilometer buffer of the seven MCHF focal forest reserves (located in Dedza, Lilongwe, Salima, Mzimba and Nkhata Bay²

Statistical Parameters: 95% level of confidence, with 5% margin of error³.

Timeline: Baseline (Sept. 2020), midline (Sept. 2022), endline (pending in 2024).



RESULTS: IMPROVED COOKSTOVE (ICS) USAGE APPEARS TO BE RISING

Percentage of households adopting⁴ an improved firewood cookstove.



Percentage of households using a three-stone fire more than 50% of the time



Exposure/Awareness is Growing: In 2020, fewer than 7 of 10 households reported exposure to messaging on alternative cooking energies and/or fuel-efficient cooking technologies. This increased to more than 9 out of 10 households in 2022.

Acceptance is Increasing Adoption: 46.96% of households sampled at midline reported having adopted ICS (i.e., using 50% or more of the time), compared to 38.9% at baseline. This increase of 8.06% suggests that more households are not just curious and testing improved firewood cookstoves but are shifting their behaviors towards sustained use of these more efficient technologies.

¹ See Malawi Energy Compact (https://www.un.org/sites/un2.un.org/files/2021/09/2021-09-20_malawi_cleaner_cooking_energy_compact.pdf)

² Central Landscape Forest Reserves = Dedza-Salima Escarpment, Dzalanyama, Mua-Livulezi and Thuma; Northern Landscape Forest Reserves = Bunganya, Kaning'ina and Perekezi.

³ The RRCS is statistically significant in aggregate, for the population living within a 2km buffer of each focal FR. While providing important insights these data and results should not be extrapolated nationally.

⁴ MCHF defines “adoption” as use at least 50% of the time.

Key Takeaways to Strengthen Adoption & Sustained Use of Improved Firewood Stoves:

Fragility/durability and the lack of customer service limits adoption and sustained use.

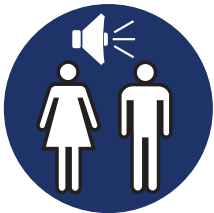


Eight out of 10 households surveyed that had used an ICS in the past but since stopped, reported damage as the cause. Damage includes cracks and breakage beyond repair. **The quality of both constructed and manufactured stoves, their durability, and the lack of ongoing customer service and/or distribution networks** present significant obstacles to sustained use. **Factoring in after sales service and developing effective distribution systems that can be sustained for both constructed and manufactured stoves is essential to sustaining improved firewood cookstove use over time.**



Broken chitetezo mbaula

Messaging and marketing should target men and women.



The RRCS found that cooking was done **almost exclusively** by women (more than 98%). While messaging and marketing often target women, the MCHF found that **men also influence** the adoption potential (e.g., through management of household finances, taste preferences, etc.). **Developing awareness and social marketing that target both women and men as decision-makers can be important to secure the level of buy-in needed to try, adopt and sustain household use of improved firewood cookstoves.**



Changuchangu moto



Rocket stove

Extension agents can help to raise awareness and encourage adoption.



Extension agents and other well-placed individuals (e.g., local leaders) can play an important role in raising awareness and encouraging adoption and sustained use of improved cookstoves. Well informed extension agents, whether governmental or NGO/project/private, and local leaders can be instrumental in raising awareness and driving demand for improved firewood cookstoves. The RRCS findings indicate that households are more likely to approach a known and trusted individual (e.g., an extension worker or a local leader) to ask questions or to seek assistance that may encourage them to adopt or to sustain the cleaner cooking behavior. **Extension agents can also help monitor cookstove usage, support maintenance and provide technical advice and services that promote sustained use of the improved firewood stove.**