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Stated Preference of Smallholder Farmers for Improved Cookstoves in Malawi and Mozambique

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Abstract

Solid biomass is the main energy source for cooking in many developing countries. Beyond that consumption rates of firewood and charcoal are high, because most households use inefficient devices for cooking. Stresses on ecosystems caused by consumption of biomass could be mitigated by a comprehensive adoption of improved cookstoves. Development partners and NGOs disseminate improved cookstoves in sub-Saharan Africa since more than 20 years. However, their adoption rate in rural areas is still low. Market information could be used to identify first adopters and develop comprehensive adoption strategies for improved cookstoves.

As there are no or only disturbed markets for improved cookstoves in rural areas, we investigated the demand side of an improved cookstove market by conducting stated preference approaches in Dedza District, Malawi and Angonia, Mozambique. We implemented both a choice experiment and an analysis of the willingness to pay for the locally produced clay stove (“Chitetezo Mbaula”) as well as a factory-made and imported metal stove.

Our results reveal that networks, which increase the information and knowledge transfer in rural areas are very important for the adoption of improved cookstoves. Especially, membership in a women’s group had a positive impact on the preference of the improved cookstoves over the traditional three-stone fire. Personally experienced negative consequences from the use of traditional cooking devices and unsustainable biomass consumption, which we measured in occurring of respiratory diseases in the family and the amount of time necessary for collecting firewood, also contributed to a positive perception towards improved cookstoves. Additionally, we found evidence for the mental accounting hypothesis for remittances. Income received from relatives or friends, which is often transferred with conditions or information, is more likely to be spend on purchasing improved cookstoves.

Keywords: Choice experiment, improved cookstoves, Malawi, Mozambique