Demand for Rainwater Harvesting Devices in Uganda

Researchers:

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Sector(s): Agriculture, Finance, Gender, Health

Fieldwork: Innovations for Poverty Action (IPA)

Location: Uganda

Sample: 3,240 households in 81 villages

Target group: Children Parents Men and boys Rural population Women and girls

Outcome of interest: Student learning Technology adoption Women's/girls' decision-making Water access Water quality

Intervention type: Fertilizer and agricultural inputs Social networks Preventive health Water, sanitation, and hygiene

Partner organization(s): Relief International (RI)

Rainwater storage devices have the potential to improve access to safe drinking water and lessen the time burden of water collection in low- and middle-income countries. In Uganda, researchers studied the demand for rainwater storage devices, the effectiveness of various marketing strategies in promoting them, and their impact on indicators such as school attendance and women's participation in the labor market.

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Poor access to safe drinking is an acute problem in many low- and middle-income countries which has both health and social repercussions. Lack of safe water for drinking, bathing, and other household tasks is the primary cause of diarrheal diseases, which account for 15 percent of deaths among children under five years of age.[1] Poor access to water also entails large time costs associated with gathering water. In some parts of Africa, women spend up to eight hours per day collecting water. New technologies, such as rainwater storage devices, could improve access to safe drinking water and decrease the time needed for water collection. However, such new technologies are only useful to the extent that they are affordable and acceptable to the intended beneficiaries. Before any large investments are made in the development and distribution of a technology, it is necessary to determine the potential size of the market, the most effective marketing strategies to promote adoption, and the potential impacts it could have on the lives of low-income households.

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In order to improve access to safe drinking water, Relief International (RI) has developed a rainwater storage device (RSD), which consists of a rubber bag approximately 1.5 meter across and 1.5 meter tall when full. The bag is held up by a simple earthen foundation and is fed by a series of gutters. It can hold up to 1000 liters of water, which is estimated to meet the basic needs of a family of five for ten days.

Researchers evaluated this new technology in the Kamwenge district in Uganda. Residents of Kamwenge are particularly likely to benefit from a rainwater storage device, as the district receives substantial rainfall during the two rainy seasons—the first and smaller of the two lasts from the end of February to the end of April, while the second and longer season lasts from mid-

September to the beginning of December.



Water tanks in use in agricultural fields.

Photo credit: Shutterstock.com

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This study assessed the demand for rainwater storage devices and determined potential marketing strategies. Specifically, researchers randomly varied the incentives and marketing conditions associated with the sale of rainwater storage devices to different households. Researchers experimentally varied the price for the device by offering discount vouchers to random subsets of households.

Researchers also randomly applied two different marketing schemes across villages. In the first scheme, a product ambassador was chosen from each village and given training and materials to promote the device within the village. In the second marketing scheme, the first household within each village that purchased the device at full price received free installation. Both marketing schemes were intended to increase locally available information about the device and promote take-up by others in the village.

The intervention was implemented in two distinct waves spread six months apart, in order to study the importance of information transmission in generating demand for the new technology. For instance, it could have been the case that second-wave households would have had some indirect experience with the new technology through their friends who adopted in the first wave, affecting their likelihood of adoption. The two-wave strategy also created the opportunity to examine whether the overall level of demand changes once society becomes more familiar with the product and its price is anchored.

A follow-up survey measures women' s participation in the workforce, child school attendance, and changes in household economic activity among adopters and non-adopters.

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Results forthcoming.

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1. World Health Organization (WHO), World Health Statistics 2011. http://www.who.int/whosis/whostat/EN_WHS2011_Full.pdf