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Farmers Willingness to Pay and the Sustainability of Irrigated Maize Production in Rural Kenya

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Abstract

Maize is a key staple food in Kenya with over 80% of households consuming and producing it. Production has largely been under rainfed conditions. However, with increasing population and dwindling land of high and medium potential, the government of Kenya has been encouraging County governments to support irrigation development as a strategy to enhance food security and reduce poverty. This expansion can take place in the ASAL areas which are populated mainly by the resource poor farmers. These farmers will only use irrigation if it can post positive returns to their investment. However, given the poor history of irrigation development in Kenya, the participation of farmers is key. ASAL areas have largely been remote with more than half of the population is living under the poverty line. Agriculture is the largest sector in these areas and employs over 80% of the population. Their livelihoods are thereby directly dependent on the sufficiency of outputs received.

The continued use and development of irrigation depends on farmers participation. To contribute to the understanding of role of farmers in irrigation development, we carried out a study on their willingness to pay for irrigated maize production. We assessed the profitability and sustainability of irrigated maize production as well as farmers to pay for irrigation services.

The study was carried out in Lower Kuja, Bunyala, Nandi, Lower Nzoia, Perkerra, Mwea Bura, Hola and Galana Kulalu in Kenya. A structured questionnaire was used to capture farmers' perception and willingness to use irrigation services for irrigated maize production. Additional data was collected using key informant and focus group discussion. A total of 220 participants were involved.

Data was modelled for description and inferencing using Heckmans two stage models and analyzed using Stata and SPSS software. The study established that irrigated maize production was profitable

and viable. The mean willingness to pay was found to be KES 3,082 and that it increased with increasing irrigation rates or premiums. Viability was evaluated using four indices and all were positive. NPV gave positive cash flows in less than 21 years at most for one season output. The economic value of water was found to be greater than the willingness to pay implying that irrigated maize production is sustainable.

A regression on farmers' willingness to pay for irrigated maize production using scheme and plot level factors showed that premiums, and high yields have a positive effect on willingness to pay while produce quality, efficient fertilizer use, and crop season have a negative effect. The economic value of water was found to be greater than the mean WTP. The study recommended farmer training and education, empowering WUAs to help manage irrigation water use and using a market price as a just price that will enhance farmers WTP for irrigation services

For further assistance, more information or if you would like to conduct interviews with the Lead Principal Investigator, you can do so through: Judy Kimani, 0720 96 33 48, (jkimani@tegemeo.org).