

Market Learning and Transport Costs among Fertilizer Retailers in Tanzania



Small farm productivity in sub-Saharan Africa lags behind that in Asia and other parts of the world. One reason for this may be low rate of adoption of inputs such as fertilizer. In Tanzania one reason for this may simply be the absence of local retailers, especially in more remote areas. Researchers are testing if their absence may be because of the costs of entering these markets or demand, with interventions targeted to each.

Policy Issue

Since the Green Revolution of the 1960's, farmers in Asia and Latin America have increasingly been able to grow more food on the same amount of land, i.e., improve crop yields, but in sub-Saharan Africa, crop yields have remained largely the same. For example, between 1960 and 2008, maize yields worldwide doubled from 2.5 to 5 tons per hectare; in Africa, they remained at less than 2 tons. Among the reasons for this gap may be differences in usage of modern inputs such as fertilizer. As much as fifty percent of Asia's agricultural yield growth in the late-twentieth century can be attributed to fertilizer usage. Despite its demonstrated benefits, relatively few farmers in sub-Saharan Africa use fertilizer (9kg/hectare) compared to South Asia (80 kg/hectare). Previous demand-side interventions such as price subsidies, knowledge dissemination programs, and the introduction of high-yield fertilizer have been unsuccessful at closing this gap. In the meantime, new evidence from academic studies as well as from anecdotal accounts suggests that fertilizer adoption is hampered by issues on the supply-side, wherein fertilizer is simply unavailable in many rural areas, or at least not available at a reasonable price. While the lack of sellers in rural areas could be responsible for these low rates of use, if buyers are also absent, it can be difficult to disentangle cause and effect, and come up with the appropriate policy prescriptions.

Evaluation Context

Despite inefficiencies in the agricultural sector, in 2014, agriculture accounted for 67 percent of total employment in Tanzania, and 70 percent of Tanzanians lived in rural communities where farming is the dominant sector of the economy. Pilot research from the Arusha region suggests fertilizer retailers are not distributed evenly, with clusters of sellers in some areas, while 75 percent of villages have no retailers at all. For every additional hour of driving time from the regional center, the likelihood of a



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village having a retailer drops by nearly 25 percentage points. These geographic limitations are reflected in prices, which are higher in the more remote areas. Researchers are interested in understanding the reasons behind the absence of retailers in these remote markets. During interviews with the research team, only 20 percent of the existing retailers reported having experimented with selling in other markets.

Details of the Intervention

Possible reasons retailers may not be entering these new markets may include the high cost of entry, and the potential that demand is too low to be worthwhile for them. Researchers will test interventions designed to address each.

Supply side: The intervention will subsidize the cost of entering rural markets by randomly selecting 50 villages and paying for a local seller to travel there with several bags of fertilizer on market days.

Demand side: To test the effects of stimulating demand on retailers' willingness to enter new markets, a randomly selected subset of approximately 25 villages in the group above will be chosen for an additional intervention. In these villages a local representative will be hired to collect fertilizer orders and place them in bulk with the retailer.

Researchers will compare these villages receiving the interventions to a comparison group which did not, to test effects on pricing, demand for fertilizer, and willingness of sellers to stay in these markets after the interventions have ended.

Results and Policy Lessons

Project ongoing. Results forthcoming.