

**BRIEFCASE**

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## A WELL-TIMED NUDGE

Enabling farmers to prepay for fertilizer when they had cash on hand was effective in promoting fertilizer adoption.



**T**he persistence of low agricultural yields in Africa, even as other regions (notably South Asia) have enjoyed dramatic increases in farm productivity, is a vexing problem in agricultural development. One possible explanation for this discrepancy is low adoption of inorganic fertilizers. If used correctly, fertilizer has the potential to dramatically increase yields and be a highly profitable investment. Many experts have called for, and some African governments have adopted, heavy subsidies for fertilizer. If fertilizer is so profitable, the reasoning goes, farmers must not be using it because they do not have access to cash or credit needed to buy it.

An alternative view, rooted in behavioral economics, is that what drives low fertilizer use is not only unaffordability, but issues of timing and impatience. At harvest time, when farmers have available cash, they may not be motivated to buy fertilizer, and pre-purchasing it may be inconvenient. Later in the season, when it is time to apply fertilizer to crops, farmers may find that they do not have enough money left to buy it. If this view is correct, it would suggest that policies that encourage farmers to buy fertilizer when they have cash immediately after harvest could increase fertilizer investment.

IPA affiliates Esther Duflo (MIT), Michael Kremer (Harvard University), and Jonathan Robinson (UC Santa Cruz) investigated these issues with a randomized evaluation in western Kenya. Can small, time-limited offers for advanced fertilizer purchase increase fertilizer adoption? Could this type of “nudge” achieve a similar impact on fertilizer adoption as a traditional subsidy program, at a lower cost?

- Farmers had high demand for the ability to purchase fertilizer in advance. Among farmers who were offered advanced purchasing, 31 percent bought fertilizer in the first season of the program, and 39 percent bought it in the second season. The incentive offered to the farmers was small (free delivery), suggesting that farmers were attracted by the ability to commit to purchasing fertilizer in advance.
- Fertilizer adoption increased while advanced purchasing was offered, but once the program was removed, fertilizer usage went back to what it had been. Fertilizer adoption went up by 11-14 percentage points among farmers who were offered advanced purchasing. When the program ended, farmers in the treatment group reverted back to the same level of adoption as the comparison group.
- Prepayment had an impact on adoption comparable to a large subsidy during the growing season. Providing farmers with the option to purchase fertilizer in advance was as effective at increasing fertilizer adoption as a 30-percent discount, offered at the time when fertilizer needed to be applied.

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