

# Can Better Consumer Information Improve Product Quality?

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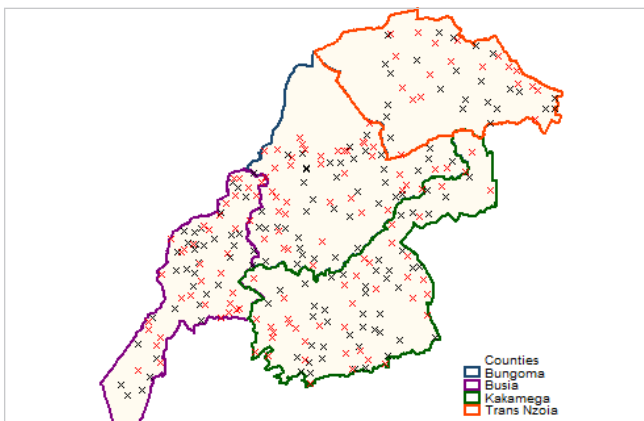
*Improved information helped maize farmers in Kenya obtain better quality seeds.*

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## Topic at a Glance

Maize is a staple crop in many areas of the world. In Eastern and Southern Africa, maize is estimated to account for 22% of all calories consumed and is an important crop for subsistence farmers in the region (Shiferaw et al., 2011). A central challenge for policy-makers concerned about food security is how to boost agricultural productivity in lower-income countries, where maize yields are a small fraction of the average in OECD countries (OECD/FAO, 2021). Increasing access to improved agricultural inputs such as high yielding seed varieties and fertilizers have been one focus among policy-makers in recent decade (Evenson and Gollin, 2003).

However, recently scholarly work and local media coverage has suggested that retail maize seeds in East Africa and other agricultural inputs are variable and often sub-standard (Bold et al., 2017; Ashour et al., 2019; Muchiri, 2019; Okinda, 2019). In Kenya, the regulation of agricultural inputs falls under the responsibility



The study area consists of four counties in Western Kenya. In this map, red X's represent treatment sites, where community-wide trainings were conducted to help consumers identify quality-verified seed packets. Black X's represent control sites.

of the Kenya Plant Health Inspectorate Service (KEPHIS). A number of observable markers on seed packets help indicate that the packet has properly gone through KEPHIS certification procedures, as required under national regulations. For example, a printed lot number, a printed packaging or testing date, and an e-verification sticker help to communicate to the end-user (in this case the farmer) that a packet has been certified and is not expired.

## New Insights

To evaluate the effects of improved consumer information, we conducted a field experiment. In randomly selected markets in the study area, the research team provided community-wide trainings to enable farmers to identify quality-verified hybrid maize seeds. This market-level intervention allows us to identify effects of improved information on local market participants. Using a series of surveys and secret shopper activities, we track outcomes for buyers and sellers (including knowledge, seed sales and purchases, and agricultural outcomes) for over one year after treatment.

The findings first show that observable quality markers correlate with lab tested quality, with packets missing one or more quality marker having lower germination rates. The gap between quality-verified packets and packets that lacked one or more observable markers was particularly large in more remote markets. This confirms that agricultural gains should in theory be possible if farmers follow a strategy to use these observable markers to avoid buying seeds that are not quality-verified. Yet, farmer knowledge about observable quality markers was low at baseline suggesting that not many farmers took advantage of such strategies.

The information treatment caused buyers to have better ability to detect seed quality. Treated buyers had greater knowledge of observable quality markers and were more likely to successfully use detection techniques in subsequent planting seasons. Examining agricultural outcomes, we find that treated farmers experienced higher maize yields overall, with differences in yields and amount harvested statistically significantly different from zero in more remote areas. We do not detect effects on quality offered to unin-

formed buyers in the same communities, as revealed by data from secret shoppers. The findings suggest that even though informed farmers were able to obtain higher quality seeds particularly in more remote areas, the market-level effects on seed quality did not spread to uninformed farmers in the same communities, at least not to an extent that is economically significant.

## Policy Recommendations

These research findings suggest that policies that improve consumer information may benefit consumers. In this study's context of markets for an agricultural input, this means that farmers can obtain improved yields supporting regional food security and the livelihoods of vulnerable populations.

Community trainings, as implemented in this project may help communicate regulations and help buyers avoid sub-standard products. However, the project's focus on in-person community trainings was informed at least partly by research needs. The in-person approach that the research team used provides an ability to target the information carefully to local market areas and to limit spillovers, which is extremely useful for rigorous program evaluation (and in fact, we do not detect information spillovers to nearby communities in our sample). While not the focus on the project, we suspect that other less-labor intensive means of disseminating information may be more cost-effective in a scaled-up public information campaign. For example, improved messaging on packaging, more accessible e-verification communications over SMS, or mass media such as radio or TV may be cost-effective policies to disseminate information to consumers.

## Limitations

As always in program evaluations, point estimates come with confidence intervals, and extrapolating will depend on being able to effectively target. We expect this to be especially true given the heterogeneous effects in our study sample. The baseline conditions in a new settings will naturally affect the expected effects of an information campaign. Notably one should expect the pre-existing gaps in quality between substandard products and national standards likely will influence the value of improved information.

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