

# Linking Farming Cooperatives with a Processor to Improve Maize Production Quality in Rwanda



One of the main challenges keeping small farmers from tapping into commercial value chains is that their output often does not meet required quality standards. In Rwanda, The Farmers to Market Alliance (FtMA) connects cooperatives with a commercial food processor to improve maize processing after harvest and enable farmers to receive higher prices for their output. Researchers are conducting a randomized evaluation of FtMA to measure its impact on farmers' maize quality, sales, and investment in productive inputs. Preliminary results show significant participation in FtMA and a large increase in the number of contracts between cooperatives and the food processor. However, results do not suggest an impact on farmers' sales and prices received.

## RESEARCHERS

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## COUNTRY

Rwanda

## SAMPLE

180 maize cooperatives

## TOPICS

Access to Markets, Human Capital & Skills, Technology Adoption, Women & Girls

## STUDY TYPE

Randomized Evaluation

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## TIMELINE

2020-2024

# Policy Issue

Small farmers have the opportunity to transition from subsistence farming to market-driven agriculture by selling their output to commercial food processors, who are willing to purchase goods at higher prices if they are high quality. However, the quality of small farmers' production, such as maize, often falls short of processors' standards. Farmers typically hand-shell maize kernels and dry them on plastic tarps outside their homes, increasing the risk of contamination.<sup>1</sup>

In Rwanda, the start of the next rainy season comes shortly after the harvest of the main growing season, often causing maize to be insufficiently dried before storage. Moisture build-up causes much of the maize to be contaminated, leading to losses and low-quality maize.<sup>2</sup> Much of the maize contributed by small-scale farmers thus tends to get rejected by processors.<sup>3</sup> This shuts farmers out of value chains and discourages them from investing in productive inputs.

## Evaluation Context

To improve quality maize production in Rwanda, the World Food Program's Farm to Market Alliance (FtMA) connects farming cooperatives to commercial food processors. These processors buy farmers' entire output immediately after harvest and have industrial facilities that can dry maize quickly, eliminating the need for farmers to do it and reducing contamination.

Through FtMA, farmers can receive higher and guaranteed prices for their maize, increasing sales

and profits. They may then expand their land holdings and invest in productivity-enhancing inputs.

FtMA may carry significant investment opportunities for women. While 70 percent of female-headed households currently depend on agriculture, more than half cultivate on land less than 0.3 hectares—compared to 40 percent of men—and only 25 percent use fertilizer.<sup>4</sup>

## Details of the Intervention

Researchers are conducting a randomized evaluation of the FtMA to measure its impact on farmers' output of high-quality maize, sales, and investment in productive inputs. A total of 180 farming cooperatives across Rwanda are participating in the intervention. Representatives from the World Food Program are visiting 90 cooperatives to explain the FtMA program and encourage them to secure a buyer contract before the start of the growing season while another 90 cooperatives are serving as a comparison group without visits from World Food Programme representatives.

After the harvests in 2022, 2023, and 2024 (and possibly 2025), researchers are conducting in-person surveys with the leadership of all 180 cooperatives and with a subset of farmers from these cooperatives to collect data on land holdings, hired labor, crop yields, crop sales, crop choice, and agricultural income. Researchers are also collecting data from the World Food Program FtMA team to understand the timing of, quantity, and price received by farmers for sales.

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1. Nakisanzwe Segawa, "Drying Maize on the Ground Increases Health Risks and Decreases Exports in Uganda," *Global Press Journal*, August 30, 2019, <https://globalpressjournal.com/africa/uganda/drying-maize-ground-increases-health-risks-decreases-exports-uganda/>

2. Benimana, Gilberthe Uwera, Cecilia Ritho, and Patrick Irungu. "Impact of adopting maize hermetic storage technologies on smallholder farmers' income in Gatsibo District, Rwanda." *Heliyon* 9, no. 3 (2023).

3. IDH, "SDM Case Study: Africa Improved Foods, Rwanda" IDH-The Sustainable Trade Initiative, July 28, 2021, <https://www.idhsustainabletrade.com/publication/sdm-case-study-africa-improved-foods-rwanda/>

4. National Institute of Statistics of Rwanda, "Integrated Household Living Conditions Survey 4 (EICV 4)," National Institute of Statistics of Rwanda, Accessed August 9, 2023, <https://www.statistics.gov.rw/datasource/integrated-household-living-conditions-survey-4-eicv-4>



# Results and Policy Lessons

Preliminary results indicate significant participation in FtMA in cooperatives that received visits during the 2022 season. The number of contracts signed between cooperatives and the food processor increased substantially, as did selling on the cob. However, there does not appear to be any significant effect on sales and prices received by farmers.

Because FtMA was implemented in the mid-season of 2022, there was no time for input use to change. As such, there was no effect on input usage or harvest output, although this will likely change in subsequent seasons as cooperatives stay enrolled.

Researchers are in the process of analyzing data for the 2023 season and will collect data for the 2024 and 2025 seasons to examine the longer-term effects of FtMA participation.



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