

Factsheet midterm findings Global Challenges Programme Call 3



Sustaining food supplies and improving health in Kenya

Summary

Unsafe food is a major and under-recognized cause of ill health and deaths globally. This study aims to shed light on how market forces can be leveraged to improve the safety of food in contexts where the enforcement of food safety regulations is weak. The research is based in Kenya, where maize, the staple grain, is often contaminated with a cancer-causing by-product of certain molds called aflatoxin. The project has analysed how market incentives for safer maize affect farmers' purchase and use of a new technology – Aflasafe – to control this toxin.

The study has involved 152 pre-existing groups of maize farmers in a region of Kenya where maize is commonly contaminated with the toxin. All groups were given information on aflatoxin and Aflasafe, and were given the opportunity to purchase Aflasafe. To address the risk that the possibility of a poor harvest due to inadequate rainfall would depress farmer demand, a weather insurance product was offered to farmers together with the Aflasafe. In addition, half of the groups were offered a premium price for maize that met the associated food safety standard.

Results indicated that while farmers do respond to market incentives, lack of demand among bulk maize buyers in the study region is a constraint to the development of markets that support food safety. Future work through the project will address this challenge, by analyzing urban consumers' demand for aflatoxin-safe maize.

Interim research findings

A significant proportion (18.4%) of farmers to whom Aflasafe was offered purchased the product. Further, the amount of Aflasafe purchased was approximately 50% higher among farmers offered a premium price for aflatoxin-safe maize. This is a promising indicator of the viability of a market-based approach to scaling up Aflasafe, especially since the value of the premium was quite low – just 100 KSH per bag, around 5% of the price of maize in the non-premium market. However, we note that markets for premium maize will need to be developed within high-aflatoxin areas themselves, as the transport costs from aflatoxin-vulnerable regions to Nairobi, where most of the demand for premium flour currently exists in Kenya, makes selling to this market impossible in most years.

The impact of the premium price on incomes during the study year was modest, as very few farmers aggregated their maize for sale to the premium market, apparently due to insufficient rainfall resulting in low production. Almost all farmers who purchased weather insurance for their Aflasafe received a pay-out from the insurance company. The results also indicate that training smallholder farmers on Aflasafe application must take into account their reliance on the weather and should provide specific recommendations in case of lack of rain.

Intermediate outcomes achieved

Nathaniel is a small-scale farmer who hails from Ndiriine village, Meru county, Kenya. He is the head of a household consisting of 5 members. During the 2017 main season (October 2017–February 2018), Nathaniel purchased 4 kgs of Aflasafe that he used to treat almost half of his land under maize in that season. It took him one hour to broadcast the Aflasafe in his field. Despite the inadequate rainfall in this season, Nathaniel managed to harvest 12 bags of maize from his Aflasafe-treated fields. Samples collected at harvest from his treated maize had aflatoxin levels much lower than what is considered unsafe by the Kenyan Government. He used 2 bags from the treated maize for home consumption and sold the remaining 10 bags through the project, earning him a bonus of 1000 KES (approximately 10 USD) for the safer maize. This gave him a 150% return on his investment in Aflasafe and safe maize for his family.

Messages to

A) Actors from private sector:

- Maize farmers are interested in producing aflatoxin-safe maize for home consumption and for sale. Farmers are more likely to invest in Aflasafe, a new technology to control aflatoxin, if they are offered a premium price on maize that meets the regulatory safety standards.
- There is high demand among farmers for weather index insurance to insure their purchase of Aflasafe against rainfall risk.

B) Civil society and practitioners organizations:

- Providing information and training to smallholder farmers can help them participate in food safety-sensitive value chains.
- The development of aflatoxin-safe value chains requires effort from various actors in the chain, including producer organizations to aggregate maize, and input suppliers to facilitate access to food safety technologies.

C) Policy makers:

- Markets can support the use of Aflasafe by small-scale producers in one of the most affected regions in the country, improving safety of food for home consumption and for sale. To create and support markets for aflatoxin safe maize, there is a need for the enforcement of existing regulations that apply to maize millers in the affected regions. This also requires building the capacity of millers to sample and test their grain for aflatoxin.

Knowledge products

Project paper on the results from the main study: "[Can markets support smallholder adoption of a food safety technology? Aflasafe in Kenya](#)" (2018)

Knowledge networks

[CGIAR Research Program on Agriculture for Nutrition and Health](#) (A4NH)

Co-creation

In October 2016 the project held a launch meeting, which was attended by representatives from the Eastern Africa Grain Council, Cereal Millers Association, Cereal Growers Association, Kenya Agriculture and Livestock Research Organization, World Food Program, Texas A&M AgriLife Research, IITA, ILRI, IFPRI, and Wageningen University. This was followed by a Stakeholder Workshop In April 2017. In addition to the institutions participating in the launch meeting, this was attended by representatives of Innovations for Poverty Action, the Meru County Government, Kenyan Ministry of Health, Dahlberg Associates, two private sector maize aggregators, one maize milling company (Unga Ltd), and ACDI/VOCA. The Stakeholder Workshop was held after the conclusion of the pilot study, and before the design of the main study was finalized. This timing allowed the researchers to present preliminary results and the proposed design of the main study and to solicit feedback, which was used to refine the study design. Stakeholder engagement through these workshops has also built awareness of the study and demand for the results.

Consortium Partners

- [Wageningen University and Research, Development Economics Group](#) (The Netherlands)
- [International Institute of Tropical Agriculture](#) (Kenya)
- [International Food Policy and Research Institute](#) (US)
- [East African Grain Council](#) (Kenya)

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Project websites

- [F&BKP Research Project page](#)