

## Mitigation of aflatoxin in maize and groundnuts in Mozambique

**Donor:** United States Agency for International Development Mission in Mozambique (USAID-Moz), United States Department of Agriculture – Foreign Agricultural Service (USDA-FAS)

**Timeframe:** 2013 - 2016

**Background:** Trade issues associated with aflatoxins in Mozambican groundnuts and maize are only partially documented. The rise in groundnut exports from Mozambique to the European Union (EU) has been accompanied by a rise in the European Union Rapid Alert System for Food and Feed (RASFF) notifications for Mozambican groundnuts since 2007. There is no existing data on the levels of aflatoxin in Mozambique's maize exports or in domestically consumed maize or groundnuts. However, the importance of aflatoxins in Mozambique are illustrated by the high levels of certain types of cancer in the country, the strong links between HIV infection rates and aflatoxin intake, and negative correlations between aflatoxin in the diet and development in children.

**Project summary:** The goals of the project are to reduce aflatoxin levels in the Mozambican national diet and provide additional ways for farmers, regulators, input suppliers, and exporters to produce, trade and export groundnuts and maize in compliance with aflatoxin standards set by CODEX Alimentarius through the development of a bio-control product, aflasafe-Moz, for aflatoxin mitigation. However, with limited data available on aflatoxin prevalence in maize and groundnut in Mozambique, a strong initial focus will be on mapping the incidence of aflatoxin in both crops. To support the development and registration of aflasafe, which has already proved effective in Nigeria, a training program of national agricultural extension workers in the public and private sector followed by widespread training of smallholders will be carried out. The introduction of aflasafe-Moz will be accompanied by the reinforcement of the use of existing aflatoxin reduction strategies with smallholders through a widespread training program. Other project activities will be the upgrading and equipping of laboratory facilities at UniLurio in Nampula for mycological work and mycotoxin testing.



A trader selling maize in a local market in Nampula, Mozambique (photo by R. Bandyopadhyay)

### Objectives

- to quantify the incidence of aflatoxin in maize and groundnut, and to estimate population densities and characterize *A. flavus* in at least 3 provinces of northern Mozambique
- to identify, with farmers, the best Mozambican atoxigenic strains for bio-control in maize and groundnut
- to evaluate the effectiveness of the biocontrol product aflasafe-Moz on aflatoxin management in maize and groundnut
- to commercialize aflasafe-Moz, and engage in product stewardship and market development
- to nurture national capacity in aflatoxin research and monitoring
- to create awareness on aflatoxin contamination

### Outputs

- scale of the aflatoxin problem in maize and groundnut value chains quantified and *A. flavus* characterized in at least 3 provinces of northern Mozambique
- effectiveness of aflasafe-Moz in reducing aflatoxin accumulation in maize and groundnut assessed
- bio-control of aflatoxin to reduce maize and groundnut crop contamination deployed
- technical capacity of national partners, extension services, farmers and other actors in the maize and groundnut value chain enhanced, for better integrated aflatoxin management to minimize contamination, partly using low-cost aflatoxin measuring tools
- awareness of stakeholders of the effects of aflatoxin on human and animal health, and procedures to limit aflatoxin contamination and consumption increased

**Major partners:** IKURU, Universidade Lurio (UniLurio), Instituto de Investigacao Agraria de Mocambique (IIAM), Universidade Eduardo Mondlane (UEM), International Institute of Tropical Agriculture (IITA), Ministerio da Agricultura de Mocambique (MINAG), United States Department of Agriculture - Agriculture Research Service (USDA-ARS)

**Target country:** Mozambique

**Crops:** groundnut, maize