Evidences

Study #2782

Contributing Projects:
- P342 - Technological and institutional innovations for assessing and mitigating food safety risks related to aflatoxins designed and tested, including capacity building
- P339 - Better evidence on foodborne disease in target regions

Part I: Public communications

Type: OICR: Outcome Impact Case Report

Status: New

Year: 2019

Title: Aflasafe biocontrol products to reduce aflatoxin contamination are now registered in nine African countries and available at more than 30 distribution points in seven countries

Short outcome/impact statement:
In 2019, two more Aflasafe products were registered in Mozambique, bringing the total number of African countries with registered Aflasafe products to nine and total number of registered Aflasafe products to 12. Registration is critical for scale-up of Aflasafe. Aflasafe are tailor-made products for each country developed by IITA in collaboration with the Agricultural Research Service of the United States Department of Agriculture and local national institutions. Companies are making Aflasafe products available to farmers in various African nations.
**Outcome story for communications use:**
IITA with the Agricultural Research Service of the United States Department of Agriculture has developed Aflasafe, a biocontrol product for controlling aflatoxins. In its initial research phase, Aflasafe was tested for safety, efficacy and for commercial viability. With safety and efficacy established and lessons on commercialization available, a scaling-out phase is underway. To date, 12 countries are pursuing registration and then various stages of commercialization. There are some common and some unique elements to the process of commercial scaling out in individual countries.

In each country, Aflasafe must be registered and for specific crops. A first step is to identify the strains of Aspergillus flavus present in the country that do not produce aflatoxins. These are then used to create a country-specific Aflasafe product. Multi-year field trials on farms are conducted in the main agro-ecological zones in a country. These trials are managed by farmers, using protocols provided by IITA and with oversight, as required, from government regulators. In all cases at least 80% and usually much greater reduction in aflatoxin levels were achieved. Other data for registration beyond efficacy in farm trials are: environmental safety through sampling A. flavus populations, cost-benefit analyses for farm use and assessments of potential profitability and business success (usually for use of crops in higher-value products). Registration has now been completed in nine countries - Burkina Faso, The Gambia, Ghana, Kenya, Mozambique, Nigeria, Senegal, Tanzania, and Zambia. In all nine countries Aflasafe products are registered for use in maize, in eight for groundnuts (except in Kenya), and also for sorghum in Ghana.

Once national registration is approved, the technology transfer phase begins. Companies to produce and distribute Aflasafe are identified and they engage in a commercialization plan including a detailed business plan. By 2019, three companies have been licensed to manufacture and distribute Aflasafe products in four countries – BAMTAARE Services (in Senegal and The Gambia), HarvestField Industries (in Nigeria), and most recently, A to Z Textile Mills Ltd. in Tanzania. In Kenya, the Kenyan Agricultural and Livestock Research Organization (KALRO) manufactures and distributes Aflasafe KE01. IITA also produces country-specific Aflasafe products at its Ibadan production facility for Nigeria and other countries. Now that production units are being established, distribution networks are following. In 2019, new distribution partners were added in Burkina Faso, Ghana, and Kenya. Now Aflasafe is available at more than 30 distribution points across seven countries in Africa.

**Links to any communications materials relating to this outcome:**
- https://tinyurl.com/y89andna
- https://aflasafe.com/

**Part II: CGIAR system level reporting**

**Link to Common Results Reporting Indicator of Policies:** No

**Stage of maturity of change reported:** Stage 1

**Links to the Strategic Results Framework:**

Sub-IDOs:
- Reduced biological and chemical hazards in the food system
- Appropriate regulatory environment for food safety
- Increase capacity of beneficiaries to adopt research outputs

Is this OICR linked to some SRF 2022/2030 target?: Too early to say
Comment: <Not Defined>

**Geographic scope:**
- Multi-national

**Country(ies):**
- Mozambique
- Nigeria
- Tanzania, United Republic
- Zambia
- Gambia
- Burkina Faso
- Senegal
- Kenya
- Ghana

Comments: <Not Defined>

**Key Contributors:**

**Contributing CRPs/Platforms:**
- Maize - Maize
- A4NH - Agriculture for Nutrition and Health

**Contributing Flagships:**
- F3: Food Safety

**Contributing Regional programs:** <Not Defined>

**Contributing external partners:**
- A to Z Textile Mills Ltd.
- MAAH - Ministère de l'Agriculture et des Aménagements Hydrauliques (Burkina Faso)
- MECCNAR - Ministry of Environment, Climate Change and Natural Resources (Gambia)
- BAMTAARE SA
- FMARD - Federal Ministry of Agriculture and Rural Development (Nigeria)
- MASA - Ministério da Agricultura e Segurança Alimentar (Mozambique) / Ministry of Agriculture and Food Security
- USDA - U.S. Department of Agriculture
- MALF - Ministry of Agriculture, Livestock, Fisheries and Cooperatives (Kenya)
- MoA - Ministry of Agriculture (United Republic of Tanzania)
- KALRO - Kenya Agricultural and Livestock Research Organization
- MoFA - Ministry of Food and Agriculture (Ghana)
- Ministry of Agriculture (Zambia)
- MAER - Ministère de l'Agriculture et de l'Equipment Rural (Senegal)
- USAID - U.S. Agency for International Development

**CGIAR innovation(s) or findings that have resulted in this outcome or impact:**
Selected and shown below.
Innovations:
- 152 - Aflasafe KE01 for Kenya
- 730 - Aflasafe GH01 and Aflasafe GH02 for Ghana
- 729 - Aflasafe BF01 for Burkina Faso
- 733 - Aflasafe TZ01 and Aflasafe TZ02 for Tanzania
- 719 - Aflasafe MWMZ01 and Aflasafe MZ02 for Mozambique
- 731 - [updated from 2017] Aflasafe product for Nigeria
- 732 - [updated from 2017] Aflasafe product ZM01 and ZM02 for Zambia
- 151 - Aflasafe product for the Gambia and Senegal made available for commercial use

Elaboration of Outcome/Impact Statement:
IITA in collaboration with the Agricultural Research Service of the United States Department of Agriculture (USDA-ARS) and local national institutions have developed several biocontrol products under the trade name Aflasafe for use in Sub-Saharan Africa. In 2019, two Aflasafe products were registered for use in Mozambique [1]. Now nine countries in Africa - Burkina Faso, The Gambia, Ghana, Kenya, Mozambique, Nigeria, Senegal, Tanzania, and Zambia - have Aflasafe products registered for use in maize, groundnut (except in Kenya), and sorghum (only in Ghana. Regulatory approval was based on results of multi-year farmer field efficacy trials conducted across different agro-ecological zones, which were conducted in part by IITA (efficacy trials are actually managed by farmers that received training on use of Aflasafe and other aflatoxin management practices). Supporting data for registration included but was not limited to demonstration that the atoxigenic genotypes were native to the target nations, effectiveness in hundreds of farmer field trials, environmental safety, benefits to farmers, and possibility to unlock premium markets as a result of treatment. In all cases, aflatoxin reductions in treated maize and groundnut crops ranged from 80% to 100% less compared to untreated adjoining crops. The reductions occurred both at harvest and even in poor storage conditions [2, 3, 4].

Registration is a critical step in the pathway for scale-up of Aflasafe. After regulatory approval has been granted, IITA begins working with public and private sector actors to implement the technology transfer to appropriate companies for them to commercialize products that can improve food systems, boost trade, and protect public health. This follows a three-phase approach to develop a country-specific commercialization strategy, select investors, and execute a business plan. To date, three companies have been licensed to manufacture and distribute Aflasafe products in four countries – BAMTAARE Services (in Senegal and The Gambia), HarvestField Industries (in Nigeria), and most recently, A to Z Textile Mills Ltd. (in Tanzania). In the case of Kenya, the Government is manufacturing and distributing the Aflasafe KE01 product; IITA financed and built the Aflasafe KE01 manufacturing facility and handed it over to the Government of Kenya. The number of distributors also continues to grow. In 2019, new distribution partners were added in Burkina Faso, Ghana, and Kenya [5]. Now Aflasafe is available at more than 30 distribution points across seven countries in Africa. With this expansion, manufacturing and distribution companies are bringing Aflasafe closer to the users.
References cited:

Quantification:

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<td><strong>Comments</strong>: In 2020, it is estimated that 60 tons of Aflasafe will be used on 16,000 ha in Kenya. This is according to the agreement with the new distributor, Koppert Biological Systems.</td>
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<td><strong>Comments</strong>: In 2020, it is estimated that 130 tons of Aflasafe will be used on 13,000 ha (around 13,000 farmers) in Burkina Faso. This is according to the commercialization strategy and actual numbers on historical production.</td>
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<td><strong>Comments</strong>: In 2020, it is estimated that 15 tons of Aflasafe TZ01 will be used to be used on 1,500 ha in Tanzania. This is according to the commercialization strategy and actual numbers on historical production.</td>
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<td><strong>Comments</strong>: In 2020, it is estimated that 1,000 ha will be treated with Aflasafe GH02 in Ghana. This is according to the commercialization strategy.</td>
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Gender, Youth, Capacity Development and Climate Change:

Gender relevance: 0 - Not Targeted
Youth relevance: 0 - Not Targeted
CapDev relevance: 1 - Significant

Main achievements with specific CapDev relevance: The effectiveness trials that pave the way for regulatory approval of the products are conducted as joint activities between IITA and local partners. IITA works with private companies to transfer the Aflasafe know-how and provides technical assistance in implementing the business plan. IITA’s support includes training technical and sales staff on the integrity of the technology to increase their confidence during commercial deployment; providing technical assistance for structured awareness-raising and demonstration of the economic and social value of the product to different market segments using business cases; and support in setting up of their factory, quality control and staff training.

Climate Change relevance: 0 - Not Targeted

Other cross-cutting dimensions: NA

Other cross-cutting dimensions description: <Not Defined>

Outcome Impact Case Report link: Study #2782

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