

Our journey from incubation to market: Status of Aflasafe commercialisation in Africa

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Matieyedou Konlambigue,* Oscar Jacob,+ Nneka Eze,° Tracy Shanks,+
Peter Okomoh,* Njeri Okono,* Edward Landreth,+ Jane Kamau,* Ouambi Yameogo,*
Ranjit Bandyopadhyay* and Frederick Schreurs*

* International Institute of Tropical Agriculture (IITA)

+ Chemonics International

° Dalberg Advisors

Introduction

Aflatoxin exposure is frequent and widespread in most African countries. Key staples such as maize and groundnuts are particularly vulnerable to aflatoxin contamination. A stealthy and silent killer, aflatoxin is a major concern because of its acute, chronic and irreversible health effects on people and livestock, sometimes leading to fatalities. Besides being life-threatening and compromising health, aflatoxin contamination hampers domestic, regional and international trade as companies are unable to meet international and regional standards.

There is no single solution, nor sector, that – alone – can conclusively tackle this complex food-safety threat. Rather, the imperative is combined action at various levels and across sectors – technology, market, policy, institutions and behaviour change.

On the technological front, the good news is that a solution exists. The International Institute of Tropical Agriculture (IITA), in partnership with the Agricultural Research Service of the United States Department of Agriculture (USDA–ARS) and local national institutions in several African countries, has successfully adapted and improved an all-natural technology, using it to develop an environmentally friendly product with the commercial name Aflasafe®. In thousands of tests in farmers' fields across several African countries over more than 16 years, when Aflasafe is correctly applied and all facilitative conditions are met, Aflasafe consistently reduces aflatoxin contamination in groundnuts, maize and sorghum by between 80% and 100% when the crop is in the field. And although applied pre-harvest when the crops are still growing in the field,

comparative tests have shown that the protection that Aflasafe confers pre-harvest continues during storage as well. In addition, IITA constructed an Aflasafe factory at its headquarters in Ibadan, Nigeria, adapted to the African context. The factory not only serves as a model and training facility for potential investors, but also supplies new countries while an investor is being sought.

Over the last four years, IITA and partners (Chemonics International and Dalberg Advisors) have been implementing the Aflasafe Technology Transfer and Commercialisation initiative (ATTC) to facilitate sustainable delivery of Aflasafe products to farmers in Africa. IITA's goal for ATTC is to contribute to improving food safety, and to increase income for groundnut, maize and sorghum smallholder farmers through the use of Aflasafe. ATTC's specific objective is to significantly expand the acreage of Aflasafe-protected farmland across African countries.

This brief provides the status of Aflasafe commercialisation in Africa thus far, how we have approached commercialisation, and what we have learnt along the way. The first part focuses on the approach employed to transfer the technology and commercialise the product. The second part presents and analyses the progress at continental and country levels. The third part outlines primary challenges that both the private sector and IITA are identifying; and what we're learning from market feedback about the product, and from market actors about the commercialisation and business-development strategies. The fourth part outlines several recommendations to drive product uptake.



1 An innovative approach for technology transfer and commercialisation

Research results from IITA and other CGIAR centres are considered International Public Goods (IPGs), and are traditionally delivered mainly through the national agricultural research and extension systems. However, unlike most technologies and innovations developed by CGIAR centres, Aflasafe is a commercial product addressing an invisible threat, yet one with an immense but largely unrecognised, unrecorded or untraceable economic and social toll. And yet, this invisible solution to an equally invisible problem requires significant investment for its manufacture, marketing and distribution. These inherent paradoxes raised cogent questions about the pathway for the scaling up of the product with a potential market demand in different locations where it is registered. Among them were: Is there a business case for farmers and other businesses to use the product? If so, is there an incentive for the private sector to invest in product

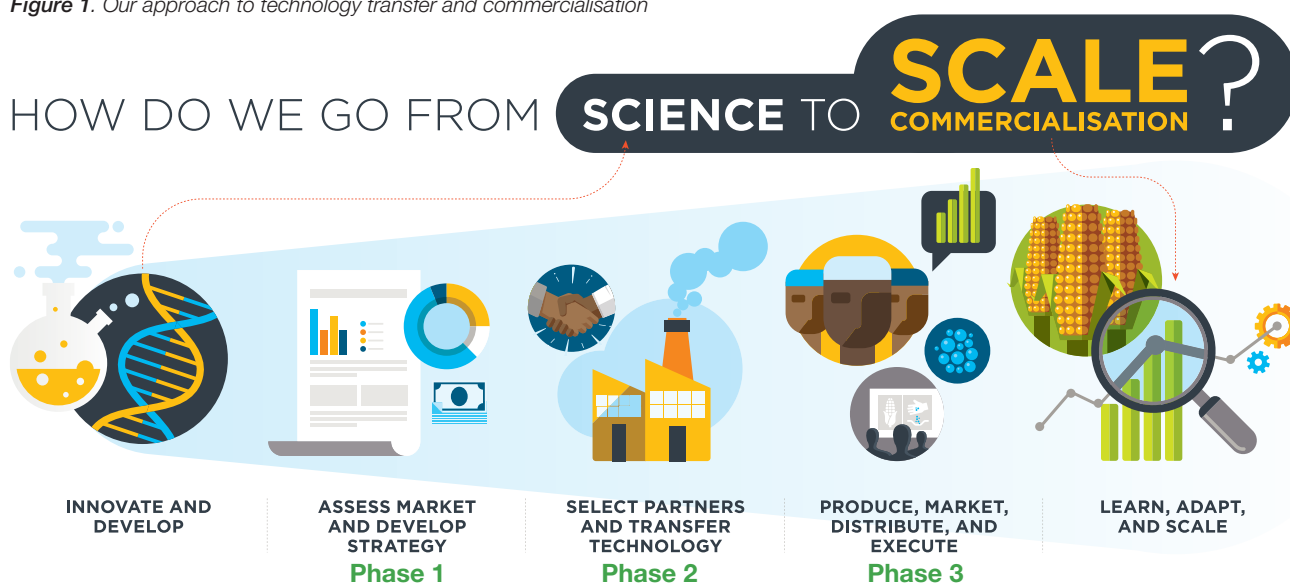
manufacturing, distribution and market development? If not, is the public sector motivated and ready to lead the scaling of the innovation? And are there any opportunities for public–private partnerships to drive the scaling?

These questions are addressed in a three-phase approach to transfer and commercialise the technology. The interconnected phases are:

1. Developing the commercialisation strategy;
2. Selecting investors and transferring the technology; and,
3. Executing the business plan.

The main thrust of the approach is to collaborate and partner with both public- and private-sector actors to commercialise a viable product that improves food systems, boosts trade and protects public health.


Figure 1. Our approach to technology transfer and commercialisation



1.1 Laying the foundations: drafting the commercialisation strategy

One size does not fit all: commercialising Aflasafe successfully requires a distinct strategy for each target country for the simple reason that countries are not homogeneous. Rather, they differ widely in factors such as private-sector development, cost of inputs, market structure, the level of awareness on the toll of aflatoxin, and the existence and enforcement of food-safety regulations. All these factors have a heavy bearing on Aflasafe commercialisation.

For this reason, the commercialisation strategy is the first step in tracing the path to take Aflasafe to market. The strategy illuminates the drivers of demand and the options to meet demand, as well as the enabling interventions required to increase product uptake in each country.



It provides key market, economic and financial analyses that any potential investor would first want to know before considering an investment in manufacturing and distributing Aflasafe. The analyses include – but are not limited to – market projections, manufacturing feasibility, distribution scenarios,

potential return on investment, sensitivity analyses projections, description and prioritised ranking of targeted market segments most likely to use Aflasafe, stakeholder analysis of influencers, incentive and risk assessment, as well as ways to encourage farmers to use Aflasafe.

1.2 Selecting investors and transferring the technology

This phase is implemented in three sequential steps:

1. Hosting the investor forum;
2. Selecting the investor; and,
3. Formally transferring the technology.

Hosting investor forum to mobilise private-sector and government participation

The country-level Aflasafe investor forum mobilises and gathers together local authorities, regulators and key players in the maize, groundnut and sorghum value chains and/or agricultural input industries. The forum aims to explain the current market conditions in the country, present the investment opportunity, pique investor interest, and serve as a feedback loop for the strategy itself. During the forum, the participants scrutinise, interrogate, fine-tune if necessary and validate assumptions and commercialisation models proposed in the strategy. At the end of the forum, investors are asked to indicate their level of interest in learning more about the commercialisation, and in investing in Aflasafe.

After the forum, IITA sends a call for expressions of interest. Interested businesses must demonstrate their dedication and motivation to nurturing and growing the Aflasafe business line, in keeping and in concordance with IITA's vision, which includes ultimately ensuring last-mile delivery. Further, Board-level approval and proof of available funding to invest in Aflasafe production or distribution are required in a first-level screening.

Selecting investors

After first-level due diligence, shortlisted applicants are invited to submit a full business plan with supporting documents for evaluation. ATTC works closely with the investors to develop their business plans, which also not only aid initial transfer of knowledge, but also give a better understanding of the potential partners.

The second level of screening is assessment of business plans and supporting documents using pre-defined criteria. Finally, ATTC invites those whose business plan and supporting documents meet the criteria to pitch, after which the best 2–3 applicants present their business plan to the ATTC Advisory Board.

The final selection of investors is by the Advisory Board, whose members have diverse experience and are drawn from various international and regional intergovernmental organisations, funders, civil society, private sector and IITA senior leadership. The Board examines the business plan, selects investors, and determines the conditions for the resultant technology transfer and licensing agreements, based on the nature of the specifics of each case. If these conditions are acceptable to the investor, they move forward to contracting.

Formally transferring the technology

Once the successful investor is selected, a Technology Transfer and Licensing Agreement (TTLA) is signed. This legal document sets the terms and conditions under which IITA grants to the selected company the right to manufacture, distribute and market the product. The TTLA provides incentives for private-sector investment, while balancing

between the company's profit motive, affordability by farmers, and IITA's obligation to disseminate international public goods. The TTLA also sets out production targets and distribution targets that the partner is expected to meet, and lays out the time period covered by the agreement. The TTLA takes into account the business plan, commercialisation strategy, and the time required for the company to break even on Aflasafe production.

1.3 Implementing the business plan

Once the TTLA is signed, ATTC works with the selected partners to transfer the know-how about the technology, and additionally provides technical assistance in implementing the business plan.

The transfer of the know-how – which takes about two years – takes various forms depending on partner capacities and needs. ATTC's support package includes training the technical and sales staff on the integrity of the technology to increase their confidence during commercial deployment of this new-to-market product.

To grow the market demand, ATTC also provides technical assistance for structured awareness-raising and demonstration of the economic and social value of the product to different market segments using business cases.

Last but not the least, we support the setting up of their factory, quality control and the associated specialised staff training. Standard operating protocols for various manufacturing and quality control processes are also provided.

2 Where are we with Aflasafe commercialisation in Africa?

2.1 Overview at continental level

Aflasafe commercialisation is primarily led by private-sector companies that are investing in setting up local manufacturing plants and market development.

Even though the availability of the product has expanded significantly, the uptake is still limited in aflatoxin-conscious core market segments dominated by large processors, exporters and government procurement.

A private sector-led commercialisation

Over the last three years, IITA licensed three private companies to manufacture and distribute Aflasafe in four countries: The Gambia, Nigeria, Senegal and Tanzania. Two private companies are currently distributing Aflasafe in Ghana and Burkina Faso on an interim basis. These companies are leading market development in collaboration with public and non-governmental organisations. In Kenya, a government institution is leading the manufacture and distribution of the product.

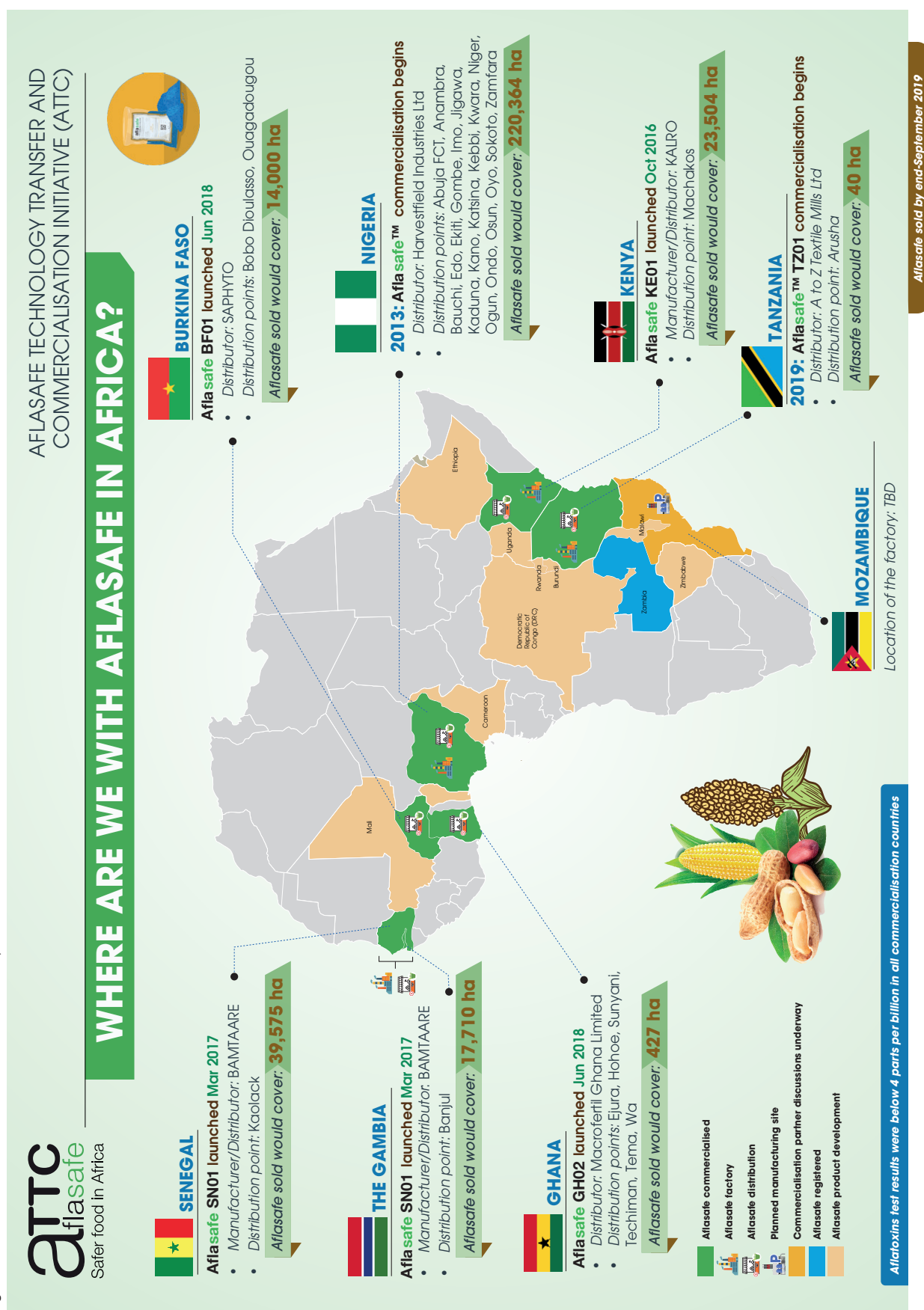
The steady expansion of manufacturing and distribution points

Apart from the research and demonstration factory at IITA headquarters at Ibadan, Nigeria, two additional factories have been constructed thus far: one in Senegal fully built, owned and operated by the private sector, and another in Kenya with donor funding operated by the public sector. The licensees in Nigeria and Tanzania are each currently constructing their own factories.

From a single delivery point in 2017 at IITA headquarters, today, Aflasafe is currently 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.



Figure 2: Where we are with Aflasafe commercialisation: September 2019



The uptake is driven by business-to-business (B2B) clients including aflatoxin-conscious businesses and government entities

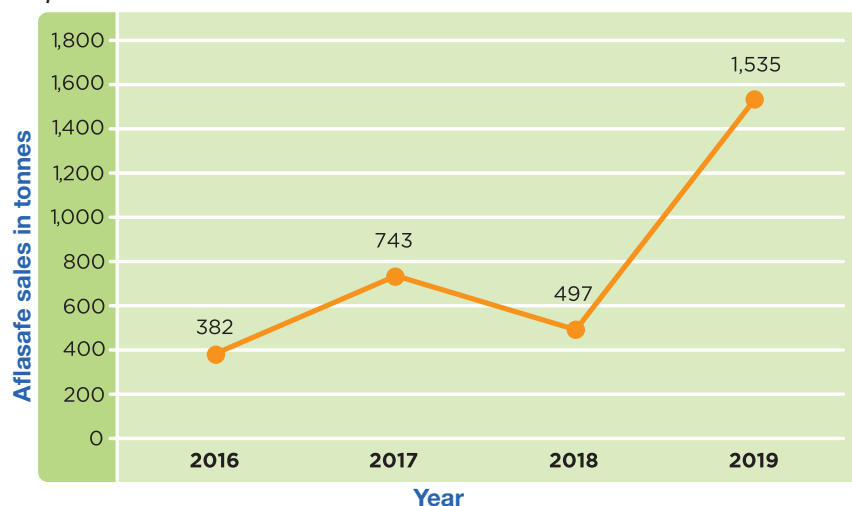
Between January 2016 and September 2019, manufacturers and distributors sold a total of 3,156 tonnes of Aflasafe, enough to cover 315,620 hectares of maize, groundnuts and sorghum. Almost all (99%) of the sales were through B2B clients. Of this, public institutions procured nearly half (40%).

These figures show that the demand for Aflasafe remains concentrated among actors that are well aware of the negative impacts of aflatoxin, which directly affects their businesses.

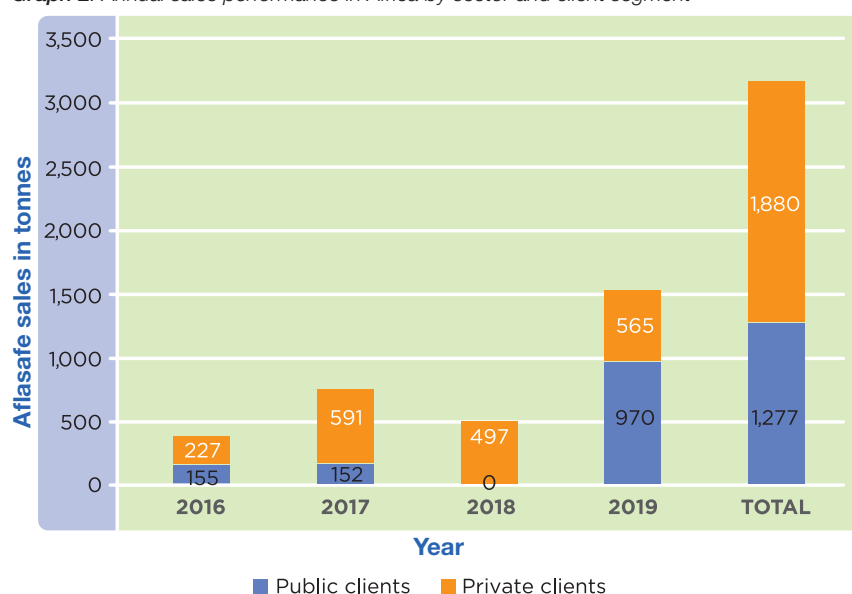
On the one side, we have small and medium enterprises (SMEs) supplying large processing and export companies operating downstream with clear and stringent aflatoxin-safety limits in their quality specifications. In most cases, these SMEs include Aflasafe in the package of inputs provided to outgrower farmers through contract farming.

On the other side, some Ministries of Agriculture that have accurate information on the level of contamination in crops, and that know the effectiveness of Aflasafe, are distributing limited quantities at a subsidised price – or free of charge – to target farmers to raise awareness about the product, and expand its use.

Graph 1: Annual Aflasafe sales in Africa



Graph 2: Annual sales performance in Africa by sector and client segment



2.2 Country progress

Nigeria: leading the commercial uptake of Aflasafe in Africa

The first Aflasafe product in Africa was registered for and in Nigeria in 2014. Since then, the country has been a pioneer in manufacturing, commercialisation and product improvement. By providing incentives and rewarding organisations that supply aflatoxin-safe products into the market, the recently concluded AgResults Nigeria Aflasafe™ Challenge has demonstrated the use of Aflasafe at scale.

Aflasafe commercialisation in Nigeria is being driven by Harvestfield Industries Ltd (HIL). The company's engagement started in 2017, with a non-exclusive distributorship agreement with IITA's Business Incubation Platform (BIP). The one-year agreement provided HIL the opportunity to test the market potential and entry strategy for Aflasafe. With the signing of a TTLA with IITA in 2018, HIL strengthened its position as the appointed and exclusive manufacturer and distributor of Aflasafe in Nigeria.

HIL's business-development strategy focusses on stimulating and expanding Aflasafe sales in three key segments: AgResults agribusiness firms, corporate

clients and government. The company invested in various market-development activities targeting corporate clients and farmer organisations. HIL has also implemented various initiatives to support the Federal Government's policies and programmes to address the challenge of aflatoxin in Nigeria.

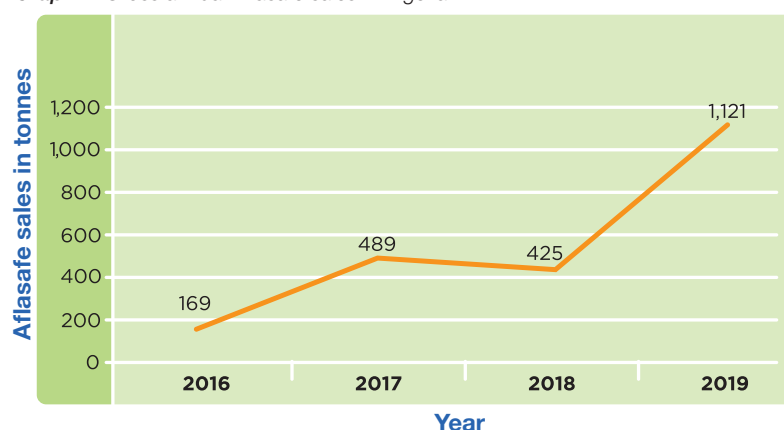
From 169 tonnes in 2016, entirely to AgResults implementers, the annual sales of Aflasafe have risen nearly seven-fold to 1,121 tonnes in 2019. This increase came directly from diversifying the client base, which now ranges from new corporate clients, commodity associations, and – importantly – to the Federal and State governments. Over the last four years, the country recorded a total sale of 2,200 tonnes, accounting for more than two-thirds (69%) of the total uptake in Africa.

During the first two years, HIL signed a toll-manufacturing contract with IITA's Business Incubation Platform (BIP) for Aflasafe production at IITA's Ibadan factory. HIL has since commenced construction of its own Aflasafe factory in Ogun State, acquiring most of the equipment currently being used for manufacturing at the IITA factory. The new factory is expected to go into production by the first quarter of 2020.

Graph 3: Nigeria annual sales performance by sector and client segment



Graph 4: Gross annual Aflasafe sales in Nigeria



Box 1: Nigeria – David vs Goliath dream come true!

For Mr David Odumade, Managing Director, Acirfa Shipping International, 2018 remains a momentous year to remember.

Three years earlier, Acirfa ventured into commodity exports. The company had excellent contacts with European agro-commodity importers interested in Nigerian groundnuts. At the same time, Acirfa was itself diversifying its product portfolio, and this European demand and appetite for Nigerian groundnuts presented heaven-sent low-hanging fruit. From David's inquiries, all roads led to one place, and one place only.

Dawanu market in Northern Nigeria's commercial capital of Kano was David's dream and a marketer's thrill! What a sight greeted him! Behold, there were hundreds upon hundreds of rows of groundnut waiting for buyers, huge lorries ferrying hundreds of groundnut bags in and out. A veritable marketer's delight!

And then, havoc stuck. 'Goliath' confronted an unprepared David: aflatoxin reared its ugly head, upsetting this seemingly perfect opportunity for our hero. All 30 samples David collected from the major groundnut merchants had aflatoxin

levels beyond 10 parts per billion (ppb), firmly closing the door to the European market whose strict standard was between 0.1 and 4 ppb.

For two long years, our David relentlessly searched for a solution to the plague of aflatoxin in Nigeria's otherwise market-attractive groundnuts. His search led him to IITA's doorstep, and to Aflasafe – an IITA anti-aflatoxin product. And so, in 2018, Acirfa shipped a test run of five metric tonnes of Aflasafe-treated and aflatoxin-tested groundnuts to Spain to see if the groundnuts would pass the rigorous EU test too. They did!

Acirfa is not looking back. In 2019, they are expanding production of aflatoxin-safe groundnuts using Aflasafe. The company is working with farmers in Nasarawa State to cultivate more than 100 hectares of groundnuts for the EU market, a tenfold-plus increase over the 10 initial hectares in the successful 2018 test run. And Acirfa are not the only ones in the private sector: in Nigeria alone, several other commodity-export companies such as Olam International and Dangote Farms are using Aflasafe to assure aflatoxin-safe harvests.

Kenya: public-led manufacturing and public-driven uptake

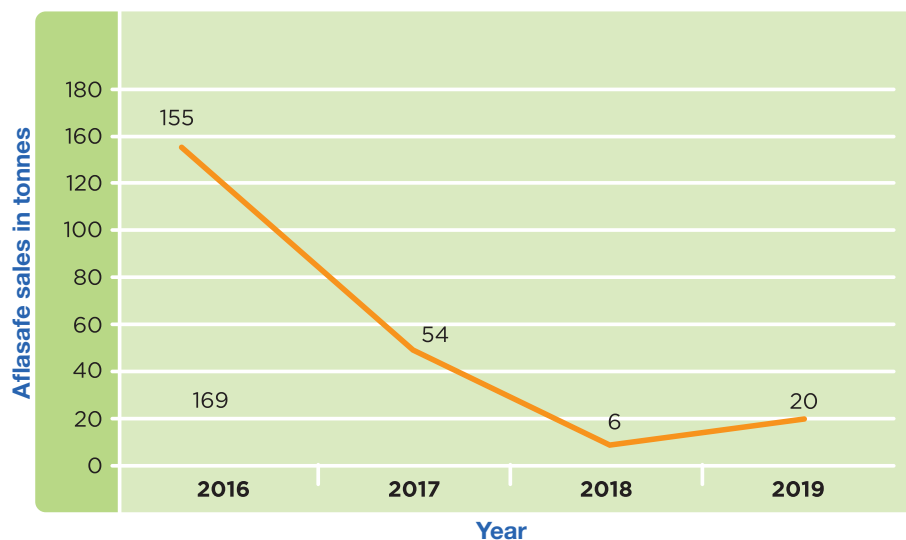
In 2015, Aflasafe KE01 became the second nationally registered Aflasafe product in Africa. After two years of importing Aflasafe from IITA headquarters in Nigeria, the government-owned Kenya Agricultural and Livestock Research Organisation (KALRO) started local production at Katumani, Machakos, with donor funding.

Over the last four years, a total of 235 tonnes have been sold, all entirely to public institutions. Indeed,

national and county governments have been driving the distribution of the product to maize farmers in aflatoxin-prone areas where high levels of contamination are frequently recorded. The sharp reduction in public procurement over the years has affected the use of Aflasafe in the country.

KALRO is currently in the process of selecting a private company to organise distribution. When completed, Aflasafe KE01 will enter a vital phase in commercialisation, with appropriate business models to cover the entire country.

Graph 5: Annual Aflasafe sales in Kenya



Box 2: Kenya – Saving lives and enhancing quality

Here, the facts and figures readily speak for themselves, on both problem, and solution. The naturally occurring poison – aflatoxin – is hardly new in Kenya, and has long haunted the country. Aflatoxin has resulted in deaths, widespread contamination of food, animal feed and milk, and destruction of maize. Some of these incidents have been widely reported in the media through the years. What is relatively new, and not as broadly reported, are successful efforts to combat aflatoxin, with the government as a key actor. Efforts that once expanded would halt the recurring painful trend and its deadly toll. And save lives – literally.

And so it was that in this quest, in early 2015, Kenya's National Irrigation Board (NIB) purchased Aflasafe airfreighted directly from IITA headquarters in Nigeria, to help deal with aflatoxin contamination in maize, a predicament afflicting some of its own irrigation schemes.

The result? Dramatically reduced aflatoxin, whose contamination is measured in parts per billion (ppb). That first year, in Galana, all the Aflasafe-treated maize had less than 4 ppb, meeting not only the Kenyan regulatory threshold of 10 ppb, but also the even more stringent European Union standard of between 0.1 and 4 ppb. The maize was safe to eat at home, and was also a premium product that could be sold anywhere abroad – the US aflatoxin threshold is 20 ppb.

In April 2017, NIB milled and sold their first aflatoxin-safe maize flour at no profit, recovering only production costs, and therefore selling at a lower price than the market (KES 75 [USD 0.73] per 2-kg packet, less than half of the commercial price of KES 153 [USD 1.5] at the time).

According to NIB, consumers say this maize flour is tastier.

Senegal and The Gambia: export-oriented groundnut market

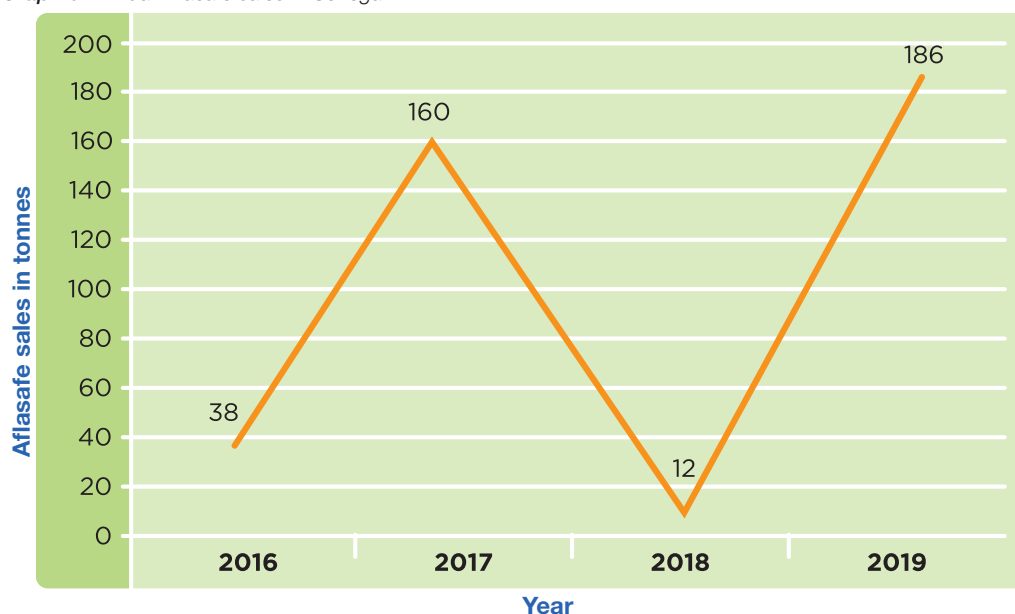
BAAMTARE Services SA is the face of Aflasafe commercialisation in Senegal.

A 100% subsidiary of SODEFITEX, BAMTAARE (*Base d'Appui aux Méthodes et Techniques pour l'Agriculture, les autres Activités Rurales et l'Environnement*), is a full-service agribusiness firm involved in the aggregation and export of various agricultural commodities.

Like its Nigerian counterpart, BAMTAARE first commenced distribution of Aflasafe SN01, the Senegalese version of Aflasafe, in Senegal and The Gambia in 2017, under a distribution agreement with IITA's BIP. The company's entry strategy for Aflasafe focused on the pre-existing and well-structured farmer cooperatives, processors and exporters in the groundnut value chain in both Senegal and The Gambia.

Following the signing of a TTLA with IITA in early 2018, BAMTAARE has built its own Aflasafe factory, which started production in June 2019 to supply both countries.

Graph 6: Annual Aflasafe sales in Senegal



BAMTAARE is working with major groundnut value-chain actors in both countries to make the business case for mainstreaming Aflasafe SN01 as part of the standard inputs package for groundnut production. The company's market-development strategy is demonstrating, disseminating and advocating the economic value of the product using the results from the field during the business-to-business engagements and awareness-raising activities. With ATTC's support, the company uses the aflatoxin-test results to scientifically and objectively prove the economic value of the product.

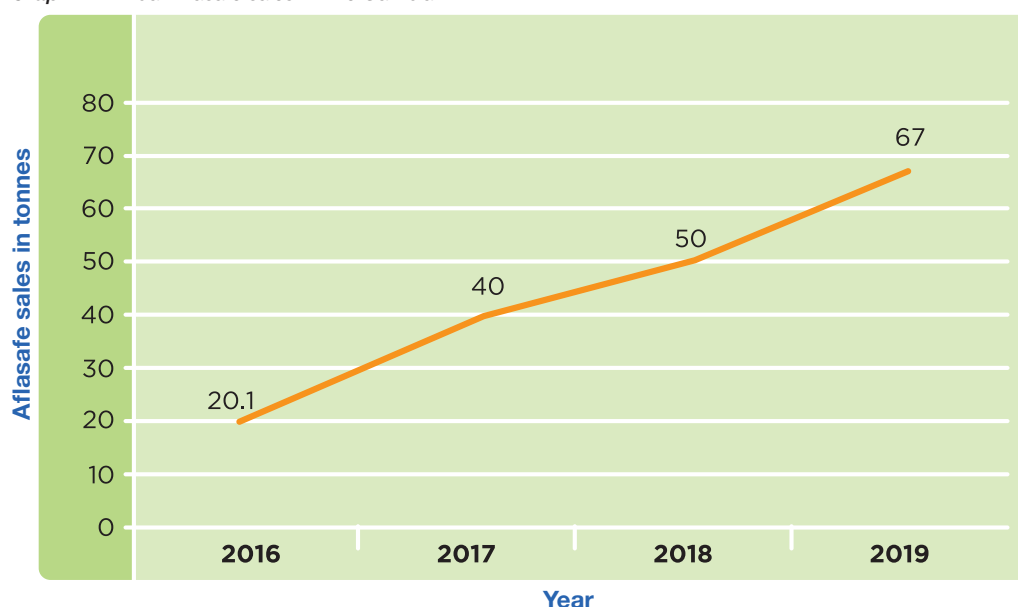
In Senegal, annual sales have risen from 38 tonnes in 2016 to 186 tonnes in 2019, only limited by BAMTAARE's manufacturing capacity as demand

was more than 350 tonnes. The country recorded a significant drop in the quantity of new sales in 2018 due the stock carried over by some clients. Indeed, some users had to put on hold use of the product because the window of application had passed due to late arrival of the product imported from Nigeria.

In The Gambia, sales have steadily grown from 20 to 67 tonnes during the same period. In both countries, thus far, sales have been primarily to corporate clients along the groundnut value chain.

With the completion of the factory, BAMTAARE is ready to expand its market-development activities to other key segments, such as the public sector and smallholder maize and groundnut farmers.

Graph 7: Annual Aflasafe sales in The Gambia



Box 3: Detoxifying crops in The Gambia, from the ground up

With people in The Gambia largely dependent on crops they themselves grow, and with a national economy highly reliant on agriculture exports, ensuring aflatoxin-safe fields and food is of utmost importance.

So how does The Gambia tame this toxic fungus that particularly flourishes, as fungi do, when moisture is high and storage practices poor, and that is disrupting a country's economy and the lives of its citizens?

"IITA developed Aflasafe to fight aflatoxin... Our goal is to encourage farmers to use it, so we have trained them and are giving a group of them Aflasafe free of charge in this pilot phase," said Ebrima Njie, Quality Control Manager at the National Food Security Processing and Marketing Corporation (NFSPMC).

"The international acceptable levels of aflatoxin allowed in groundnuts in the European Union is four parts per billion [ppb]. For The Gambia, the measure of aflatoxin can reach 20 ppb or more, so because of that, since 2014, Gambian groundnuts have been unable to access markets in the EU," said Abdouramane Diallo, from the Policy and Partnerships division at the International Islamic Trade Finance Corporation (ITFC).

This has resulted in a loss of USD 20 million, Diallo added.

In Phase 1 of this pilot project, supported by ITFC and the Enhanced Integrated Framework (EIF), 6,936 farmers in northern Gambia have been trained in the dangers of aflatoxin, been provided Aflasafe and have applied it to their crops.

The first round of testing on those harvests showed aflatoxin at 0–4 ppb, meaning the groundnuts are now safe for export to the EU. The next step will be purchasing those harvests directly from the farmers at a premium. Then repeat with more farmers.

"It's a very pragmatic project. We purchased 100 tonnes of Aflasafe to eventually be applied on 5,000 hectares of 7,000 farmers with the goal to reduce the level of aflatoxin and increase the income of farmers. When they sell aflatoxin-safe harvests to the NFSPMC they will initially get 15 percent more for their product because it can be exported to the EU market, and the premium can reach 30 percent over the long term," said Diallo.

He added, "Over the next two years, what the pilot project will show us is the extent of the resources needed, how many people we need, and the equipment. We will extract the lessons learned from the pilot so that we can scale up to the national level in three years or so."

With aflatoxin-safe groundnuts making their way to the EU, this will help to create market acceptance and build a new brand for a product that had been considered tainted, Diallo said. And, Gambian groundnuts can then garner higher export prices.

Scaling up nationally means all the country's groundnut crops will have been treated and are aflatoxin-safe, which has implications not only for The Gambia's exports to the EU, but also for Gambians themselves.

"I hope sometime between 2020 and 2022 we might be able to say that we fought and mitigated the consequences of aflatoxin in the country," Diallo said.

Adapted from original article in Trade for Development News by EIF, Impact stories series, 27th May 2019

Tanzania: A to Z is taking the latest entrant – Aflasafe TZ01 – into the market

Following the registration of the Tanzania product – Aflasafe TZ01 – in October 2018, ATTC initiated the commercialisation process in the country, which culminated with the signing of a TTLA with A to Z Textile Mills Ltd (A to Z) in May 2019. With a sales target of 57 metric tonnes (MT) for 2019–2020, the company projects to ramp up to 2,176 tonnes by 2023–2024.

To achieve this, A to Z is relying not only on its countrywide distribution network, but also on a market-development partnership approach involving public and non-governmental organisations for awareness-raising, and strategic partnerships with aflatoxin-compliant companies for incentives to farmers for producing quality crop products.

A to Z is building a factory in Arusha with a capacity of 2.5 MT/day. The factory is at 90% completion in October 2019, pending equipment installation.

The factory is expected to be fully operational by December 2019 – in time to supply the market for the main agricultural season.

Burkina Faso: SAPHYTO is testing the market

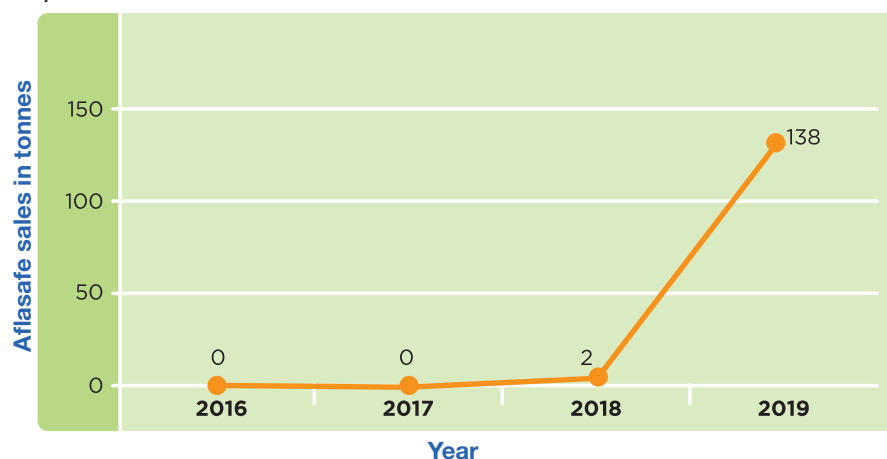
Though a late entrant into Aflasafe commercialisation, Burkina Faso has shown promising prospects for growth following product launch in 2018. Driving the establishment of the Aflasafe BF01 market in Burkina Faso is *Societe Africaine de Produits Phytosanitaires et d'Insecticides (SAPHYTO)*.

A household name in the country, SAPHYTO is a major player in agro-inputs in Burkina Faso, with a broad range of its fertiliser and crop-protection products already widely used by farmers across the country.

The company signed a distribution agreement with IITA's BIP in mid-2019, and has ordered an initial 130 MT of Aflasafe BF01 from IITA, with which it will test the market.



Graph 8: Annual Aflasafe sales in Burkina Faso



Like BAMTAARE and Harvestfield Industries Ltd, once the market potential is ascertained, SAPHYTO is committed to building an Aflasafe factory in Burkina Faso to assure product availability across the country.

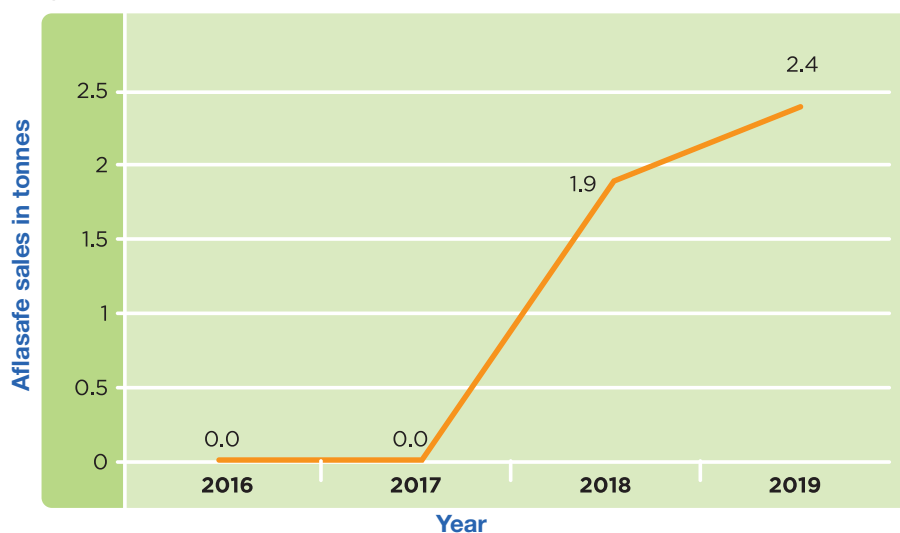
Ghana: work in progress

Like Burkina Faso, Ghana was a later entrant into the Aflasafe commercialisation programme, with the formal registration and launch of Aflasafe GH02 in mid-2018. Macrofert Ghana, a subsidiary of Louis Dreyfus Commodity, imported 20 tonnes to test the market and organise local distribution.

Results from this testing phase will inform further long-term engagement.

In the meantime, ATTC is working with Macrofert Ghana, public institutions and other development partners to raise awareness on aflatoxin across the country.

Graph 9: Annual Aflasafe sales in Ghana



Mozambique

Following registration of two Aflasafe products in February 2019, we are currently at the stage of mobilising potential investors for commercial deployment.

3 Challenges

3.1 Food safety does not sell

Aflasafe is admittedly a difficult product to market, since aflatoxin contamination is invisible, and a safe harvest looks no different.

Sadly, it is also true that toxic grain can quickly be sold on African markets, making it difficult – if not impossible – to easily and readily trigger any economic incentive for farmers and farm businesses to invest in Aflasafe.

In most cases, only ‘sophisticated’ industrial and institutional buyers and exporters are aflatoxin-conscious due to the strict requirement imposed by self-regulation, or by the markets in which they operate. These large businesses (or premium markets) are currently the strongest drivers for Aflasafe adoption.

However, they represent only a small fraction of the addressable demand for the product.

3.2 Struggle to ‘invent’ new marketing and business development strategies for Aflasafe

In all countries, manufacturing and distribution partners at first assumed the standard marketing and sales plan they have successfully used for other product lines would also work for Aflasafe.

Consequently, the business-development function is quasi-absent in a number of the companies, with Aflasafe being handled by sales officers who, understandably, first prioritised existing business lines generating rapid and guaranteed revenues that would help them meet their sales targets.

Our partners first leaned on pure ‘push’ strategies such as direct sales, without significantly investing in the ‘pull’ side to grow the new business that this new product represented.

Mixed reactions from the market forced the companies to constantly adjust their business-development and marketing strategy.

4 What are we learning?

4.1 The business plan pitch and investor selection process was transparent, and the TTLA is an appropriate tool to reconcile IPGs and the profit incentive for private-sector investment

One of the major concerns at the beginning of this journey was the compatibility between IPGs and commercialisation.

The CGIAR Intellectual Asset Policy provides for the possibility for Limited Exclusivity Agreement for innovations that would otherwise not reach intended beneficiaries. ATTC uses this policy around exclusivity to protect private companies willing to invest in the manufacture and distribution of the product.

However, in order to protect the public interest, ATTC builds into the TTLA key performance

indicators (KPIs), targets and pricing parameters. One concern during the process is how to know whether the potential investors would be able to meet potential KPIs and pricing parameters that would be acceptable to the market – and in line with the public good.

The business plan pitch and investor selection process offers a platform for eligible parties to pitch for the opportunity. It also allows ATTC to engage with the potential investors, understand their business processes and their market engagement – getting to know a partner before the partnership.

4.2 The right mix of policy and market incentives to accelerate uptake

Since food safety is not as rigorously regulated as it should be in most countries, the private-sector players interested in upgrading the agricultural value chains should themselves send a strong signal to farmers and intermediaries by rewarding quality.

To sustain such action, and thus assure safe food for all, governments should formulate and enforce appropriate food-safety policies and regulations.

Last but not the least, collaborative partnerships between the public and the private sector to sensitise value-chain actors and food consumers might increase the demand for safe food, and thus, for Aflasafe.

4.3 While the technology is at the heart of the commercialisation, it is the suitability of the business-development and marketing strategies that make the difference

Aflasafe is not a traditional agricultural input in the sense that it does not increase yield, nor is it designed to do so.

Regardless of its effectiveness, it is the ability of the businesses to demonstrate and deliver tangible value to customers through the most effective business-development strategies model that will trigger, capture and sustain use at scale.

4.4 Start with the right segments and tailored business cases

The level of awareness about aflatoxin is low and highly variable within and across countries.

The pain of aflatoxin contamination is also at different levels for different stakeholders.

Therefore, as part of the business-development effort, companies should focus first on ‘pain spots’ – segments of the market that are highly affected and willing to pay for the solution.

By first focusing on these segments which are low hanging fruit, companies are assured of revenue streams, while they are investing and developing strategic partnerships to unlock the other more elusive market segments.

5 What next for the expansion of Aflasafe across Africa?

As anticipated, our journey has not been without challenges inherent in the nature of the problem (aflatoxin) and the technology (Aflasafe).

Nevertheless, the commercialisation of Aflasafe is taking shape across the continent as a sustainable market-driven approach to scaling Aflasafe and a solution to the aflatoxin problem.

We now have a growing set of private-sector partners taking the lead in organising product availability, and directly engaging the agricultural value-chain actors, public institutions and NGOs to facilitate farmer access to the product.

We need to build on the momentum created to expand the partnerships in order to overcome the challenges and to reach scale.

As such, during the next five years, our priorities are as follows below.

5.1 Advocate for the development and enforcement of aflatoxin-control policies

Aflatoxin control is a ‘shared responsibility’ between consumers, businesses and government, with the latter as the indispensable fulcrum, bearing the significant and facilitative role.

Capitalising on the momentum created, we will work with identified key influencers to unlock the opportunities in the other segments, which represent the largest proportion of the potential demand.

Through these engagements, we will also catalyse public-private led education and awareness-raising on aflatoxin and its control.

With the introduction of the African Food Safety Index by the African Union to monitor food safety of member states, we will work with national regulators to strengthen aflatoxin-related food-safety systems by introducing Aflasafe as a proven strong aflatoxin management tool.

5.2 Finalise the transfer of know-how to manufacturing and distribution partners

We will continue targeted support to partners to ensure the delivery of a quality product into the market, as explicitly provided for in the TTLA.



5.3 Expand the countries covered through TTLAs, through existing or new commercialisation partners

Aflasafe products are being developed in new countries.

Drawing from the experience gained over the last four years, we will facilitate partnerships with the private sector for product delivery in these countries.

Where possible, we will extend the licence to existing partners to cover new countries and crops once they demonstrate ability to grow the business line in the respective country.

5.4 Strengthen capacity to manage and develop relationships with commercial partners

We will not only secure and assure institutional memory of the knowledge acquired in the commercialisation of Aflasafe within IITA, but also build the capacity required to strengthen existing commercial partnerships, and to forge new ones.

5.5 Improve the technology

As the products are being used at scale in different conditions, we will use the feedback from the market to inform the scientific agenda in terms of product improvement, how to optimise manufacturing, and context-specific agronomic recommendations.

This brief was a key resource at the *1st Aflasafe for Africa conference, fighting aflatoxin in food*, held in November 2019.



The conference logo depicts Africa, the focus of Aflasafe. The rising sun, represents a new aflatoxin-safe dawn for Africa, protected by the in-palm 100%-natural Aflasafe®. Groundnuts, maize and sorghum fall under the protection of our green product, with green representing both the lush landscape as well as symbolising safety. The protective and unbroken stout green sweeping bands represent the guarantee and continuity of Aflasafe, fighting aflatoxin from plot to plate to stop contamination from reaching dangerous levels in the food we eat.



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