



A POLICY BRIEF

Assessment of Aflatoxin Using the OPERA Framework

A policy brief developed by The Joint Advocacy Project on Aflatoxins Control (JAAC) awarded under The USAID funded-Feed the Future Uganda Institutional and Systems Strengthening Activity.





Key Messages

- Aflatoxin contamination of major staple foods and animal feeds has been on the increase, leading to a number of rejections at the regional and international markets.
- In March 2021, Kenya banned importation of maize from Uganda, noting there had been an acute increase in chronic aflatoxin in the maize products.
- In May 2023, the South Sudan Bureau of Standards impounded 62 Uganda trucks loaded with maize grains after a lab test found the items contained dangerous aflatoxins.
- In April this year (2024), the United Grain Millers Association (UGMA) warned of high aflatoxin in Ugandan maize circulating in Kenya and emphasized that maize meal consumers in Kenya could be exposed to high-levels of aflatoxin in maize imports trickling in from Uganda.
- In a recent study supported by USAID Feed the Future (FtF) Uganda Agriculture Research Activity conducted in 2022, aflatoxin levels determined in maize, sorghum, and groundnuts from Central, Eastern, and Northern parts of the country showed that more than 50% of the samples had aflatoxin levels beyond the 10 ppb regulatory limits.

Introduction:

The right to adequate food is one of the most fundamental human rights crucial for the sustenance of the planet, and the prosperity of all people.

Globally, food safety is one of the most important challenges denying people the right to adequate food. The desire to have a safe food supply chain in Africa has been at the center of commitments adopted by the African Union Commission, and in 2022, to address and mitigate the public health concerns and economic costs of unsafe agricultural products, the AUC developed a new continental Food Safety Strategy for Africa (FSSA) 2022-2036.

Aflatoxins produced by *Aspergillus flavus* and *Aparasiticus* fungi that reside in soil, are highly toxic metabolites that affect the safety of food and feed in tropical and subtropical regions of the world, including Uganda.

During the Financial Year 2018/19, Uganda established the Strategic Action Plan for Prevention and Control of Aflatoxins (SAPPCA). The strategy had five (5) outcomes each with specific outputs, activities, and a budget attached.

There is a perception that the objectives of the 2018/19-2023/24 SAPPCA may not have been achieved over the five-year period since it expired in June this year (2024). Thus, an analysis of the SAPPCA has been done based on existing Outcomes, Policy Efforts, Resources, and Assessment (OPERA) mechanisms in place.

This policy brief provides a summary of the assessment of the implementation of the SAPPCA using the OPERA framework. The brief contains key messages, findings of the implementation of the policy, and key recommendations for future implementation for management and control of Aflatoxin in Uganda.



Key Messages

- Similarly, in the same study, high aflatoxin levels, beyond the 20 ppb regulatory limits were reported in different categories of animal feeds sold in Uganda.
- Aflatoxin contamination in maize, sorghum, and groundnuts increased government and household expenditure on health, reducing economic growth and employment by 0.147 and 0.107 percent for FY 2023/24, respectively.
- Tax collections and business sales are negatively affected by Aflatoxin contamination through export rejections.
- Government loses tax collections to a tune of UGX 32.8 billion, which is equivalent to US\$ 9.2 million over the modeled period (2023/24–2026/27).
- Aflatoxin contamination reduces trade and transport margins for the domestic and export markets by 0.035 and 0.345 percent, respectively, which slows down business activity. Sales to the industrial commodities contract by US\$ 15.6 million while sales of food crops decline by US\$ 2.2 million.
- The animal husbandry commodity sales are also consequently affected and decline to a tune of about US\$ 8.9 million, largely due to the reduced sales to households and to the meat and dairy processing firms.

Approach

Analysis of the SAPPCA was performed using the OPERA Framework, which is a step-by-step framework for assessing compliance with the obligation to fulfill economic, social, and cultural rights. The following steps were followed:

a) **Analysis of the Outcomes:** The participants assessed to what extent the outcomes (health, economic, social, and political) outlined in the SAPPCCA, have been achieved, clearly identifying the outcome, the targets, and the current status.

b) **Policy analysis:** This involved analysis of the global/international, continental, regional and national policy, and regulatory frameworks that the government of Uganda has developed, signed, or ratified to control aflatoxins since 2018/19, when the SAPPCCA was put in place, commitments made, and the extent to which commitments have been translated into reality.

c) **Analysis of Resource mobilization and budgeting:** This involved analysis of budget performance reports from relevant Ministries, Departments, and Agencies (MDAs) for the financial years from 2018/19 to 2023/24, when the SAPPCCA was launched and when it is ending, respectively.

d) **Assessment:** This involved an assessment of the state party obligations in ensuring the right to adequate food, and monitoring and evaluation mechanisms of the SAPPCCA to establish the systems put in place to ensure that the plan is being implemented. The assessment also generated a list of stakeholders involved in the prevention and control of aflatoxins.

Human rights-based approach in aflatoxin prevention and control

Based on the OPERA framework and using the human rights approach, in the context of aflatoxin prevention and control, food and nutrition programs should take into account the following principles:

- (i) Accountability of duty bearers and all actors involved in aflatoxin prevention and control within the wider context of ensuring food and nutrition security at all levels (household, community, and national);



Key Messages

- The effects of aflatoxins cause an increase in health sector sales by an additional US\$ 1.87 million largely due to medical purchases by households and government.
- Constraints hindering aflatoxin control and prevention in the country have been identified. These include effects of climate promoting *Aspergillus* spp infection and thus high chances of aflatoxin contamination, dominance of agriculture by smallholder farmers who practice subsistence farming using rudimentary technologies.
- Micro-Small and Medium Entrepreneurs (MSMEs) within the private sector are poor traders and processors who are less bothered with food and feed quality and safety.
- Inadequate food control system with laws and policies scattered among MDAs, poorly coordinated with minimum enforcement
- Aflatoxin testing is quite expensive, unaffordable by most farmers and traders, and the country at the moment has only two government accredited laboratories for aflatoxin testing.
- There is no simple testing equipment to be used by farmers before the produce enters the food chain.

- (ii) Responsibility of duty bearers and rights holders to ensure the respect, protection, and fulfilment of all persons right to aflatoxin-free food and feed;
- (iii) Participation and community ownership of the process, outcome, and benefits of the right to adequate food programs and initiatives;
- (iv) Transparency at all stages of management, policy, and financial investments in aflatoxin prevention and control;
- (v) Democratic governance based on the rule of law, Constitutionalism, respect of fundamental freedoms, and international human rights law;
- (vi) Legislative capacity that provides jurisprudence to all human rights affected by aflatoxin contamination;
- (vii) Independence of the Judiciary Arm of the State in aflatoxin prevention, and control;
- (viii) Freedom of the press and freedom of speech in reporting on aflatoxin contamination, prevention and control; and,
- (ix) Socio-economic and political empowerment of the vulnerable and hungry poor, especially vulnerable farmers and households, in aflatoxin prevention and control.

Findings of implementation of SAPPCA using OPERA Framework

I. Outcomes

a) Reduced levels of aflatoxins in susceptible foods and feeds: based on the findings from the most recent studies conducted around the country, aflatoxin contamination is still rampant in both food and feeds. This could be attributed to the narrow coverage of intervention programs due to budget limitations, variations in environmental conditions resulting from climate change effects, limited and uncoordinated enforcement, and limited awareness among the stakeholders. Thus; this outcome is not yet fully achieved, estimated at 30% based on the current findings.

b) Improved aflatoxin awareness across the entire food and feed system: Overall, MAAIF and civil society organizations have, over the course of SAPPCA, implemented many activities that have increased awareness among the key stakeholders. However, the IEC materials and the extension workers have not reached all the targeted beneficiaries due to



Key Messages

- Inadequate research funds from the Government, with the majority of the funding coming from development partners and the private sector.
- There is only one technology in the country that can decontaminate aflatoxin affected grains, and this is located in Soroti. It is quite far and expensive, unaffordable by the farmers and MSMEs who dominate the grain value chains. This has led to rejection of the produce within the EAC region and beyond.

limited resources. It is estimated that about 40% of the stakeholders in Uganda are aware of the aflatoxins and their effects.

c) **Reduced impact of aflatoxins on human and animal health:** Given the liver cancer incidence data obtained from both national and regional data bases, it is clear that cancer cases and other aflatoxin related illnesses in both humans and animals are on the increase. Therefore, the expected target of a 20% reduction in the prevalence of aflatoxin related illnesses by 2025 is not yet achieved.

d) **Improved compliance to aflatoxin regulations and standards:** The export rejections are a clear testimony that not much progress has been made in ensuring compliance with national and regional standards. Thus, the target of at least 80% of stakeholders adhering to aflatoxin regulations was not met. It is estimated that 40% of stakeholders are adhering to aflatoxin regulations.

e) **Aflatoxins prevention and control activities effectively implemented and coordinated:** The National Aflatoxin Technical Working Group (NATWG)

and Mycotoxin Mitigation Steering Committee (UMMSC) established to coordinate stakeholders that are working towards mitigation of aflatoxins, have been inactive. Even among the key government ministries of Health, Agriculture and Trade, no clear coordination mechanisms exist. Thus, the target of aflatoxins mitigation interventions being well coordinated and monitored by 2022 was not met and the report cannot score the achievement at all.

Policy Effects:

- Uganda as a country is signatory to a number of regional, continental, and global regulatory frameworks, although mainly in the form of standards. Whereas the country has adopted and harmonized most of the aflatoxin-related standards for foods and feed across the EAC region and beyond, enforcement of these standards is still a major challenge in the country, contributing to non-compliance and high rejection levels at regional and international markets.

- Six (6) relevant national policies and laws (UNAPII 2020/21-2024/25, National Seed Policy 2018, Plant Health Act (amended 2023), Fisheries and Aquaculture Act (2022), NEMA Act (2019), and Animal Feeds Act 2024) have been established since the 2018/19-2023/24 SAPPCA was launched. None of these directly included aflatoxin control and management.



- The other policies and regulations have generally been observed to be more than 5 years old and not effectively aligned to the national development plan and issues on aflatoxin control in the country.
- Key strategies supporting food safety and quality have also expired.
- The majority of the laws and policies are not adequately enforced and implemented, leading to low levels of compliance, the presence of counterfeits, poor-quality foods, and increasing levels of rejections at the regional and international markets due to aflatoxin contamination.
- This implies that the food control system in Uganda has not adequately addressed activities included in the 2018/19-2023/24 SAPPACA.

Resources:

- A review of the national budget for the fiscal years 2019/2020-2023/2024 indicated that there were no specific budgets allocated to implementation of SAPPACA in line with its thematic areas.
- While a number of activities that are related to the prevention and control of aflatoxins were undertaken by the key Ministries of Agriculture, Health, and Trade, the amount of money allocated to such activities could not be easily calculated since the budget performance reports focused on outputs that were not aligned to SAPPACA.
- The funds allocated to activities that are related to prevention and control of aflatoxins undertaken by the key sector ministries and departments, could not be easily estimated since the budget performance reports focused on outputs that were not aligned to the Strategy.

Assessment:

- During the analysis, it was established that the country-initiated mechanisms and systems to implement the aflatoxin control and management strategy. These included the establishment of 2 committees (the National Aflatoxin Technical Working Group; NATWG and the Uganda Mycotoxin Mitigation Steering Committee, UMMSC).
- Launching of the Joint Advocacy on Aflatoxin Control and Management (JAAC) campaign by the Food Rights Alliance from FY 2023/24 with support from USAID FtF ISS.
- Indirectly addressing aflatoxin issues through other Technical Committees, for instance, the UNBS Technical Committee (TC 201) on cereals, legumes, and related products, as well as that on cassava and products, charged with reviewing and establishing of standards for these commodities.
- However, the NATWG and UMMSC have been inactive, requiring resources to effect their terms of reference, including coordination of aflatoxin activities in the country.
- Furthermore, analysis showed that a number of stakeholders are partnering with MDAs in addressing aflatoxins challenges in the country. These include development partners, the private



sector, civil society organizations/non-government organizations, research institutions, the Consultative Group on International Agricultural Research (CGIAR), academia, and the media.

Recommendations:

- Based on the findings, it is recommended that there is the need to revise the SAPPCA to align it with the MAAIF budget. This will ensure that the aflatoxin mitigation strategies are integrated within the ministry budget and will be able to roll-over for different financial years.
- To minimize the economic and health impacts of toxins in Uganda, there is a need to strengthen the regulatory framework. An advantage could be taken of the on-going efforts to establish the Food and Agriculture Regulatory Authority (FARA) in the country.
- In the meantime, the enforcement of the existing UNBS standards should be strengthened by investing in human resources and quality infrastructure for monitoring aflatoxin and strengthening awareness of all the relevant stakeholders.
- There is the need to strengthen the monitoring and coordination of the different actors to ensure efficient utilization of resources and avoid duplication of activities. The coordination structures in place, such as NATWG and UMMSC, should be given adequate support to enable them to carry out their activities effectively.

Conclusion:

- The analysis of the outcomes of the 2018/19 SAPPCA has indicated that the Strategy has not been adequately implemented, and for this reason, aflatoxin contamination of food and feed has continued, causing significant impacts on the livelihoods of both humans and animals.
- The impacts are still on and will continue as long as effective management strategies to address the menace are not implemented.
- For the country to minimize aflatoxin contamination of food and feed, there is a need to address the identified constraints.
- It should be particularly noted that overall, the SAPPCA still provides relevant aflatoxin management strategies that can be put in place to significantly reduce the effects of this hazard in the country.
- In addition, it has been observed that the SAPPCA was designed as a “project” with short term outputs yet aflatoxin prevention and control require joint, long-term, multi-stakeholder, and sustainable approaches.