**Summary of the Tanzania Aflatoxin Control Action Plan**

June 2015

**Background**

The government of Tanzania developed the Strategic Aflatoxin Control Action Plan with support from the African Union Commission (AUC), through the Partnership for Aflatoxin Control in Africa (PACA) and using a consultative process involving a wide spectrum of stakeholders from within the country and abroad. These include the Ministry of Health and Social Welfare (MoHSW), the Ministry of Agriculture, Food Security and Cooperatives (MAFC), the Ministry of Industry and Trade (MoIT), the Prime Minister’s Office responsible for Government Business Coordination, the Prime Minister’s Office – Regional and Local Government Authority and President’s Advisor on nutrition. Other government agencies consulted were the management teams of the Tanzania Food and Drugs Authority (TFDA) (including the National Mycotoxin Steering Committee), the Tanzania Food and Nutrition Center (TFNC) and the Tanzania Bureau of Standards (TBS). District levels authorities consulted and from which rice samples were collected are Mbarali, Misungwi and Kilosa. In addition the consultants made a deep analysis of the data on aflatoxin knowledge and awareness that was collected from stakeholders in Bukombe, Njombe and Kongwa in the year 2012. Bukombe, Njombe and Kongwa are the districts from which information and samples were collected for assessment of the aflatoxin problem in maize and groundnut. The PACA secretariat, steering committee and contact points for Uganda and Malawi also contributed to the formulation of the Aflatoxin Strategic Actions.

The process of identifying concrete investment options was informed by findings of the Country Aflatoxin Assessment carried out in 2012 and the Aflatoxin Country Food Safety and Situation Analysis and Action Planning (C-SAACP) conducted in the year 2014/205 to supplement the 2012 assessment. In the latter assessment, there was a purposeful review of the existing food safety policies and those being developed to identify gaps that could be addressed to strengthen the food safety system of Tanzania.

The policies review catalyzed strategic actions in Tanzania by identifying existing programs that can integrate aflatoxin control measures, avoid duplication of efforts and provide the necessary input to align aflatoxin control with broader food safety and Sanitary and Phytosanitary (SPS) issues. In addition, the aflatoxin assessment looked at the economic burden of aflatoxins based on their impact on health.

Importantly, the supplemental aflatoxin situation analysis reviewed the TAFSIP document to identify areas into which aflatoxin measures could be mainstreamed. The analysis confirmed that, although factors related to food safety issues were mentioned in many areas of the TAFSIP document it does not explicitly mention food safety or to be more precise, the aflatoxin problem. A closely related priority investment area (Pillar III) that was identified in TAFSIP is about Food and Nutrition security whose strategic objective focused on enhanced household and national food and nutrition security. It was noted that, under the Key Results section (under Food and Nutrition Security thematic area) the need for Food Safety and Quality Policy is listed as a Policy and Institutional Consideration.

This document therefore aims to summarize the Tanzania aflatoxin control action plan which is being finalized by the Country level consultants based on the inputs of stakeholders during the validation of the action plan.

**Estimated health and economic impact for Tanzania**

* About 22,956,186 persons, aged 15 to 63 years are exposed to aflatoxins.
* Out of these persons, a median of 183 cases of liver cancer would result.
* A median total of 546,000 Disability-Adjusted Life Years (DALYs) would be lost because of morbidity and mortality from liver cancer.
* The total economic loss ranging between US$ 92,890,000 and 757,900,000 can result annually.

This economic loss indicates cost savings for the economy should efforts to reduce aflatoxin contamination and exposure be put in place and adequately monitored.

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| **Crop** | **Region** | **Range of Prevalence (%)** | **Range of highest contaminant (ppb)** | **Range of prevalence above regulatory limit (%)** |
| Maize | Manyara, Morogoro, Iringa, Mbeya, Rukwa, Kilimanjaro, Tabora, Shinyanga and Ruvuma | 35-95 | 8-1081 | 2-85 |
| Groundnuts | Mamyara, Ruvuma, Mtwara, Dodoma, Shinyanga | N/A | 31-123 | 18-20 |
| Rice | Mbeya, Sinyanga and Morogoro | 6-70 | 0.01-3.83 | None |

**Potential solutions for aflatoxin control in Tanzania**

A country-wide assessment of the Food Safety and Aflatoxin Situation in Tanzania helped identify opportunities for aflatoxin control in Tanzania in the three sectors of concern (agriculture, trade, and health) as well as in the education and research sectors.

An Aflatoxin Strategic Action Plan was developed to support implementation of the Tanzania Agriculture and Food Security Investment Plan (TAFSIP). The Aflatoxin intervention actions complement the Food Safety and Quality component of the TAFSIP, specifically, the Key results section under Food and Nutrition Security thematic area. The aflatoxin control action plan of Tanzania is summarised in the table below:

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| --- | --- | --- | --- | --- |
|  | **Intervention** | **Estimated cost****(TZS, Million)** | **Beneficiary sector** | **Responsible Ministry** |
| 1. | Improved regulatory system for aflatoxins in food | 1,550 | Health/trade | Ministry of Health & Social Welfare (MoHSW) |
| 2. | Farmers are enabled to comply with aflatoxin regulations | 4,835 | Agriculture | Ministry of Agriculture, Food Security & Cooperatives (MAFC) |
| 3. | Processors and traders enabled to comply with aflatoxin regulations and access markets | 700 | Trade | Ministry of Industry and Trade (MoIT) |
| 4. | Consumers enabled to minimize the risk of aflatoxin exposure and effects | 2.,050 | Health | MoHSW |
| 5. | Risk Assessment Institutional framework established | 2,550 | Agriculture/trade | MAFC and MoIT |
| 6. | Enhanced research on aflatoxin prevention strategies | 1,775 | Cross-cutting |  |
| 7. | Enhanced knowledge on aflatoxins | 5,900 | Education |  |
| 8. | Enhanced capacity on aflatoxin issues capacity | 980 | Cross-cutting |  |
|  | **TOTAL** | **20,340** |  |  |

The intervention areas of the aflatoxin control action plan of Tanzania were informed by the gaps and challenges in the current aflatoxin mitigation efforts in the country as identified in the C-SAAP report and summarised in table 2 below:

**Table 2: Challenges and recommended actions to overcome them**

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| --- | --- | --- |
| **SN** | **Challenge** | **Intervention** |
| **1** | **High prevalence of maize and groundnut with aflatoxin contamination above the regulatory limit** | **Improve aflatoxins risk management capacity**  |
| 1.1  | TFDA is a semi-autonomous body with a strong inclination to the MoHSW and a Ministerial Board without any representative from key ministries for food safety regulation (MAFC, MoLDF, MoIT and PMO-RALG), | Facilitate transformation of TFDA to establish an autonomous body, with a multi-sectoral food safety board, mandated to coordinate food safety and quality from farm to fork.  |
| 1.2 | Low budgetary allocation for aflatoxin management activities, particularly under the MAFC, MoLDF and PMO-RALG | Set a mechanism for resource mobilization for food safety activities |
| 1.3 | The National Mycotoxin Steering Committee cannot meet regularly due to limited budget | Increase support for operations of the National Mycotoxin Steering Committee |
| 1.4 | Tanzania has regulations on treatment and disposal for unfit foods but the regulations do not contain specific directives on how to handle aflatoxin contaminated foods | Improve regulations and procedures for product withdrawal, including alternative uses for contaminated food |
| 1.5 | There are no specific regulations for aflatoxins in foods | Formulate and enforce regulations for aflatoxins contamination in maize and groundnuts  |
| 1.6 | There is no regular plan or budget for monitoring of aflatoxins in the informal internal market. TFDA enforces commodity standards but mostly for packaged foods and foods bound for the formal export market; thus, the vast majority of foods consumed by the Tanzania population are not regulated for aflatoxin | Routinely monitor aflatoxins in the informal internal market, giving priority to cereal-based weaning foods |
| 1.7 | Aflatoxin analysis is centralized in Dar es Salaam (at TFDA) or Arusha (at NM-AIST) | Establish five zonal laboratories for aflatoxins screening in the country |
| 1.8 | TFDA formed a secretariat to the National Mycotoxin Steering Committee but the secretariat is also responsible for many other food safety issues | Establish a full time coordination office for aflatoxin activities; with a coordinator at TFDA and two advisors (one at TBS and another at MAFC) |
| **2** | **Tanzanian farmers cannot recognize aflatoxins contaminated harvest, nor do they face any restriction for aflatoxin-contaminated food.**  | **Farmers enabled to recognize the aflatoxin problem and take measures to comply with aflatoxin regulations**  |
| 2.1 | GAP guidelines with aflatoxin control measures are not available. Also farmers storage facilities are inadequate for protection of food from contamination | Integrate aflatoxin control measures in the GAP guidelines  |
| 2.3 | Formulate codes for prevention of aflatoxin contamination during transportation of food crops and feeds |
| 2.4 | Empower agricultural extension officers to disseminate information on aflatoxins measures in the GAP and Codes of Practices |
| 2.5 | Support dissemination of information on aflatoxins measures in the GAP and Codes of Practices |
| 2.6 | Develop models of improved postharvest handling facilities (e.g. improved threshing, drying, storage technologies) for use at community level  |
| 2.7 | Pilot and disseminate models of improved storage facilities for use at community level |
| 2.8 | The biocontrol technology which has been proven to be effective in Nigeria is not introduced in Tanzania | Develop bio-control for Tanzania, keeping in mind the cost implications for poorer farmers |
| 2,9 | Scale up biocontrol product within the country to benefit poor farmers |
| 2.10 | Develop capacity for evaluation of effectiveness and efficacy of bio-control products |
| 2.11 | There are no regulations for prevention of aflatoxin contamination in animal feed. Maize chaff generated by large millers is used by the feed industry as raw material and is not regulated or tested for aflatoxins, which raises concern for aflatoxin contamination in animal products, particularly milk and possibly eggs | Formulate specific regulations for aflatoxins in feed.  |
| 2.12 | Although the National Agriculture Policy (2013) is comprehensive enough to provide for regulatory and institutional frameworks which are needed for effective and efficient regulation and promotion of the safety and quality of agricultural products, strategies for its implementation is yet to be developed | Formulate strategies for implementation of food safety related policy statements of the National Agriculture Policy (2013)  |
| **3** | **No evidence of testing for aflatoxins in the domestic maize and groundnut markets in Tanzania** | **Enable processors and traders to recognize the aflatoxin problem and take measures to comply with aflatoxin regulations and access markets** |
| 3.1 | There are no incentives for testing; no difference in price between contaminated and non-contaminated food | Formulate market-based incentives for production of safer food |
| 3.2 | Disseminate market-based incentives for production of safer food |
| 3.3 | Only one food manufacturer has an HACCP based aflatoxin control plan | Develop guidelines for Good Manufacturing Practices (GMP)/ HACCP plan for aflatoxins control |
| 3.4 | Disseminate guidelines for Good Manufacturing Practices (GMP)/ HACCP plan for aflatoxins control |
| 3.5 | Although the Agricultural Marketing Policy (2008) is comprehensive enough to provide for regulatory and institutional frameworks which are needed for effective and efficient regulation and promotion of the safety and quality of agricultural products, strategies for ist implementation is yet to be developed. | Formulate strategies for implementation of food safety related policy statements of the National Agricultural Marketing Policy (2008).  |
| 3.6 | In Tanzania, food processors and distributors do not have a coordinated voluntary mechanism for self-regulation of safety and quality.  | Establish a voluntary mechanism for self-regulation of food safety and quality |
| 3.7 | Promote formation of cooperatives to enable processors and traders acquire improved produce handling technologies  |
| 3.8 | Regulatory inspection and enforcement in the informal market is non-existent in Tanzania | Work out innovative systems and pilot regulatory enforcement for the informal internal market |
| **4** | **There is virtually no demand for aflatoxin safe foods; the risk of exposure to aflatoxins is very high.** | **Consumers enabled to minimize the risk of aflatoxin exposure and effects** |
| 4.1 |  | Incorporate aflatoxins mitigation guidelines in the Infant and Young Child Nutrition guidelines |
| 4.2 | Facilitate access to Infant and Young Child Nutrition guidelines which contain aflatoxin mitigation measures |
| 4.3 | Disseminate the aflatoxins mitigation actions through the Infant and Young Child Nutrition guidelines |
| 4.4 | Promote dietary diversification as one of the measures to minimize aflatoxin exposure |
| 4.5 | There is no routine testing for aflatoxins in patients | Build capacity for monitoring aflatoxin exposure in patients |
| 4.6 | Monitor aflatoxin exposure in humans |
| 4.7 | Hepatitis A Virus (HAV) is not part of the immunization program and HBV vaccination coverage is limited | Include HAV vaccination in the national programs and achieve universal vaccinations for HBV, since liver cancer risk is 30 times higher in HBV-positive populations |
| **5** | **Tanzania does not have a formal food risk assessment system which is independent of the risk management system** | **Establish an independent risk Assessment Institutional framework**  |
| 5.1 | Tanzania does not have a policy which provides for establishment of a food risk assessment body  | Finalize formulation of the Food Safety and Quality Policy in which all issues of necessary for food safety risk analysis (Risk Assessment, Risk Management and Risk Communication) will be addressed including a clear separation of risk assessment from risk management mandates. . |
| 5.2 | Establish an autonomous food risk assessment body |
| 5.3 | Hire staff for the Risk Assessment body |
| 5.4 | Provide for office space and facilities for the risk assessment body |
| 5.6 | Provide in-service training on risk assessment for aflatoxins |
| 5.7 | Develop aflatoxin risk assessment protocol for Tanzania |
| **6** | **There are very limited research activities on aflatoxins** | **Enhance research on aflatoxin risks and prevention strategies** |
| 6.1 | Tanzania has not conducted an evaluation of the safety and environmental impact of the biocontrol technology which has been proven to be effective in Nigeria  | Perform independent health risk assessment for crops produced using the bio-control technology |
| 6.2 | Perform independent environmental risk assessment for crop production using the bio-control technology |
| 6.3 | Develop capacity for evaluation of effectiveness and efficacy of bio-control products |
| 6.4 | Aflatoxin hotspots and risk factors are not well understood | Map and continuously update the risks of aflatoxins contamination and exposure in Tanzania |
| 6.5 | There are no well-established alternative uses for aflatoxin contaminated foods | Develop cost effective alternative uses of aflatoxin contaminated produce  |
| 6.6 | Although there are ongoing researches for aflatoxin resistant maize varieties, the efforts have not yet produced fruits | Continue research efforts for breeding maize and groundnuts with aflatoxin resistance for availability in the longer time horizon |
| **7** | **Very low level of aflatoxin knowledgeable individuals** | **Enhance knowledge on aflatoxins through targeted awareness mechanisms for focus groups** |
| 7.1 | Aflatoxin knowledge is not taught at primary or secondary level schools | Include aflatoxin related aspects in agriculture and health subjects taught at primary and secondary schools |
| 7.2 | Build capacity of teachers on aflatoxin knowledge and communication |
| 7.3 | Curricula for some agriculture and health undergraduate students do not contain specific content on aflatoxin risk and management | Review curricula for undergraduate and graduate programs on agriculture and health to incorporate components of aflatoxin prevention and control |
| 7.4 | Conduct short courses to processors and produce dealers in quality control and assurance with respect to aflatoxin contamination |
| 7.5 | Conduct short courses to district extension workers to build their capacity for training farmers on management of aflatoxins |
| 7.6 | Train at undergraduate levels, people who will perform risk assessment and management for aflatoxins in Tanzania |
| 7.7 | Aflatoxin risk assessment experts are very few in Tanzania” | Train at postgraduate levels, people who will perform and build a career on risk assessment and management for aflatoxins in Tanzania |
| 7.8 | Low level of awareness of the aflatoxin problem among health practitioners (e.g. doctors, nurses, public health officers and laboratory technologists) | Conduct periodic trainings for medical experts to enable effective preventive strategies for aflatoxin monitoring via the health sector (e.g. free testing or monitoring of serum Af-alb levels in pregnant mothers and children as well as on-point/early aflatoxin screening for patients showing early signs of liver problems); this will inform early preventive or remedial measures (counseling for dietary restrictions and diversification). |
| **8** | **There is very low awareness on the aflatoxin issues** | **Improve communication on aflatoxins issues** |
| **8.1** | **There is no standardized way for communicating the aflatoxin risk without scaring the public** | **Enhance capacity for a holistic communication about aflatoxins** |
| 8.2 |  | Train communication specialists (media presenters, journalists, farmers organizations, youth volunteer groups or undergraduate interns) on the economic and health risks of aflatoxin exposure and best practices for aflatoxin control for information dissemination to farmers. Enable communication experts to select most appropriate communication mechanism. |
| 8.3 | Develop information, education and communication materials |
| 8.4 | Conduct advocacy and public awareness raising campaigns | Conduct programs for advocacy about aflatoxins through a coordinated effort involving the trade, health and agricultural partners.  |
| 8.5 | Conduct programs for raising public awareness about aflatoxins through a coordinated effort involving the trade, health and agricultural partners.  |
| 8.6 | Conduct annual scientific forum for sharing aflatoxin information |