

Strengthening the Capacity of Food Safety in Zambia

Introduction

Zambia is heavily reliant on agriculture, with a significant proportion of the population dependent on farming for income and subsistence. It is an essential sector for socioeconomic development and progression towards achieving the Sustainable Development Goals. The country developed the Vision 2030 in 2006, which is pursued through discrete National Development Plans.

Among other things, the eight National Development Plan (8NDP) outlines the country's priorities in Agriculture, Water Sanitation and hygiene (WASH), and nutrition. With rapid urbanization, changes in dietary habits, and the growing importance of food exports, it is crucial to ensure that the food supply is safe for consumers. The increasing incidence of foodborne illnesses and contamination has raised concerns about the safety of food consumed by Zambians.

The Zambian government has made efforts to strengthen food safety systems, but challenges remain in ensuring the protection of public health and securing the competitiveness of the country's food exports.



Formal and Informal Food Supply Chains

Food in Zambia is sourced from either the formal or informal food supply chain. Both sources play crucial roles in ensuring food security, supporting livelihoods, and contributing to the national economy.

The formal food supply chain comprises local and international registered businesses that follow and strive to comply with legal food safety requirements. The food sold in the formal supply chain is of high quality and attracts higher prices. As a result, it primarily serves individuals with higher disposable income. Research indicates that only one percent of households in the lowest income group purchase staples from supermarkets, compared to 28 percent in the highest income group.¹

The formal food supply chain is fragile in times of external pressures, as seen during the COVID-19 pandemic when food imports and international trade were disrupted.²

The informal food supply chain is a cornerstone of Zambia's food system, especially in urban areas where it serves low-income households. It is a convenient source of food and offers unparalleled diversity, accessibility, and affordability among lower-income groups. It includes small-scale farmers, street vendors, and local markets that operate outside formal regulatory frameworks. Informal food markets offer a diverse range of affordable and accessible food products, including fresh fruits, vegetables, and meats, thereby enhancing dietary diversity and nutrition.³

Despite its importance, the informal food supply chain faces challenges such as poor hygiene, inadequate infrastructure, limited policy and regulatory support, and weak organisation.⁴

Food Safety Situation in Zambia

Foodborne diseases have been a persistent public health concern in Zambia, causing significant morbidity, mortality, and economic costs. These diseases, often caused by the ingestion of contaminated food or water, include bacterial, viral, and parasitic infections. With the growth of Zambia's population and its reliance on agriculture, coupled with inadequate food-handling practices and environmental factors, foodborne illnesses continue to challenge the country's healthcare system and economy.

Over the past 10 years, Zambia has witnessed several outbreaks of foodborne diseases, with the most common being cholera, typhoid fever, salmonella, and aflatoxicosis. Zambia faced one of its most severe cholera outbreaks in 2017, with over 3,000 reported cases and at least 72 deaths, mostly concentrated in Lusaka, the capital city.⁵



Furthermore, Zambia's food exports to regional and international markets are at risk due to concerns over food safety, which could undermine the economic benefits derived from agriculture and trade.

A cholera outbreak in Lusaka in 2020 resulted in 2,141 cases and 68 deaths. The disease spread due to contaminated drinking water and poor hygiene practices in informal settlements. This outbreak was particularly devastating due to the strain it placed on the health system during the COVID-19 pandemic. Typhoid fever, caused by the bacteria *Salmonella typhi*, is another recurring foodborne disease in Zambia. The infection is often transmitted through the consumption of contaminated food and water, and it remains common in regions with poor sanitation and inadequate access to clean water.

Between 2015 and 2020, Zambia witnessed several localised outbreaks of typhoid fever, with high case numbers recorded in Lusaka and the Copperbelt regions. In the

last decade, there has been a steady increase in reported cases of *Salmonella* infections as well as aflatoxicosis due to the consumption of aflatoxins.

According to the Ministry of Health 'Cholera Outbreak Report 2017, the Zambian government spent approximately US\$12mn on the cholera outbreak response alone in 2017, including costs of healthcare and sanitation infrastructure. ([Ministry of Health, Zambia. \(2017\). Cholera Outbreak Response. Lusaka, Zambia.](#))

Foodborne diseases continue to pose a significant threat to public health and the economy in Zambia. The country has made notable strides in improving its response to outbreaks, particularly cholera and typhoid fever. However, foodborne illnesses remain a persistent issue, exacerbated by weak enforcement of food safety standards, inadequate public awareness, and challenges in managing the informal food sector.

To mitigate the burden of foodborne diseases, Zambia must focus on strengthening its food safety infrastructure, enhancing public health education, improving regulatory enforcement, and addressing the long-term risks posed by aflatoxins and poor agricultural practices.

Legal and Institutional Arrangements

Zambia's legal and institutional framework for food safety is structured to protect public health and ensure the integrity of food products throughout the supply chain. The country's food safety framework is anchored by the Food Safety Act No. 7 of 2019, which aims to safeguard the public against health hazards and fraudulent practices in the manufacture, sale, and use of food. Key provisions include:

The Act mandates a streamlined process for regulatory clearances concerning food premises, ensuring that facilities involved in food handling meet prescribed health standards. It prohibits the sale, import, export, manufacture, or storage of food that is unsafe, contaminated, adulterated, or contains harmful substances. The Act establishes the Food Safety Coordinating Committee and the National Food Laboratory to oversee and coordinate food safety measures.⁶

Several institutions are pivotal in implementing and enforcing food safety regulations in Zambia. The Food Safety Coordinating Committee (FSCC), coordinates activities and responses related to food safety among enforcement agencies, ensuring a unified approach to food control. The National Food Laboratory is responsible for testing and

analyzing food samples to ensure compliance with safety standards, supporting enforcement actions, and providing scientific data for policy formulation.

The Zambia Bureau of Standards (ZABS) develops and implements standards across various sectors, including the food industry. It provides standardisation services such as testing, inspection, and certification of food products to ensure they meet established safety and quality standards. The Zambia Medicines and Regulatory Authority (ZAMRA) regulates food supplements and fortified foods, ensuring they are safe for consumption and accurately labeled. Municipal and district councils play a role in inspecting food premises, enforcing hygiene standards, and issuing health permits to food business.⁷

Key Challenges

1. **Weak Enforcement and Coordination:** Despite the existence of regulatory frameworks and various institutions involved in food safety management, enforcement of the legal requirements and coordination are inadequate. The poor coordination among the various institutions results in inefficiencies and overlaps in responsibilities.
2. **Resource Constraints:** Inadequate human resources and the limited financial resource allocation to food safety programmes lead to limitations in the extent to which interventions such as inspections, testing surveillance, awareness, and regulatory oversight can be performed. The two challenges also affect the effectiveness and timeliness of food safety activities. In addition, poverty and food insecurity make a large number of households purchase and consume unsafe or substandard food because that is what they can afford.
3. **Water, Sanitation and Hygiene:** The root cause of foodborne illnesses in Zambia is usually contamination due to poor Water, Sanitation and Hygiene (WASH) practices. Access to clean water and proper sanitation facilities for the many vendors throughout the country is inadequate. Vendors also have limited access to refrigeration facilities for foods such as fresh vegetables and meat.
4. **Lack of Proper Food-Handling Practices:** Many food handlers in Zambia, especially in the informal sector, lack training in food safety. This results in unsafe food preparation and storage, contributing to foodborne disease outbreaks.

5. **Limited Public Awareness:** While there is some public awareness about foodborne illnesses, many producers, consumers, traders/vendors, processors, and food handlers either have limited or no knowledge of good food hygiene and safety practices. The lack of knowledge and low public awareness significantly raise the risk of food contamination at each stage of the food supply chain. The risk is more serious in the informal food supply chain, which accounts for the larger portion of the food supplied and consumed in the country.
6. **Aflatoxins and Pesticide Residues:** The contamination of food with aflatoxins (produced by certain molds) is a persistent problem in Zambia. Aflatoxins are commonly found in maize, groundnuts, and other crops and can lead to serious health problems, including liver cancer. The use of unsafe pesticides and fertilizers in food production also poses health risks to consumers.
7. **Inadequate Laboratory Capacity and border controls:** Zambia's capacity to test food for contaminants, such as bacteria, pesticides, and heavy metals, is limited. This hinders the country's ability to monitor food safety across the supply chain effectively. Weak border controls and inspection systems, coupled with inadequate resources, increase the risk of entry of unsafe food into the Zambian market.
8. **Global Trade Barriers:** The country's ability to access international markets for agricultural exports is compromised by food safety concerns. The European Union, for example, has stringent regulations regarding pesticide residues and food safety, which Zambian exporters must comply with to maintain access to these markets. Zambia faces strict international food safety regulations, affecting its ability to access markets, particularly in the EU.⁸

Recommendations

1. **Strengthen Inter-Agency Coordination:** Improve coordination between agencies involved in food safety, including the Zambia Food and Drug Authority (ZFDA), the Ministry of Health, and the Ministry of Agriculture. This could be done by establishing a dedicated food safety coordination body to streamline activities and improve communication among stakeholders.

2. **Enhance Regulatory Enforcement:** Strengthen the enforcement of food safety regulations by increasing the capacity of food inspectors and providing them with the necessary resources to carry out their duties. This could include investing in better training and expanding laboratory infrastructure for testing food products.
3. **Public Education Campaigns:** Launch nationwide campaigns to raise awareness about food safety. These should target both consumers and food producers, emphasizing proper food handling, storage, and the risks associated with contaminated food. Schools, marketplaces, and media outlets could be used as key platforms to disseminate information.
4. **Invest in Food Safety Research and Technology:** Invest in research to identify and mitigate foodborne risks, including the development of low-cost technologies for detecting contaminants such as aflatoxins and pesticide residues. The government should also encourage the use of improved agricultural practices that minimize contamination risks.
5. **Improve the Informal Food Sector:** Create policies and incentives to support good food safety practices within the informal food supply chain. This would include providing food safety training to vendors, setting up health and safety standards for street food, and offering affordable certification schemes for small food enterprises.
6. **Strengthen Export Compliance:** Strengthen collaboration with international bodies to ensure that Zambia's food exports meet global food safety standards. This could include improving traceability systems, investing in food safety certifications, and providing support to farmers and exporters in complying with international standards.
7. **Improve resource allocation for food safety:** Increase the allocation of financial and human resources for food safety management. The government could consider increasing the budget allocation and also leveraging resources from the public-private sector collaborations, as well as international community.

Endnotes

1. Mulenga, C. *The State of Food Insecurity in Lusaka, Zambia*. Kingston: African Food Security Urban Network, 2013.
2. Manda, S. "Inside Zambia's 'new normal:' COVID-19 policy responses and implications for peri-urban food security and livelihoods." *Journal of International Development*, 2022.
3. Chirwa, M., and Mukumba, C. *Harnessing the Potential of Zambia's Informal Food Sector*. International Institute for Environment and Development (IIED), 2019.
4. Ibid.
5. Ministry of Health. *Cholera Outbreak Report*, 2017.
6. Government of Zambia. *Food Safety Act No. 7 of 2019*.
7. Zambia Bureau of Standards. *Food Safety Regulations Report*, 2021.
8. European Commission. *Food Safety and Export Compliance Report*, 2022.