



Overview of Nigerian Food Safety Legislation

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Abstract

According to the World Health Organization (WHO), about 1 in 10 people in the world fall sick after eating contaminated food. Despite poor data collection on foodborne disease outbreaks, evidence exists to show that these contribute to ill health and death in Nigeria as well as reductions in productivity and economic growth. With funding from the United States Agency for International Development (USAID), an assessment of food safety legislation and efforts in Nigeria was undertaken by the Global Alliance for Improved Nutrition (GAIN) through the EatSafe: Evidence and Action Towards Safe, Nutritious Food program. In addition to a desk review of the legislation, regulations and standards, consultation with selected food safety stakeholders was undertaken to obtain their opinions on the status of food safety legislation and efforts in Nigeria. This involved virtual and in-person meetings with officials in relevant government Ministries, Departments and Agencies (MDAs), Non-Governmental Organizations (NGOs) and Food Business Operators in the Federal Capital Territory (FCT), Kebbi and Nasarawa States. Findings revealed that Nigeria currently operates a multiple agency Food Safety Control System which is mostly sectorial in nature. Many of the definitions of terminologies used in the body of the legislation are often vague, confusing, and not fully aligned with Codex or other international standard bodies. Of the existing legislations relating to food safety, 14 out of 16 (87.5%) were enacted 10 to 100 years ago, and some are overdue for review or repeal. Nigeria's Food Safety and Quality Bill produced in 2016 is still awaiting passage into law (Act) in the National Assembly as HB.19.01.1598 as at the time of this study. Nonetheless, Nigeria needs to maintain effective food safety legislation and the accompanying regulations and guidelines. Moreover, the legislation should adequately address the whole range of food

safety concerns in the food supply chain; including the traditional food sector that has been hitherto neglected.

Keywords: Codex Alimentarius Commission; EatSafe; Food Safety; Food Safety and Quality Bill (FSQB); Implementation; Legislation; National Policy on Food Safety and its Implementation Strategy (NPFSSIS); Nigeria; Traditional market

Introduction

Nigeria is a naturally endowed agricultural country, with huge potential to become Africa's regional hub for food production, manufacture, and trade [1]. However, with the Nigerian population growing rapidly, the provision of safe, nutritious food is increasingly becoming a major challenge [2]. Food production, processing, and marketing systems in Nigeria are complex and highly fragmented, comprising of many smallholder farmers, working with small scale and artisanal food processing outfits, which predisposes large quantities of food to pass through a multitude of food handlers and middlemen, resulting in high postharvest losses, storage challenges, and food safety issues [1].

Food safety is a significant public health concern because of its direct relationship with people's lives and health [3-15]. Food safety control covers prevention, reduction, or elimination of risks from contaminated foods, justifying the need to safeguard the quality and safety of Nigeria's food supply both for domestic consumption and for export. Foodborne illnesses, which may result from the consumption of food contaminated by microbial pathogens or toxic chemicals, range from mild and self-limiting, to serious and life-threatening cases resulting in death [3, 7, 10-12, 15-18].

Food safety legislation is an essential component of a modern national food control system that provides a foundation for food business operations to assure effective protection of the health of consumers [4-5, 7, 17, 19]. Thus, it is imperative for national governments to have the capacity to develop, implement and enforce sound food safety legislation to protect public health and facilitate food trade within its territorial boundaries. Both globally and nationally, food safety is an essential component of public health protection that enhances confidence in the safety and integrity of the food supply chain and assures consumer protection [20].

Nigeria operates a mixed legal system [21, 22] and a presidential system of government, where the Nigerian constitution allows the Federating Units (Federal, State and Local government) concurrent powers to legislate on issues relating to public health, agriculture, and food independent of each another. Consequently, Nigeria operates a multiple agency system of food control that is sectoral and fragmented between the three tiers of government i.e. Federal, State and Local Government Area Councils, respectively [23,24]. The first legislation, the Public Health Ordinance, was enacted in 1917 [6-7, 10, 17, 23].

Reported instances of poor food safety practices and the rising incidences of foodborne disease outbreaks has raised doubt in the citizenry as to the effectiveness of the existing food safety legislation and efforts in Nigeria [3, 6-7, 10, 19, 17, 26]. To mitigate these growing concerns, the Federal Government of Nigeria, in partnership with critical stakeholders in the food chain, developed the National Policy on Food Safety and its Implementation Strategy (NPFSSIS) in 2014. It aimed to provide the needed framework to modernize the country's food safety control and management system in line with international best practices. As a follow-up to this development, the Food Safety and Quality Bill (FSQB) was drafted in 2016 to usher in an integrated approach to food safety control and management in Nigeria. The bill is still at the National Assembly (NASS) awaiting final steps required for its enactment into law (Act) of the Federal Republic of Nigeria.

Globally, the widely accepted principles of food control systems include 1) the role of scientific evidence and use of the risk analysis framework to make food safety decisions 2) structures to achieve prevention and control along the entire food value chain and 3) ensuring that food chain operators realize that the primary responsibility to ensure safe and good quality foods rests on them. A well-planned and structured food control system should give rise to a suitable national system developed in line with international best practices and harmonized with Codex standards and World Trade Organization (WTO) requirements (5, 10, 15). Nigeria is obligated to protect human, animal and plant life and health as a member of the Codex Alimentarius Commission and the World Trade Organization. According to Codex, national food control systems should be designed, implemented, and maintained to protect the health of consumers and ensure fair practices in trade [4-5, 7,

17, 19, 27]. This requires food laws, regulations, and standards that prohibit the production and sale of unsafe and substandard food and food products. Thus, a food safety system should be based on prevention, provide coverage over all sectors in the food chain, operate in an integrated manner, and address all stages of the production chain. Thus, national governments have a mandate to ensure the health of the population, including the provision of safe and nutritious food. To do so, a national food safety control system needs to be in place that keeps pace with the present environment in the food safety arena while addressing new challenges that impact on public health [4-5, 7, 10, 17, 19]. Confidence in the safety and integrity of the food supply has become increasingly important to consumers in the last few years. Foodborne disease outbreaks involving agents of foodborne diseases such as bacteria, viruses and chemical contaminants highlight problems with food safety and increase public anxiety. Thus, the development of relevant, effective, and enforceable food laws and regulations is an essential component of a modern food control system [4-5, 7, 17, 19].

Antiquated food safety laws in many countries, including Nigeria, are reactive rather than proactive in nature, and they tend to be focused on the final products only. For example, enforcement tools target removing unsafe food from retail markets and punishing responsible parties after the lengthy fact-finding process. These laws do not provide food control agencies with a clear mandate and authority to implement preventive control programs, which are a more holistic approach to reduce the risk of foodborne illness. Modern food laws should not only contain necessary legal powers and prescriptions to ensure food safety, but also allow the competent food authority or authorities to build preventive approaches into the system [5, 7, 10, 19, 23].

Some of the food safety issues in Nigeria requiring attention are:

- Nigeria has a long history of food legislation dating back to 1917, when the Public Health Ordinance was enacted. Limited reforms and improvements have occurred over the years, and the current legal structure is not effectively nor sufficiently protecting public health.
- An increasing number of outbreaks of foodborne illnesses are common in Nigeria. Poor environmental hygiene and sanitation is widespread, and contaminated, unwholesome, mislabeled or adulterated food along each sector of the food supply chain is common. The shrinking consumer confidence in the Nigerian food control system is a major challenge facing the Nation.
- Informal food-related activities have the tendency to exacerbate the food safety challenges and concerns in the country. Traditional market operators can lack awareness, knowledge or training in basic principles of food safety hygiene and other requirements that assure the production and sale of safe food. A greater challenge is that street food vending occurs at night in many cities across Nigeria. Thus, these vendors cannot be monitored by regulatory

agencies/authorities that are not operational at night. Applying regulatory legislation and their enforcement is therefore a difficult issue.

- The Government of Nigeria has started to modernize its food safety regulatory framework in line with international best practices, which is commendable and a step in the right direction. To support government efforts to achieve these objectives and in line with its global commitment that consumers have access to safe, nutritious food, the Global Alliance for Improved Nutrition (GAIN), through Feed the Future's EatSafe: Evidence and Action Towards Safe, Nutritious Food (EatSafe) program, initiated the assessment of food safety legislation and efforts in Nigeria. This study was made possible by the funding support from the United States Agency for International Development (USAID).

Objectives

The objectives of the study were to:

- Identify the existing legislative instruments on food safety and their current implementation status; including their constitutional mandate based on the Constitution of the Federal Republic of Nigeria.
- Evaluate the existing and pending food safety laws/regulations, including the Nigeria Food Safety and Quality Bill (2016, revised in 2017), in comparison with international best practices and standards for their adequacy in terms of scope and implementation strategy.
- Provide an analysis of perceived deficiencies and gaps in the current legislation addressing food safety and suitability (primarily through analysis of the relevant documents and consultations with the stakeholders and key informants).
- Make recommendations for amending or re-drafting the relevant legislative instruments on food safety designed to ensure safe foods based on risk analysis and gap analysis.
- Provide overview of how the food safety regulations and implementation efforts apply to traditional food markets in line with international best practices.
- Perform a gender lens review to identify if any gender-related issues exist, and make suggestions on steps to address those issues, with respect to the revision of food safety laws and regulations.

Methodology

The methodology employed involved the use of a literature review, stakeholder consultations and observation as explained below.

Literature Review

The literature review was undertaken to analyze information on existing laws/Acts, regulations, and standards related to food safety and control of foodborne diseases. Searches were conducted in official websites of relevant Government MDAs, FAO, WHO

World Food Programmed (WFP) and USAID, as well as websites of relevant organizations, including but not limited to Global Food Safety Partnership (GFSP), Global Food Safety Initiative (GFSI), Safe Food 360 and the U.S. Center for Disease Control and Prevention. Several published articles in the following thematic areas of search were reviewed: The Nigerian legal system; institutional arrangements for implementation and enforcement; existing legislations relating to food safety; deficiencies and gaps in the existing food safety legislative framework; factors contributing to production and sale of unsafe foods; Foodborne disease burden and its socioeconomic consequences; food safety and street food vending; food safety in the informal food markets; and Gender-related issues in food safety knowledge and practices.

Stakeholder Consultations

Representatives of relevant government MDAs, the food industry, consumer groups and other relevant Non-Governmental Organizations were consulted to obtain their views and opinions using the following techniques:

Focused Group Discussion (FGD) with Senior Officials of relevant MDAs

FGDs were held with senior officials of the Departments of Food and Drug Services of the Federal Ministry of Health (FMOH); National Primary HealthCare Development Agency (NPHCDA); Departments of Livestock and Pest Control, Strategic Food Reserve, Fisheries Extension Services and Department of Agriculture of the Federal Ministry of Agriculture and Rural Development (FMARD); Representatives of the National Food Safety Management Committee (NFSMC), Federal Competition and Consumer Protection Commission (FCCPC) and the Federal Ministry of Science and Technology (FMST) to obtain views and insights on the strengths, weaknesses, gaps and deficiencies in the existing food safety legislation. However, due to the COVID-19 travel restrictions, some of the interactions were done remotely.

Interactions with key stakeholders through online assessment questionnaire

Assessment questionnaires were designed on Google forms and disseminated virtually to obtain views and insights on the strengths, weaknesses, gaps and related deficiencies in the existing food safety legislation from stakeholders in relevant Government Institutions, Food Business Operators (FBOs); Consumer Groups and other relevant Non-Governmental Organizations (NGOs) outside Abuja with responsibility for implementing and/or enforcement of the existing food safety legislation and regulations. A total of 43 responses comprising 14 from government institutions and 29 from representatives of private organizations were received. Their views and insights were collated, analysed, and formed part of the findings.

Key Informant Interviews (KIIs)

Key Informant Interviews were held with senior local government officials in Local Government Area Council (LGAC) offices in selected local government areas/communities in Kebbi, FCT and Nasarawa States who have a role in implementing and enforcing food safety and related legislations/regulations. In addition, KIIs were conducted with individual traders/vendors to obtain information on the hygiene and sanitary conditions of the markets, food vending sites including the food handling practices, respectively, and were assessed using a prepared observation checklist. An average of 10 traditional food market and street vending sites in each of the sites were assessed, respectively. In all, a total of 100 respondents in the selected locations were interviewed. The views and insights from the respondents were collated, analysed, and formed part of the findings.

Observation

Using on-site observation checklists, markets and street food vending sites in select local government areas of Kebbi, Federal Capital Territory and Nasarawa States were assessed for identified critical factors like environmental hygiene, food handling practices, sanitary condition of vending premises, utensils and equipment, dish washing, garbage disposal, pest control and food handling/processing area.

Findings

Findings from Literature review

Food Supply and Related Food Safety Challenges in Nigeria

The problems and potential threats to food safety across the food supply chain in Nigeria identified in the literature review [7, 10, 17, 23, 28-32] include:

- The issue of food safety and foodborne toxicants in Nigeria, is exacerbated by public unfamiliarity on the subject, uncoordinated approach to food control, lack of technical expertise and adequately equipped laboratories in some cases, poor enforcement of legislations and regulatory limits.
- Widespread reported cases of unsafe practices among stakeholders across the food chain involved in production, processing, handling, storage, distribution, and sale of food at the marketplace.
- Lack of or inadequate application of Good Agricultural Practices (GAP) and/or the abuse or misuse of agrochemicals by farmers during pre-harvest and on-farm storage of harvested farm produce.
- Poor application of food safety practices such as Good Hygiene Practices (GHP) and Good Manufacturing Practices (GMP) and Hazard Analysis Critical Control Points (HACCP) by small-scale food processors/operators.

- Widespread abuse and/or misuse of agrochemicals, preservatives and chemical additives in the production, processing, and storage of foods.
- Use of cheap and toxic pesticides including their excessive application on stored food commodities such as beans and grains, to prevent insect infestation and or fungal growth or moldiness.
- Poor monitoring and enforcement of existing food safety legislation by regulatory agencies.
- Poor disposal of refuse/wastes within and outside food establishments, markets, and household environments.
- Absence and/or shortage of safe water supply, electricity, storage facilities including cold stores, and transport facilities and market networks and linkages.
- Lack of appropriate knowledge and expertise in the application of modern agricultural practices, food hygiene, and good food handling practices by most food producers and handlers.
- Widespread bacterial foodborne diseases arising from ingestion of contaminated foods with bacterial pathogens are major health concerns and contribute to high rates of morbidity and mortality, especially among children and the immune-compromised group in the population.
- Inadequate attention paid to the presence of toxic metals in urban and rural water supplies. The recent lead poisoning in Zamfara state of Nigeria which caused the death of dozens of infants and children shows the poor attention given to toxic metals in food and water consumed in Northern Nigeria.
- Consumers are often more interested in money saving and time convenience than issues of safety, quality and hygiene.

Burden of Foodborne Diseases in Nigeria

Food safety failures exact severe costs on Nations worldwide especially in developing countries. Foodborne disease (FBD) is a global public health concern. In 2015, WHO estimated that 600 million people fall sick after eating contaminated food, out of which 420,000 die every year worldwide [12, 13]. Diarrheal diseases are responsible for more than half of the global burden of foodborne diseases, causing 550 million people to fall ill and 230,000 deaths every year. Children are at particular risk of foodborne diarrheal diseases, with 220 million falling ill and 96,000 dying every year [13, 14]. In 2015, the WHO (African Region) study of FBD incidence in the African Continent indicated 91 million FBD cases annually, out of which 137,000 deaths were reported [14]. It found that diarrheal diseases are responsible for 70% of foodborne diseases in the African Region. Non-typhoidal *Salmonella*, which can be caused by contaminated eggs and poultry, causes the most deaths, killing 32,000 a year in the Region—more than half of the global deaths from the disease [14]. Foodborne diseases can cause short-term symptoms, such as nausea, vomiting and diarrhea (commonly referred to as food poisoning), but can also cause longer-term illnesses, such as cancer, kidney or liver failure, brain and neural disorders [14]. These diseases may be more serious in children, pregnant women, and those who are older or have a weakened

immune system. Children who survive some of the more serious foodborne diseases may suffer from delayed physical and mental development, impacting their quality of life permanently [14].

Despite the paucity of reliable data and absence of an effective foodborne surveillance and reporting system in Nigeria, reported incidents and outbreaks of foodborne illnesses illustrate their potential for devastating consequences [6-8, 10, 17-18, 22, 28, 35]. Examples of reported recent cases of foodborne illnesses in Nigeria include:

- Gastroenteritis triggered by zoonotic bacteria identified as the cause of 62 deaths, in a settlement predominantly inhabited by Fulani herdsman in Yagba West, Kogi state in 2015.
- Reported poisoning event in Rivers State, where 112 people were hospitalized after eating beans (Cowpea) preserved with pesticides.
- Toxic metals in the public water supply linked to the death of numerous infants and children in Zamfara State, in 2017.
- Improperly preserved sandwiches contaminated with the *Salmonella spp.* linked to the death of 20 people in Ibadan, Oyo State.
- 120 reported cases of food poisoning involving students at a secondary school in Doma, Gombe State, after eating food items contaminated with pesticides.

The Nigeria National Food Safety Control System

Food control systems include mandatory regulatory and enforcement activity by governments to provide consumer protection. The first food safety legislation in Nigeria, the Public Health Ordinance, was enacted in 1917. Since that time, the national food control system has undergone several reforms and improvements. Its scope covers the entire food supply chain (i.e., food production, preparation, manufacturing, storage, transportation, distribution and trade, importation and exportation of food), and the main objectives are to protect public health by reducing foodborne illnesses; protect consumers from insanitary, contaminated, unwholesome, mislabeled or adulterated food, and to maintain consumer confidence in the food system [4, 7, 10, 17, 19, 23].

To achieve these stated objectives and in line with its continued efforts to improving its food control system, the government, and in partnership with critical stakeholders in the food chain, launched the National Policy on Food Safety and Its Implementation Strategy (NPFSSIS) in 2014. NPFSSIS was developed to provide the government with the needed framework to minimize the incidence of risks associated with physical, chemical, and biological hazards in food and water; and to modernize the national food safety control system in line with international standards and best practice. A critical and significant component of this system is the legal framework and the institutional arrangement needed for NPFSSIS implementation and enforcement.

Reviews on the strengths and weaknesses of the Nigerian food control system have been undertaken [3, 7, 10, 17, 19] and summarized as follows are the inherent challenges identified:

- The rapidly changing technologies in food production, processing, and marketing.
- Increasing burden of foodborne diseases and the new and emerging food hazards.
- The need to develop, implement and enforce a modern food safety control system.
- The need to harmonize food safety and quality standards in line with global standards.
- Lifestyle changes arising from rapid urbanization and related socioeconomic trends.
- Growing consumer awareness of food safety and quality issues and increasing demand for relevant and critical information.
- Inability or failure to participate in international food trade.

The Nigerian Legal System

Nigerian food safety legislation consists of laws (acts), regulations and standards that establish broad principles for food safety control, and govern all aspects of the production, handling, marketing, and trade of food. Its purpose is to protect consumers against unsafe food and fraudulent practices [Error! Reference source not found.]. The process of law making in Nigeria is tedious and time consuming as changes to laws must pass through multiple stages in the National Assembly before final approval. This is likely one of the reasons the Food Safety and Quality Bill (FSQB) is still pending enactment into law at the Nigeria Assembly, four years after it was produced.

Development and Enactment of Laws in Nigeria

In Nigeria, all Federal laws are enacted by the National Assembly (NASS), which consists of two independent chambers: House of Representatives and the Senate, respectively. All members of the National Assembly are elected directly every four years. Typically, once a Bill (Executive, Private, or Member's Bill) is introduced in the National Assembly, it goes through a rigorous review process before it is enacted into law. This includes three consecutive readings of the Bill by the relevant committees including a public hearing where the provisions and requirements in the Bill are debated and finalized. The final approved Bill is presented to the President for his assent, and it then becomes a Law (Act).

On the other hand, state laws are enacted by the State Assembly, with members elected every four years, while local government by-laws are enacted by the Local Government Legislative Council that are elected every three years [33, 34]. The States and the Local government levels have only one house (The State House of Assembly and the Local Government Legislative Council), and the State Governor or the Local Government Chairman, respectively, is required to assent to the Bill to make it a Law [7, 17].

Institutional Arrangement for the Implementation and Enforcement of Legislations Relating to Food Safety in Nigeria

To implement laws at each tier of government, the corresponding executive arm of government enacts relevant regulations, usually issued by the Honorable Minister at the Federal level and Commissioner or Local Government Councils at the States and LGAC level, respectively. Nigeria currently operates a multiple agency Food Safety Control System [7, 10]. The federal level includes the Federal Government Ministries of Health, Environment, Agriculture, Science and Technology, as well as Trade and Investment; with their Agencies as seen in **Table 1**.

The States have their State Ministries of Health and Agriculture as well as Local Government Departments of Health and Agriculture at the local government level and their respective mandates on food safety legislation and regulation. The Local Government Area Councils are usually responsible for street-vended foods, *bukaterias*, catering establishments, local abattoirs, and traditional markets [7, 10, 17, 23].

There are state laws on sanitation in most states in Nigeria, especially as regards cleaning abattoirs and the general environment. These laws come in different forms, to impact positively on food safety and quality [7, 10, 17].

International Development Partners and Non-Governmental Organizations (NGOs) also play a key role in training and capacity building. Universities and Research Institutes help to shed light on food safety issues by conducting research and producing policy briefs on food safety and providing scientific basis for policy development and program implementation design while professional bodies and associations as well as consumer associations engage in policy discussions on industry guidelines, workshops as well as in self-regulatory regimes.

The private sector also plays a significant role in food safety by self-regulation and ensuring compliance to statutory food safety, quality, and standards. As in most low- and middle-income countries, food small and medium-sized enterprises (SMEs) are not well organized, and their products are mostly characterized by food safety concerns [6, 35]. However, the future outlook of SMEs in the food industry sector is bright with great potential for growth [35]. Private-led Food Business Operators (FBOs) have organized into umbrella associations to support compliance to food safety regulations. Informal sector actors in the food supply chain include small holder farmers, cottage-level food processors, traders of different food commodities of plant and animal origin in traditional markets, abattoirs, street food vendors, and consumers.

Federal Ministry	Department	Agency
Health (FMOH)	Directorate of Food Safety & Applied Nutrition (FSAN)	National Agency for Food and Drug Administration and Control (NAFDAC)
	National Codex Committee (NCC).	National Primary Health Care Development Agency (NPHCDA)
Agriculture and Rural Development (FMARD)	Federal Department of Fisheries	Nigeria Agricultural Quarantine Service (NAQS)
		National Agricultural Seeds Council (NASC)
Industry, Trade and Investment (FMITI)	World Trade Organization (WTO)/ Sanitary and Phyto-sanitary Standards (SPS)	Standards Organization of Nigeria (SON)
	Federal Produce Inspection Services (FPIS)	Federal Competition and Consumer Protection Council (FCCPC)
Environment (FME)		National Environmental Standards and Regulations Enforcement Agency (NESREA)
		Environmental Health Officers Registration Council of Nigeria (EHORECON).
Science and Technology (FMST)		National Biotechnology Development Agency (NABDA)
		Federal Institute of Industrial Research Oshodi (FIIRO),
		Sheda Science and Technology Complex (SHESTCO).
		Raw Materials Development and Research Council (RMRDC),
		Nigerian Council of Food Science and Technology (NiCFoST).

Table 1: Breakdown of MDAs related to Food Safety.

Inventory of Existing Legislations Relating to Food Safety in Nigeria

They include list of existing laws; regulations; and Nigerian Industrial Standards – NIS relating to food safety in Nigeria.

Evaluation of existing legislation relating to food safety for their adequacy in terms of scope and implementation strategy.

Assessment of existing legislation to determine if domestically produced and imported foods meet global standards for quality and safety is necessary. In most developing countries, like Nigeria, the presence of unsafe and unwholesome food across the food supply chain is widespread [7, 10, 17, 19, 36]. The extent of deficiencies and gaps in the existing food safety legislation in Nigeria has been well reviewed and analyzed by some authors [7, 17, 26,]. In Nigeria, several of the existing legislation relating to food safety are outdated and characterized with overlaps and gaps [7, 36]. Some of the laws were obsolete and inadequate and therefore need to be repealed or strengthened in line with modern realities. The legislations assessed are listed below:

1. Food and Drug (Amendment) Act (formerly called Foods and Drugs Act of 1974) amended 1999.
2. Counterfeit and Fake Drugs and Unwholesome Processed Foods (Miscellaneous Provisions) Act no 17 of 1989, now Act 25 of 1999 now Act C 34 LFN 2004.
3. Food and Drug Related Products (Registration, etc.) ACT of 1993 now known as Act CAP F33 LFN 2004.
4. National Agency for Food and Drug Administration and Control (NAFDAC) (establishment Decree) of 1993 as Amended by Decree 1999 and now known as Act CAP N1 LFN 2004.
5. Standards Organization of Nigeria (SON) Act. 2015.
6. Animal Diseases (Control) Act of 1988.
7. Nigeria Agricultural Quarantine Service (NAQS) Establishment Act 2018.
8. Establishment of the National Environmental Standards and Regulations Enforcement Agency (NESREA) Act of 2007.
9. Federal Competition and Consumer Protection Act (FCCPA) 2018.
10. National Biosafety Management Act, 2015.
11. Public Health Ordinance CAP 165, F&L 1958 Cap165, 1972 No 16. L N 112 of 1964. L S L N 16 of 1972 (First enacted in 1917).
12. Live Fish (Control of Importation) Act No 27, 1962.
13. Sea Fishery Act Number 71 of 1992.

Evaluation of Adequacy of the Food Safety and Quality Bill (FSQB) 2019 (HB 19.01.1598)

The Food Safety and Quality Bill (FSQB) was developed in 2016 to modernize Nigeria's food safety legislation. The Bill was developed following the FAO New Model Food Law, Version 3 (The Integrated System) [26] with input from stakeholders, including representatives from relevant Federal and State government MDAs; NGOs, Development Partners; Food Business Operators (FBOs). The finalized Bill was approved by the Federal Executive Council (FEC) in 2019 awaiting the legislative of the National Assembly (NASS) to enact it into, over 5 years after it was first produced.

The FSQB consists of 14 Parts, 58 Sections and 2 Schedules. Its objective is to establish the National Food Safety Council and the National Food Safety Management Committee for the official control of Food and Feed Safety, the obligations of Food and Feed Business Operators and to define the functions and powers of Institutions of Government with the objective of ensuring that Food and Feed Safety Risks are effectively managed and for related matters. The Bill was reviewed and analyzed based on internationally accepted benchmarks for food legislation as described by FAO (4). A summary of Bill is presented below:

Objectives of the Bill:

1. Protecting health of consumers from hazards through assessment of available scientific evidence (i.e., by adopting certain internationally accepted food safety principles such as risk communication, risk management, risk assessment, precautionary principle and transparency, Part 3 of the Bill).
2. Establishing general principles of official control of food safety (Part 8).
3. Establishing the obligations of food business operators (Part 6).
4. Establishing Central governance of food safety (Part 11).
5. Defining and coordinating functions and powers of institutions of Federal and State governments in ensuring that food safety is effectively managed.

Scope of the Bill:

1. All activities and all areas of the safety of foods and animal feeds affecting the health of consumers.
2. All stages of production, transformation, and distribution of food commodities, which are undertaken throughout the course of a food business.
3. Applies to every area of Nigeria.

The proposed Bill does NOT cover:

1. Safety of Genetically Modified Organisms (GMOs) & Genetically Modified (GM) Foods.
2. Management of pesticides.

3. Management of animal health/diseases.

Perceived Deficiencies and Gaps Observed by Stakeholders in the Existing Legislation related to Food Safety in Nigeria

Based on the analysis of questionnaire administered, only 28% of respondents were of the view that the current food

safety legislation meets consumer needs and requirements as seen in **Figure 1**. Thus, it is important that existing food safety legislation address food safety concerns across the entire food supply chain from farm to table to achieve an effective food control system [10].

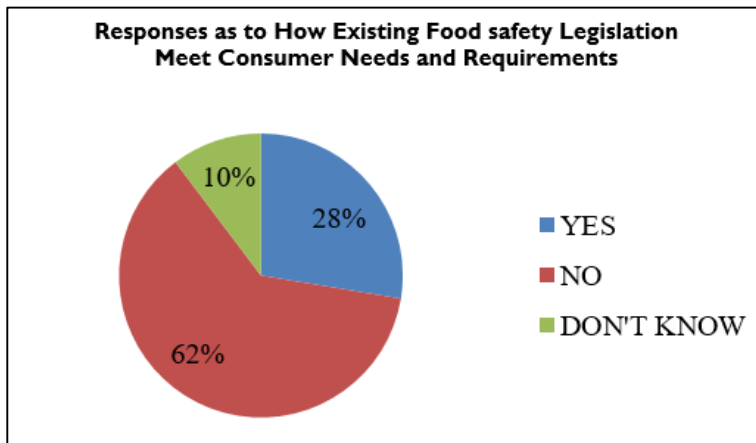


Figure 1: Responses to food safety legislation meeting requirements.

Content and Adequacy of Legislation Meeting Existing Needs and Challenges

Key highlights from the engagements with relevant food safety stakeholders are as follows:

- 62% of respondents opined that there existed areas of contradiction and overlaps in monitoring the production, distribution and sale of food, and food products by regulatory bodies in the country. Previous reports have also identified this limitation [7, 10, 17].
- Only 7% of respondents believed the existing food safety legislation encompasses risk analysis (i.e., risk assessment, risk management and risk communications).
- Only 4% of respondents agreed that existing legislation sufficiently addressed food safety concerns relating to biotechnology and GMOs.
- 64% of respondents opined that existing legislation did not address other food safety concerns associated with new technologies nor food safety risks associated with existing and emerging food hazards.
- 55% of respondents believed that the existing legislation does not have such provisional requirements to enforce good food safety practices (GAPs, GHPs, GMPs and HACCP) for the production of food.
- 3% of respondents expressed their opinion that existing food safety legislations addressed gender-related issues in food safety.

Overview of how Food Safety Regulations and Implementation Efforts Apply to the Informal Food Sector (Street Food Vending) in FCT, Kebbi and Nasarawa States, Nigeria

As Africa’s most populous country, the informal food sector plays a central role in Nigeria [38] however it is characterized by absence or inadequate formal food regulatory and control framework [38, 39]. In Nigeria and elsewhere, informal food traders frequently are blamed for outbreaks of foodborne disease [11, 17, 27, 38-40]. Establishing laws and regulations for governing their behaviors is necessary but not solely sufficient to improve food safety. Regular sensitization of traders to food sourcing and preparation issues is critical, as is the investment of revenues collected from traders into the relevant infrastructure that will enable them to implement proper food safety practices (38).

Street-vended foods or "Street foods" are foods and beverages prepared and/or sold by vendors in streets and other public places for immediate consumption or consumption at a later time without further processing or preparation and include fresh fruits and vegetables which are sold outside authorized market areas [29, 38, 41-44]. The prevalence of eating street foods in Nigeria is high. A study conducted in 2017 showed that more than 60% of their respondents consumed street foods on daily basis [42]. This means that street foods contribute to a significant proportion of daily intake of macro- and micronutrients [41]. An earlier report [43] found that street foods contributed to more than half of the daily protein and carbohydrate intake and more than one third of fat intake of Nigerian adults. Thus, street food vending is an important socio-economic activity in Nigeria that

requires effective food safety control system to protect consumers from the associated foodborne disease risks and outbreaks. The current Food Safety Quality Bill (HB19.01.1598) [45] and existing regulations related to food safety at the federal, state and local government levels have no specific section devoted to ensuring effective food safety control in traditional food markets/street food vending operations. However, the informal food sector, including street food vending is still under the regulatory control of state and local government authorities; and there is a yawning gap in the food safety control system and foodborne surveillance at these traditional markets. As street food vending is a significant source of livelihood and provides an easy access to ready-to-eat meals and employment, special attention through appropriate legislation and enforcement of regulations should be paid to protecting the health of the consumers that patronize them on daily basis. Street food vending has contributed significantly to solving major social and economic problems in Nigeria [30, 38, 46- 47]. However, despite these potential benefits, street food vending is an informal activity that is generally not regulated in Nigeria, and street foods are perceived to be a major risk to public health [7, 10, 17-18, 31, 40, 48]. The hygienic aspects of street food vending constitute a major concern for food control officers. Vending stands are often made of crude structures, and running water, washing facilities and toilets may not be available. This is because street food vendors are often poorly educated and lack knowledge and understanding of food hygiene and related safe food handling practices. From regulatory point of view, difficulties often arise in controlling the large numbers of street food vending operations because of their diversity, mobility, and temporary nature [40, 46-49]. In Nigeria, the street food vending sector often escapes formal inspection by regulatory authorities, often operating without permits or licenses and in unapproved places. Thus, regulatory control of street food vending activities faces several complex challenges. For example, extant legislations on the subject matter are inadequate or out of date, ill-equipped. There are inadequately trained inspectors, poor laboratory facilities, poor management, and lack of coordination and cooperation among government food control agencies. There are also insufficient resources for inspection and laboratory analysis. Thus, more commitment is needed from government, especially the local government authorities, to ensure that global best food safety practices are adopted irrespective of the prevailing local conditions.

Overview of how Food Safety Regulations and Implementation Efforts Apply to Traditional Food Markets in FCT, Kebbi and Nasarawa States, Nigeria

With the increasing rural-urban migration in Nigeria, and the rising population in urban areas, traditional food markets have become important sources of affordable food for many millions of people [18, 30, 46-47]. While the modern retail sector (e.g., supermarkets) is growing, traditional food markets

remain the major source of food to most Nigerian cities and towns providing more than 90% of the market share of basic fresh food produce such as grains, vegetables, meats, cooking oils, fruits, pepper and related spices [35]. While the informal food sector thrives, foodborne disease remains a major public health problem in Nigeria and in most countries in sub-Saharan Africa. Therefore, policies and legislation on food safety should cover the informal sector for effective regulatory control to protect the health of consumers. Studies have indicated that food is an important route for pathogen transmission to humans and high-risk foods such as meat, milk, fish, eggs, and fresh fruits and vegetables are produced by smallholder farmers, marketed through the informal sector, and sold in traditional food markets [40, 50]. Consequently, there is widespread concern about food safety risks associated with food produced by smallholder farmers and sold in wet markets. Indeed, these concerns about public health are one of the main reasons policymakers often favor large-scale farming systems rather than developing the traditional sector [51]. The informal food trader is also faced with numerous challenges. The environmental conditions of the markets, the personal health of vendors and the microbiological contamination of the water available give rise to serious problems for food hygiene and safety [7, 17, 40]. While the informal food sector can offer consumers relatively low prices, it leaves consumers more vulnerable to contaminated, adulterated, and unwholesome foods. Due to the absence of food safety legislations to regulate the activities of this critical sector [7, 10, 17] the operators and related stakeholders of this sector are constantly subjected to crackdowns and harassment by local government officials. These actions have not necessarily been effective in addressing food safety concerns inherent in this sector [9, 17, 38]. Consequently, an assessment of existing traditional food markets was conducted to obtain views and opinions of responsible authorities and traders on the likelihood of food hazards and related health risks posed by trading activities in the markets as well as their implications for the enforcement of food safety legislation. Key findings are presented below.

Cleanliness and sanitary condition of the market premises

Factors, such as nature of food contact surfaces, cleanliness and sanitary condition, suitability of containers for food, cleanliness of utensils such as knives, were observed. Our findings from the observations revealed that conditions of most of the markets were unhygienic.

Extent to which food contamination is prevented

Factors such as separation of raw and ready-to-eat foods, adequacy of storage rooms, cleanliness of storage rooms, and possibility of cross contamination were observed. Most respondents did not believe that systems were in place to prevent food contamination in the market (Figure 2).

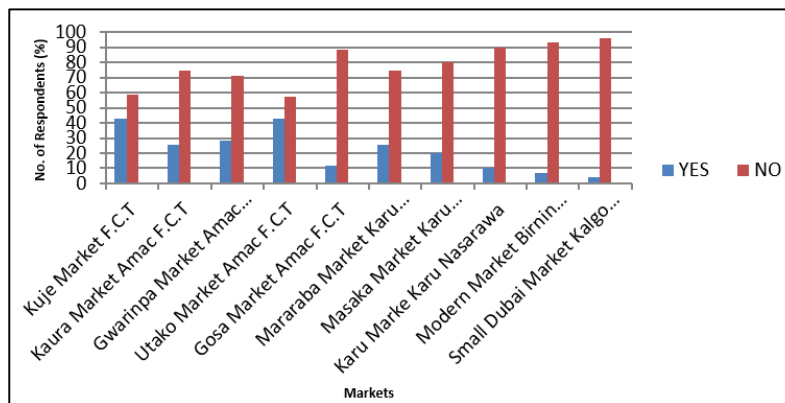


Figure 2. Systems in place to prevent food contamination.

Source of raw food materials and water

Critical factors, such as raw food materials and water, in-place mechanisms for traceability, and spoilage or rotten food materials on display, were assessed. Findings revealed that in all except one market, there is no reliable traceability mechanism in place for raw food materials and water sources. Thus, tracing of contaminated or spoiled food sources would be difficult.

Gender and Food Safety in Nigeria’s Traditional Food Markets

Both men and women play significant roles in production, processing, handling, and retail of food in Nigeria. And the informal food sector is an important source of income and employment, especially for women in Nigeria [38, 47]. In the informal food sector, men and women often play complementary and distinctive roles. For example, women are overwhelmingly responsible for street food vending operations. Women are traditionally skilled in these activities as they already have acquired the necessary skills and cooking utensils at home, while preparing food to feed their families. However, gender-based specialization may be influenced by a number of factors [18, 50, 53]. In Nigeria and most of West Africa, grilled meat is sold by men, while the women sell prepared food dishes. These roles, according to reports, one way or the other affects their socio-economic lives, such as exposure to foodborne diseases and related risks. In West Africa, where men dominate in the animal husbandry sector, men are more prone to diseases associated with zoonosis (e.g., brucellosis). On the other hand, in smallholder farms in East Africa where women are in charge of milking, women are more prone to diseases associated with zoonosis [18, 50, 53].

Women play significant and specialized roles across the food supply chain, especially in the processing and marketing sectors. In artisanal coastal fishing in West Africa, including Nigeria, men are responsible for fishing, but women dominate in the onshore processing (smoking) and marketing of this sector. The smoking practice not only exposes the women to

health hazards, such as eyestrain and headaches, but also increases levels of potentially carcinogenic residues in the fish and environment and unsuitable type of firewood used for smoking the fish [50]. Gender-specific findings from food safety research also indicates that women have greater capacity to manage food safety, nutritional, and economic risks, though there was no significant difference in their knowledge of and attitude towards food safety compared to men [51]. Gender and value chain research has also indicated that men and women often face different barriers to participating in value chains that stem from gender-based differences in social norms, or access to assets, such as land, financial capital, social capital, information, and education [54, 54]. Participating in value chain activities can also lead to unintended harm based on gender in domains, such as time poverty, energy burden, capacity for childcare, or dispossession of women’s gains by other actors. However, information is limited on how gendered participation in value chains affects food safety and health risks [50].

Gender-sensitive approaches to food safety remain limited within the wider food safety literature. Activities along the value chain, including primary food production, processing, preparation, transportation, and sale of food products are highly gendered, with men and women occupying diverse but often segregated or complementary roles. In most communities in Nigeria, women are more visible and tend to dominate in traditional informal value chain activities, while men are more in formal value chain activities. However, with rapidly changing food systems, women activities and participation in the value chain may likely be affected. Given the important role of women in traditional markets and the wide variation between men’s and women’s roles, understanding gender is important for improving food safety in traditional food markets. Addressing women’s and men’s varying and evolving roles in value chains is essential for improving food safety in traditional markets and reducing health risks for the majority of people in the developing world who rely on them. Various intervention strategies to address the above-mentioned gender related issues arising from food safety legislation have been suggested [30]. Nonetheless, we observed that the formulation of food safety policies, legislation and

regulations and their enforcement provides no specific gender-based considerations nor preferences. It is noteworthy that any food processing and preparation interventions targeted at women in the quest for food safety practices will consequently impact positively on households to achieve reduction in processing related food contamination [31].

Observed Deficiencies and Gaps in the Existing Legislation Relating to Food Safety

As earlier mentioned, several deficiencies and gaps of different legislation (Act) and regulations related to food safety have been highlighted and include:

- a. Ambiguous and inappropriate provisions.
- b. Obsolete and inadequate provisional requirements.
- c. Fragmented, incoherent, and overlapping jurisdiction.

Another gap that deserves great attention is the weak enforcement provisions in the existing legislation (Act) and regulations on food safety. In particular, the provisions prescribing enforcement responsibilities and penalties are weak and not a deterrent [17]. Regulatory agencies often circumvent this challenge through regulations that often prescribe much higher penalties. This leads to out-of-court settlements using processes that are not transparent [17]. Existing food legislation and regulations should cover the entire food supply chain (farm to table). However, the extant laws and regulations do not adequately address areas such as crop production; food transportation and storage; safe use of agricultural inputs, aquaculture, production of animal and fish feedstuff, respectively. The Food Safety and Quality Bill (HB19.01.1598) currently at the Nationally Assembly awaiting enactment into law (Act) is expected to ameliorate these deficiencies and gaps.

Recommendations

An effective food safety control system is required to protect the health of consumers. In support, the following are recommended:

- In view of its significant socioeconomic contribution, there is need for government to promote attitudes and policies that are favorable to informal food sector operators, especially street food vending.
- There is need for mandatory training and re-training in knowledge gap areas for traditional market actors and regulatory officers of the state and local government MDAs responsible for agriculture, nutrition, women affairs, food safety and hygiene matters in traditional markets. This could be done by the relevant MDAs, civil society organizations, research and academic institutions, professional public health, food and agro-allied associations, and the private sector actors.
- Civil Society, advocacy and non-governmental organizations, local and international agricultural and trade development partners, as well as the private sector should contribute to the sensitization of food safety stakeholders on the Food Safety and Quality Bill 2019 (HB19.01.1598) awaiting enactment into law at the National Assembly. They should encourage stakeholders

to participate in the public hearing session where they can make necessary input and advocate for inclusion of the relevant guidelines for the informal food sector.

- Food safety and related program implementers are to encourage the state and local government regulatory agencies to formulate simple messages on food safety and hygiene and translated to local languages and graphics that are easily understood by the vendors and consumers at the community level.
- Relevant government MDAs, related donor-funded programs and project activities, and the private sector should ensure extension messages on food safety are channeled along the entire food value chain (farmers, vendors, transporters, wholesalers, retailers, processors, and consumers) through preferred sources to bridge the information gap among the stakeholders.

Conclusion

Foodborne disease is a major public health problem in Nigeria. However, the existing food safety legislation is ineffective in addressing the scourge and in curbing the underlying risks. Existing laws relating to food safety are implemented by multiple government ministries, departments, and agencies (MDAs). The laws contain gaps and overlaps in responsibilities of enforcing agencies, lack appropriate coordination mechanism, contain no surveillance activity fully articulated and ready for implementation and there are several obsolete provisional requirements when compared to modern food safety control models. The Food Safety and Quality Bill (HB19.01.1598) produced since 2016 to address these challenges is yet to be passed into law and it is recommended for the Federal Government of Nigeria to expedite this process.

Regulatory framework for the control of street-vended ready-to-eat foods and traditional food markets, where the majority of the rural and urban poor source their fresh meat, fruits, vegetables, and other high-risk foods, is not clearly articulated in the legislation; a yawning gap that is of urgent importance to address during the public hearing when stakeholders can make inputs for its amendment as may be required. Once the Food Safety Bill has been enacted into law, it is recommended that States, and especially Local Government Area Councils (LGACs), adopt relevant sections of the food safety legislation to meet their regulatory control needs for traditional food markets under their purview to ensure safe food supply to consumers. LGACs should pay close attention to the safety requirements for regulatory control of traditional food markets and street-vended foods to ensure safe food supply to consumers. Vendors should be trained on these requirements so that they are acquainted with basic food safety and hygiene practices. The formulation of food safety policies and legislation provides no specific gender-based considerations nor preferences. While food safety is a shared responsibility for all stakeholders in the food supply chain, improved safe food handling interventions developed specifically for women could positively impact on households in reduction food contamination and resulting illness. Finally, more needs to be done to inspire greater consumer confidence in the safety and quality of food commodities in traditional food markets or street foods in Nigeria.

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