



Policy Brief: Measures to strengthen food safety in Borno State

Executive Summary:

Food safety remains a key challenge for Nigerians with potential impact on the economic stability of each state, local government and community. Recent incidents of foodborne illnesses across Nigeria (such as Cholera) highlight the need for a proactive approach to ensure the safety of our food supply. This brief presents some key research findings and associated



policy recommendations geared to support increased food safety through improved regulation, inspection, education, and technological innovation. It draws on two related studies on food safety conducted by the Bill and Melinda Gates-funded project RSM2SNF (Research supporting African MSMEs to deliver affordable, safe, and nutritious foods). Between July 2023 and February 2024, key information about the size,

infrastructure, and governance of fish, tomatoes, and green leafy vegetables (GLV) wholesale markets were collected in 7 Nigerian states (and the Federal Capital Territory), including Borno State where twenty-one wholesale markets were identified for these products. Table 1 describes the findings related to infrastructure and food safety in the markets in the study states and highlighting the results for Borno.

State	Has a functional toilet (%)	No. of Traders per toilet	Access to pipe-borne water (%)	Treat water (%)	Main water source is a bore hole	Main water source is a well	Main water source (streams, jerricans, etc.)
Cross River	32	911	0	0	36	2	62
Kaduna	39	510	5	9	29	46	19
Ebonyi	26	722	13	0	57	8	30
Oyo	52	470	4	17	72	20	9
FCT	100	216	40	20	60	0	20
Plateau	17	1129	8	0	19	21	55
Borno	95	183	0	0	24	0	76
Kebbi	77	211	0	0	32	41	28

Source: RSM2SNF wholesale market study

Key findings:

- **Inadequate toilets and clean water:**
 - While 95 % of wholesale markets for tomatoes, GLV, or fish in Borno State had a functional toilet the trader/toilet ratio was found to be over 180 traders to a toilet, on average. In the absence of a sufficient number of functional toilets to meet the needs of market users (traders and consumers), people can resort to open defecation, or the use of unsanitary practices (e.g. use of buckets or bowls sometimes kept around traders' stalls). These practices can lead to the contamination of food (sold in the market) as well as soil and water sources with fecal matter, which can harbor the *Vibrio cholerae* bacteria.
 - No wholesale markets in Borno State have pipe-borne water. The major source of water, about 50% (transported in Jerricans) is from unsanitary sources such as nearby streams while water from boreholes is about 24%. None of these markets treat their water.
 - Trader hygiene practices (washing hands after toilet use) and handling practices (washing vegetables with clean water that is changed frequently) are important for reducing consumer exposure to microbial contaminants such as *E.coli* ((Martins et al., 2024). Without access to clean water, traders and consumers can face increased spread of cholera bacteria through direct contact with contaminated hands and/or via transmission from unclean water that contains the *Vibrio cholerae* bacteria.
- **Lack of Public Awareness and Education:**
 - No markets in Borno State have (1) any posters promoting food safety practices, (2) any rules about food safety communicated to traders or (3) quality control checks for these perishable foods. This shows that food safety and food safety regulations are not yet prioritized in these food markets.
 - In the study on vegetable traders in southwest Nigeria, less than 1% of traders had ever received training on food safety and only about half of them changed their wash water (for vegetable washing) correctly (Martins et al., 2024). This means there is significant scope to improve trader hygiene and food safety handling practices via training. Currently none of the wholesale markets for the study products (fish, tomatoes and green leafy vegetables) in Borno provide such training.

Key Messages



Borno State needs more functional toilets in food markets



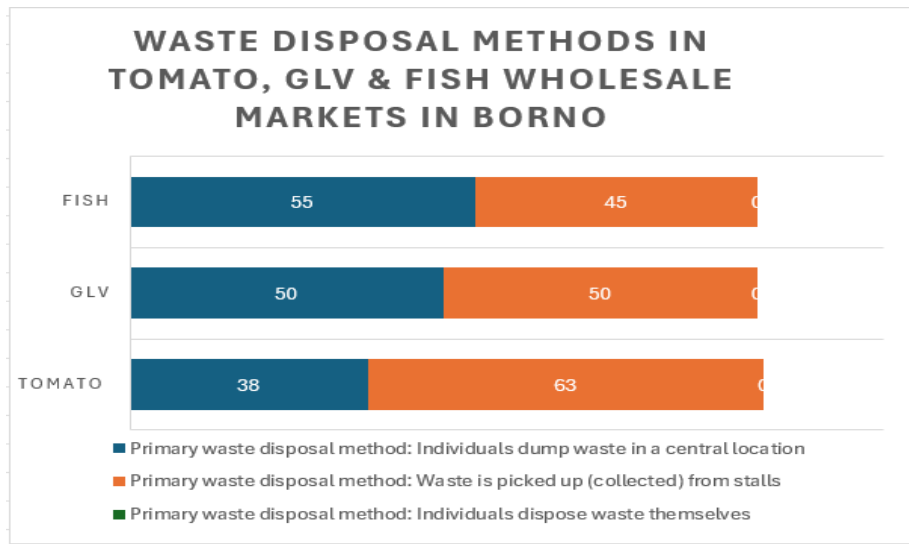
Food markets in Borno State need access to potable water



Food traders and consumers need adequate food safety training

- **Improper Waste Disposal:**

- The 2 main ways waste is disposed of in Borno State are either by individual traders dropping their waste in a central location from which that waste is picked up daily, weekly, or less frequently or having their waste picked up from their stalls. Having solid waste around markets that is not properly disposed of frequently is a potential source of pathogens (that cause diseases) such as *Salmonella spp.*, *Escherichia coli*, and *Vibrio cholerae*.



Source: *RSM2SNF wholesale market study*

Policy Recommendations:

1. **Invest in the construction of more toilets** to reduce the trader-to-toilet ratios in the state.
2. Produce boreholes or wells within the food markets with simple treatment of the water with chlorination to prevent potential health hazards.
3. Launch statewide **education and training for food traders and consumers** to educate the public on safe food handling, storage, and preparation practices. This has been found to encourage adoption of good practices, particularly when the cost of adoption is low (Seaman and Eves 2010; WHO, 2015)
4. Integrate food safety education into school curricula to raise awareness among children and their families to improve food **safety demand and supply**
5. Employ more workers as Environmental Health Officers and train them on the Principles of Food Safety, Food Hygiene, and Personal Hygiene.



6. **Monitoring and control of hygiene in the markets:** The Environmental Health Officers should be empowered to regularly monitor the hygiene practices of the people in the markets and sanction them, when there is a need.



7. **Enhance collaboration via** Public Private Partnerships and improve interagency coordination between state and local government to streamline food safety efforts and ensure a unified response to incidents.
8. **Support research and innovation:** Increase funding for research on new methods and technologies to improve food safety and bring researchers, industry experts, and policymakers together to develop and implement cutting-edge food safety solutions.

Conclusion:

Ensuring the safety of our food supply is a shared responsibility that requires concerted effort from all stakeholders. By implementing these policy recommendations, Borno State can significantly reduce the incidence of foodborne illnesses, protect public health, and enhance the economic vitality of the food sectors.

Prepared by: Professor Obadina Adewale (Federal University of Agriculture, Abeokuta), Professor Lenis Saweda O. Liverpool-Tasie (Michigan State University and IITA, Ibadan) and Ms. Itohan Ebunoluwa Martins (Federal University of Agriculture, Abeokuta)

Date: July 18, 2024

This policy brief is intended to guide strategic actions and foster discussions on enhancing food safety in Borno State. For further information or to discuss these recommendations in more detail, please do not hesitate to contact the RSM2SNF project via Mrs. Amadi Grace (the Project Management Assistant) using 09162066036 or grcraji@gmail.com.

References:

- Seaman, P., and Eves, A. (2010). Perceptions of food safety training and knowledge among food handlers. *Journal of Food Protection*, 73(7), 1238-1246.
- World Health Organization (WHO). (2015). Estimates of the global burden of foodborne diseases.
- Martins, I.E, Liverpool-Tasie, L.S.O and Obadina, A (2024). When washing is not enough: evidence from Nigerian vegetable traders' hygiene and handling practices. RSM2SNF Research Paper
- Oyediji, T, Amadi, G., Liverpool-Tasie, L.S.O and Kolade, O. An assessment of the Tomato, Green Leafy vegetable and Fish wholesale markets in Borno State. RSM2SNF Research report

