



RSM2SNF

Research Supporting African MSMEs
To Provide Safe and Nutritious Food

Policy Brief: Enhancing food safety in Plateau State

Executive Summary:



Food safety is a critical public health issue in Nigeria. It affects the well-being of Nigerians and the economic stability of Plateau state communities. Recent incidents of foodborne illnesses such as Cholera highlight the existing food safety challenge in the country and the need for a comprehensive response to ensure the safety of our food supply. This brief outline key research findings and policy recommendations to

enhance 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 (including Plateau) and the Federal Capital Territory. In Plateau, 47 wholesale markets were identified for tomatoes and green leafy vegetables. Table 1 describes the findings related to infrastructure and food safety in the markets in the study states.

| 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 |

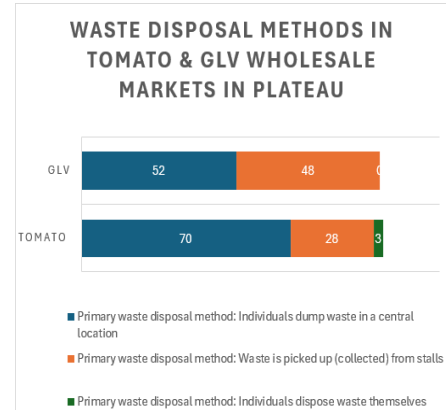
Source: RSM2SNF wholesale market study

Key findings:

- **Inadequate toilets and clean water:**
 - Only 17% of wholesale markets for tomatoes or GLV in Plateau State had a functional toilet the trader/toilet ratio was found to be over 1000 traders to a toilet, on average. This is a very high number and likely to encourage unhygienic practices such as people resorting to open defecation, or the use of buckets sometimes kept around their stalls in the market or plastic bags thrown into bushes. 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.
 - Only 8% of wholesale markets in Plateau State have pipe-borne water. The major sources of water are water from boreholes, wells and water being sold from jerricans etc; 19%, 21% and 55% respectively and no wholesale markets treat their water
 - In addition to challenges associated with where water being sold from Jerricans was obtained (e.g. wells or stream), other food safety challenges from Jerrican use include **cross-contamination** from improper cleaning and handling of jerricans and/or water in them.
 - 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 enough functional toilets and handwashing stations, many people will not wash their hands properly after defecation, increasing the spread of cholera bacteria through direct contact, food handling, and other means.

- **Lack of Public Awareness and Education:**

- No markets in Plateau 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.



Improper Waste Disposal:

- The 2 main ways waste is disposed of in Plateau State is either with 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*.

Key Messages



Plateau State needs more functional toilets in food markets



Food markets in Plateau State need access to potable water



Food traders and consumers need adequate food safety training

Source: *RSM2SNF wholesale market study*

Policy Recommendations:

1. **Invest in the construction of more n toilets in wholesale markets** to reduce the trader-to-toilet ratios in the state.
2. Launch statewide **education and training for 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)
3. Proper use of jerricans should be promoted. For example, jerricans should be dedicated to water transport and not used interchangeably with movement of other substances to avoid cross-contamination. Jerricans should be handled with clean hands and tools to maintain the safety of the water. Jerricans should be cleaned regularly and thoroughly with appropriate sanitizing agents to prevent microbial contamination. They should be stored in clean, dry places
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, Plateau 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 Plateau 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
- Bashir, A, Amadi, G, Liverpool-Tasie, L.S.O and Kolade, O. An assessment of the Tomato and Green Leafy vegetable wholesale markets in Plateau State. RSM2SNF Research report