

EatSafe: Evidence and Action Towards Safe, Nutritious Food

Qualitative Behavioral Research in Traditional Food Markets in Kebbi State, Nigeria

July 2022



This EatSafe report presents evidence that will help engage and empower consumers and market actors to better obtain safe nutritious food. It will be used to design and test consumer-centered food safety interventions in informal markets through the EatSafe program.

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ABBREVIATIONS AND ACRONYMS

Below is a list of all acronyms and abbreviations used in this report.

EatSafe	Evidence and Action Towards Safe, Nutritious Food
FGDs	Focus Group Discussions
GAIN	Global Alliance for Improved Nutrition
IDIs	In-depth Interviews
IRB	Institutional Review Board
LOC	Locus of Control
USAID	U.S. Agency for International Development

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EXECUTIVE SUMMARY

Food safety is critical to public health and safety. Feed the Future's Evidence and Action Towards Safe, Nutritious Food (EatSafe) seeks to improve the safety of nutritious foods in traditional food markets in low-and middle-income countries. In Nigeria, EatSafe operates in Kebbi and Sokoto States. As part of its Phase I (Formative Research) activities, EatSafe conducted this study to understand consumers' and vendors' knowledge, attitudes, and practices (KAP) related to personal and environmental hygiene and food purchasing decisions, as well as how sociocultural norms influence food safety behaviors. This study complements existing EatSafe research by leveraging a behavioral science lens to understand how sociocultural norms and personal and environmental hygiene practices influence consumers and vendors' preferences, beliefs, and habits regarding food safety.

Data was collected via in-depth interviews and focus group discussions with 96 participants, including 36 vendors and 60 consumers, the latter of whom were separated into buyers and preparers. Study findings can be summarized into four themes.

Vendor and consumer familiarity with food safety: All vendors and consumers were asked if they were familiar with the concept of food safety and then asked to explain what the concept means to them. Probing participants' understanding of food safety was important for establishing familiarity with and meaning of food safety among participants to provide a background for subsequent questions about specific food safety practices and behaviors. All the respondents said they were familiar with the concept of food safety. Based on participants' responses, understanding of food safety is centered around avoiding contaminated food, proper handling of food, all with the goal of avoiding causing harm to the body of oneself or one's family.

Linkages to gender: EatSafe found gendered beliefs and expectations for food vending and handling. Female consumers believed they are expected to be more thorough with their personal hygiene practices than male members of their household. At the market, food vending is seen as a job primarily for men, although some female vendors operate in the three target markets. When it comes to handling food at the market, female vendors feel more pressure to model hygienic behavior, compared to their male counterparts.

Linkages to personal and environmental hygiene practices: Both consumers and vendors defined personal hygiene as avoiding getting dirty, appearing neat, and maintaining a clean environment (both at home, for consumers, and at the market, for vendors). Respondents understood that health risks (i.e., contracting diseases, vomiting) and associated costs of treating these conditions may result from poor hygiene practices. Beyond health, some consumers also noted the social risk of poor hygiene (e.g., being shunned) so that people do not see them as "dirty." Further, because vendors' primary motivations were consumer retention and profit, they strive to keep themselves and their stalls clean. Vendors understood consumers use visual cues linked to hygiene to make choices between vendors.

Linkages to sociocultural norms, such as religion and ethnicity: Though neither religion nor ethnicity are evaluated by EatSafe as determinants of food safety behaviors, this report includes facts on both to enrich the contextual landscape where EatSafe will implement its market-based food safety interventions.

I. INTRODUCTION

Food safety is a global public health concern that will play a key role in achieving several of the United Nations Sustainable Development Goals (1). Food is considered safe if it is free of disease-causing pathogens, parasites, chemical contaminants, or adulterants. Unfortunately, many foods are not safe, and the negative effects of foodborne disease (FBD) are widespread in low- and middle-income countries. In Africa, the per-capita FBD burden is about 27 times that of Europe or North America (2).

The Evidence and Action Towards Safe, Nutritious Food (EatSafe) program aims to improve the safety of nutritious foods in traditional food markets by developing consumer-focused interventions. In Nigeria, the program operates in two traditional food markets, one each in Kebbi and Sokoto States. EatSafe previously conducted other formative research activities to understand food safety knowledge, attitudes, and practices (KAP) in Kebbi State, Nigeria: quantitative formative assessment, risk assessment, and focused ethnographic study (3–5). Together with this report, these studies provide important context to inform the design of food safety interventions, as well as insights on how to measure changes in KAP.

Sociocultural norms inform KAP and its precursors (e.g., perceptions, beliefs, expectations, habits), which then inform how people perceive and manage risk – factors foundational to EatSafe’s objectives. For example, in one study, sociocultural norms counteracted risk perception, such that consumers were more willing to consume unsafe foods despite knowing the risks (6). Given this understanding, EatSafe conducted this qualitative study using a behavioral science lens to examine how sociocultural norms can influence perceptions, beliefs, and expectations for food purchase and handling practices among vendors and consumers in Kebbi State, Nigeria. EatSafe also examined how personal and environmental hygiene, two topics not yet explored in detail in previous EatSafe research in Nigeria, could also influence KAP related to safe food handling practices.

1.1. RESEARCH OBJECTIVES

While EatSafe focuses on traditional food markets and interactions between consumers and vendors, food safety practices do not begin and end in the market. The wider context, such as personal and home hygiene as well as broader sociocultural norms, influence food safety practices in the market. As such, **Table 1** provides the research objectives of this study.

Table 1. Research Objectives, by Group

OBJECTIVE	VENDORS	CONSUMERS
1. The influence of sociocultural beliefs and practices on ...	Food handling decisions at the market	Personal hygiene and home food safety practices
2. The influence of personal and environmental hygiene practices on...	Food safety handling practices and perceived risk at the market	Food purchasing decisions and perceived risk at the market
3. Gendered experiences and expectations around food hygiene practices...	At the market	With vendors at the market and during home food preparation

1.2. BEHAVIORAL SCIENCE APPROACH

EatSafe leveraged a behavioral science approach to achieve the identified research objectives of understanding the linkages between sociocultural norms and personal and environmental hygiene practices, as well as their influence on an individuals' risk perception and their self-efficacy related to food safety practices. These concepts are all important dimensions that underlie individual decision making in behavioral science, as defined in detail in **Table 2**.

Table 2. Definition of Behavioral Science Terms Related to Food Safety Practices

TERM	DEFINITION
Sociocultural norms	<ul style="list-style-type: none"> • The rules that guide behaviors in groups and societies (7) • Impacted by religious or ethnic social group identities • Can impact food purchasing, handling, and preparation decisions • Particularly salient in gender norms, which are associated with expectations around how men and women behave
Risk Perception	<ul style="list-style-type: none"> • An individual's subjective evaluation of risk (e.g., perceived likelihood of foodborne illness from the consumption of unsafe foods) (8) • The degree to which individuals are willing to accept an adverse food-related incident • People's verbal (or non-verbal) communications and reported actions to reduce risk or the probability of harm (8)
Self-efficacy	<ul style="list-style-type: none"> • An individual's subjective perception of his/her capability to make optimal decisions to ensure their food is safe for consumption (9)
Locus of Control (LOC)	<ul style="list-style-type: none"> • The extent to which people believe they have power over their outcomes; can be <i>internal</i> or <i>external</i> in focus (9) • <i>Internal</i> LOC: the belief that outcomes or reinforcements (e.g., rewards and punishments) are a function of factors within one's control, rather than luck, fate or chance. • <i>External</i> LOC: the belief that reinforcement is a function of factors beyond one's control (e.g., luck, chance, or randomness).
Heuristics	<ul style="list-style-type: none"> • Cognitive processes that facilitate decision-making (sometimes referred to as rules of thumb, signals, or cues) (7) • Include both search criteria and decision criteria. • Can make complex decisions <i>easier</i> but do not necessarily help people <i>make</i> optimal decisions, because the cues used in the heuristic are based on existing knowledge and practices.

2. METHODOLOGY

EatSafe conducted this study in three traditional markets in Kebbi State, with a focus on EatSafe’s Key Commodities in Nigeria.¹ Data collection occurred during the last two weeks of July 2021 and span three methods:

1. In-depth interviews (IDIs);
2. Focus group discussions (FGDs), which allowed deeper exploration of themes identified in the interviews that were unclear or needed further probing; and
3. Follow-up IDIs with select participants using vignettes.

The study received Institutional Review Board (IRB) approval from the Nigerian Institute of Medical Research for all activities. The ID number of the IRB record is IRB/21/064.

2.1. STUDY PARTICIPANTS

The study targeted people who regularly interact with at least one of EatSafe’s seven Key Commodities at the study markets in Kebbi State. EatSafe identified three participant groups: consumers that purchase food at study markets (i.e., “buyers”), consumers who are the main food preparers in their household (i.e., “preparers), and vendors that sell food. The sample size of each participant group, by the method type, are in **Table 3**.

Table 3. Sample Size, by Method

PARTICIPANT GROUP	NUMBER OF PARTICIPANTS PER METHOD		
	IDI *	FGD *	FOLLOW UP IDIs
1. CONSUMERS (BUYERS)	15	16 (2 FGDs)	4
2. CONSUMERS (PREPARERS)	15	6 (1 FGD)	4
3. VENDORS	15	17 (2 FGDs)	4
TOTAL	45	39 (5 FGDs)	12

* EatSafe used different sets of consumers (buyers and preparers) and vendors for the IDIs and FGDs

Given the gender norms in Kebbi around the mingling of men and women, separate FGDs were held to ensure a conducive environment for participants to comfortably express their views. A total of five FGDs were conducted: three with consumers (two with all women and one with all men), and two with vendors (one with all women and the other with all men).

Trained enumerators approached potential participants at the three markets, explained the details of the study, and asked them if they were interested in participating. For those who consented to participate, the enumerators set up an interview date, time, and suitable location. [Appendix 1](#) provides additional details on the study methodology, including participant inclusion and exclusion criteria.

¹ The markets were chosen in consultation with key local stakeholders and in alignment with other EatSafe activities. EatSafe in Nigeria’s Key Commodities are grains (rice, maize, cowpea, soybean), aquaculture fish, fresh vegetables, and fresh beef, which were high in nutritional value, accessed via traditional markets, and sold directly to consumers. They were chosen in consultation with USAID and local stakeholders, aligning with existing Feed the Future programs in Nigeria.

3. RESPONDENT CHARACTERISTICS

EatSafe interviewed a total of 96 participants, including 36 vendors and 60 consumers. Consumers were separated into two groups, buyers (n=35) and preparers (n=25). Demographic data presented in **Table 4** combines these two consumer groups for simplicity, which is also done in the results section of this report.²

Table 4. Respondent Demographics

CHARACTERISTIC	VENDORS (n=36) ¹	CONSUMERS (n=60) ²
GENDER	Men: 56% Women: 44%	Men: 45% Women: 55%
MEDIAN AGE	31 years (ranged 18 – 50)	27 years (ranged 18 – 50)
EDUCATION	Secondary: n=8 Post-Secondary: n=3 Qur’anic + Secondary: n=2	None: 7%, n=2 Secondary: 23%, n=7 Post-Secondary: 63%, n=19
MARITAL STATUS	Married: 67% Single: 33%	Married: 53% Single: 47%
RELIGION	Christian: 33% Muslim: 67%	Christian: 33% Muslim: 67%
ETHNICITY	Hausa: 79% Hausa-Fulani: 16% Fulani: 5%	Hausa: 84% Igbo: 11% Fulani: 5%
FOOD ITEMS SOLD	N/A	Mixed grains: n=6 ³ Rice: n=2 Vegetables: n=3 Fish: n=2 Beef: n=2

¹ *Vendors*: Gender and religion are the only two characteristics that represent the entire vendor sample (n=36). Age data was collected for IDIs and FGDs (n=32). Ethnicity was collected during IDIs (n=19). Education, marital status, and food items sold were collected for IDIs (n=15). Note that one individual each reported receiving only primary education and only Qur’anic education.

² *Consumers*: Gender is the only characteristic that reflects the entire consumer sample (n=60). Religion and education data were collected during IDIs (n=30). The remaining characteristics reflect data from the IDIs and follow-up IDIs, n=38. Note that one individual each (both food buyers) reported receiving only primary education and only Qur’anic education.

³ Mixed grains include: maize, cowpeas, soybeans, millet, sorghum, groundnut.

In Kebbi, men customarily purchase food at the market for women to prepare at home. Given this gendered dynamic, most buyers interviewed were male, while most preparers, or those responsible for making food in the home after purchase, were female. All vendors interviewed sell the same foods year-round. Target food sold did not vary by gender except for beef and fish, which seem to be sold exclusively by men.

² The 31 consumer *buyers* who participated were split between IDIs (n=15) and FGDs (n=16, four groups separated by gender). The 21 consumer food *preparers* included more IDIs (n=15) and one FGD (n=6, one group of women only).

4. CONSUMER RESULTS

This section presents the findings of the research from the consumer IDIs and FGDs, organized by research topic. Unless otherwise noted, respondents refer to consumers, regardless of their role as buyer or preparer. The sections below focus on the main findings, highlighted in *green*, within each research topic.

4.1. PERSONAL HYGIENE AND HOME FOOD SAFETY PRACTICES

Consumers understand personal hygiene as a set of activities to comply with sociocultural norms: Most consumers described personal hygiene as what they do to keep the body, house, and food clean and free from dirt, germs, and associated diseases. The importance of personal hygiene was described as mainly to avoid diseases and the associated cost of treating them. For some buyers, it also meant a set of activities (e.g., taking a bath, brushing their teeth, or cleaning their surrounding area) that they engage in to achieve specific, interlinked outcomes (i.e., personal and religious objectives). Most respondents said they first heard about personal hygiene at a young age, in their home or in social settings, like religious institutions or schools. Health centers and media (specifically radio) were also mentioned as important sources of information.

“Hygiene is a key element in our religion, as such it is expected that at all times we should be clean.” – Male Food Buyer

“Hygiene basically talks about how you take good care of yourself from dirtiness and free from germs. And also, taking care of yourself and the food that you eat. Keeping your surroundings clean.” – Male Food Buyer

Good personal hygiene practices are influenced by consumers’ knowledge, potential negative outcomes reinforced by past experiences, and expectations from their community: To gauge the level of importance associated with personal hygiene practices, EatSafe asked the respondents how important personal hygiene was on a scale of 0 (lowest) and 5 (highest). All respondents gave a minimum score of 4. Reasons for this score include:

- Existing knowledge on its importance;
- For prevention of illness;
- Sociocultural expectations; and
- Salience of past negative experiences.

According to respondents, hygiene-related information is shared by parents, schools, health facilities and religious spaces. Together, they have shaped consumers’ values on practicing good personal hygiene. Potential negative outcomes (e.g., contracting diseases) were cited as strong motivators to practice good personal hygiene, made more salient where consumers have had previous negative experiences.

Consumers recognize that poor food safety and hygiene habits are associated with health and social risks: All 15 respondents associated poor personal hygiene practices with health or social risks. Most consumers emphasized the relationships between poor hygiene habits (e.g., not sweeping the house or cleaning the toilet) and contracting diseases (e.g., malaria, dysentery, cholera, and typhoid).

Beyond health, some respondents noted the risk of being shunned if they practice poor hygiene habits (e.g., visitors may be offended by an unclean house, an example noted by two respondents). A few respondents mentioned maintaining body and home cleanliness as important for social desirability (e.g., taking baths multiple times daily, brushing their teeth so that they do not smell while talking) so that people do not see them as “dirty.”

“There are risks if you are not observing good hygiene. For the environment when it is polluted, if you have guests coming they won’t be happy and neither will you, so you have to make sure the environment is very, very clean.” - *Male Buyer*

“Sickness. This is the most dangerous risk of not practicing personal hygiene. It can lead to unimaginable diseases. And you know health is wealth.” - *Male Buyer*

“Some only care about their immediate appearance before people. Like in my place of residence, you see women sweep only their frontages without gathering all the rubbish generated. They love to appear neat when going out to be applauded by external persons, but their environment is questionable.” - *Female buyer*

Consumers prioritize look and taste of food over hygiene when preparing meals:

Even though food preparers practice proper personal hygiene when preparing meals (e.g., handwashing, cleaning vegetables), the main considerations for meal preparation mentioned by respondents are (in no order) availability of ingredients, household food preferences, how the meal tastes, offering balanced diet, and hygiene. Food preparers appear to believe that the main outcome of meal preparation is the taste and look of the food, rather than the level of hygiene practiced during food preparation. This has food safety implications and underscores the need to ensure the safety of primary ingredients.

4.2. DECISION MAKING INFLUENCES IN THE MARKET

Buyers shop from multiple vendors and use visual cues to make choices: Most consumers indicate that they browse multiple vendors in the market and then select the vendor using certain criteria, as detailed in **Table 5**.³ Visual cues like cleanliness of the vendor’s clothes are used to determine overall hygiene, while good customer service was defined as being treated well and respectfully.

Table 5. Frequency of Cues Mentioned by Respondents

CRITERIA FOR VENDOR SELECTION	FREQUENCY (# OF RESPONDENTS)
Physical cleanliness of the vendor	9
Vendor’s stall	7
Quality of available products	4
Price	3
Good customer service	2

³ How consumers use these cues for decision-making is beyond the scope of this study, but Section 5 includes a discussion of what those decision processes may be.

“His cleanliness, quality of foodstuff and good environment. Once all these requirements are met then I choose a vendor. Also, I consider measuring plates, I make sure the measuring plate is ok.” – *Male Food Buyer*

“For example, when you go to buy meat and the seller looks rough and tattered, the meat full of blood and then flies all over, you won't want to patronize such places. But when you see the seller neat and clean, his meat washed with no flies, there is every tendency you would buy from such a person.” - *Female Food Buyer*

“Some vendors lack good personal hygiene while some have it. Like when you go to buy foodstuff like rice, some will keep it on the floor while some will keep it on top of a plank to avoid exposure to dirt.” – *Male Food Buyer*

Buyers state that limited attention and price sensitivity can result in less-than-optimal purchase quality:

Though customers use cues to select vendors some still reported negative purchasing experiences due to not paying attention to how vendors handle foods because they were rushed or needed to haggle for lower prices and thus acquired substandard products. Some buyers mentioned situations in which they discovered a food item was bad only during the meal preparation process. Thus, at points of purchase, being in a hurry or price haggling might affect consumers' risk perception.

“Yes. I bought bad beans one time, I bought it without checking because my attention was divided and I didn't check well. I kept it and after a week I found weevils in it. And it was because I wasn't cautious enough.” - *Male Food Buyer*

“Yes, I bought maize last month, and when my wife was cleaning it she noticed it was full of stone mixed with beans. It happened because I didn't check it properly before buying it-I was in a hurry to buy it.” - *Male Food Buyer*

“Yes. I had a bad experience with the catfish I bought last time. When I prepared it, the taste of the fish was bad. It tasted rotten. I think what caused it was when I got to the market to buy it, I noticed that the fish was not moving but it was big. But the vendor assured me that it was okay. The price was also cheap.” - *Male Food Buyer*

Consumers have some prior knowledge about how to maintain food safety at home and in the market:

Eleven of 15 respondents defined safe food in terms of food storage practices in the market and its outcomes. For example, proper food storage and accompanying hygiene practices (i.e., sweeping floors, fumigating) were expected to result in uncontaminated food and no health hazards. Likewise, some consumers noted the relationships between purchasing substandard food and exposing their household to illnesses and then reasoned the need for good safety practices during purchase.

“Yes, it is important. As I've said, one needs to be sure he doesn't consume what will cause them illness from food poisoning.” - *Female buyer*

“Yes. I look out for cleanliness of the food and vendor; I also look at surroundings where [it] is sold. Because I know that this will save not only me but the entire family the risk of consuming food that will harm us.” - *Male Buyer*

3.1. GENDERED EXPERIENCES AND EXPECTATIONS AMONG CONSUMERS

Women and men conceptualize hygiene differently. Women respondents tended to think about hygiene in a thorough manner and express an internal locus of control in relation to personal hygiene. When probed about *how* they practice good personal hygiene, most male respondents focused on outward cleanliness (i.e., cleanliness shown outside the home, such as wearing clean clothes and keeping guest spaces clean). All female respondents stated that every area of the home should be kept clean and expressed frustration at those in their communities who focused on cleanliness outside but not in their homes.

In the FGD, women respondents also mentioned that good personal hygiene practices result from the personal ability to engage in the right behaviors. Men, on the other hand, emphasized the need for external factors like money and available amenities (e.g., tap water). These responses seem to suggest gendered differences in LOC related to hygiene practices, with women having an internal LOC and men having an *external* LOC (9).

“No, it’s not about money. You see, neatness is in the blood. If you don’t regard personal hygiene as part of life, you would not do it except if you are given proper orientation.” - Female Food Buyer

“Even if you choose to buy water from a wheelbarrow pusher it will require money which oftentimes is not sufficient. Basically, cost is a challenge. To fully practice personal hygiene, one must spend a tangible amount of money.” – Male Food Buyer

Some participants felt male buyers were less “discerning” with respect to quality of food purchased: Although most women said they trusted and expected the food purchased by the men to be safe, three respondents noted specific experiences of substandard food purchased by their husbands or brothers. They attributed this error to lack of attention on food product quality or rushing the purchase. Four female preparers also mentioned they pay close attention to food they did not purchase themselves during preparation, to avoid negative experiences they have had in the past.

Gender preferences do not appear to influence vendor selection: Most consumers did not mention gender as a key consideration for vendor selection, though a few buyers did say that they prioritize vendors that share their social identity groups. This is simply because they assume the individuals are well-informed of social expectations for food items, especially for *halal* slaughter practices.

“We normally buy from men, mostly men, because most women selling in our market are not people from our cultural background.” – Male Food Buyer

“There is no gender consideration, religious leaders always advise us to keep ourselves and food clean.” - Male Food Buyer

“My culture does not prohibit me from buying things from people who don’t practice my culture. As long as what they are selling is not on the list of things that are prohibited by my culture.” - Male Food Buyer

3.2. INFLUENCE OF SOCIOCULTURAL NORMS

This section explores how sociocultural norms (e.g., religious and ethnic practices) may affect consumers' food purchasing and handling decisions. EatSafe also examined what factors reinforce the adoption of those beliefs or norms, and how those norms might undermine food safety practices.

Sociocultural norms highlight the importance of cleanliness: All respondents noted the influence of religion on some food handling and hygiene practices, and their buying practices. Religious norms particularly informed how animals should be killed (e.g., *halal* butchering practices among Muslims). Christian respondents repeatedly mentioned the phrase “cleanliness is next to Godliness” when describing the importance of purchasing and handling food safely, and some noted they are forbidden from eating specific food. Muslim respondents referenced teachings that relate to their general hygiene (e.g., pre-prayer ablution). However, religious influences do not appear to extend to specific safe food practices (e.g., participant responses did not specifically describe any food safety practices beyond their faith's requirement to not consume *haram* (forbidden) foods, to eat *halal* (acceptable) foods, and the general hygiene practices mentioned above).

Ethnic norms may influence the food purchase decisions of consumers but have more influence on home food handling measures: Respondents indicated ethnic norms influence how food is prepared to achieve specific tastes. Optimal food purchasing and handling practices that produce tasty foods were mostly disseminated through generations by parents and elder relatives during food preparation, especially mothers and grandmothers. Respondents also mentioned cross-learning from other cultures' styles of food preparation to achieve better tasting food or safer food (e.g., some Hausa respondents learned rice cooking practices from the Yorubas, an ethnic group in Southwestern Nigeria). Other ethnic learnings referenced by participants, such as keeping short nails, washing hands before cooking, washing certain food items like vegetables with saltwater, ensuring food is cooked properly, cleaning the environment, and removing impurities, such as stones from grains before washing, are common strategies for ensuring food safety.

“Yes. Let me use millet as an instance to explain how my culture supports good food safety practices. First, we wash it using clean water and dry it in the sun. We then remove the chaff from the grain using a machine, or manually using mortar and pestle. Now, we can use it to prepare a meal.” - Male Food Preparer

“Foreign rice is another example. Most people think because it's processed by machine it's free of germs and is ready for use. It is not. It's important you parboil it for some minutes and then remove it from the fire and wash it before taking it back to the fire. I learned these practices from my association with other people from different ethnic groups, before learning more from school.” - Male Food Preparer

Respondents also recalled some unsafe practices encouraged by their ethnic group. These practices that are still in use because they achieve specific outcomes (e.g., not washing certain food items like benniseed or vegetables because they might lose their taste).

“Let's use soup (soup made from benniseed) when it is removed from the farm. It usually comes with particles of sand that need to be washed off, but some people will say they don't see the need to wash it because it will lose its thickness. Most locals have this belief.” - Female Food Preparer

“Some don't believe that vegetables should be washed or go through some hygienic process before it is cooked.” - Female Food Preparer

4. VENDOR RESULTS

This section presents the findings of the research from the vendor IDIs and FGDs, organized by research topic. The sections below focus on the main findings, highlighted in **green**, within each research topic.

4.1. PERSONAL HYGIENE

Vendors know the importance of personal hygiene, but often face challenges in meeting hygiene standards: All vendors said they were familiar with the concept of personal hygiene and understood it as avoiding dirt and appearing neat. Aspects of hygiene mentioned by vendors included body cleanliness (regular bathing, brushing teeth, washing clothes), cleanliness of surroundings (regular cleaning of environment and shop), cleaning tools used to handle food (washing tools/utensils), and physical appearance (looking neat and clean). When asked to rank the importance of hygiene on a scale of 0 (not important) to 5 (very important), all 15 vendors gave a score of 4 or 5.

All vendors mentioned having access to water through personal or community taps, personal or community boreholes, both at home and at the market. Although all vendors understood the importance of using water and soap for cleanliness, the vendors identified several challenges in practicing personal hygiene, including:

- Cost of cleaning supplies;
- Labor needed to clean;
- Differences of opinion in hygiene standards; and
- Lack of cooperation among vendors (e.g., one vendor may practice hygiene by cleaning a drain, but a neighboring vendor does not).

“One major challenge is finance. For one to keep an environment clean it involves buying items like soap, izal, pesticides and so on. And you know the economic situation is poor. Another challenge is that you must labor hard to keep yourself and your environment clean.” - Female Vendor

“One challenge is co-operation. I may be practicing personal hygiene, but if my neighbor does not practice it my effort may be ineffective.” - Female Vendor

“We live in a society where there are people with different orientations and opinions. These opinions sometimes affect our judgment and choices. I may choose to practice personal hygiene but someone else may criticize me by saying I want to show I know better than them.” - Female Vendor

Vendors believe poor personal hygiene results in poor personal health: Most vendors listed health concerns and associated costs of treating sickness (malaria, cholera, vomiting) as potential risks of poor hygiene. Interestingly, some of the diseases mentioned by vendors (e.g., malaria) are not caused by poor personal hygiene. While most vendors say they have not had personal encounters with those risks, they are familiar with neighbors, friends, or others who have become sick due to poor hygiene. When they do fall ill, most vendors said they change their personal hygiene practices, and once better, increase the frequency of their personal hygiene practices to avoid getting sick again.

4.3. FOOD HANDLING KNOWLEDGE AND PRACTICES AT THE MARKET

Vendors say they are familiar with the concept of food safety and apply its principles in their food handling practices: All vendors said they were familiar with the concept of food safety and that it was important to them. When asked about the meaning of food safety, three different answers arose:

- Preventing disease;
- Handling (sourcing, storing, packaging) food properly; and
- Avoiding contaminants (insects, pests, chemicals).

Vendors indicated they practice food safety through their food handling practices and decisions (e.g., keeping the stall or business area clean, regular handwashing, proper washing, sorting, and storing of food, and keeping the body clean).

“Any food that one eats that does not spoil one’s stomach or give you problems is safe food.” - Male Vendor

“When you talk about food safety we mean hygiene, and it means the food item is being washed properly and kept clean. Also, making sure every food item looks perfect and clean.” - Male Vendor

“It [food safety] is food that is neat without contaminations, such as the food that they wash well before preparing, the washing of the items used in cooking such as pots, and the neatness of the seller or the person preparing it.” - Male Vendor

Vendors prioritize food handling decisions to attract, satisfy, and retain consumers to maximize profit: All vendors reported that their decisions and behaviors on sourcing, storage, and packaging of food were to attract and retain consumers to maximize their business’ profit. **Table 6** contains a description of the factors that vendors consider most important; a full list is available in [Appendix 2](#). The themes of consumer attraction, satisfaction, and retention featured strongly in vendors’ responses on the importance of their food handling practices.

“If we don’t buy from the good and clean people, we are likely to buy bad food, and if we buy bad food our [consumers] will not buy from us. We will have spoiled the relationship with the [consumers], that is why it is very important to buy from a good place.” - *Male Vendor*

“It is important because that helps me keep consumers [and bring more] to me.” - *Male Vendor*

“It is important because the health of my [consumers] is at risk; if the nylon is clean, it shows that I am not a dirty person. They may not come to my store next time.” - *Male Vendor*

Table 6. Vendor Consideration for Sourcing, Storing, and Packaging Food

CONSIDERATIONS WHEN....		
SOURCING FOOD	STORING FOOD	PACKAGING FOOD
Physical appearance of the food	Consumer preferences and demands	Cleanliness of the packaging paper
Cleanliness of the food	Avoid exposure to flies and insects or water that might cause damage to the food	Appearance of the packaging paper (i.e., size, quality, newness)
Consumer demands and preferences	Cleanliness of surfaces where food is stored and materials used to cover food	Appearance of the food when packaged
Avoiding pests and insects	Shelf-life and freshness of food	Consumer preferences
Distance of the source from the market		Distance to be covered by consumer
Quality, especially rice (i.e., no stones or insects, parboils well)		
Price		

4.2. GENDERED EXPERIENCES AND EXPECTATIONS AMONG VENDORS

Some female vendors believe they are expected to handle food more carefully than men: In response to a question about gendered expectations related to food handling, most vendors of both genders said there were no apparent differences. However, some women vendors expressed that women vendors are expected to handle food better than men.

Generally, food vending among Hausas is considered a male activity, as women are perceived primarily as homemakers. One female vendor noted that women vendors have to balance responsibilities at the market and home. Moreover, selling at the market requires mingling with men, which is not considered acceptable in the Islamic faith, according to at least one of the male and female vendors interviewed.

Upon further probing in follow up IDIs, gendered preference for *selling* certain types of foods arose (e.g., meat is sold only by men). A female Hausa vendor said she would prefer to sell

food commodities like tomatoes, vegetables, and oils (without providing reasoning behind her preferences), but in her view she feels that society does not support that. Women are generally expected to sell ready-to-eat foods (e.g., bean cake, soya bean cake, cooked rice, and beans), while men are expected to sell commodities (e.g., meat, maize, sorghum, rice, millet, and vegetables) primarily because handling these commodities requires time to go to source the food (see quote below) or strength to lift heavy sacks of food.

“If you choose to sell food that is more common with women then you must be ready to handle it properly like the way a woman will.” – Female Vendor

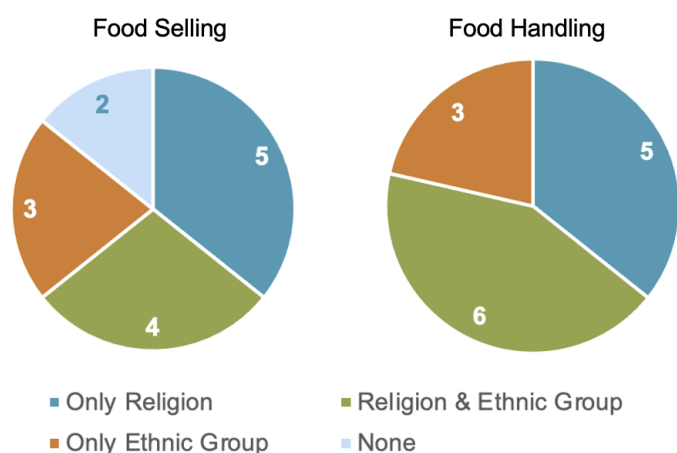
“...most women don't have the freedom and time that men do. ... If you talk about small businesses around the community, like ready-to-eat food or businesses that you can do even at home, then women can do better. Otherwise, men can supply and sell more than women. Most businesses require going to get supply and then selling it. This means you have to move from one place to another which most women don't have that privilege. It requires you to also mingle with men, which is not acceptable to our husbands.” - Female Vendor

“If [a male vendor] sells grains he will test better compared to women because it requires strength and time [that] most women don't. Another example is the sugarcane business [which] requires going to swampy areas which is [in]convenient for women. ... This is why you will find more men in such businesses, and over time it has become a culture of our community.” - Female Vendor

4.3. INFLUENCE OF SOCIOCULTURAL NORMS

Sociocultural norms influence vendors' decisions about what foods to sell: Vendors varied in their responses when asked about how their culture influences which foods they sell (**Figure 1**). All respondents who mentioned religion as an influencing factor were Muslim, and they noted not selling foods deemed *haram* (forbidden). Further, Islamic teachings encourage Muslims to meet the needs of their community, so some Muslim vendors aim to ensure people can access food.

Figure 1. Factors Influencing Vendors on Selling and Handling Foods (n = 15)



Sociocultural norms about personal hygiene and food safety are learned at home and through social identity groups: Vendors say that their social identity encourages personal and environmental hygiene practices. For example, both religious and ethnic norms encourage hygienic practices and that vendors who do not practice cleanliness, or who do not appear presentable are judged poorly.

Vendors say that consumers regularly buy staple foods characteristic of their respective ethnic groups, increasing demand for certain foods (e.g., Hausas like to eat rice and beef, while Igbos like pumpkin leaves). Vendors also noted that high demand foods are lucrative and reputable to sell (e.g., vegetables are valued highly for their perceived benefits to the body and skin among Hausas). Moreover, in Hausa culture selling beef is considered reputable.

When asked about the factors that have influenced how they *handle* food, all vendors mentioned religious beliefs or ethnic group norms (**Figure 1**).⁴ According to Muslim vendors, Islamic teachings discourage handling food in ways that could harm others. Religious beliefs lead vendors to be conscious of their personal hygiene and cleanliness of their surroundings, which leads to safe behaviors and practices when handling food.

Ethnic group norms also encourage cleanliness of both body and surroundings and provide guidance on how food should be presented or judged. For example, in Hausa culture, rice is considered of good quality if it does not contain stones, insects, or any type of debris. Vendors noted that their reputation will be negatively affected if they disregard those ethnic norms.

“You know that Islam has given us some guide about the foods to eat and sell. Those foods religion told us to eat/sell are called *halal*. But the ones that we have been given instructions not to eat/sell are called *haram*. Some of these foods that religion encourages to eat/sell are fish, beef, goat meat, chicken, and many others, have also influenced my decisions about foods in general.” - *Male Vendor*

“I believe culture has influenced my decision to sell meat because we Hausa people love eating meat, so I decided to start selling because I want to make meat accessible to everyone.” - *Male Vendor*

“...our culture here in Kebbi—which is Hausa—people like buying vegetables, *pepe (pepper)* and tomatoes because some people say it increases blood in the body, and makes the skin look good. Such aspects influence me to sell the vegetables in the market.” - *Female Vendor*

⁴ One vendor said aspects of religion and ethnic group influence food handling but was not specific about whether it is the former, latter, or both.

5. DISCUSSION: BEHAVIORAL INSIGHTS

5.1. CONSUMERS USE CUES TO SELECT VENDORS

Consumers use several criteria/cues to select vendors, including specific cues that imply cleanliness (e.g., “clean stall,” or “neat vendor”) or other cues that signal “good customer service.” More research is needed to know how consumers are using these cues in their decision-making, either as search criteria, decision criteria, or both. In our study men and women reported men’s lower level of attention at point of purchase and women’s higher expectations of food quality. Thus, men and women may differ in how they use cues.

From vendors’ perspectives, consumers’ attraction, satisfaction, and retention are important for business and profit. Vendors know that consumers use their physical appearance, the cleanliness of their stall or shop, and the product itself (e.g., food placement, packaging) as cues to determine where to shop. To ensure consumer satisfaction, vendors take measures to ensure their food handling practices coincide with the consumers’ expectations (e.g., rice vendors will remove stones, insects or debris in rice to ensure consumers do not doubt its quality). A vendor’s best outcome is to have repeat consumers who build the vendor’s reputation, representing a source of both pride and motivation.

5.2. CONSUMERS MAY NOT PRIORIZE SAFETY WHEN PURCHASING FOOD

While the cues that consumers use to make decisions at the market generally result in satisfactory purchases, consumers still make suboptimal choices that result from limited time, attention, and information. When consumers discussed buying substandard food items, it was because they were unlikely to notice specific food quality cues.

Price is another important factor. Buyers negotiate to obtain a favorable food quality-price combination. While most consumers say they do not forego quality for better prices, some mentioned that they have purchased substandard products they thought were of high quality because of price haggling.

In both situations, there is an attentional focus on other outcomes (e.g., price or time to complete the trip to the market). Therefore, the cost of sub-optimal decisions must be highlighted, with the aim of making “food safety/avoid food risk” a specific outcome of the shopping experience.

5.3. GENDERED DIFFERENCES EXIST IN CONSUMERS’ LOCUS OF CONTROL

Optimal food safety practices require a belief in one’s own capacity to perform these ideal behaviors, a concept referred to as self-efficacy. Informed by culture and lived experiences (10), self-efficacy is related to the concept of locus of control. While the small sample size of this study limits the scope of conclusions drawn regarding the locus of control across genders, the difference in responses between men and women were revealing.

In this study, male and female consumers differed in how they qualify their ability to apply good food safety practices. Women were more likely to discuss good food safety practices as a set of procedures that have become second nature after learning them over time. By contrast, male consumers reported that food safety practices were contingent on other factors beyond their control, like money or the availability of the right amenities at the marketplace and at home.

This *internal* LOC among women may stem from both two sociocultural norms: women are food preparers, and that women must maintain clean appearance and clean home.

5.4. SOCIOCULTURAL NORMS COULD BE LEVERAGED FOR FOOD SAFETY

Many sociocultural norms are learned from childhood and become ingrained in minds, creating “habit loops” (i.e., cues to follow, routines, and rewards). Reported ethnic norms and religious beliefs in this study included a mix of good food safety habits (e.g., personal hygiene, washing hands, pots, clean cooking area), and suboptimal practices (e.g., preparing food without washing to achieve a certain kind of taste).

Vendors and consumers in this study stated that their religious beliefs and ethnic group practices promote food safety. Existing cultural habit loops were endorsed or incentivized because people have observed their parents and grandparents practicing those behaviors and have not suffered ill consequences or have lived long lives. Vendors said that general cleanliness practice at the market led to positive outcomes (e.g., repeat consumers and thriving businesses). Neglecting expected behaviors can lead to negative social and personal outcomes (e.g., less profit and perhaps a bad reputation at the market). Good cleanliness practices that are rewarded by repeated customers leads to expectations and outcomes that reflect cleanliness but are not always aligned with food safety best practices. Although cleanliness is a sociocultural entry point, further work is needed to fully incorporate ideas around food safety into a ‘cleanliness’ construct.

5.5. STUDY LIMITATIONS

This study represents a small sample of consumers and vendors in Kebbi State, Nigeria. As with all qualitative research and self-reported data, there is risk for social desirability bias, or the tendency for people to act or respond to socially acceptable behaviors (11). For example, the rating questions regarding the importance of personal hygiene had scores of 4 to 5. To limit social desirability bias, researchers can ask about past experiences, or the behaviors of others (rather than themselves). In this way, respondents may be more forthcoming about information. Interviewers were also instructed to probe and dig beyond the “first and/or obvious response.”

The ordering and type of interview questions could also have primed respondents to respond in certain ways. For example, it is possible that asking consumers about their own personal hygiene at the start of the interview caused them to specify visual cues more vividly on vendor hygiene. The questions in this study were highly directive and prompted respondents on specific aspects of their food purchase and handling behaviors. Different responses may have occurred if more open-ended, general experiences questions had been used.

6. CONCLUSION

This study sought to understand the role of personal hygiene, environmental hygiene, and food purchasing, on perceptions of risk as well as self-efficacy in food safety practices among consumers and vendors. The results suggest personal cleanliness practices, including relevant food safety behaviors (e.g., handwashing, personal hygiene) are foundational knowledge learned at home and further emphasized through sociocultural norms. Religious norms largely focus on food acceptability for consumption and food safety outcomes (clean food, avoidance of diseases) rather than specific safety measures that

should be adopted by consumers and vendors. This gap is partly filled by ethnic norms that place emphasis on the process of achieving safe food.

While consumers believe in their abilities to practice food safety behaviors, some have had negative experiences in the market due to limited time, attention, and price haggling. Consumer self-efficacy to practice good food safety behaviors appears to be higher among women than men, given women's internal LOC. These findings imply that men and women may require different interventions on food safety.

Recommendations for EatSafe's Intervention Design

EatSafe in Nigeria aims to generate evidence and knowledge on leveraging the potential for increased consumer demand for safe food, to improve the safety of nutritious foods in traditional markets. Central to EatSafe's work is understanding and potentially shaping the motivations, attitudes, beliefs, and practices of consumers and food vendors. Based on the results of this study, EatSafe should consider the following lessons emerging from this document in the design of its interventions going forward:

- Sociocultural norms that leverage positive personal and environmental hygiene practices (e.g., hand washing, clean stalls for vendors) are potential entry points to encourage good food safety habits.
- While creating sociocultural expectations around food safety best practices help create an enabling environment, consumers need help in decision-making. This study suggests that consumers are using heuristics. The interventions may advise consumers on the specific criteria (i.e., cues) they can use to optimize how they select vendors and purchase foods.
- Among female consumers, it might be useful to leverage the internal locus of control with regards to personal and environmental hygiene. Interventions that target women should deliver new, useful information and allow them to incorporate food safety habits as criteria for their shopping routines.
- Interventions can also highlight the benefits of good food safety practices as an immediate reward (e.g., good shopping trip or satisfactory meal), as well as carefully highlighting the risks of poor food safety practices with diseases, since vendors and consumers seek to avoid these outcomes.
- Interventions can focus on consumer satisfaction and retention, two important outcomes for vendors. Because food vending is a business, vendors need and want to generate income. Interventions should promote vendors' business interests by encouraging consumers to support hygiene in the market, e.g., "cleaner" vendors. Vendors should be able to see the connection between food safety practices and positive business outcomes.
- The interventions should ensure access to training and educational resources that support consumers and vendors alike.

7. REFERENCES

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8. APPENDICES

8.1. APPENDIX I: DETAILED METHODOLOGY

Participant Recruitment:

INCLUSION CRITERIA	EXCLUSION CRITERIA
CONSUMERS (FOOD BUYERS)	
<ul style="list-style-type: none"> • Be 18 years of age and above (completed years; i.e., must have been 18 at the time of the survey). • Have primary or shared responsibility for purchasing food for their household (as determined by a pre-screening survey). • Shop at a target market at least once in a month, on average. • Purchase at least one of the key commodities - beef, aquaculture fish, fresh vegetables, rice, maize, cowpeas, and soybean. • Be willing and able to give informed consent. 	<ul style="list-style-type: none"> • Food vendors at the market. • Purchasing to resell part or all of the commodities at the target market. • Being a vendor or hawker selling outside the boundaries of the market. • Being a hawker of street or ready-to-eat foods.
CONSUMERS (FOOD PREPARERS)	
<ul style="list-style-type: none"> • Be 18 years old and above (completed years; i.e., must have been 18 as at the time of the survey). • Have primary or shared responsibility for meal preparation in the household. • Be able and willing to give informed consent. 	<ul style="list-style-type: none"> • Food vendors at the market. • Have already been recruited as food buyers. • Cannot be single or living alone in the household.
VENDORS	
<ul style="list-style-type: none"> • Be 18 years old and above (completed years, i.e., must have been 18 as at the time of the survey). • Should be selling food within the boundaries of the selected market. • Sold food at the selected market for the past 3 months. • The vendor or the business where the vendor works sells food at the market at least one day per week. • Selling at least one of the key commodities. • Vendors eligible for recruitment in the study should be key staff in the shop or stall, and regularly perform operations relevant to food safety (restocking, arranging food on display, temporary storage, upkeeping the stall, making transactions with consumers, cleaning stalls). • Only vendors interfacing with consumers should be included (i.e., the person should be involved in the day-to-day operations in the shop). • Only one vendor per shop or stall should be recruited. • Owners, managers or employers of the shop or stalls can be included. There is no discrimination based on roles. • Be willing to give informed consent. 	<ul style="list-style-type: none"> • Another vendor in the same food vending business is already enrolled in the cohort study (the person with primary responsibilities in the operation of the business should be preferentially enrolled). • The business sells only snacks or food that is not brought home and/or consumed at home.

Recruitment Targets: For each of the three categories of participants, EatSafe aimed to recruit 30 participants (20 for IDIs, and 10 for FGDs, for a total of 90 participants), aiming for equal gender representation. Because women are more likely to be food preparers, EatSafe anticipated this quota may not be met and planned accordingly. In instances where the recruitment goal for buyers were met, and buyers also act in the role of food preparers, they were recruited for the preparer category. Consumers eligible to be considered as food buyers are those considered primary shoppers for the household.

Recruitment Actuals: After recruiting 96 participants and thus meeting the recruitment goal, EatSafe interviewed 15 of the 20 recruited participants for interviews per group, and held FGD with six to eight people, of the original 10 recruited, per session. For the follow-up interviews, EatSafe recruited participants previously interviewed and spoke to four respondents per category.

Data Collection and Analysis: The FGD instrument was refined after a review of the first 10 interviews. Upon completion of 45 interviews, a follow-up interview was administered. All instruments were translated into Hausa, the most commonly spoken language in Kebbi. Trained enumerators visited participants at their location of choice and conducted interviews in their language of choice (i.e., English or Hausa). FGDs were held near the markets. All interviews were audio-recorded with participant consent. IDI enumerators input responses into stripping sheets (pre-prepared spreadsheets with questions). FGD and follow-up interviews were transcribed using audio recordings.

Content analysis was the main data analysis strategy. Two researchers reviewed script sheets and develop codes to analyze the text for each study participant group. Regular check-ins occurred within the EatSafe consortium to ensure inter-coder agreement on code labels, and reliability in interpretation of the text. The codes relating to similar topics were grouped into themes guided by the research objectives and topics. The analysis was iterative and involved joint meetings among researchers to resolve differences in coding and text data interpretation.

8.2. APPENDIX 2: VENDORS' CONSIDERATION IN FOOD HANDLING

Vendors' Sourcing Considerations by Food Type

SOURCE	CONSIDERATION	IMPORTANCE TO VENDOR
BEEF		
<ul style="list-style-type: none"> Buy cow from out of state and kill it at an abattoir in Kebbi Slaughterhouse 	<ul style="list-style-type: none"> Physical appearance of the cow Cleanliness of the beef 	<ul style="list-style-type: none"> Impact on consumers' health
VEGETABLES		
<ul style="list-style-type: none"> Own farm and/or other farmers Community farms in Kebbi 	<ul style="list-style-type: none"> Cleanliness of the leaf Lack of pests or insects Consumer demands Distance of the source so vegetables do not dry up 	<ul style="list-style-type: none"> Quality of vegetables Importance consumers attach to vegetables being clean
RICE		
<ul style="list-style-type: none"> Local markets 	<ul style="list-style-type: none"> Quality (i.e., with no stones or insects; parboils well) 	<ul style="list-style-type: none"> Impact on consumers' health
GRAINS		
<ul style="list-style-type: none"> Markets Villages known for particular grains Farmers Out of state 	<ul style="list-style-type: none"> Consumer preference and demand Price 	<ul style="list-style-type: none"> Profit generation Consumer retention
FISH		
<ul style="list-style-type: none"> Fish market River in the state 	<ul style="list-style-type: none"> Cleanliness of the fish and fish market Weather (e.g., rain means plenty of fish) 	<ul style="list-style-type: none"> Vendor reputation for quality fish

Vendors' Storage Considerations by Food Type

STORAGE	CONSIDERATION	IMPORTANCE TO VENDOR
BEEF		
<ul style="list-style-type: none"> Left-over meat is kept in freezers provided by market committee 	<ul style="list-style-type: none"> Avoid exposure to flies and insects Cleanliness of shop and surfaces where meat is placed Health of consumers 	<ul style="list-style-type: none"> Avoid spoilage Consumer retention
VEGETABLES		
<ul style="list-style-type: none"> Inside shop away from the sun Inside clean wet sack 	<ul style="list-style-type: none"> Cleanliness of the bags used for covering Longevity and freshness Cleanliness of shop and surfaces Avoid pests such as rats 	<ul style="list-style-type: none"> Attract consumers Consumer assessment and judgement
RICE		
<ul style="list-style-type: none"> At home in a storage room with cemented floor and no leaks in the roof In the shop inside bags 	<ul style="list-style-type: none"> Maintain Quality of the rice (avoid insects, no water contact) Neatness of the sack Make it last longer 	<ul style="list-style-type: none"> Avoid spoilage Avoid theft
GRAINS		
<ul style="list-style-type: none"> Inside bags in the shop Storage room with iron sheet roofing and cemented floor 	<ul style="list-style-type: none"> Cleanliness of shop Avoid insects and pests (e.g., rats) Avoid contact with water 	<ul style="list-style-type: none"> Avoid spoilage that might cause loss of money Avoid theft
FISH		
<ul style="list-style-type: none"> At the market In baskets Leftover fish is stored in freezer 	<ul style="list-style-type: none"> Cleanliness of the fish before putting in sacks 	<ul style="list-style-type: none"> Consumer satisfaction Consumer retention

Vendors' Packaging Considerations by Food Type

STORAGE	CONSIDERATION	IMPORTANCE TO VENDOR
BEEF		
<ul style="list-style-type: none"> • Cement paper and nylon 	<ul style="list-style-type: none"> • Cleanliness of nylon paper • Newness of nylon paper 	<ul style="list-style-type: none"> • Avoid spoilage • Attract consumers • Consumers' health
VEGETABLES		
<ul style="list-style-type: none"> • Bags • Nylon leather 	<ul style="list-style-type: none"> • Appearance of vegetables to consumers • Cleanliness of the nylon 	<ul style="list-style-type: none"> • Attract more consumers • Consumer preference • Consumers' health
RICE		
<ul style="list-style-type: none"> • Sack 	<ul style="list-style-type: none"> • Size and quality of package 	<ul style="list-style-type: none"> • Avoid contact with water • Avoid spoilage • Consumer satisfaction and retention
GRAINS		
<ul style="list-style-type: none"> • Nylon • Sacks • Polythene bag • Leather 	<ul style="list-style-type: none"> • Cleanliness of the nylon paper • Quantity purchased • No holes in sack • Clear nylon 	<ul style="list-style-type: none"> • Avoid spoilage that might cause loss of money • Attract consumers • Consumer retention
FISH		
<ul style="list-style-type: none"> • Nylons or cartons 	<ul style="list-style-type: none"> • Distance and journey • Consumer preference 	<ul style="list-style-type: none"> • Avoid losing stock • Impress consumers • Consumer satisfaction and retention