EatSafe: Evidence and Action Towards Safe, Nutritious Food

EatSafe Learnings from Phase I Research in Hawassa, Ethiopia

February 2023
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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Lourdes Martínez Romero

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**For additional information, please contact:**

- Richard Pluke, EatSafe Chief of Party, rpluke@gainhealth.org
- Caroline Smith DeWaal, EatSafe Deputy Chief of Party, cdewaal@gainhealth.org

Global Alliance for Improved Nutrition  
1201 Connecticut Ave NW, Suite 700B-2  
Washington, DC 20036

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<td>Evidence and Action Toward Safe, Nutritious Foods</td>
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<tr>
<td>FBD</td>
<td>Foodborne disease(s)</td>
</tr>
<tr>
<td>GAIN</td>
<td>Global Alliance for Improved Nutrition</td>
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<tr>
<td>LMICs</td>
<td>Low- and middle-income countries</td>
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<tr>
<td>LOC</td>
<td>Locus of control</td>
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<tr>
<td>KAP</td>
<td>Knowledge, attitude, practice</td>
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<tr>
<td>NGO</td>
<td>Non-governmental organization</td>
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<td>SBCC</td>
<td>Social and behavior change communications</td>
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<td>USAID</td>
<td>U.S. Agency for International Development</td>
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<tr>
<td>WASH</td>
<td>Water, sanitation, and health</td>
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<td>WHO</td>
<td>World Health Organization</td>
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EXECUTIVE SUMMARY

Feed the Future’s EatSafe: Evidence and Action toward Safe, Nutritious Food (EatSafe) is a multi-country, two-phased program that seeks to improve the safety of nutritious foods bought and sold by millions of people in traditional food markets. In Phase I of the program, EatSafe consolidated knowledge about food safety and traditional across low- and middle-income countries (LMICs) in addition to conducting target country situational analyses. During Phase II, the global and target country learnings about the cultural context and how local communities perceive, value, and understand food safety, are used to design, test, and implement market-based food safety interventions that seek to educate and empower consumers, vendors, and market actors to demand and provide safer foods.

In this report, EatSafe presents the results of Phase I targeted formative research specific to Ethiopia. In Ethiopia, EatSafe interventions operate in the Aroge Gebeya, a traditional food market located in Hawassa City, which is in Sidama region (southwest) of Ethiopia.

EatSafe’s Phase I research in Ethiopia produced 10 relevant reports, covering primary qualitative and quantitative studies, secondary research, and stakeholder engagements. Ethnographic research, semi-structured interviews, and survey questionnaires elucidated consumers’ and vendors’ knowledge, attitudes, and practices (KAP) related to food safety. EatSafe also developed a deep understanding of the enabling environment, including physical infrastructure, social norms, and the regulatory landscape at the local and national levels. Together, these research activities provided rich context and useful data to design EatSafe’s market-based interventions in Hawassa. Specifically, insights include:

- **Food safety risks:** While foodborne pathogens have been identified in a variety of commodities consumed in Ethiopia, less research has focused specifically on contamination and relative risks in lettuce, kale, and tomatoes commonly bought and sold in traditional food markets.
- **Gender:** Women play a key role as the primary vegetable vendors in traditional food markets and food preparers in the household.
- **Cues for decision making:** Consumers and vendors make decisions about which food products to buy using similar criteria with the top three reasons generally being price, food quality, and their existing relationships with the seller with food safety/cleanliness also being mentioned.
- **Socioeconomic status and food quality:** Lower quality and/or less safe food (e.g., near spoiled, blemished) are often sold for discounted prices, increasing risks for consumers of lower socioeconomic status.
- **Knowledge-action gap:** Vendors report caring about food safety, but they may lack the knowledge or resources to adopt food safety best practices.

The report concludes with recommendations for iterative, market-based intervention design process in Hawassa, Ethiopia, during Phase II of the EatSafe program.
I. INTRODUCTION

In low- and middle-income countries (LMICs), a safe food supply is critical for public health. Feed the Future’s Evidence and Action Towards Safe, Nutritious Food (EatSafe) seeks to improve the safety of nutritious foods bought and sold in traditional food markets by millions of people every day. EatSafe is a multi-country, two-phased program. In Phase I, EatSafe conducted qualitative and quantitative formative research to understand the motivations, attitudes, beliefs, and practices that shape the decisions of both consumers and food vendors, to enable consumers to demand safer food and vendors to deliver it. EatSafe uses the learnings from Phase I to inform the design, testing, and implementation of market-based interventions during Phase II.

Throughout Phase I of the program in Ethiopia, EatSafe gained valuable insights into Ethiopian consumers’ and vendors’ perceptions of food safety, the occurrence of foodborne disease (FBD) hazards in foods consumed in Ethiopia, and the enabling environment for food safety in Hawassa City within the Sidama Region – where EatSafe interventions operate in Ethiopia.

To develop a comprehensive understanding of the food safety context in traditional food markets in Hawassa, Ethiopia, EatSafe conducted several primary and secondary research activities using a variety of qualitative and quantitative methodologies. In this report, key findings from the resulting 10 reports (see Appendix 1) are consolidated into four thematic areas, covering:

- Food safety risks,
- Consumer demand,
- Vendor practices,
- Gender norms, and the
- Enabling environment for food safety.

This report concludes by providing recommendations for iterative, market-based intervention design process in Phase II.

2. FOOD SAFETY RISKS

Few studies have focused on contamination of produce in traditional markets in Ethiopia (1). From a literature review, only six studies were identified that examined contamination of fresh fruits and vegetables from retailers including traditional markets in Ethiopia with bacteria such as Salmonella spp., Shigella spp., and Staphylococcus aureus (1).\(^1\) Though these foods are sold at traditional markets, the complexity of the vegetable supply chain leads to many potential routes of contamination (2,3).

\(^1\) Over 20 studies in Ethiopia focused on bacterial contamination in animal source foods (i.e., beef and dairy), likely due to the common practice of consuming raw beef in Ethiopia (1).
3. CONSUMERS FOOD SAFETY KNOWLEDGE, ATTITUDES, AND PRACTICES

3.1. MARKET AND VENDOR SELECTION

While consumers in Hawassa can choose from three traditional markets, they tend to shop at the market that is closest in proximity to their home, which has the relatively lowest transportation costs (4,5). Most consumers report shopping one or more times per week, with a preference for the busiest days called “market days” where most vendors bring fresh food items to the market (i.e., Monday and Thursday from 9 to 11 AM in the market where the research was conducted) when they believe food is the freshest (6). On average, consumers compare three different vendors before making a choice of which vendor to purchase food from (5). In choosing which vendors to patronize and which food products to purchase, consumers generally applied the same three criteria: price, their level of trust in the vendor, and food quality with a mention of food safety/cleanliness (4,5,7). The visual cues utilized include visual examination of the food item (i.e., the presence of blemishes etc.) as well as vendors’ personal and stall cleanliness (i.e., lack of food coverings, limited handwashing, and dirty utensils or food surfaces) (6). In a literature review, food quality and vendor’s personal and stall cleanliness both of have been found to be associated with contamination of food sold in Ethiopian markets (7). Furthermore, consumers may decide to inspect the quality of a food item by picking it up and touching it (8), which increases contamination risks given the bacteria on consumer’s hands. Vendors that have unclean hands may also contaminate food items.

3.2. FOOD PRICES, SOCIOECONOMIC STATUS, AND FOOD SAFETY RISKS

Food prices are important considerations for consumer decision making (4,5,7). For instance, consumers were concerned about rising food costs due to inflation (4,6), which reached a high of 35% in Ethiopia in early 2022 (9). Some consumers changed their purchasing habits by choosing to shop at traditional markets compared to other food retail locations due to the lower prices at traditional markets relative to other food retail options (4). Other consumers chose to buy food items on credit from a regular vendor at a traditional market (10). Many consumers consider the tradeoffs between cost and potential spoilage when making food purchasing decisions (6):

“If you buy 100 ETB worth of tomatoes [and] put them in the fridge, you will eat them in a week […] so you are maintaining your health [and] living within your means. With your 100 ETB, you can eat all week. If it does not [spoil], I save my money. If it spoils, I will lose my 100 ETB.” – Male consumer

Lower-income consumers may carry a disproportionate burden of food safety risks, as they may only be able to afford lower quality products discounted by vendors due to blemishes or spoilage concerns (4,6,7).

2 Participants in the EatSafe research presented here can be described as lower- and middle-income households. Using the international USD $3.20/day poverty line, EatSafe estimated the mean probability of poverty was 26% for vendors and 19% for consumers (5).
3.3. CONSUMER AND VENDOR INTERACTIONS

Consumers reported rarely talking to vendors about food safety while purchasing food from the market (5,6). One exception to this was the that vendors reported instructing loyal consumers on safe produce preparation methods with lettuce and tomatoes particularly (e.g., using the produce quickly, washing it, or adding lemon and vinegar prior to consumption) (6). Consumers generally purchase food from trusted vendors who provide good customer service (4,5,11) – an advantage because they “select for you the best and freshest food [and] you can buy on credit if you are short of money” (4).³ For example, vendors may tell a regular customer about how to process a tomato due to how old the tomato is, while they may sell the same tomato to a normal customer without providing them details about its quality (6). On the other hand, consumers may not return to a vendor if they feel they have received an unfair price or if they suspect vendors of misconduct (e.g., mixing visually appealing, higher-quality food items with lower quality items, or improperly weighing and pricing the items) (6):

“If I don’t go to my regular vendor and buy elsewhere, they would add [an extra amount of] Ethiopian Birr on top of what you should pay [and] they don’t weigh the item properly... I don’t trust them because of this.” - Female consumer

3.4. CONSUMERS’ PERCEPTIONS OF FOOD SAFETY RISKS

EatSafe found that consumers frequently learn about food safety information from healthcare workers (4,5). Other consumers reported learning food safety information from older individuals, watching television, and YouTube videos (4). Consumers in Hawassa are highly confident in their ability to identify and purchase safe foods in the market as well as manage food safety risks at home through proper food storage and preparation practices (5,6). This may be an overestimation of their ability to avoid foodborne illness (i.e., low risk perception) (4) due to the limitations of what practices consumers can do at home to ensure food safety. For example, consumers frequently provided the example of washing vegetables with lemon or vinegar as common practices, considered sufficient to ensure the safety of fresh produce (6). However, the effectiveness of these practices can vary, given that vegetables themselves have varying levels of different microorganisms that may or may not be reduced by the concentration of vinegar, or acidity of the lemon (12).

4. VENDORS FOOD SAFETY KNOWLEDGE, ATTITUDES, AND PRACTICES

4.1. MOTIVATION

Most vendors who sell food in traditional markets in Hawassa were motivated to maintain food safety, given the importance of attracting new customers to grow their business and increase profits (4,6). They also acknowledge their role in providing safe food for the health

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³ Across EatSafe’s research activities, participants responded to interview and survey questions in the language of their choice (i.e., Amharic and Wolaytta), which EatSafe then translated into English. Neither Amharic nor Wolaytta clearly differentiate the meanings of the phrases “food safety” and “food quality.”
and wellbeing of their community (6), as vendors “only succeed if they maintain practices that keep their [consumers] well” (8). Another vendor noted:

“We are serving the community. We have to care [for] community health; we will be satisfied when the community gets [the] best and health[iest] products from our market” (4).

4.2. CHALLENGES AND THE KNOWLEDGE-ACTION GAP

Vendors express a desire to sell safe food and generally have some knowledge of food safety practices, but they experience an array of barriers preventing them from implementing food safety best practices (4,6,7). Reasons for this knowledge-action gap may include a lack of adequate training, limited resources (7), and factors in the enabling environment described in detail in Section 5. For instance, vendors acknowledge the importance of washing their hands regularly, but note that they have limited access to clean, free water in the market (4). A literature review demonstrated contamination of drinking water in the Oromia, Amhara, and Somali regions as well as Addis Ababa, Ethiopia with coliforms and or parasites (12). Further, when available, the location of the water stations require them to leave their stand which could result in lost business or even theft of their inventory while they are away (4,6). Lack of education and training may also impede implementation of best practices: an EatSafe cross-sectional study of 35 vendors found a positive relationship between higher levels of education and adherence to food safety practices (4).

4.3. MARKET LOGISTICS AND FOOD SAFETY INFORMATION

Vendors generally purchase the food that they sell from wholesalers and brokers, based on food prices, food quality and safety, and customer service (5,6). Nearly all vendors surveyed by EatSafe reported they had been selling food at the specific traditional market for years, and that vending in the market is their primary income-generating activity (5). Vendors are interested in learning more about food safety topics, including the relationship between contamination of food with pathogens and negative health outcomes (5). Like consumers, vendors primarily rely on medical professionals to learn information related to food safety (5).

4.4. VENDOR OPPORTUNITIES TO INCREASE FOOD SAFETY

EatSafe found that tomatoes enter the market on crates by truck, while traders bring sacks of kale and lettuce on their backs into the market (3). Once foods arrive at the market, vegetable vendors vary in their operations: some are located inside the market perimeter and some outside the perimeter; some sell food placed on raised structures like carts, while others sell food in bowls or plastic sheets on the ground (3,5,6). Vendors also vary in their adherence to food safety best practices. While vendors frequently wash and wipe produce to reduce cross-contamination, they self-report far greater levels of proper garbage disposal and stall cleaning than observed by a study conducted as a part of this research (4). As noted in Section 3.2, vendors are limited in their ability to conduct food
safety best practices due to barriers including inadequate physical infrastructure (e.g., water drainage systems; see Section 5).

4.5. GENDER NORMS

While little research has examined the intersection of food safety and gender roles in traditional market spaces (7), EatSafe prioritized understanding gender dynamics in its research in Hawassa. Men and women vendors had different primary roles in food retail in traditional markets in Ethiopia: most vegetable vendors (80%) in traditional markets in Hawassa were women, while men were primarily responsible for meat processing in abattoirs and butcher shops (5–7).

Differences of roles of men and women consumers in traditional markets were also identified, as women were the primary shoppers in traditional markets (60%), and expected to both acquire food and prepare it for consumption at home (5–7). The most common reason that men were found to be the primary household shopper for food was when their wives were pregnant or had recently given birth (6). Respondents expressed strong gendered perspectives around shopping for food: men were seen as less adept at shopping and susceptible to exploitation (e.g., spending the same amount of money for a smaller quantity or worse quality of food) (6). Women shoppers were perceived as more practical and discerning when communicating with vendors on quality and price (6).

5. ENABLING ENVIRONMENT FOR FOOD SAFETY

Understanding the physical, sociocultural, and regulatory environments in which people make choices about food safety is critical to the success of interventions seeking to improve the safety of nutritious foods (13). EatSafe has defined the enabling environment for food safety in Hawassa, Ethiopia into three categories: regulations and public policy, social networks/governance, and physical infrastructure, which EatSafe has developed into a two-page brief (14) and is summarized in Table 1.
### Table 1. EatSafe in Ethiopia: Enabling and Disabling Factors for Food Safety

<table>
<thead>
<tr>
<th>REGULATIONS AND PUBLIC POLICY</th>
<th>INFRASTRUCTURE</th>
<th>GOVERNANCE</th>
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<tbody>
<tr>
<td><strong>ENABLING</strong></td>
<td></td>
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<tr>
<td>The Ethiopian constitution recognizes the importance of food safety.</td>
<td>EatSafe’s target market has over 1,000 stalls and many more unofficial vendors, allowing consumers to choose between different vendors. They can also find and buy almost anything they may need.</td>
<td>Government stakeholders and associations in both Sidama and Hawassa reported high levels of both interest and influence related to food safety. In the markets, vendors participate in some collective action, primarily related to waste disposal.</td>
</tr>
<tr>
<td>The 2018 Food and Nutrition Policy identifies food safety and nutrition as a government responsibility.</td>
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<tr>
<th><strong>DISABLING</strong></th>
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<tr>
<td>Responsibility for food safety is fragmented across several Ministries and their respective regional offices and local authorities. Regional or federal government agencies are not involved with food safety in traditional markets, as it is part of the largely unregulated, informal food sector managed at the local level.</td>
<td>The market environment is often overcrowded with people. Animals roam the space, which may cause cross-contamination via sewage and rainwater. Markets in Hawassa have poor drainage and waste systems, and difficulty in accessing clean water. The physical spaces where vendors operate are not standardized, as some sell food atop plastic or canvas on the ground while others have permanent stalls. Some commodity storage and transportation practices are unhygienic.</td>
<td>Traditional markets in Hawassa do not have dedicated vendor or commodity associations. In both Hawassa and Sidama, there are no platforms or associations for consumers to advocate or educate others on food safety best practices. Market governance is lacking. Some vendors register with the local government, which provides licensing and collects fees, but does not provide oversight or training in food safety.</td>
</tr>
</tbody>
</table>

Sources: (3,5,6,8,15,16)
6. CONCLUSIONS AND RECOMMENDATIONS FOR EATSsafe IN ETHIOPIA

EatSafe’s global and Ethiopia-specific situational analyses provide a comprehensive understanding on the landscape for food safety in traditional markets. Insights related to consumers’ and vendors’ food safety practices, as well as the enabling environment, will be critical to EatSafe’s intervention design in Hawassa, Ethiopia (Phase II of EatSafe).

The methods and sample sizes leveraged across EatSafe’s primary research activities varied and should be interpreted accordingly. Studies like the cross-sectional survey with larger sample sizes (N=300) (5) have greater statistical power and greater generalizability, while activities like story sourcing were conducted with fewer people but provided great personal depth (10).

EatSafe leveraged a variety of methodologies in its formative research activities to develop a comprehensive understanding of the food safety context in Hawassa. These qualitative and quantitative research activities produced similar findings, including:

- Women play key roles in traditional markets as both vendors and consumers;
- Consumers and vendors use the same criteria to decide which foods to purchase with the top three criteria being price, food quality, and customer experience, including trust with a mention of food safety);
- There is limited communication between consumers and vendors about food safety during transactions, though vendors favor loyal customers;
- While vendors vary in their self-reporting of implementation of food safety practices, they have expressed interest in learning more about them;
- Vendors often lower the prices of lower quality products (i.e., products with blemishes and/or spoilage concerns), which could cause a higher risk for lower-income consumers of purchasing and consuming lower quality and potentially unsafe foods;
- Because the quality of food items sold at the market varies, consumers use a set of visual cues to determine safety, one of which is to physically inspect food items;
- Common food safety practices at home, reflecting consumers’ knowledge of food safety risks, include washing vegetables in lemon juice or vinegar, may vary in their effectiveness of reducing FBD risk due to variability of these practices (e.g., concentrations used, and time food is exposed to the washing);
- The community/market environment either enables or complicates efforts to improve food safety in traditional markets. For example, vendors are highly motivated sell safe food, but their efforts are impeded by lack of resources (e.g., clean water) and knowledge of how to implement these practices;
- No vendor association exists for vendors to engage in collective action, nor is there a central market management responsible for operations or oversight;
The insights and learnings identified in this report will create the foundation to EatSafe’s intervention design process (Phase II), which will seek to improve food safety knowledge, attitudes, and practices among consumers and vendors in Hawassa, Ethiopia.

7. REFERENCES


8. Global Alliance for Improved Nutrition (GAIN). EatSafe in Ethiopia Municipal Roundtable Discussion on Developing Safe Markets for Nutritious Food in Hawassa [Internet]. EatSafe:


8. APPENDICES

8.1. APPENDIX 1: LINKS TO FULL REPORT

<table>
<thead>
<tr>
<th>REPORT TITLE</th>
<th>LINK</th>
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<tbody>
<tr>
<td>Review of Food Safety Policy in Ethiopia</td>
<td>GAIN Website</td>
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<tr>
<td>Food Safety Attitudes and Practices in A Traditional Food Market in Hawassa, Ethiopia: A Quantitative Formative Assessment</td>
<td>GAIN Website</td>
</tr>
<tr>
<td>Focused Ethnographic Study on Food Safety Values, Knowledge and Practices in Traditional Markets in Hawassa, Ethiopia</td>
<td>GAIN Website</td>
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<td>Consumer and Vendor Perspectives and Practices Related to Food Safety in Ethiopia: A Review</td>
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