

EatSafe: Evidence and Action Towards Safe,
Nutritious Food

Food Safety Perceptions and Practices in Traditional Food Markets in Ethiopia: A Focused Ethnographic Study

November 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.

Recommended Citation: Global Alliance for Improved Nutrition. 2022. Perceptions and practices related to food safety in markets in Ethiopia: Report from a Focused Ethnographic Study. A USAID EatSafe Project Report.

Acknowledgements: This report was written by Stella Nordhagen, with useful input provided by Jamie Lee. Genet Gebremedhin and Smret Hagos overseeing fieldwork, which was conducted by Ipsos and SART. Caroline Smith DeWaal, Richard Pluke, Abby Reich, and Haley Swartz provided additional review.

Agreement Type

Cooperative Assistance

Agreement Number

7200AA19CA00010/Project Year 4 output

Period of Performance

June 31, 2019 – July 30, 2024

Geographic Scope

Global Food Security Strategy Countries

USAID Technical Office

Bureau for Food Security (BFS)/Office of Market and Partnership Innovations (MPI)

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This document was made possible through support provided by Feed The Future through the U.S. Agency for International Development (USAID), under the terms of Agreement #7200AA19CA00010. The opinions expressed herein are those of the Global Alliance for Improved Nutrition (GAIN) and do not necessarily reflect the views of USAID or the United States Government.

TABLE OF CONTENTS

ACRONYMS AND ABBREVIATIONS 2

LIST OF TABLES 2

EXECUTIVE SUMMARY 3

1. INTRODUCTION 5

2. DESIGN AND METHODS 5

3. DEMOGRAPHIC CHARACTERISTICS OF RESPONDENTS 6

4. RESULTS: CONSUMERS 8

 4.1. GENERAL SHOPPING PRACTICES 8

 4.2. GENDER ROLES AND RELATIONS RELATED TO FOOD AND SHOPPING 8

 4.3. CHOOSING A MARKET AND A VENDOR 9

 4.4. FOOD SAFETY PERCEPTIONS AND PRACTICES 11

 4.5. FOOD SAFETY AND KEY COMMODITIES 15

 4.6. RESPONSIBILITY FOR FOODS SAFETY AND VENDOR TRUST 17

5. RESULTS: VENDORS 19

 5.1. VENDOR MOTIVATIONS AND CHALLENGES 19

 5.2. VENDOR INTERACTIONS WITH SUPPLIERS, AUTHORITIES, AND OTHER VENDORS 20

 5.3. GENDER DYNAMICS AMONG VENDORS 22

 5.4. VENDORS' INTERACTIONS WITH CONSUMERS 23

 5.5. VENDORS' PERCEPTIONS OF KEY COMMODITIES 24

 5.6. VENDOR PERSPECTIVES ON FOOD SAFETY 26

 5.7. VENDOR PERSPECTIVES ON RECOMMENDED FOOD SAFETY PRACTICES 28

6. CONSUMER-VENDOR COMMUNICATION 29

7. FOOD PRICE INFLATION AND QUALITY TRADE-OFFS 31

 7.1. EFFECTS OF FOOD PRICE INFLATION 31

 7.2. PRICE-QUALITY TRADE-OFFS 33

8. DISCUSSION 36

 8.1. THE MARKET CONTEXT AND ENABLING ENVIRONMENT 36

 8.2. FOOD SAFETY PERCEPTIONS 37

 8.3. PRICE INCREASES AND THEIR IMPACTS 38

9. REFERENCES 39

APPENDIX 1. FREELISTING AND RANKING EXERCISE RESULTS 41

ACRONYMS AND ABBREVIATIONS

ETB	Ethiopian Birr
FES	Focused Ethnographic Study
GAIN	Global Alliance for Improved Nutrition
PPI	Poverty Probability Index
PPP	Purchasing power parity
USAID	United States Agency for International Development

LIST OF TABLES

Table 1. Respondent demographic characteristics, by group	7
Table 2. Vendors' Business Characteristics.....	19
Table 3. Vendors' signs of "good or safe" and "bad or unsafe" versions of key commodities ...	25
Table 4. Vendors' Perspectives on Recommended Practices	29

EXECUTIVE SUMMARY

Food safety is a significant public health problem in many low- and middle-income countries. The power of consumer demand can be leveraged to drive improvements in the safety of nutritious foods bought and sold by millions in traditional, or “open air”, food markets around the world. Because influencing consumer demand requires a thorough understanding of how market actors perceive food safety and make food safety-related decisions, Feed the Future’s EatSafe: Evidence and Action Towards Safe, Nutritious Food (EatSafe) undertook this focused ethnographic study (FES) in the Aroge Gebeya traditional food market in Hawassa, Ethiopia. Over two phases from June to August 2022, data collection included market observations, in-depth, semi-structured interviews with 129 respondents (63 vendors and 66 consumers), and cognitive mapping questions with a subset of respondents (49 total, of which 26 were vendors and 23 were consumers) was conducted.

Results indicate that women played a key role in the market as both vendors and shoppers. Women were predominant among vendors, particularly for lettuce and kale, and were also the main ones responsible for shopping and cooking. There were strong stereotypes about women being the more discerning shoppers in terms of both quality and price. Across both respondent groups, food safety understanding was moderate: only a slight majority of people understood the term, though most knew key traits or practices associated with safer food (e.g., clean handling and cooking). Food safety was not a key driver of decision making for either consumers or vendors. While both groups understood the risk of foodborne illness in theory, they generally did not feel threatened by it and felt their own actions were sufficient to mitigate risks. Both vendors and consumers saw themselves as personally responsible for ensuring food safety.

Both groups had similar food safety beliefs and practices related to the key commodities studied — lettuce, kale, and tomato. However, lettuce, often eaten raw, was seen as riskier than kale, which is eaten cooked, or than tomato when cooked. Overall, respondents did not clearly differentiate between food quality and safety. However, “quality,” which respondents closely related to “freshness,” was an important driver of both market and vendor choices, as was food prices. While vegetables were somewhat insulated from rising food prices in the current inflationary context, EatSafe found some evidence that lower-income consumers might be choosing lower-quality vegetables to mitigate higher prices – a trend that could exacerbate food safety issues.

Considering vendor-consumer relations, consumers generally distrusted vendors, and the two groups rarely discussed food safety during transactions. EatSafe identified and presented five key recommended market food safety practices, none of which vendors believed were feasible, and thus, rarely practiced in the market. EatSafe also examined the market context, in which government oversight and food safety regulations were limited. Other challenges in the enabling environment related to market infrastructure (e.g., limited working space, limited access to clean water). Vendors were not well organized into groups and did not engage in much collective action.

The report concludes by developing recommendations for the design of EatSafe’s consumer-focused, in-market interventions based on the study results. Some recommendations include prioritizing interventions that enable consumers to make choices without being dependent on communicating with vendors or needing to trust the vendor (e.g., through visual cues), focusing on increasing consumer motivation to act by raising awareness of foodborne disease as widespread and potentially serious, and complementing existing knowledge—such as the importance of cooking and cleanliness—by addressing gaps and misconceptions—such as that cooking, or treating with lemon and/or vinegar, will solve all problems.

I. INTRODUCTION

Consumer demand can be a critical driver to increase the safety of nutritious foods in low-and middle-income countries—particularly in settings with limited capacity for food safety regulation and enforcement. Feed the Future’s EatSafe (Evidence and Action Towards Safe, Nutritious Food) seeks to generate evidence on the potential for increased consumer demand for safe food to improve the safety of nutritious foods in traditional, or “open air” food markets. In Ethiopia, EatSafe operates in Hawassa, a city in the newly formed Sidama Region of Ethiopia, and the key nutritious commodities commonly sold (and selected for this study) are tomato, kale, and lettuce.

As part of its formative research activities, EatSafe conducted several primary qualitative and quantitative research studies (1–3). This focused ethnographic study (FES) sought to generate evidence on how consumers and vendors in Aroge Gebeya market, Hawassa, Ethiopia perceive food safety, both as a concept and in their daily lives, and how food safety-related decisions are made. Together with EatSafe’s other formative research activities, the results of this FES provide important context to inform the design of market-based, consumer-focused food safety interventions.

In this report, EatSafe describes the research questions and methodology (Section 2), followed by results related to consumers (Section 3) and vendors (Section 4). EatSafe then examines topics that cut across consumers and vendors: communication between the two groups and the effects of price inflation (Sections 5 and 6, respectively). EatSafe concludes the report with recommendations related to EatSafe’s intervention design (Section 7).

2. DESIGN AND METHODS

A FES is a modular approach using different qualitative methods that has proved to be a robust, versatile method of conducting formative research, especially for developing an understanding of the cultural context for interventions (4–6). In this study, EatSafe adapted the protocol and tools from EatSafe’s prior FES in Northwest Nigeria, which took place in 2021 (7). All data collected in the study were treated with strict confidentiality, all respondents provided written informed consent, and the study protocol was approved by Sidama National Regional State Public Health Institute.

The study sought to answer the following research questions:

- How do consumers and vendors understand, speak about, and recognize issues related to food safety?
- How do consumers and vendors make decisions about food safety in traditional market settings?
- How does gender influence food safety risk, exposure, and ability to mitigate or manage these issues?

Full methods are detailed in the study protocol, which is available upon request. Key points are summarized in this section. Four data collection methods were used:

- **Free-listing:** respondents are asked to name all the items in a single domain (e.g., “all the foods that can generally be considered safe”); the interviewer systematically records the answers, which are then used to develop a composite list. Items that are frequently cited and also tend to be among the first cited can be considered particularly salient;
- **Ranking:** respondents are asked to rank items across a given domain; it also provides interviewers the opportunity to ask respondents about their reasoning for a choice;
- **Semi-structured interviewing:** respondents answer a set of questions based on a detailed interview guide, with flexibility for interviewers to deviate from that guide based on the respondent’s remarks; and
- **Observations:** data collectors recorded their observations of the overall layout, market conditions, and consumer behavior to contextualize the other data collection methods.

The study took place from June to August 2022 and was conducted in two phases, with a total of 129 respondents (63 vendors and 61 consumers). The first phase focused on a smaller sample (n=13 consumers and n=16 vendors), covering their general beliefs, motivations, and practices related to food safety. Based on the results of Phase 1, Phase 2 focused on four specific topics (i.e., impact of rising prices, how price and quality are traded off in decision-making, consumer-vendor communication on food safety, and vendors’ food safety practices) with a larger sample size (n=24 vendors and n=30 consumers).¹

Respondents were chosen at random at Aroge Gebeya in line with quotas related to age group, gender, and (for vendors) product sold. Interviews were conducted by local data collection agencies (SART, with oversight by Ipsos) in Amharic. Data included detailed field notes and transcribed audio recordings, which were then tabulated in Excel spreadsheets or analyzed using Stata SE15 (8). Text data from the interview transcripts were subjected to thematic analysis involving multiple passes (9,10), using the qualitative data software ATLAS.ti (11). Analysis of free-list data applied the approach described by (12), utilizing Visual Anthropac 4.9 software (Analytic Technologies) (13).

3. DEMOGRAPHIC CHARACTERISTICS OF RESPONDENTS

The demographic characteristics of consumers and vendors included in the study are summarized in **Table 1**. This includes all consumers and vendors interviewed in Phases 1 and 2, including those who only responded to the ranking and free-listing questions in Phase 2.

¹ This sample refers to those respondents who participated in full-length interviews. An additional 26 vendors and 20 consumers participated in only the free-listing and ranking exercises and are thus included in the total.

Table 1. Respondent demographic characteristics, by group

CHARACTERISTIC		CONSUMERS (N=66)	VENDORS (N=63)
INDIVIDUAL LEVEL			
Gender	Male	50 %	39 %
	Female	50 %	61 %
Median age, in years (range)		30 (18 – 55)	29.4 (18 – 64)
Language	Amharic	61 %	43 %
	Sidama	15 %	0 %
	Wolaitta	14 %	46 %
	Kebanta	5 %	7 %
	Others	6 %	5 %
Completed Education	Primary	95%	93 %
	Secondary	62%	52 %
	Post-Secondary	47%	18 %
PPI ¹	PPP USD \$1.90	4 %	3.5 %
	PPP USD \$3.20	17 %	17 %
HOUSEHOLD (HH) LEVEL			
Respondent is household's principal income earner		65 %	97 %
Average HH Size (Range)		4 (1 – 10)	4.9 (1 – 9)
HH owns:	Television	83 %	80 %
	Radio	62 %	67 %
	Refrigerator	41 %	N/A ²
	Computer	32 %	N/A
	Mobile Phone	100 %	N/A
HH has:	Electricity	100 %	N/A
	Improved Toilet	67 %	N/A

¹ The likelihood of living in poverty was calculated using the Poverty Probability Index (PPI), using a threshold of \$1.90 or \$3.20 per person per day, purchasing power parity (PPP) (14). ² These questions were not asked to vendors.

4. RESULTS: CONSUMERS

4.1. GENERAL SHOPPING PRACTICES

Shoppers typically go to the market two or three times per week, favoring the main market days (Monday and Thursday) when availability is better, and products are thought to be fresher. Consumers usually buy vegetables each time they visit the market, and purchases are generally planned based on what is available in the home but adjusted upon arrival in the market based on availability and price. Only a few consumers shopped at other traditional markets in addition to Aroge Gebeya, but some used local shops and mobile neighborhood vendors for purchasing vegetables. Local shops or mobile vendors were primarily chosen for convenience: purchasing small items from them between trips to the main market saves travel time and money. Shopping was enjoyed by some, but it was generally seen as a practical necessity, not a social occasion. There were some inconveniences associated with shopping, particularly the crowded, hectic nature of the market and it being dusty or dirty, especially during rainy periods when it became muddy. A few respondents mentioned theft, overcrowding, and a lack of shade as inconveniences. The rising prices (see Section 6) were cited by several as making the market experience less pleasant.

I would be happy if we could make the market planned and modern... If you go to the market when it rains or it rains while you are shopping, half of your body would be soaked. Your feet would be covered in mud.... donkey excreta is there, and other animals would be kept there... it is a place for the collection of sad people. – Male consumer (1201)

4.2. GENDER ROLES AND RELATIONS RELATED TO FOOD AND SHOPPING

Food-related roles within the home were strongly gendered. Women were universally reported to be responsible for cooking within the household as either the ‘woman of the house’ or the maid (for household who had maids). Men and children were reported to play a role in deciding what the family would eat. Outside of the home, roles were more equal. Women played a larger role in shopping than men, particularly for things like vegetables and dairy (as opposed to grains, often bought in larger quantities), but men were also involved. The market was seen by all as welcoming to both genders, though some opined that men might feel as though they were the object of ridicule if they were seen to be engaging in the “female” task of shopping. One man explained, “we are culturally backward with regards to men going shopping”. A few men noted that their main experience shopping for the household came when their wife was pregnant or had recently given birth, and they had to take on that new responsibility. Several respondents also noted, though, that gender-related norms and roles were changing in the local society, with greater flexibility.

There were, however, strong gender stereotypes among consumers about how men and women differed as shoppers. Men were seen as impatient, not knowing what they were looking for, not being good at bargaining, and not knowing the appropriate price for items. As a result of this, they were seen as susceptible to being cheated by vendors (e.g., getting a smaller quantity, or worse quality, for the same price). In contrast, women were seen as taking their time and being more discerning, better able to differentiate different quality of goods, and being harder bargainers. These views were widely voiced among both men and women respondents.

Men can't bargain on the prices. They will just give what they are asked. The women will bargain on everything. [Women] see things more thoroughly... Men don't focus on the price. The women however know what they should and shouldn't get... Men aren't observant... the women are attentive and cool. They aren't quick to decide. Men are a bit careless. – Male consumer (1208)

The men will just accept what is given to them. For example, when we buy maize and other grains, we will remove the covers and see them thoroughly. We will see the bottom and everything else.... It is obvious to differentiate newly harvested from old ones. The men will just gather it and bring it home. We will see it and won't buy it if it isn't good...The men don't find good deals when they buy from the same place. – Female consumer (1221)

I just want to ask at one or two places and go back. I have no patience. They [the women] have patience... They will go to everyone and ask. They could buy more than what you are buying... Women are better when it comes to having patience. – Male consumer (1216)

4.3. CHOOSING A MARKET AND A VENDOR

Main reasons for choosing to shop at Aroge Gebeya were price, availability, quality (namely, freshness) and convenient location. Respondents appreciated being able to get all items in one place and to have enough vendors that they could comparison shop among them. It was also widely recognized that prices in neighborhood shops tended to be more expensive than in the market (though, for small purchases, this might not justify the additional transport expense of going to Aroge Gebeya) and might not have as fresh products. Food safety and cleanliness were not mentioned as a motivator of market choice, but as noted above, some respondents noted that Aroge Gebeya was often dirty.

You can find everything there [at Aroge Gebeya]. There are kiosk goods, grains, market items, and everything including vegetables and such. That is why I like it.... The price is good. They have very low prices. It is cheaper to buy there than at a shop. The price is cheaper. That is why I go there. – Female consumer (2208)

Aroge Gebeya, I can say is the mother of the poor. This is because you might be able to find something that is being sold for fifty ETB at the shops for a much lesser price. You can go around and you might find a vendor that is having difficulty to sell. You have choices. This is why I love it. – Male consumer (2246)

My reason is of course the price and the quality. You also get fresh ones from there. At the nearby market, you get stale vegetables since they bring it from the market and sell it. But at the market, if you don't like something, since it's big, you have the option to go around and buy a good one. – Female consumer (1207)

Most respondents had “regular” vendors to whom they went repeatedly, at least for certain foods and at least some of the time. But nearly all also expressed some flexibility: if their chosen vendor did not have what they were seeking, or not with a competitive price and quality combination, they would go to another. Repeat customers noted that going to the same vendor would often get them some special treatment in terms of product quality, pricing/discounts, and other services, such as credit, holding goods while the customer shopped, or helping arrange transport. As one woman explained, “they have a special place for you when you are a loyal

customer” (1222). Several customers, however, noted that they chose to switch vendors regularly to avoid being cheated on the price.

The main reasons cited for choosing a vendor were quality, price, and niceness/politeness. Most respondents named at least two of these reasons, and price and quality were seen as particularly interrelated and, for many, as necessary conditions. Several consumers suggested that there was a minimum sufficient quality that food needed to meet before the other aspects came into play. Regarding the role of personality, consumers noted preferring vendors who were smiling, warm and friendly, polite, welcoming, prompt and treating customers “with respect”. A couple even noted favoring vendors that they saw as “like family.” Consumers also mentioned negative behavior in this regard: avoiding vendors who were rude to them, insulted them or criticized them for using other vendors. A few respondents also mentioned choosing vendors based on having a wide selection, being honest/trustworthy, giving discounts or free goods or offering credit.

There are people from which I usually buy. After I look around, if I find it [the price] is similar, then I buy from those people... If I run short of money they might give me on credit, and that is the person I focus on.... Also, once I buy what I need from them, I do not have to carry around my purchases when I go in search for items that are not available there. I can leave them with my seller because I am a regular and we are used to each other. – Male consumer (1203)

The first thing is the situation with the price. We do consider the price situation. The other thing is whether we can afford it or not. You need to afford to buy a quality item. You also have to consider the amount you pay for transport. You have to add all these.... We also consider quality. The item I can buy depends on what I can afford... [Quality] is the first thing. That is the main thing that makes you go to him and want to be his customer. – Male consumer (1219)

One consumer noted that, as she was poor and would only buy a small amount, she wanted a vendor who would not disrespect her: “Maybe the one who is working at a lower level will be able to serve me properly as my means. There are those that sell wholesale to restaurants and such and may not even talk properly to those who are buying small amounts” (2223).

I go to her [my usual vendor] because... her price is good, and her product is fresh. Since it's good for my health and my family's health, I always buy from her. Another thing I like about her is her greeting. She would say 'Hi, how are you? Welcome back' and stuff. Because she gives me a proper greeting, it makes me feel like we're family, and it makes me happy to buy from her. – Female consumer (1207)

The most important thing is the way they greet you. The love and respect they give you is what makes the consumer trust them and you will be able to talk to them freely like family. That's when they would be able to tell you if they have a problem even. - Male consumer (2219)

Neatness or cleanliness was mentioned in passing as a factor in vendor choice by only a few consumers. These respondents referred to the produce being neatly arranged (e.g., in a bowl or on a platform as opposed to in the dirt) or physically washed or cleaned as an attracting feature of a particular vendor. One consumer explicitly connected quality to safety (see quote below), but for others, this linkage was not made explicitly without prompting.

Quality is the first thing. ... Quality for me is 'life'. It is life, and it is because I don't spend much on my health. My kids have never complained about a stomachache, let alone me... There are times when she [his wife] shops that the kids complain of pain even though I am trying to push her to do the same thing as me. So, I have told her to shop only from a certain area and not to shop from elsewhere. – Male consumer (1201)

Consumers generally reported distrusting vendors and seeing them as having many types of unscrupulous behavior. Nearly all respondents named at least one of these behaviors: not weighing accurately (e.g., adding an extra 100 grams to the weight of the items when quoting price); mixing various quality goods together and selling at the price of the higher-quality product; selling products with grass, chaff, or dirt mixed in; putting attractive items upfront or on top to hide damaged product and selling all at the same price; selling spoiled, damaged or insect-infested foods; charging prices higher than the current market price; and selling old or non-fresh foods without disclosing the product's age or freshness. One respondent even mentioned adulterating food (in that case, adding gypsum to injera). While the existence of this behavior for some made it more important to rely on a few trusted vendors, for others, it made them more motivated to “shop around” to ensure they were not being cheated. In contrast, consumers reported their trust could be earned by consistently providing high-quality goods, honest pricing, returning change accurately, weighing honestly and warning the customer when quality was low.

If I don't go to my regular vendor and buy elsewhere, they would think that I am just a passer-by and not a regular customer. They would say that, and they would also add some fifty ETB or the like on top of what you should pay... They also don't weigh the item properly too when you buy them... I don't trust them because of this. They don't place the unappealing ones up front. They put the skinny ones and the rotten ones on one side and place the good ones in the front so they can attract people... [then] They would just gather up [the vegetables you ask for] from the back [where quality is bad]. – Female consumer (1214)

When we go sometimes, we buy a lot of things at a time, and we would go to them [the vendor] again and again, but when they add up your total amount that you owe, the math comes up wrong sometimes. They try to trick you. When you go home and add up, there will be a difference. Because of that, there is a vendor that I stopped going to. I used to go to him a lot... but when he tried to trick me multiple times, I stopped going to him. – Female consumer (1220)

Merchants are always worried about their business and profit. They don't care about you being their customer.... It doesn't matter how many times you could go to him. He would sell you spoiled things together with the good ones. He doesn't care about the values. He only cares about his profit. – Male consumer (1201)

4.4. FOOD SAFETY PERCEPTIONS AND PRACTICES

Over half of respondents clearly understood “food safety” as being in line with the common scientific meaning (e.g., with food being contaminated or prepared hygienically, not being spoiled or expired). Others associated it with other aspects of healthiness (e.g., noncommunicable disease prevention, nutrition, dietary diversity), food security or preferences, ingredients in a dish or did not know/understand the term at all. Several combined aspects, like contamination/hygiene with nutrition.

Food safety means people won't live if they don't eat, that is what it means, right? If I have eaten in the morning and don't eat till nighttime, it would bring about illness. That is it. So, I eat my breakfast, lunch and dinner on time. So, I believe that is safety. – Female consumer (1214)

Well, food safety means when you become exposed to typhoid by eating prolonged food... It starts from the food making. If you use a spoiled food when cooking, then it can make whole food you are making unsafe. If the food is unclean. Starting from peeling the onion, the person making the food must wash his hands, the knife and the chopping board must be washed. All the utensils must be washed. If not, the food that is about to be cooked will be easily spoiled. So, the cooked must be prepared in a clean manner. – Female consumer (1205)

We say food is safe in the way it is handled if it is stored in its appropriate place. Then, the way it is washed or prepared should be attractive and also be prepared with clean materials. If this is done, I consider that this food is safe. It has no harm, it is safe and has no harm to health. – Female consumer (2252)

Very few consumers brought up food safety as a concern or motivator before the topic was raised by the interviewer. However, when asked directly whether food safety was important to them, most replied that it was, citing the potential harm to their family that it could lead to. Some also suggested that having good food quality and/or safety was important due to households' limited budgets: they did not want or could not afford to have waste or incur expenses for treating illness. Foodborne disease was universally associated with gastrointestinal symptoms (stomachache, diarrhea, vomiting); other symptoms were only rarely mentioned, with none referring to non-acute illness. Only about half of respondents reported personal experience with foodborne disease (themselves or family), mostly relating to food consumed outside the home (e.g., in a restaurant or at another person's house). None could recall any food safety-related scares in the community, though they did mention COVID-19 and a bird flu outbreak led to concerns about certain foods in the market.

[Food safety] is a health concern and then it is an economic issue... Let me give you an example with 100 ETB. If you buy 100 ETB worth of tomatoes, if you put them in the fridge, you will eat them in a week. Do you understand? So, first, you are maintaining your health. It lasts for a week. Second, you are 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 (2217)

Food safety is something that is crucial to life. If the food is not safe or if we eat a food that is poisoned or a food that does not have safety, we will be attacked by disease. The disease will force us to go to the medical center and that will again be unwanted expense. By the way I would like to tell you that I believe in food. I do not believe in medication. A person who eats a clean food well, the probability of that person to be attacked by disease is low. – Female consumer (2202)

Since we have to eat, we buy from the market. And sometimes I think, I wish, if I ever have enough income I would be happy if I could buy the ones that have been certified with their food safety and that have been packed, because when you go to the market and see on stalks, what they put in there doesn't look very appealing with its cleanliness.... it might be mixed up with the rotten ones.... So it makes me conclude that if I ever can afford it, if I could buy something that has been certified and is safe. – Male consumer (2237)

At the same time, many respondents confidently expressed that food could not make them sick—at least if it was the right kind of food (e.g., vegetables) and prepared in the right way (e.g., at home as opposed to in a restaurant, fresh as opposed to leftovers, or prepared with lemon and vinegar). This sentiment was expressed at least a few times for each of the three key commodities.

When you think about it, there is nothing that makes you sick. But if it has been contaminated with other things when it comes here, I think it is lack of cleanliness. How we handle it not washing it will have the kind of side effect when it is very ripe. It stops resisting things. But if it is medium, ripe, and strong, you see it will not bring any problem. – Female consumer (2201)

Tomato doesn't make people sick.... They would eat the ripe or the tomato that has been thrown out. The smallest baby and her elder would also eat the raw tomato, and it doesn't make people sick... [And] I think that kale is very good for health; you won't get sick from it. I believe that it would protect us from diseases. – Female consumer (1214)

There is no problem with eating lettuce. Nothing could happen if we could get and eat it. It will protect from disease and doesn't cause problems. – Male consumer (1219)

Nothing makes people sick, when I say nothing, from the things that we eat, nothing makes people sick. From what is allowed, from what we can eat as Habeshas, I have a faith that foods do not make people sick. But they might make us sick through our own fault. From lack of hygiene. From deficiencies in preparation and not knowing how to consume I believe that we get deficiencies in our bodies and our families because of that. that is from the lack of knowledge, that is not from the food. – Male consumer (1203)

Food safety was seen as situational (i.e., related to the specifics of the situation within which a given food was prepared or consumed) rather than absolute (i.e., a property specific to a given food type). Consumers saw several key causes of food becoming unsafe: poor handling or storage; food not being properly cooked or being eaten raw; spoiled or leftover food; and insect damage or infestation. Insect damage or infestation was seen as somewhat connected to poor storage but generally occurring before food reached the home or market. The other three causes of unsafe food were generally seen as practices under the control of the food preparer. Contamination with bacteria, or to a lesser extent amoebas, was widely seen as leading to unsafe food – with this being connected the first three practices named above.² More rarely named were production in an unclean environment, contamination with chemicals (e.g., pesticides), physical contaminants such as stones, and packaged food that was past its expiration date.

² Cholera, typhoid/typhus, and giardia were sometimes used to refer to causes of foodborne disease but appeared to be used not in literal reference to that pathogen but instead as catch-all terms for gastrointestinal illness associated with food.

For consumers, handling was related to washing hands and utensils; washing foods; and having good personal hygiene (i.e., clean hands and clothing), as well as covering food to avoid exposure to dirt, dust and sunlight. Some also mentioned avoiding physical damage to food during handling (particularly for tomatoes), using unclean water to wash vegetables in the market, and use of a refrigerator at home. Regarding cooking, there was a strong understanding that cooked food was safer than raw, and that many foods (including kale and certain types of tomatoes) should not be eaten raw. Regarding leftover food, it was widely recognized that food that was left for a while after being prepared, or overnight, could make one ill and should not be eaten – in some cases, even if reheated. As such, respondents broadly recognized several key practices related to food safety, even if they did not all have a strong understanding of “food safety” as a term.

Handling [makes food unsafe]. The way they are handled, the things they are kept on. Salads for example, once it is prepared you have to keep it in the refrigerator for a little while until it is consumed. A little while, then you take that and eat it, whether it stays or not it is not something you keep. You eat it once and leave it. Otherwise, if you leave it out and eat it, then it will harm your health... They are very sensitive. Their bacteria, you cannot see it with your eyes, you understand. They are invisible. – Male consumer (2204)

[Bacteria and amoeba contamination are] due to [poor] hygiene. If you want to prepare it chopped and raw, it doesn't get heated. So, both your hands and the things you handle need to be washed well. The problem may not be with the tomatoes, but with the people. For example, the reason one gets sick when they eat raw tomatoes may be due to problem with the person who serves it. One must check if the hands, the knife, the chopping blocked, and the lemon to be added are washed thoroughly. If they eat like that, I think it doesn't cause illness. – Female consumer (1222)

One could be lack of cleanliness [causes food safety problems], if it's rotten, and when we eat raw things it is good if we can add some lemon. It's either a lack of cleanliness or not using lemon or vinegar properly....not washing. For example, after we bring it home, if we don't wash it I would say it's lack of sanitary. So we need to wash and use what we buy from the market... it comes from different places and when you go to the market, you see cars, people walking about, dust and a lot of bacteria that we don't see with our naked eye. – Female consumer (1202)

It [kale] can be infected with bacteria. It may have worms inside it. Meaning inside the kale. First, if it is not properly cleaned, the things inside it-- worms might be hiding. Those things lead to diseases. ... It causes Typhus/Typhoid. Again, it causes bacteria. I think it causes those things. – Male consumer (1208)

Because food safety issues were seen as largely related to the practices of the food preparer, several respondents also opined that it was dangerous to eat food in restaurants or hotels as opposed to in the home, as those places might be less scrupulous in their purchasing and handling choices than those cooking at home.

I am not concerned about foods that are cooked, but I don't eat raw things outside my home. When food is cooked, the bacteria die, and it won't have any problem. – Female consumer (2252)

I don't trust the food made outside [of the home]. Because I don't know how they make it, and they also buy things for retailing purpose, so I don't think it is good. ... there are plenty of people that have gotten sick because of this. I had once gone to a restaurant and eaten food and then got sick. – Female consumer (1214)

Consumers were generally confident in their ability to choose the “good” vegetables and to take the right steps at home to ensure they are safe; as a result, they were not overly concerned about quality/safety issues, even though they widely recognize that they exist.

The food safety practices consumers reported using aligned with practices they reported to be supportive of safe food: checking food for signs of damage or insects before buying; washing hands and utensils; washing food with water; storing fresh food in the refrigerator; cooking food well; eating food promptly after cooking; disposing of leftovers, or thoroughly cooking them before eating. Preparing with lemon and vinegar to “kill germs” was very commonly mentioned for lettuce, tomato, and other raw vegetables. Less commonly mentioned were peeling fruits and/or vegetables, storing food in the refrigerator or with ventilation, washing with soap or bleach, limiting hand contact with food, covering food and throwing out any spoiled or damaged food.

Within the market, consumers cited looking around to choose “the good ones [products]” and looking for sellers who were in a clean area without dirt, garbage, or flies; arranged their goods attractively; put the vegetables on a clean surface above the ground and covered them. While some looked for a vendor who looked visibly clean, others claimed this was not important to them. One consumer even saw this as a sign of deception: “if they are dressed well and have a fancy scale and packaging, they are likely to trick you. If they fixed their clothes and return, this is naivety” (2217). If vegetables were purchased that were later found to be poor quality or potentially unsafe, the main coping strategy was simply to throw them out, though some also mentioned picking out the bad parts, washing, soaking with treatment products, cooking thoroughly, adding lemon juice and/or vinegar or cooking with other ingredients (e.g., spices, hot pepper, onion).

Across all the food safety-related questions, respondents did not clearly differentiate between quality, generally, and safety, specifically. Replies to questions on safety included comments about quality beyond safety, and comments about quality also were relevant to safety (e.g., being spoiled or damaged by insects). For vegetables specifically, “quality” was closely related to “freshness”, particularly for greens like lettuce and kale: One male consumer succinctly put it, “freshness determines the quality of these products” (1216). Another male consumer summarized, “If it’s fresh, then that’s good for your health” (1218). This was indicated by visual appearance (i.e., being crisp-looking and not withered), by visible aspects of handling thought to preserve freshness (e.g., refreshing with water or storing lettuce in water, shading leafy greens), and by the vendors’ assurance that it was newly procured and not left over from a prior day. Other aspects mentioned included not being infested or eaten by insects; the produce being “clean” (i.e., without visible dirt); not being exposed to dust and sun and not spoiling quickly.

4.5. FOOD SAFETY AND KEY COMMODITIES

Overall, there was little differentiation among the three key commodities in terms of food safety. Consumers (and vendors) saw similar causes and associated illnesses/symptoms among them, with the main distinction being that foods eaten raw were seen as riskier than those eaten cooked. Consumers generally used visual inspection of vegetables to determine quality/safety, with also some use of feel, followed by smell and taste. The cues used to identify safe or good

versions of the key commodities were largely the same for consumers and vendors and are summarized under 'Vendor Results' (Section 5).

Tomato. Seen as central to many traditional meals, tomato was used universally by respondents, particularly in cooked form but also raw. One male consumer noted, “We don’t eat a meal that doesn’t contain tomatoes” (1216) and another laughed while saying “tomato is a basic need in this house!” (1218). In cooked form, it was served as part of traditional stews or as a sauce for pasta. In its raw form, tomato was served as a salad with other vegetables, sometimes including lettuce, usually on the side of another dish. There was limited concern about food safety issues for tomatoes, though a few respondents voiced concerns about eating them raw. While most noted that problems with bacteria or amoebas could arise from tomatoes, they usually saw these as preventable through proper washing and not using spoiled tomatoes or those damaged by insects. As for the other commodities, the idea of a “good” tomato intertwined aspects of quality and safety, as respondents did not see them as clearly separable concepts. Tomato quality was seen as different for those to be eaten fresh (e.g., in a salad) and those to be eaten cooked (e.g., in a sauce). The former needed to be fresh, far from spoiling, and in good physical condition, without damage, the latter could be older, riper, and potentially with some cosmetic damage. Many respondents spoke of how imperfect tomatoes could cause problems if eaten raw, but not if cooked, and mentioned prioritizing the better tomatoes for eating raw, and cooking any that were of uncertain quality.

You would get stomachache [if you ate a ruptured tomato raw]. The fresh and firm one is the tomato that is suitable for eating raw. Yes, [rupturing ones are] suitable [for stew or sauce]. Because it would get heat, there won't be any problem. – Female consumer (1204)

It's safe to eat tomato cooked, but there are some people that get sick when they eat it raw. If people have typhoid, then they might get sick when they eat it raw. – Male consumer (1218)

Tomato doesn't make people sick. It could perhaps by the way you wash it. But I have never had tomato make me sick. If you properly wash it, apply lemon on it and eat it, it won't make you sick... [But] If you eat such ripe tomatoes raw or eat it without applying lemon on it, it is for sure going to make you sick. – Female consumer (2252)

Kale. Kale was also used commonly and was nearly always cooked. Only one respondent mentioned eating kale raw, and most respondents saw this as a strange practice. Kale was typically boiled, roasted, or steamed and could be cooked with meat, onion, potato, or other vegetables, eaten as a side dish or with bread, injera, or kocho. There was limited concern about food safety issues for kale, and it was generally seen as a nutritious “healthy” food. Many noted that worms were commonly an issue with kale but that this could be managed either in the market through careful selection or within the home through sorting and washing as well as proper cooking.

Lettuce. Less commonly consumed than kale, lettuce was somewhat associated with the upper and middle classes and with hotels/restaurants. It was also comparatively new and non-traditional: According to vendors, not all consumers were familiar with lettuce and how it was consumed. For those that were familiar, lettuce was always consumed raw, in salads with tomatoes and perhaps onion, pepper, avocado, and/or carrot. It was dressed with lemon, sometimes also oil and vinegar. Adding lemon (and for some, vinegar) was seen as a key step in making it safe. About half of consumers had some concern about food safety issues, making lettuce the key commodity associated with the greatest amount of concern. Higher standards for quality were applied for lettuce than for kale since it would be eaten raw. While imperfect kale (e.g., wilted, with some holes) could be salvaged through cooking, lettuce could not be salvaged since it would not be cooked. It was seen as particularly important to use fresh lettuce and to wash it well.

Salad, if you do not eat it immediately, it can make you sick... If you make salad you have to eat it right away. It should be fresh. But if you eat it later, this is not good for your health. Well contaminated food... bacteria [makes you sick] ... You can't heat salad and eat it later. But you can make cabbage in the morning, heat it, and eat it in the afternoon or at night. These are the things that I think are spoiled foods. Salad, I don't know... Salad is very scary. – Female consumer (1205)

We use lettuce, but you have to be careful. You have to wash it properly and add the necessary things to it and serve it... [You need to add] lemon and vinegar... so it can kill the bacteria. – Female consumer (1220)

I am very careful regarding anything related to salads.... salads are very sensitive foods... I fear it a lot, I would not usually eat it when I go to someone's house, I will not eat unless I prepare it myself. Why? If something happens later they are very risky foods, you have to eat it on time. You have to eat it now, fresh, prepared cleanly with clean utensils washed, with lemons, vinegar and such preparing the dressing. – Male consumer (2204)

4.6. RESPONSIBILITY FOR FOODS SAFETY AND VENDOR TRUST

Consumers primarily viewed the government as responsible for food safety, but also mentioned that the vendors, their suppliers, and the consumers themselves held certain responsibility as well. However, consumers generally had little faith in the government and low expectations for it to respond to citizens' needs or to protect them regarding things like food safety.

The government should take the biggest responsibility in assuring the quality of foods. The government should set standards for the merchants in how they should serve their citizens. It is the responsibility of the government to create the conditions. They won't do that. The officers wouldn't even give a second glance. We would push each other in the crowd and shout our needs. They haven't done anything that is planned... There should be a body that should work on the quality and announce that our community can eat that. A vendor does not know quality! Except for selling in bundles and gaining income, they are not worried about our people's safety. – Male consumer (1201)

I feel like it's the vendor that should take the first responsibility. They should think about the customers just as they'd be concerned for themselves. And second, government bodies should also have some kind of control so that rotten foods or something like that won't be sold to customers. But the first responsibility should be taken by the vendors. – Male consumer (1218)

... Who will accept you if you go and complain or accuse/report [about a food safety or quality problem]? You might tell if there is someone who believes that you are telling the correct information. But... the question is, 'Is there a body that listens to you?'. When we speak frankly, is there a body to listen to you? Since there is not, I will not tell. Even if I tell, there is no solution I am going to bring. If I am not going to bring any solution, then why should I bother/tire myself? So, I will watch and be silent. – Female consumer (1205)

Respondents generally focused less on vendor actions than what they could do as consumers. But when consumers did respond on how vendors could improve their practices to support better food safety, they mentioned: source good-quality products from farmers; store food on a clean surface; protect them from the sun and from dust/dirt; refresh vegetables with water or stored in water (especially for lettuce); handle food carefully to avoid damage; avoid keeping vegetables overnight (and avoid overbuying); arrange different foods to be separated, not stacked; wash or wipe vegetables with a cloth; and sort out bad product.

On accessing food safety information, there was some mention of hearing about food safety in the media (primarily television; secondarily radio and the internet), through cooking or health advice shows. Several respondents, however, mentioned never hearing such information. If consumers needed food safety information, they would get it from interpersonal sources – health professionals, their spouse or children, neighbors, or a food vendor.

5. RESULTS: VENDORS

In addition to the demographic information contained in Table 1, EatSafe collected additional information on vendors' businesses (**Table 2**).

Table 2. Vendors' Business Characteristics

BUSINESS CHARACTERISTICS		
Business	Is owned by respondent	97 %
	Has employees	84 %
	Has # employees (range)	1.43 (0 – 4)
Sells key commodities	Tomato	49 %
	Kale	30 %
	Lettuce	21 %
Shop type	Permanent wooden table, no walls	86 %
	Permanent stall with walls	8 %
	Pushcart or mobile cart	4 %
	Temporary table/on ground	2 %
Stall	Has electricity	3 %
	Has refrigeration	2 %
	Can be locked	18 %
	Has piped water	0 %
	Has drainage	0 %
INDIVIDUAL BUSINESS CHARACTERISTICS		
Avg. years vending (range)		6.2 (0 - 27)
Respondent has another income source		2 %
Median incomes (range)		4,000 ETB (400 – 10,000 ETB)
Also shops in the market where they sell		100%

5.1. VENDOR MOTIVATIONS AND CHALLENGES

Most vendors interviewed were not particularly motivated to be vegetable vendors *per se* – they needed money and had few other career options. Some had a family history in vegetable vending, for others it simply seemed a better option than other jobs (e.g., day labor) and other types of vending (e.g., of grains) that require more start-up capital than vegetables. However, some vendors, especially women, really appreciated that vending allowed them to be somewhat financially independent.

I just really love and respect the vegetable business.... I provide for my family and kids because of it. Since we have that my kids won't get hungry or thirsty and I wouldn't get hungry... it really makes me happy that I'm not dependent on someone else. – Female kale vendor (1103)

I chose vegetables because I was out of options. Firstly, I left my work and secondly there are many necessities for my kids as well as myself. So, what good would I be if I was idle? So, I started this work thinking that it would be better. – Male tomato vendor (1114)

Vendors named several challenges with their work: the recent price increases and price variability generally, a slow market with limited demand, insufficient facilities for vending (e.g., too-small stalls, or no stall at all for “unofficial” vendors), limited money to invest in their business, difficulty accessing transport for their products from the farm, hassling from authorities, and unhygienic conditions in the market, particularly during the rainy season. The broader political context and conflict within the country were also noted as a challenge, but not one directly related to vending.

The obstacle here is that there are some illegal vendors in front of my shop. I am working by paying taxes while they are not. They used to sell their items by closing the main road. I am getting a chance when it is surplus for them. Secondly, they [legal authorities] have prohibited me not to transport vegetables with Bajaj for my shop. I am selling for cheap because I don't pay any cost for transportation. This is a big challenge. I have to work on my own -- I don't have offspring to help me except my daughter who is too young. They have prohibited me to enter into the market. So, I have to get up at 5:30 early in the morning and I don't even have a place to park my Bajaj on near around. My Bajaj was even stolen once upon a time. – Male tomato vendor (1107)

If I could have a wider space, and if I could also add people to work with me. And it's to also have a proper stall like others that I could open in the morning and close when I leave. If I had these it would have been more comfortable... there are market days that they chase us out of the area. I mean, we are illegal workers, and we know that, but it's because there's no place to work that we work on that area. So, they might take our stuff when we put it there, and we'd get hurt. For example, items have been taken from me without me selling anything at all. – Female lettuce vendor (1122)

The hard thing and challenging thing is, there is a time where I don't sell many. And I get worried when it gets spoiled. Sometimes when there are only few buyers, half of what I brought get spoiled. So, when I throw that away, I worry so much. – Female lettuce vendor (1102)

5.2. VENDOR INTERACTIONS WITH SUPPLIERS, AUTHORITIES, AND OTHER VENDORS

No vendors interviewed belonged to a dedicated vendor association. However, many belong to informal social organizations with other vendors: *idir* (funeral/bereavement support) and *iqub* (savings group). The latter was sometimes used to support business expenses. Vendors' informal relationships were also not very collaborative: while there were some examples of communication and coordination on small issues (e.g., discussing price and availability challenges or cleaning shared surroundings), there was very limited collective action among vendors (e.g., working together to make collective decisions to benefit their livelihoods). With some exceptions, most vendors seemed to have a *laissez-faire* relationship with their neighboring vendors: not interfering in their affairs and expecting the same in return. There were also many examples of competition (e.g., shouting over one another to attract customers, arguing about prices or suppliers, fighting over goods, telling lies about other vendors). A few

vendors wanted more collaborative relationships but did not seem to feel this was likely. One female kale vendor noted, “it would have been nice if we could support each other. But no one supports one another in this vegetable business” (1103).

Vendor to vendor [relationships]? (Breaks in a laughter) What good is there between vendors? They don't want me to do business and I would also argue with them by asking them why they have done and the like. When have vendors gotten along? – Female lettuce vendor (1106)

One important thing here in the market is that we operate collaboratively; just by supporting one another. For example, I might borrow 10,000 ETB from my friend and bring some products to sell. We help each other in the market. But, the one with a unique way is doing his business on his own way, he will distance himself from the majority. – Male tomato vendor (1108)

There's nothing called unity in the market. Everyone works but there's no unity. It's just working and sitting together, other than that there's no unity amongst us. – Female lettuce vendor (1122)

Our relationship is ... a bit difficult. There are times when we compete each other to take customers from one another. So, there are grievances... If, for example, one of my customers comes late after I have finished mine [vegetables], I have to go to the others [vendors] and bring for them [the customer]. This is one of our good sides. Our bad sides arise during selling and buying the products from the farmers [when we try to out-compete one another]. – Female lettuce vendor (1117)

Like consumers, vendors report that some vendors are unscrupulous and engage in bad behavior (e.g., cheating with weight, mixing quality of goods, not disclosing that product is not fresh) – though report that they themselves would never do this. Such practices were seen as problematic not only for ethical reasons but also because they were likely to lead to loss of consumer trust—and thus loss of a potential repeat consumer.

I often notice vendors who use to cheat on the beam balance. They might give you 90 kilograms when you order a quintal. If I just confront them for that, they will say 'it is none of your business.' Then I will tell the shopper that he has to deal with it on his own. If they cheat 5 or 10 kilo from a quintal, it might seem the price is cheaper for the lay people in the community. But those people may sell 'Baro' onions for 35 ETB per kilo while it is being sold for 40 ETB somewhere else in the market. Yet, they are cheating on the measures. If I try to confront against such deed, no one will stand with me from the community. My friends will even tell me to put my hands off and take care of my own business rather. This is one of the challenges in this business. People in the community often rush to the discounted prices; they don't question themselves on why it is cheaper. – Male tomato vendor (1121)

[Other vendors] are not concerned about other people... They will sell it if it is good, but they don't care if it is not.... they also sell the rotten ones for 5 or 10 ETB in a form of retail in a “pity market”. But me, there is no one who would buy me, and my conscience will not also allow me to sell it. – Male tomato vendor (1107)

...If all vendors are mischievous, what they would do is lower the price of the overnight or almost finished goods they are selling to get sales on the day I have brought fresh goods. My goods are fresh, and it has come at an expensive price, and I haven't sold. So, when that vendor lowers his price, my customers would say that “vendor X is selling at such price” and tells me to give them a discount. So, when this happens, the price I have bought a box of goods at would not profit me if I have given them a 100-200 ETB discount. – Male tomato vendor (1114)

Aside from revenue/tax collectors, those who occasionally verify whether a scale is appropriate (weights & measures), and local authorities who prevent vendors from selling in unauthorized locations, vendors reported very limited interactions with authority figures. When asked about his relationship with the authorities, one male tomato vendor said, “No there’s nothing. So far, I’ve never seen anyone that controlling the market or vendors around here” (1105). Vendors generally saw government actions as having a very limited effect on their work, and many did not have very positive impressions of the government. Some opined that they would like to see more government support or action, particularly as related to improving market infrastructure and cleanliness or controlling price fluctuations. Some vendors were not officially licensed and faced hassling from authorities (e.g., if selling in the street) and some “official” vendors found these “illegal” vendors to be unfair competition.

They tell us to pick it up and that we’re illegal. They say that we shouldn’t put things on the road and all. They don’t stop with just giving advice, but they’d take all your items too. And that’s not good because there are times where we bring items with credit and those suppliers might have also brought it that way so it’s very difficult. They would take it and later it might get spoiled, so they’d just throw it away... They’ve seen us, we’re working on the streets and there isn’t any hygiene there. We’re really suffering there at that field. They took our previous stall and now we’re just sitting on the streets. And there’s nobody that looks at us, we’re just sitting on the streets as if it was a stall. It’s not even clean, too, so we get sick, and we don’t get that much hospital treatment, too. – Female kale vendor (1104)

There is no one for regulation here in the vegetables stall.... No one. Had there been someone responsible of regulation, there wouldn’t be cheating on the beam balance and people in the community would not be exploited. – Male tomato vendor (1121)

They [the authorities] can’t do any tangible things. They are talking and talking.... If there is no way we change this discussion into practice, it has nothing worth. If you take the case with me, I do pay 10,200 ETB tax annually from nothing. For the past 4 years, we have given them with many complaint letters for they have to correct the problems they have. But nothing has changed. It is worsening.... They haven’t implemented the issues that we have raised in the past meetings. They just look for some trivial reasons and close your shop for days. If you have the money, you have to pay them in some way. If you don’t, my vegetables will get rotten. – Male tomato vendor (1121)

5.3. GENDER DYNAMICS AMONG VENDORS

In general, many vegetable vendors, especially lettuce vendors, were women. Indeed, some vendors expressed it was embarrassing for men to sell vegetables that are not sold by standard units (e.g., kilograms), or which require more care (e.g., leafy greens vs. onions), and that men were better at selling unit-sold items because they were heavy. Suppliers of vendors were mostly men with a minority of women.

Vendors generally noted that consumers are mainly women, but that men also shop, particularly for hotels and restaurants. There was some sense that women customers preferred male vendors and vice versa, but this was not universal. However, vendors had the same perception as consumers related to shoppers and gender, though perhaps even stronger: Vendors saw women as the “hard” customers, who know what they want and bargain extensively, while men were impatient, quick, did not really know what they are looking for and might not feel comfortable in the market. A few respondents even noted that it was embarrassing for men to

be seen bargaining. As a result, men were seen as susceptible to being cheated (i.e., sold a smaller quantity, or worse quality, at the same price).

If a man comes to buy from me, since they don't bargain like the women, some people want to hurt them with price. But I sell to them the same way I sell to the woman... It's mostly women [who inspect items before buying]. The men are like me, they are scared... Even if it's bad, they will take it. – Male kale vendor (1123)

When women come, some of them, the way they buy, some of them are would guess low. When we try to give them, if we are selling one bundle of lettuce for ETB, they ask to buy 4 pieces with 10 ETB and say that that was how they bought it elsewhere. Some women do that. But the men would agree to take two for 10 ETB. The men don't negotiate; the men are good when they come to shop. They don't drain you, they are thoughtful. – Female lettuce vendor (1106)

While shopping, men don't argue that much. If your item is quality, they'd just tell you to put it and they'd just take it and go. But females don't trust you, they might even choose each item while I'm measuring for them. – Female kale vendor (1103)

Men cannot select items by checking all the details like women do. If they do so, vendors might insult him by saying 'what a sissy he is' (Laugh). – Female lettuce vendor (1117)

5.4. VENDORS' INTERACTIONS WITH CONSUMERS

Consumers at the market shopped for their household consumption, hotels/restaurants, and to re-sell in other areas. Most vendors reported having at least some regular customers, though they also recognized that these customers were not “fully loyal” and would sometimes shop with other vendors. Vendors understood that they attracted consumers based on various criteria: being friendly, polite, or nice; offering low or fair prices; having high-quality products; having a variety of products (being a ‘one stop shop’); giving some extra product as a bonus; and offering credit (see [Appendix 1](#)). Vendors generally felt that a core combination of these criteria (particularly, having quality at reasonable prices and treating customers well) was needed to succeed in attracting customers. Less commonly mentioned characteristics that attracted customers were having a convenient location, being trustworthy (particularly when it comes to weighing goods), using an official scale, having an attractive set-up of goods, helping with transportation, and being fast.

Many vendors offered additional services to attract and retain clients. Services include offering credit (which basically all vendors did), holding items while customers shop elsewhere, selling by phone, delivering to home, and providing advice. These tactics were seen to both attract customers in the moment and ensure loyal customers over time; as one male tomato vendor explained simply, “Customers come again tomorrow if I treat them good today”. Loyal customers, even if few, are important to vendors, and they will do a lot to keep them – mostly having to do with price (e.g., selling at low price, giving extra, or selling on credit).

My customers come and buy from me because I give them a little extra amount; I also handle them with care, I don't insult people, and I am not tempered. When my customers come, I would smile and handle them with good manners and also give them a little extra amount. – Female lettuce vendor (1106)

They [customers] would rather buy from someone that has everything. People want to buy carrot, beetroot, tomato and everything else from one location.... If the goods have been placed in a way that is presentable, you would buy it. If there is volume, they would buy from me.... [But] the price is the main thing they consider because the price is increasing greatly. There are different levels [of] quality foods that are sold, but the main thing the people consider is the price. The condition of the community is what is concerning me.. the community is struggling.... There are times when customers would say they don't have enough money to pay and give us what they have. – Male tomato vendor (1114)

You'll benefit when you have fresh items. When you finish your items and bring in a new fresh one, people would say that we're going to go to her because she always has fresh stuff. And those people will be your regular customers after that. You bring good stuff by trusting in your customers and then your customers would come and buy from you. – Female kale vendor (1104)

5.5. VENDORS' PERCEPTIONS OF KEY COMMODITIES

Across the three key commodities, vendors used a set of signs to distinguish between “good or safe” and “bad or unsafe” quality of food (**Table 3**). These signs are consistent across vendors and consumers, and they relate to a mix of both quality and safety aspects, as respondents did not clearly distinguish between the two.

Lettuce. Lettuce had fewer vendors than other key commodities. It was primarily sold by women and seen as being somewhat of a ‘gendered’ product. Unlike the other key commodities, many lettuce vendors interviewed appeared to be informal/unofficial – i.e., selling in or near the market but not from an official market stall. Most reported buying their lettuce directly from farmers. Lettuce is a comparatively new food in the area, so some lettuce vendors saw themselves as playing an educational role: teaching community members how to prepare and eat lettuce, including to use lemon on lettuce to make it safe. As discussed in Section 4.8, lettuce vendors had the highest level of concern about the safety of their food: they recognized that it spoils quickly and cannot be sold if it sits for too long, so selling on time in a key preoccupation for them. Seasonality was also a key challenge: supply and demand are low in the winter, making selling lettuce more challenging.

Vendors also described a fairly small and consistent set of practices they used for keeping lettuce safe: washing it, keeping it wet (sprinkling with water, or storing in a basin with water), covering it to protect from the sun and dust (with cloth or an umbrella), and selling it quickly. Somewhat less commonly mentioned were keeping a clean stall, keeping it on a clean surface, and sorting out any bad parts.

Kale. Kale was also mostly sold by women vendors, who tended to have limited infrastructure (box, sacks, a cart). There were different standards of quality of kale (based on size, cleanness, freshness, etc.), and vendors mostly bought from resellers/wholesalers, though some bought from farmers. Like lettuce, kale was seen as a somewhat tricky food to sell as it ‘needs care’ and to be sold quickly before spoiling. Once spoiled, kale can only be thrown out or maybe fed to animals, and thus represents lost money for the vendors. Since kale is cooked, however,

vendors generally did not associate very many food safety issues with it. The practices used to maintain safety/quality of kale before it was sold included sprinkling with water, covering or shading, washing, keeping it on a clean surface, trying not to keep it overnight (i.e., selling quickly), and aerating.

Table 3. Vendors’ signs of “good or safe” and “bad or unsafe” versions of key commodities

COMMODITY	SAFE/GOOD	UNSAFE/BAD
KALE		
Color	Green	Going yellow
Leaves	Strong, Wide	Wilted or soft, Dry, Worm-eaten; holes from ice damage
Stem	Thick with water	Doesn’t have “handle”
Size	Tall	Shrunken
Other	Clean, fresh	Dusty, smelly, visible flies
TOMATO		
Color	Between Green & Red	Too red; dark spots
Skin	Intact	Cracked, wrinkled, or leaking; bruised or scratched; insect damage
Variety	Grown in area known for resilient variety	Less desirable variety
Touch	Dense, weighty; firm to touch	No heft; weak to touch
Other	Not overly ripe; clean	
LETTUCE		
Color	Green	Yellow; reddish; dark spots
Leaves	Wide, no holes; voluminous	Wilted, worm-eaten; visible rot inside
Tips	No burned tips	Black, darkened tip
Other	Clean, fresh	

Note: Most vendors (and consumers) do not clearly distinguish safety from quality, so these should be interpreted as signs of “safe or good” versus “unsafe or bad” quality. Consumers generally have the same perceptions as vendors regarding these quality/safety signs.

Tomato. While interviewed lettuce and kale vendors often sell just that item, tomato vendors generally sold multiple other products (e.g., potato, onion). Tomato vendors included men and women, and they mainly sourced their tomatoes through wholesalers who brought them in from the main production areas. Some tomato vendors used brokers to connect to farmers. Tomatoes were seen as having different standards of quality, with different varieties associated with different uses and both variety and quality determining whether it was good for cooking or eating raw. The high-quality tomatoes were prioritized for being eaten raw, and lower-quality ones were used for cooking. Consumer preference was often for tomatoes that were not too ripe and would store for a while before use. Tomatoes that were very ripe, mashed, visibly damaged, or kept too long would be sold at a lower price, particularly to hotels/restaurants and to poorer

consumers. Typically, lower quality tomatoes were used in stews or sauces. Several vendors mentioned that hotels/restaurants would willingly buy damaged (or even rotten) tomatoes at a discount to use in sauces. As one male tomato vendor explained, “If it [tomato] gets very red, you have to supply it to a cafeteria, restaurant, or hotel you know for a discounted price quickly. They can easily mash it up with a ‘machine’ and put on a refrigerator. If it is prepared like that and used as a sauce, it is not going to be spoiled” (1121).

Regarding food safety/quality practices, vendors mentioned selling quickly and selling the ripest ones first; protecting them from sun and moisture; separating them from other vegetables and from spoiled tomatoes; keeping them in a neat area; storing on clean cloth or crates; minimizing hand contact; and keeping them in cool place. Unlike for kale and lettuce, vendors did not mention washing tomatoes before sale. As one male tomato vendor explained, “The person who buys it should go and wash it...we don’t have time to wash it!” (1114).

5.6. VENDOR PERSPECTIVES ON FOOD SAFETY

About half of the interviewed vendors understood “food safety” as a term in line with common understanding (i.e., related to reducing the risk of becoming ill from eating contaminated food). Others described it as related to eating on time, dietary diversity, nutrition, or prevention of non-communicable diseases, food preferences, affordability, crime, and general food quality.

Food safety is... we eat what we can afford. With what we can afford, whether it is flat bread or Injera, we eat what we can afford. – Female lettuce vendor (1106)

Food safety is meant: One is the place; the second is the way it is cooked; and thirdly, it is the way the food stored.... if you put tomatoes on the ground, it will start to get rotten quickly because it is affected by the moisture. Once it start[s] to rot on the bottom, it will move up to the top. Tomatoes should be placed on mesh or crates [so] it cannot easily be affected by moisture.... When I say cooking, we need to know the amount of ingredients required for the food. – Male tomato vendor (1107)

[Food safety] means its cleanness. It means having a food that is quality and it’s to also handle vegetables in a good way. – Female kale vendor (1103)

The safety of food is mainly about the time rather than the food. It is eating food at time. For instance, if I were to eat my breakfast and lunch together at 12, it would bring problems. But if we eat any food at the proper time, there will be no problem. – Male tomato vendor (1114)

However, vendors did understand several of the key concepts related to food safety, even if they did not know it by that name. As with consumers, vendors saw food safety as being largely situational – particularly related to food being spoiled, leftover, or not cooked, but also adulteration, eating in hotels/restaurants, not adding lemon to raw vegetables, and unclean handling (i.e., with dirty hands or equipment). There was little consensus on certain foods being “safer” or “less safe” than others, these situational aspects aside. There was some recognition of bacteria as a cause of illness and that bacteria incidence was related to food sitting around too long. Insects were also a concern as much for food quality in terms of appearance as for safety. Chemicals (e.g., pesticides, fertilizers) were rarely seen as a food safety concern; rather, they were generally seen as positive, with their usage leading to better-quality products.

If you're in a hurry and you prepare food just because you're hungry or if you didn't prepare it with a good hygiene or if you eat without washing your hands, then you'll get sick because of germs. - Female lettuce vendor (1122)

Nothing will happen if one eats food which lasts long after heating it. Most of the times, problems arise from eating foods raw. Raw tomato or potato might have liquid material inside it. Such liquid can easily attract bacteria or fungus after a week. If it is washed, peeled and cooked. If you eat it raw however it might cause diseases. – Male tomato vendor (1107)

Foods that have stayed overnight are bad for our health. You always have to eat your vegetables fresh [or they will not] be suitable for our health. – Female kale vendor (1103)

I approach meals that are not prepared in my home with suspicion. For instance, if we ran out of injera and you suggest buying one from injera dealers, I will not agree with you, I would rather eat bread... Because I have witnessed gypsum, grinded carton, and wood scraps being add[ed] to the dough of injera. So I would never eat injera outside my home. Another is chili pepper (“bärbäre”), where they add powdered clay that should have been trash. I have witnessed people mixing food items with such kind of alien substances at nighttime in hidden locations. Another is butter; they add rotten bananas in it. Also the jellied type of cooking oil, they add melted fat residues from butcheries. – Male consumer (2235)

With some exceptions, vendors were generally not very concerned about food safety. Worry was more common among lettuce vendors, as some expressed concern about lettuce grown in unclean areas or being riskier because it was eaten raw. Like consumers, vendors see considerable overlap in the meanings of “quality”, “fresh”, and “safe”, and do not distinguish among them. There is a close association between “quality” and “won’t spoil too fast.” This is both because of the association between spoiling and food becoming unsafe and due to spoilage making food unsellable for human consumption and thus leading to lost revenue. Vendors’ main concerns related to the quality/safety of their product was food staying out too long and quality degrading before being sold. Half of interviewed vendors reported getting sick from food, often citing food eaten outside the home. As with consumers, vendors associated foodborne illness entirely with gastrointestinal symptoms (stomachache, diarrhea, vomiting).

Since I started selling kale I have never experienced [somebody not trusting my product] before.... anything that has been cooked doesn't cause sickness... it's when you eat it raw that you get sick.... I don't get into these things [like kale causing illness]. I feel like I have sold the kale and making it in his home is [the customer's] responsibility, so I don't worry about him getting sick. – Male kale vendor (1123)

I worry because I might have to bring lettuce from an unclean area and my customers could contract diseases after [buying] from me. Unclean places might [be] farms near garbage collection areas, [where] flies can easily be reproduced and lay on the leaves, contaminat[ing] it. If we buy contaminated lettuce from such areas and sell it for customers, they can easily get sick. So, we will decide against buying from it and ignore our sales for that particular day. – Female lettuce vendor (1117)

Lettuce doesn't cause any health problem. You just have to add lemon on it and you can't also eat it by itself, you either have to add tomato or avocado in it. And it would cause a problem if you don't add lemon to it. – Female lettuce vendor (1122)

I worry because it would hurt me and my customer if it stays overnight so I worry so that I can finish all the lettuce I got for the day.... I don't want to sell anything that has stayed overnight. It's going to be eaten raw, so it shouldn't stay the night.... It might stay overnight sometimes, if it's a small amount we'd throw it out but if it's a large amount it's our money, so we'd mix it with the other and sell it because we'd be losing our main business money if we don't. – Female lettuce vendor (1122)

Vendors mostly agreed that vendors were responsible for keeping food safe. In addition, some named the consumer, government, and farmers/suppliers as responsible parties. Similarly, while vendors did not know of many detailed information sources for food safety, nor did they report regularly seeking out such information, most said that if they wanted such information, they would consult other vendors, farmers/suppliers, or government officials.

It's the vendor that's responsible to bring safe foods... I have to be able to have clean stuffs. I have to sell items that I would use for myself. If I use it for myself, then I can sell it to others as well. – Female kale vendor (1103)

The shopper is the one who should ensure whether the food they buy is good or bad. They have the mandate to buy the safest foods. They don't have to shop for unsafe foods only because they are the available ones or the cheapest in the market. - Male tomato vendor (1121)

5.7. VENDOR PERSPECTIVES ON RECOMMENDED FOOD SAFETY PRACTICES

Vendors' reported food safety actions include choosing good quality products from suppliers; storing items in a suitable, clean place; keeping their area clean; shading and watering and leafy greens; wiping off tomatoes; covering items; placing them on a clean surface; and arranging them neatly. Nearly all reported some issues with cleanliness in the area where they sell, particularly due to people who throw trash in the market and inadequate processes/staff for dealing with this trash. While many vendors reported working with neighboring vendors to keep their area clean, this was not always sufficient. The excess mud during the rainy season also posed challenges, and some noted their selling and safety practices being complicated by having a small, cramped space or one that was very near the road.

It is not practicable because no one frequently washes their hands when they are selling in the market. Because of the nature of our work, we may touch a tomato and then immediately touch a potato. We touch beetroots, carrots, and onions with our hands at the same time. You touch the food products with your hands when you are selling them, so you do not go to the bathroom to wash your hands before you touch another product. No vendor implements this. – Male tomato vendor (2108)

Consumers do not purchase a product without [thoroughly] touching it with their hands [or] see[ing] it with their own eyes. [They do so] to check its quality before deciding whether or not it is worth purchasing it.... Consumers will never agree with this idea when it comes to tomato production. When you tell them that they cannot pick tomatoes by hand, they will respond to you that they have the choice to pick tomatoes by hand and buy them from another vendor, so they leave without buying from you... All vendors allow consumers to pick and buy tomatoes by hand. – Male tomato vendor (2124)

To understand the feasibility and barriers to adopting recommended practices, vendors were asked about five recommended food safety practices—whether they were feasible and what share of vendors practiced them. The results are summarized in **Table 4**. In general, vendors found staying home while sick to be feasible, though they acknowledged that it was difficult for vendors who did not have anyone else to sell for them or guard their stall. Vendors estimated that a bit less than half of vendors observed this practice. For the other practices, however, vendors generally described them as infeasible—particularly for not allowing customers to touch the vegetables or for washing hands regularly.

Table 4. Vendors’ Perspectives on Recommended Practices

PRACTICE	FEASIBLE?	WHY NOT?	% VENDORS PRACTICING ¹
Stay at home when sick	Mostly not	No one else to sell for vendors at home, resulting in lost income. Risk of theft and of items going bad.	53%
Wash hands regularly	Almost all not	Products are touched constantly, busy selling, no water, customers are impatient, not seen as important.	22%
Not eat while selling	Mostly not	Need to be there to sell; will lose customers. Risk of theft or items being eaten by animals. Too far to go home and have nowhere else to go.	28%
Wash vegetables before selling	Only for carrot and lettuce, & tomatoes may be wiped	Not needed for other vegetables; they could be damaged by it. Increases spoilage for tomatoes. Too time consuming. No water access.	Most for lettuce and carrot; few for anything else ²
Not allow customers to touch product before buying	Almost all not	Customers want to touch before they buy; won’t buy otherwise and will get angry or go to other vendors.	10%

¹ Estimated percentage of vendors that observed that practice, averaged across those interviewed.

² Because vendors felt this varied widely by commodity, they could not estimate the percentage of vendors that observed the practice.

6. CONSUMER-VENDOR COMMUNICATION

When consumers and vendors interact, both reported that the main topic of discussion was price, specifically the price of the food and the reasons why it had increased, if it had. Most consumers and vendors reported that they do sometimes discuss food quality with vendors/consumers during purchase interactions. For example, asking about where the food is from (an indication of quality, as certain zones are known for high-quality vegetables or certain varieties), how good the quality is, or when it came to the market (to gauge freshness). However, these discussions were usually brief, and in most cases, nothing more was asked aside from price. The only food for which vendors repeatedly mentioned discussing safety issues with customers was lettuce, with this centering on instructing shoppers on how to safely prepare it (e.g., using quickly, washing, and adding lemon and vinegar).

With regard to tomato, most of them ask questions about its quality.... If they are convinced about the quality, they don't ask questions about other things. They say 'this tomato is appealing; how long it will stay? Can it last long? What is its name? What are its behaviors?' – Male tomato vendor (1107)

...You can just see and tell about lettuce. It is people like me and you that comes there, so they'd see it and know if it's a good lettuce or not. If they don't like it then they'd go somewhere else and buy it. ... They trust it because they see it with their bare eyes. Plus, they also know that it won't get spoiled, and they would see it with their eyes that it's not spoiled too. – Female lettuce vendor (1122)

[Customers ask] "Doesn't the price get lower? Is it still the same? I have heard that it has fallen..." There is nothing else... They don't [ask about quality]. They can know about the quality by looking at it. The people of Hawassa are good at identifying quality. – Male tomato vendor (2122)

Normally for me, it's all about the price. I would ask for the price I would pick it and other than that, I don't ask much detail... Sometimes people don't say enough information. Their focus is on their business. So they do not want to tell you anything. They don't have the interest to talk to. You don't even see much advertising on the food. They don't like talking. – Female consumer (2201)

Instead, quality or freshness was usually determined by the customers inspecting the vegetables—always visually and often also by handling them. Consumers bought based on what they see, perceiving quality visually, and they did not ask any further questions. In some cases of an ongoing relationship, consumers might trust the vendor to provide them with good products without this inspection. Most consumers reported that they did not ask advice from vendors. When they did, the main topic discussed was storage practices, namely, how best to store vegetables to extend their shelf life before spoiling. Vendors were somewhat more likely to report offering consumers advice, with the most cited topic also being how to store vegetables, though some also gave advice on how to prepare them (including washing).

I ask them if the lettuce is from another day because it does not look fresh... [but] if you are someone who is just buying, if you are not a [repeat] customer, they will not tell you the truth. But if you are a customer, they will tell you not to buy it because it is from another day. Do you want this tomato for salads so do not buy it because it is not from today? But if it is not a customer, they will sell it for them. They might say I brought it now. – Female consumer (2216)

It is hard [to discuss food safety and come to an understanding with merchants] ... They would feel as if you are better at their job. That would enhance hatred because they think you are after their business. He would make the others join him and treat you like the dog that entered the church... They aren't willing to have a conversation regarding this. – Male consumer (1201)

[If I were worried that the foods available might not be safe] I would tell the vendor that it's a not a good food that he's selling and that he might affect the customers that he's selling to. And then I wouldn't buy from him, too.... Regarding telling government authorities, I mean this is a free market and there's no regulation referring to this. I don't think anyone would listen to you if you'd go and report saying that he's selling a spoiled food.... I mean, I can't tell the government authorities or the police that a certain item is spoiled [Laughter]. – Male consumer (1218)

I don't confront [vendors who sold poor-quality products] them back like that. There is no such thing as that in our country as you know it. There are rare things that you can accomplish like that in our country. – Male consumer (1206)

Many consumers seemed reluctant to discuss food safety or quality issues with vendors: They thought it would not do any good, that the vendor might get angry at them, that the vendor would blame others, or that it was not appropriate. Similarly, vendors generally noted that food safety was not a main concern for their customers and that they rarely received comments or questions about it. While most consumers and all vendors agreed that it would theoretically be acceptable for a consumer to complain to a vendor about a food safety issue—particularly if they were their “regular” vendor—doing this (or, for vendors, receiving such feedback) was not common.

At the same time, both consumers and vendors commonly cited close consumer-vendor relationships developed over time, wherein they know about one another’s families and will exchange updates on personal lives; in such cases, market interactions could involve extended conversations or even having a drink together at the vendor’s stall.

I would feel bad if I do not spend the day at the market. Because we have good relationships with most of my customers. I treat my customers as family... They are the key contributors to my business. I would not make a living if it was not for them. – Female kale vendor (2119)

7. FOOD PRICE INFLATION AND QUALITY TRADE-OFFS

Both vendors and consumers were preoccupied with prices and inflation, which made shopping more difficult (annual food inflation in Ethiopia in May 2022 was 44%, among the highest in the world, falling slightly to 35% in July, according to the Ethiopia Central Statistical Agency, (15)). The topic was further examined with the aim of understanding whether and how it might influence purchasing practices of EatSafe key commodities and, particularly, whether consumers were trading off lower quality food for lower prices to mitigate inflation, which could have food safety consequences.

7.1. EFFECTS OF FOOD PRICE INFLATION

Inflation was a major challenge for both vendors and consumers. In a free-listing exercise, it was listed as consumers’ top concern, named by 80% of respondents, often first on the list (see Appendix for free-listing and ranking results). A closed-ended ranking question confirmed this, with all respondents ranking inflation among their concerns, and many ranking it their greatest concern (though the related issue of insufficient income was also widely cited). For vendors, ranking showed inflation second only to the related concern of insufficient capital for the business. The main foods named (by consumers and vendors) as having particularly large price increases were edible oil, onions, teff, and maize, followed by lentil, tomato, garlic, pasta, peas, meat, flour, berbere spice, egg, and rice. In contrast, only a few foods—namely, potato and kale—were noted as having seen price decreases. Consumers also confirmed that this had significant impacts on their quality of life, such as by causing stress, limiting their ability to save, and restricting their social and family lives, with a few even mentioning skipping meals.

It does affect our lives, but it isn't that much on me. It harms and that is right. However, you will stop doing anything else and put the money for food.... If the price were cheaper, I could save the money and use it for other purposes. However, I will refrain from doing other things. I will use the money for food... I will have to leave that other thing I wanted to buy... – Female consumer (2208)

Its consequences depend on the lifestyle. Some are like us; some have lower incomes than us. They have almost started to beg. They were the ones who were working well. But they are becoming poor now. We have handled it. We reduce the portion and won't use too much of things.... But there are those people whom I know of, who couldn't even get this. They have started begging now. – Male consumer (2203)

Price inflation also impacted food choices—with many choosing to purchase less of the more expensive foods, such as edible oil, tef, onions, and meat. Over half of consumers noted that there were some foods they had quit purchasing altogether, particularly more optional foods, like fruit or butter, or more expensive ones, like meat. However, few consumers reported cutting back on vegetables. Consumers explained that price increases were smaller for the vegetables and that they were generally cheaper, so they could be used as substitutes for pricier foods such as lentils, tef, or meat. As one male consumer described it, “Since the price [of meat] is expensive now, they are all seeking refuge with the vegetables”. Few consumers reported that the price increases had impacted their choice of markets, though about half noted that it had made them more eager to shop around among vendors to find a better price, and some mentioned that it had made it more difficult for them to access credit.

Among fruits, banana, orange, apple and so on, have become unaffordable. We have a child who needs to have balanced nutrition, but in this kind of galloping inflation providing him with fruit has become impossible.... Another item is chili pepper (“bärbäre), it has moved from our shopping list to our wish list. Even though we want to prepare this item, we could not due to financial constraints.... We are compelled to use chili pepper prepared in the ghetto sold 70 ETB per quarter of a kilo, these products are not inspected by the relevant food safety authorities. I use this product knowing it is damaging for my health. I have eye witnessed how it is produced, how the food is manipulated by strange and hazardous substance and parts that ought to be disposed are grinded all together, salt is mixed beyond the necessary amount to tweak its weight. Because of the skyrocketed price we are using such hazardous items in our diet. The other item is butter, with its extraordinary price increment. The cheapest butter is sold for 700 ETB per kilo, whereas the best quality is sold around 800 and 900 ETB per kilo. Such a price is way above our purchasing range. For the last holy day, we bought a kilo for 800 ETB, yet to do that we needed to tightly squeeze our budget. All these necessary food items have become a luxury. Essential items such egg, milk, butter as well as wheat flour have become too expensive. – Male consumer (2235)

We used to eat 4 times a day, that is impossible under current circumstances. Thus, even though it is far from enough we try to sustain our lives with the daily bread. The effects of high inflation are multifaceted, it modifies your behavior; touch your love life; and alienates your social life. For instance, we sometimes be unable to carry out our social duties, such as paying fee for village sanitation committee, it has made it impossible for us join and contribute to our local “Idir”. It also has psychological influences, we could not visit our relatives in Gondar and Addis because you cannot go there empty-handed... A one-way trip will cost us nearly 1,000 ETB, and that is too expensive. – Male consumer (2235)

Similarly, vendors were impacted by having fewer customers, or those customers buying less, which led to lower profits and sometimes to loss. To compensate, they generally purchased less from suppliers, raising their sales prices, giving less credit, and selling lettuce and kale in smaller bundles. However, a few vendors also admitted that inflation had created some opportunities for them to increase their profits or speculate. Very few reported changing products or suppliers as a result.

Both vendors and consumers mentioned that the price increases were creating greater tension between vendors and consumers in the market. Some consumers blamed vendor profiteering for the price increases, while others understood that the vendors were in a difficult situation and had no option but to increase prices. Many consumers also noted that the vendors had gotten more short-tempered or less willing to bargain. Vendors, in turn, noted that consumers were now quicker to get upset with them about price increases and potentially to blame them for it; as one consumer described it, “the environment there [in the market] is anger”. However, some vendors also recognized that their customers—particularly lower-income customers, or those with large families—were suffering due to the high prices and had empathy for them.

I sometimes think it is something the vendors are intentionally doing. When I come to think of it, I think they just call one another and decide to raise the price themselves. They say the price has increased on the items they have at hand; the commodity has already been stocked and stored but on the same item, they say it has increased when you go back. – Female consumer (2252)

People argue and complain about the price increment. If the price increases when they come tomorrow, people would not be in a good mood and they usually ask or complain why the price has increased overnight... Some people insult us vendors and go without buying due to the price increment. Some people insult us or say to us, “You vendors like to increase the price on us.” – Female kale vendor (2113)

I do not judge people because life itself changes a person’s character, and it makes them easily irritated. If there are 5 or 6 children in a household, there are heads of families who cannot afford to buy enough food for them, so I sometimes think that the high cost of living itself can make people become complainers and be easily annoyed.... So when she comes to the market, I think she is worried about this issue, and that is why she gets annoyed by every little thing.... I advise her to reduce the portion of side dishes that she feeds them, because if she gives that much amount of food to her children, the amount of food that she buys will not be enough for her. – Female kale vendor (2112)

The main difficulty right now is that most people in the community do not have cash. It is very saddening. When some people come here for shopping and told the price, they might be dazed where they stand. It is very sorrowful... It is sad to see a mother unable to buy something and feel depressed after she asked a price and just leave away.... She might be disgraced to take a small amount of items with the money she has at hand. When I get elderly mothers who are unable to buy something, I use to give them a Kilo or two of something for free.... It is satisfying. I feel sad when they feel sad. Yet, I will also be happy when they feel happy because they get something they haven’t expected. – Male tomato vendor (1121)

7.2. PRICE-QUALITY TRADE-OFFS

On the question of accepting lower quality food in exchange for a lower price, most consumers agreed that they did this at least sometimes. If consumers found out they did not have enough money to buy the food they had planned to at the market, fewer than a third named opting for lower quality as their top option, with most electing to purchase less. However, some noted that

they did not opt for low quality for vegetables. This was due several reasons: being particularly concerned about their quality; limited perceived difference in quality/price; seeing vegetables as cheap to begin with so little savings could be obtained this way; poorer-quality versions quickly becoming inedible and risking waste (i.e., lost money); and them being “optional”, such that people who really could not afford them would choose to just not eat them. Instead, the practice of opting for lower quality for a cheaper price was commonly cited for grains, legumes, or onions. Among the key commodities, the practice was most common for tomatoes that would be used for cooking. Considering these three commodities, only a few respondents were willing to accept lower quality in ways that might compromise safety—such as being a few days old or wilted, dirty, or with insects or, for tomatoes, holes or cuts. Additionally, only about one third of consumers cited reducing the quality they purchased due to the price increases, and those who did so normally did so for non-focus-foods such as onion, legumes, oil, or tef.

Vendors agreed that lower-quality products could be sold at a lower price, and that there was more demand for this in the present context of rising prices. Vendors were somewhat divided on whether they purposively purchased lower-quality products with this goal. Some felt that their customers would only purchase high-quality products, and thus the vendor would be unwilling to accept lower-quality goods from a supplier. Others felt that there was a market for lower-quality foods at low prices, and they were happy to choose their products to meet it. The types of lower quality accepted included small, thin, and slightly discolored vegetables, though a couple mentioned accepting those with visible insect damage, broken lettuce leaves, or bruised tomatoes.

My customers want me to bring quality items. If I stock low quality kale, they would not want to buy from me... there [is] no point in having it in my shop if customers will not buy it. – Male kale vendor (2111)

You buy to sell high-quality, medium-quality, or low-quality products by taking into consideration your market or the ability and needs of the majority of the consumer community that buys from you. You study the needs of the majority of consumers, and if they want to purchase at a low price, you buy and sell a low-quality item, if they want to purchase a quality item, you buy and sell a quality item at a higher price For example, they want to buy tomatoes, but they do not have the money to purchase good-quality tomatoes. There are low-quality tomatoes ... If these poor people are planning to eat a tomato in a stew or other cooked form, if they are not going to chop and eat it uncooked, and if they want to make tomato sauce for pasta or macaroni, the tomatoes that can be eaten cooked should be ripe. Any hotel buys ripe and cheap tomatoes to make food.... When the price was reasonable in the past, when it was 10 or 15 ETB, these people from lower-income societies used to buy and consume quality products, but now when the price increases, they can only buy and use low-quality products. – Male tomato vendor (2108)

I believe in the saying “Habesha people are proud”, but when something is expensive, to the extent that you can’t afford, people are obliged to buy lower-quality foods. This year, [the number of] people [who] want to buy cheap foods and lower-quality foods have significantly increased because there has been price increase in almost all types of foods.... they are confronted with livelihood challenge and forced to buy from street vendors. – Male lettuce vendor (2123)

People purchase food products from us according to their desire. For example, there are poor people who buy the lower-quality type of kale we pick from the quality kale at a price of 5 or 10 ETB. Such types of poor shoppers willingly purchase lower-quality food items for a significantly cheaper price, so we sell to them a lower-quality food item by reducing its selling price.... Normally, the quality type of kale is very green, but the poor-quality kale has a yellow color. A poor-quality tomato variety may be worm-infested. – Female kale vendor (2112)

At the same time, nearly all vendors and consumers and vendors acknowledged that, if a low-income consumer did not have enough money to buy the vegetables in the market, one option they had was buying lower-quality ones sold at a discount. Discounted low-quality vegetables were noted to be readily available in the market, in a section referred to as 'gulit' where vegetables were sold by the pile as opposed to by weight and could include vegetables that were near to expiring or damaged. Some also mentioned purchasing at the end of the day before vendors would discard any food that would soon spoil. A few consumers reported purchasing from these places themselves and being willing to accept lower quality to be able to find something they could afford.

When I go to the market, I check my wallet and walk to the third types of vendors and buy the damaged tomatoes that should have been in thrown away, then overcook and eat it praying to God to protect us from the possible illnesses.... I purchase tomato from such traders, for their price is cheap and the quantity is high. Nonetheless, about 70% of this high quantity exhibits signs of rottenness, burst or related types of defects. If it is not consumed on the day of purchase its potentiality of contamination increases alarmingly. – Male consumer (2235)

How much you can afford also determines things... your diet is also dependent on how much you can afford. You can eat good things if you can afford them. You can make it quality if you have the means. You can also buy quality items when you can afford them. There is nothing you would do if you can't afford anything... You may buy poor quality products because you can't afford to buy quality items. – Male consumer (1219)

Ethiopians want something cheap that is similar to their living situation. They want quality food but goes with their lifestyle. And there are people who can't afford to buy quality food... Tomatoes can get spoiled but I don't throw away. I collect it, put it in a row and sell it. That individual will clean it up and use it. She will ask me to give her 10 ETB worth of tomatoes. There are poor people who need this and aren't able to buy. – Female tomato vendor (2121)

They separate the ones [tomatoes] that has water, the ones that have been affected by the sun, and the ones that have been pierced by worms. And then they'd put the clean ones separately... The remaining ones from the clean ones are sold with a cheaper price... people that are poor would eat it. – Female kale vendor (1103)

Vendors also generally had empathy for the plight of poorer consumers and would try to accommodate them if possible (e.g., by offering credit or discounts).

People who are coming here may feel humiliated whenever they are being told that they can't [afford to] buy half a kilo. It is going to be difficult when they feel humiliated. They are going to feel humiliated because they don't have money. They won't have that feeling had they have enough money. Personally, I don't feel good to see poor people feeling humiliated. Yet, we don't have to disregard it because it is money. I also use to ask them on why they decide to buy half a kilo. I may say 'is it because you don't have enough money?' If they say 'Yes', I will tell them 'I can fill it for you'. At that time, there is something they usually say 'God Bless You!' These days however I am decreasing such a price because I am not economically well myself. – Male tomato vendor (1121)

8. DISCUSSION

This study has shed light on the food safety-related perceptions and practices of food consumers and vendors in Hawassa, Ethiopia, with a focus on fresh vegetables. The results are discussed here with a special focus on drawing implications for EatSafe intervention design.

8.1. THE MARKET CONTEXT AND ENABLING ENVIRONMENT

Regarding the market context and enabling environment, the results indicate both challenges and opportunities. First, market infrastructure is clearly a constraint, particularly regarding overcrowding, dirt and mud, limited working space, and limited access to clean water. The former two represent factors that inconvenience consumers, while all raise the barriers for vendors to ensure food safety—as was clear in their comments about the feasibility of recommended practices. However, **these issues could also serve as opportunities to simultaneously create a more supportive environment for food safety and improve the consumer experience, which could improve goodwill among consumers and vendors and make them more supportive of any overall intervention.**

Vendor-consumer interactions cover a range from repeated, loyal relationships to extensive “shopping around”—particularly in the context of rising prices. Consumers have some mistrust of vendors, opining that some of them engage in various types of unscrupulous behavior (e.g., cheating with weight, mixing quality of goods, not disclosing that a product is not fresh)—though they may have close trusting relationships with a few of their “regular” vendors. Communication between consumers and vendors is generally short and centered on price, with few discussing food safety or seeming interested in doing so. **This indicates some potential for interventions dependent on building trust but also that activities that enable consumers to make choices without being dependent on communicating with vendors or taking the vendor at her word (e.g., through visual cues) may be more impactful.**

Vendors are not well organized at present and engage in limited collaboration or collective action. **It will thus be difficult to make work interventions that depend on joint action.** Similarly, consumers and vendors alike were skeptical about the ability of the government to ensure food safety, and vendors have very limited interactions with authorities and primarily negative associations with government intervention. **It thus seems unlikely that interventions reliant on close government engagement will meet with local acceptance or success. More optimistically, both consumers and vendors see themselves as mainly being the ones responsible for ensuring safe food, suggesting a strong feeling of personal responsibility to build upon.**

Finally, women play a large role in shopping, particularly for vegetables, and there were some stereotypes related to men as shoppers: engaging in a “female” task and not knowing how to shop or bargain. Similarly, women are predominant among vegetable vendors and there are some negative stereotypes about men selling certain foods (e.g., lettuce). **As such, while women should be a key target for interventions, it is important that this does not further reinforce this gender divide or make men feel unwelcome in the market.**

8.2. FOOD SAFETY PERCEPTIONS

While food safety was understood by a slight majority of consumers and vendors, nearly all have a decent understanding of at least some of the key aspects of food safety. That is, seeing it as largely situational, related to poor handling or storage; food not being properly cooked or being eaten raw; spoiled or leftover food; food in restaurants/hotels; and insect damage or infestation. The practices consumers reported using to keep foods safe largely aligned to the causes of food safety they cited—e.g., checking food before buying or washing. Preparing with lemon and/or vinegar was commonly mentioned for raw vegetables. Cooking was also widely seen as a way to make food safe, with few citing food safety risks that cooking would not eliminate. **These beliefs encompass a helpful foundation of knowledge on which to build—such as the importance of cooking and cleanliness—but also some gaps and misconceptions—such as that cooking, or treating with lemon and/or vinegar, will solve all problems and can make spoiled tomatoes safe.**

Food safety was not a key driver of choice for consumers or key motivator for vendors. This was because, while consumers understood the risk of foodborne illness in theory, they generally did not feel personally threatened by it. In general, fewer consumers and vendors reported personally getting sick from food than would be expected based on data on actual food safety risk in Ethiopia, and most were confident that they could take the steps to avoid or mitigate the risk. One popular saying—“germs can’t kill Habesha”—encompasses this underplaying of the risk associated with foodborne illness. This suggests a large gap related to consumers’ motivation and feeling of personal risk; **there may thus be an opportunity for interventions to raise awareness of foodborne disease as something widespread, that affects nearly all, and can have large negative consequences.**

Overall, there was not much differentiation among the three key commodities in terms of food safety: consumers and vendors saw similar causes and associated illnesses/ symptoms among them, with the main distinction being that those eaten raw were seen as riskier than those eaten cooked. Among key commodities, lettuce raised the highest level of food safety-related concern for both consumers and vendors, as it is eaten raw and spoils easily. Moreover, respondents did not clearly differentiate between quality more generally and safety, specifically. For vegetables specifically, “quality” was very important as a driver of market and vendor choice and was closely related to “freshness.” Freshness was determined based primarily on visual appearance (with consumers and vendors having a set of specific, commonly shared cues used to assess quality/freshness) and secondarily on vendors’ assurances. Some of these cues (e.g., splashing vegetables with water, well-arranged goods) may not correlate with safer food, while others likely do. Food spoilage and waste (and the incurred cost) were key concerns for both vendors and consumers and the main topic on which vendors currently provide advice, and both would be interested in reducing the risk of this. **The existence of visual cues and the worry over spoilage/loss are entry points that could be leveraged for messaging on food safety, such as by correcting misconceptions on useful visual cues or providing tips on extending shelf life that also increase safety.**

For the five recommended food safety practices examined here, vendors largely found them to be not feasible and rarely practiced; regular handwashing and preventing consumers from

touching vegetables were the least feasible, with vendors citing several barriers to enacting them. **If recommending these practices through an intervention, it will be important ensure that something is done to make them more feasible for vendors to follow – or to find less-good-but-more-feasible alternatives.**

8.3. PRICE INCREASES AND THEIR IMPACTS

Price was generally a strong driver of market and vendor choice, and rising food prices were a preoccupation of both consumers and vendors in the current inflationary context. Overall, kale and lettuce seemed relatively insulated from changes in price and consumption, and Aroge Gebeya remains an essential market for ensuring access to quality vegetables at affordable prices. However, consumers were very sensitive to price considerations and perhaps more actively ‘shopping around’ vendors than normal. Vendors reported feeling under additional pressure, and consumer-vendor relations appeared to be strained. **It will be important to ensure that no interventions further increase price – or are perceived to have done so – and to enter into the “vendor and consumer interactions” space with caution.**

Consumers and vendors did report that they accept lower quality food in return for a lower price, but this was less relevant for the vegetables – except for tomato that is cooked. At the same time, the poorest consumers seemed to be most vulnerable to the type of price-quality trade-off that might expose them to greater food safety risks, including by purchasing damaged or near-to-spoiling vegetables from the “gulit.” **It will be important for any vendor-focused intervention to also work with gulit vendors and lower-income to ensure it is “pro-poor” on both the consumer and vendor side – but without decreasing affordability.**

9. REFERENCES

1. Global Alliance for Improved Nutrition (GAIN). Evaluation of Consumer and Vendor Behaviors in a Traditional Food Market in Hawassa, Ethiopia [Internet]. EatSafe: Evidence and Action Towards Safe, Nutritious Food; 2022 Sep. (U.S. Agency for International Development (USAID) EatSafe Program Report). Available from: <https://www.gainhealth.org/sites/default/files/publications/documents/Evaluation%20of%20Consumer%20and%20Vendor%20Behaviors%20in%20a%20Traditional%20Food%20Market%20in%20Hawassa%2C%20Ethiopia.pdf>
2. Global Alliance for Improved Nutrition (GAIN). Food Safety Attitudes and Practices in A Traditional Food Market in Hawassa, Ethiopia: A Quantitative Formative Assessment. EatSafe: Evidence and Action Towards Safe, Nutritious Food; 2022 Oct. (U.S. Agency for International Development (USAID) EatSafe Program Report).
3. Global Alliance for Improved Nutrition (GAIN). The People of Traditional Markets: EatSafe's Story Sourcing in Hawassa, Ethiopia [Internet]. EatSafe: Evidence and Action Towards Safe, Nutritious Food; 2022 Sep. (U.S. Agency for International Development (USAID) EatSafe Program Report). Available from: <https://www.eatsafe-storysourcing.org/>
4. Pelto GH, Armar-Klimesu M. Focused Ethnographic Study of Infant and Young Child Feeding 6-23 months: Behaviors, Beliefs, Contexts, and Environments. Geneva: Global Alliance for Improved Nutrition; 2014.
5. Lee J, Pelto GH, Habicht JP, Bhuiyan MMI, S Jalal C. Identifying Nutrition and Health-Relevant Behaviors, Beliefs, and Values of School-Going Adolescent Girls in Rural Bangladesh: Context for Interventions. *Current Developments in Nutrition* [Internet]. 2019 May 1 [cited 2020 May 7];3(5). Available from: <https://academic.oup.com/cdn/article/doi/10.1093/cdn/nzz013/5372409>
6. Pelto GH, Armar-Klimesu M. Identifying interventions to help rural Kenyan mothers cope with food insecurity: results of a focused ethnographic study. *Matern Child Nutr*. 2015 Dec;11 Suppl 3:21–38.
7. Global Alliance for Improved Nutrition (GAIN). Focused Ethnographic Study on Food Safety Values, Knowledge and Practices in Traditional Markets in Birnin Kebbi, Nigeria [Internet]. EatSafe: Evidence and Action Towards Safe, Nutritious Food; 2021 Sep. (U.S. Agency for International Development (USAID) EatSafe Program Report). Available from: <https://www.gainhealth.org/sites/default/files/publications/documents/focused-ethnographic-study-on-food-safety-values-knowledge-and-practices-in-traditional-markets-in-birnin-kebbi-nigeria.pdf>
8. Stata Statistical Software: Release 15. College Station, TX: StataCorp LLC: StataCorp; 2017.
9. Spradley JP. *The Ethnographic Interview*. Fort Worth: Harcourt Brace Jovanovich; 1979.
10. Borgatti S, Halgin D. Elicitation techniques for cultural domain analysis. In: *Specialized Ethnographic Methods: A Mixed Methods Approach*. Lanham, MD: Altamira Press; 2012. p. 80–116.

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11. ATLAS.ti. Berlin: ATLAS.ti Scientific Software Development GmbH; 2020.
 12. Weller SC, Romney AK. Systematic Data Collection. Newbury Park: Sage; 1988.
 13. Analytic Technologies. Visual Anthropac.
 14. IPA. Poverty Probability Index (PPI). 2020 [cited 2020 Apr 6]; Available from: <https://www.povertyindex.org/about-ppi>
 15. Ethiopia Central Statistical Agency via Trading Economics. Ethiopia Inflation Rate [Internet]. 2022. Available from: <https://tradingeconomics.com/ethiopia/inflation-cpi>

APPENDIX I. FREELISTING AND RANKING EXERCISE RESULTS

Table A1. “Unsafe foods”: Freelisting Results with Consumers (Phase 1; n=16)

FOOD	FREQUENCY	AVG. RANK	SALIENCE
Kale	50%	2.75	0.320
Tomato	50%	2.13	0.369
Leftover food	31%	3.40	0.206
Cabbage	25%	2.75	0.170
Lettuce	25%	2.75	0.146
Milk	19%	3.00	0.105
Potato	19%	3.67	0.096
Shiro	12.5%	4.00	0.052
Salt	12.5%	2.00	0.083
Meat	12.5%	1.00	0.125
Raw meat	12.5%	3.50	0.056
Vegetables	12.5%	5.00	0.067
Banana	12.5%	5.00	0.033
Food from outside the home	12.5%	4.00	0.061
Avocado	12.5%	5.00	0.035

Note: items named by only one respondent are omitted.

Table A2. “Unsafe foods”: Freelisting Results with Vendors (Phase 1, n=13)

FOOD	FREQUENCY	AVG. RANK	SALIENCE
Leftover food	61.5%	1.25	0.590
Vegetables in restaurant food	23.1%	1.67	0.192
Cottage cheese	23.1%	2.67	0.146
Tomato	15.4%	3.50	0.099
Meat	15.4%	2.50	0.096
Lettuce	15.4%	5.00	0.059
Avocado	15.4%	5.50	0.042

Note: items named by only one respondent are omitted.

Table A3. “Safe foods”: Freelisting Results with Consumers (Phase 1; n=16)

FOOD	FREQUENCY	AVG. RANK	SALIENCE
Potato	25	3.00	0.173
Miser wot (lentil)	25	3.25	0.146
Meat	25	1.75	0.198
Egg	18.8	5.33	0.046
Shiro	18.8	2.67	0.135
Tomato	18.8	1.67	0.156
Beans	12.5	5.50	0.039
Orange	12.5	3.50	0.047
Kale	12.5	3.00	0.076
Injera	12.5	2.00	0.100
Sweet Potato	12.5	5.00	0.040
Pasta	12.5	2.50	0.090
Stir Fried Meat	12.5	3.00	0.066
Bread	12.5	2.00	0.083
Cooked Tomato	12.5	3.50	0.065
Cabbage	12.5	3.50	0.047

Note: items named by only one respondent are omitted.

Table A4. “Safe foods”: Freelisting Results with Vendors (Phase 1, n=13)

FOOD	FREQUENCY	AVG. RANK	SALIENCE
Lettuce	38.5	3.00	0.185
Egg	30.8	4.00	0.187
Meat	23.1	2.67	0.155
Shiro	23.1	2.33	0.165
Tomato	23.1	2.00	0.167
Banana	23.1	3.67	0.076
Avocado	23.1	2.00	0.173
Roasted/Fried Barley Snacks	15.4	2.00	0.115
Beet root	15.4	7.00	0.037
Chard	15.4	1.50	0.135
Potato	15.4	1.00	0.154

Note: items named by only one respondent are omitted.

Table A5. Factors Causing a Shopper to Choose a Vendor: Freelisting Results with Vendors (Phase 2; n=50)

FACTOR	FREQUENCY	AVG. RANK	SALIENCE
Vendor behavior/service	92	1.89	0.713
Quality of items	72	2.08	0.525
Pricing	60	2.77	0.323
Offers credit	28	3.00	0.124
Adds bonus amount	28	2.36	0.193
Appearance/presentation of items	18	2.78	0.107
Food is clean	12	3.17	0.073
No spoiled items	8	2.75	0.048
Availability/variety of items	8	2.00	0.052
Sells only fresh products	6	3.00	0.035
Personal hygiene	6	3.33	0.033
Concessions to regulars	6	5.00	0.017
Discounts large purchases	6	4.00	0.028

Note: items named by <2 respondents are omitted.

Table A6. Foods with Largest Price Increases According to Consumers and Vendors (Phase 2; n=100)

FOOD	FREQUENCY	AVG. RANK	SALIENCE
Edible oil	85	2.24	0.712
Onions	72	4.01	0.457
Teff	68	3.68	0.455
Maize	51	4.63	0.291
Lentil	44	5.30	0.216
Tomato	39	5.21	0.209
Garlic	33	5.24	0.171
Pasta	31	5.00	0.157
Peas	29	4.93	0.157
Meat	28	5.29	0.144
Flour	26	4.85	0.134
Berberbe	26	5.62	0.126
Egg	23	7.26	0.077
Rice	20	5.05	0.099
Butter	19	6.58	0.082
Beans	17	4.88	0.090

Chick pea	16	5.06	0.087
Sugar	14	5.71	0.069
Barley	14	5.57	0.066
Coffee	10	5.20	0.051
Shiro	9	5.44	0.047
Grains	8	4.38	0.049
Cabbage	7	4.86	0.042
Carrots	7	5.00	0.036
Kale	5	6.40	0.020
Lettuce	5	6.20	0.026
Chili	5	4.80	0.027

Note: items named by <5 respondents are omitted.

Table A7. Foods Consumers Report Buying Less of (Phase 2; n=50)

FOOD	FREQUENCY	AVG. RANK	SALIENCE
Edible oil	48	3.50	0.288
Teff	48	3.92	0.272
Onions	44	3.41	0.281
Meat	40	2.80	0.292
Garlic	30	4.20	0.164
Tomato	30	3.47	0.183
Egg	28	4.50	0.141
Lentil	28	2.71	0.195
Pasta	26	3.92	0.142
Butter	20	3.10	0.145
Berbere	18	4.11	0.099
Maize	14	4.29	0.079
Shiro	12	4.33	0.069
Barley	12	2.33	0.087
Carrots	12	4.33	0.071
Peas	10	3.00	0.065
Rice	10	4.20	0.053
Milk	10	3.80	0.052
Cabbage	10	5.60	0.046
Beans	10	4.60	0.055
Flour	8	4.50	0.045

Sugar	8	5.25	0.028
Banana	8	3.00	0.053
Lettuce	6	4.00	0.024
Beetroot	6	6.00	0.018
Potato	6	2.67	0.049
Grains	6	4.33	0.036

Note: items named by <2 respondents are omitted.

Table A8. Foods Consumers Report Buying More of (Phase 2; n=50)

FOOD	FREQUENCY	AVG. RANK	SALIENCE
Potato	58	1.79	0.476
Tomato	36	2.22	0.254
Kale	34	3.00	0.184
Cabbage	16	3.13	0.093
Lettuce	16	3.50	0.081
Pasta	14	2.57	0.075
Carrots	12	2.50	0.079
Spinach	12	4.17	0.055
Rice	12	2.33	0.096
Chick pea	10	2.80	0.060
None	10	1.00	0.100
Flour	10	2.60	0.067
Maize	8	3.75	0.048
Beetroot	8	3.25	0.036
Edible oil	6	1.67	0.047
Barley	6	2.67	0.043

Note: items named by <2 respondents are omitted.

Table A9. Main Challenges Consumers Face in their Lives (Phase 2; n=50)

FOOD	FREQUENCY	AVG. RANK	SALIENCE
Inflation/cost of living	80	1.48	0.694
Insufficient income	34	1.94	0.230
Unemployment	32	2.06	0.210
War	6	2.33	0.039
Public safety	6	3.67	0.020
Housing	6	2.00	0.037

Note: items named by <2 respondents are omitted.

Table A10. Consumer Ranking of Key Challenges (Phase 2, n=50)

	NUM NOT RANKING	NUM RANKING TOP	AVERAGE RANK (AMONG THOSE RANKING)
High prices	0	12	2.46
Insufficient Income	4	16	2.97
Jobs and opportunity	11	7	2.97
Conflict or political situation	12	8	3.68
Insufficient food availability	5	2	4.24
Local crime	23	2	4.41
Climate or weather issues	26	2	4.79
Health issues	21	1	5.41

Table A11. Vendor Ranking of Key Challenges (Phase 2, n=50)

	NUM NOT RANKING	NUM RANKING TOP	AVERAGE RANK (AMONG THOSE RANKING)
Limited investment capital	1	9	2.69
High prices	5	12	2.76
Weak demand	12	10	3.71
Insufficient supply	13	6	4.24
Inadequate market facilities	12	2	4.42
Conflict or political situation	21	4	4.76
Hassling from authorities	28	3	5.00
Bad vendor behavior	23	2	5.11
Poor vendor relations	19	1	6.03
Poor customer-vendor relations	27	1	6.39