

Nourishing livelihoods

Recognising and supporting food vendors in Nairobi's informal settlements

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Patrick Njoroge and Alice Sverdlik

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The Human Settlements Group works to reduce poverty and improve health and housing conditions in the urban centres of Africa, Asia and Latin America. It seeks to combine this with promoting good governance and more ecologically sustainable patterns of urban development and rural-urban linkages

Partner organisation

Muungano wa Wanavijiji is Kenya's federation of the urban poor that mobilises residents of informal settlements to participate in saving schemes, advocacy, and community-led processes. It represents over 80,000 members in 300 informal settlements from 19 counties. Muungano started in 1996 as a movement to resist unlawful evictions, land-grabbing and discrimination, but it has evolved to pioneer community-led planning solutions to poverty and underdevelopment. Its main objective is to improve the dignity and well-being of all residents of informal settlements. Muungano works closely with its financial support organization, Akiba Mashinani Trust (AMT), and technical team at Shack/Slum-Dwellers International Kenya (SDI-K).

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Vendors in African informal settlements play vital but overlooked roles in alleviating food insecurity. Many vendors are women selling affordable food to their fellow residents. Using participatory research, we offer a gender-sensitive analysis of how food vending intersects with environmental hazards, insecurity, and governmental neglect in Nairobi's informal settlements. We argue that improving food security must form part of a wider set of upgrading initiatives to promote jobs, community safety, and political empowerment. Food vendors in informal settlements are a key entry-point for such interventions. By nourishing and recognising these livelihoods, vendors can lead the way towards equitable food systems.

Contents

Acronyms	4	Earnings for vendors by food type and gender	25
1 Introduction: Food security and vendors in African informal settlements	5	Income fluctuations and gender in Korogocho	26
2 Methodology	7	Insecurity and food vending	26
3 Study setting	9	4 Comparing vendors' socioeconomic profiles in Korogocho and Viwandani	27
Viwandani	9	5 Focus group discussions findings in Viwandani and Korogocho	28
Findings: a profile of Viwandani's food vendors	10	Advantages to food vendors and consumers in Viwandani	28
Categories of foods sold in Viwandani	11	Disadvantages and challenges to vending in Viwandani	30
Areas of operation	12	Summary of FGDs in Viwandani	34
Gender and food types	12	Advantages to food vendors and consumers in Korogocho	35
Food vending and access to infrastructure	12	Disadvantages and challenges to vending in Korogocho	37
Environmental hazards and food vending	14	Summary of FGDs in Korogocho	40
Korogocho	15	6 Summary and conclusions	41
Findings: profiling food vendors in Korogocho	16	References	44
Vendors' gender and age profiles	16		
Types of food	19		
Gendered typology of food vendors	21		
Location	22		
Food vendors and access to infrastructure	23		
Environmental hazards to food vending	24		
Number of years in food vending	25		

Acronyms

APHRC	African Health and Population Research Centre
CBD	Central business district
FAO	Food and Agriculture Organization of the United Nations
FGD	Focus group discussion
FVA	Food Vendors' Association
IIED	International Institute for Environment and Development
ILRI	International Livestock Research Institute
Ksh.	Kenyan shilling - 1 British pound is equivalent to 149 Kenyan shillings

1

Introduction: Food security and vendors in African informal settlements

While the urban poor face several challenges in accessing safe, affordable food, vendors in African informal settlements play vital but rarely-appreciated roles in alleviating food insecurity. Food security is defined as “when all people, at all times, have physical, social and economic access to sufficient, safe and nutritious food that meets their dietary needs and food preferences for an active and healthy life” (FAO 2010: 8), which is often viewed as solely a rural problem. Yet food insecurity has become an acute concern in urban areas, requiring new approaches to promote accessible, affordable, and nutritious meals. In African cities, food insecurity is pervasive due to widespread poverty and unemployment, “rather than because of food production and supply constraints” (Crush and Frayne 2014: 110). Instead of focusing on rural food production and urban agriculture, as in African food policies to date, improved “urban food security hinges upon **access** to food” (*ibid.*, p. 115, emphasis added). For low-income households seeking access to affordable food sources, informal providers are a mainstay. With rising food prices outpacing the meagre incomes of the urban poor, they often rely heavily upon informal markets and food-sellers. These informal workers lack official recognition or licences, but are typically located near residents; they “offer credit and [are] often better equipped to

sell products in volumes low-income customers can afford” (Battersby and McLachlan 2013: 717). Such advantages of proximity, cost, and selling on credit can all bolster household food security, particularly when vendors operate in the same informal settlements where their customers reside. This study explores the contributions and challenges of food vendors in Nairobi, using participatory mixed methods research in two contrasting informal settlements of Korogocho and Viwandani.

Food vendors in informal settlements offer a range of foods throughout the day, and we highlight how women play a central role in vending while combining their livelihoods with household duties. Vendors provide meals to workers, schoolchildren, and passers-by, in addition to affordable meats, vegetables, and snacks. As a recent study recognised, “the informal food market never seems to sleep”, and in Nairobi workers can enjoy an early morning “steaming cup of *masala* tea... ‘snacks’ such as samosa, corn cobs or *nyama choma* (roast meat) are always available... Once back home from work, it is more convenient to go next door to buy vegetables” (Grace and Roesel 2014: 13). Furthermore, informal markets and vendors offer “a wide range of products at a cheap price compared to shopping malls

or supermarkets" (*ibid.*, p. 14). Our research confirmed that vendors in informal settlements provide an array of low-cost foods all day, either as stationary or mobile sellers. Main roads and footpaths are often important sites for vendors, although some working mothers may prefer to sell near home to help care for their children. Additionally, we found that women comprise the majority of food vendors: 63 per cent and 81 per cent of vendors are female in Viwandani and Korogocho respectively. We underscore the pivotal role of female vendors in particular sub-sectors, such as cooked foods and fresh vegetables, and we analyse the gendered, cost-saving, and other advantages of selling in informal settlements.

Furthermore, we examine how food vending intersects with the profound environmental hazards, insecurity, and governmental neglect in African informal settlements. Food vendors' efforts to promote hygiene "may be undermined by the inaction of public authorities [who] seldom provide vending spaces with clean water pipes, drainage system, public toilets, or garbage collectors" (Vieira Cardoso *et al.* 2014: 3). Inadequate infrastructure and services like rubbish collection not only pose major threats to food safety, but can also hamper vendors' livelihoods (especially in informal settlements with severe shortfalls in provision). Yet past studies usually overlook food vending in African informal settlements, preferring to focus on markets or food vendors in the city centre. Our earlier research provides a rare exploration of food vendors in three of Nairobi's settlements (Ahmed *et al.* 2015), and this paper continues examining the spatial constraints, environmental hazards, and security threats facing food vendors (see also Simiyu 2014). Compared to Viwandani, Korogocho residents typically have higher levels of food insecurity and childhood stunting (Mutisya *et al.* 2015). In other key differences, Viwandani has more extensive environmental hazards than Korogocho, a highly insecure settlement that also has recently-upgraded infrastructure. Food handling

may be inadequate in both settlements, as indicated by vendors' reselling of leftovers or leaving their items uncovered. However, we argue that many food safety concerns are beyond the vendors' control and instead reflect the Kenyan government's systematic neglect of informal settlements. Moreover, supporting vendors and improving their working conditions can offer wider benefits for their fellow residents.

We argue that enhancing food security in African informal settlements must form part of a broader set of upgrading interventions to promote jobs, improved safety, and political empowerment for residents. Food vendors are an unusually promising entry point for such initiatives, as they have close links to local environmental hazards, but also strong potential to foster food security for their fellow residents. As discussed below, our contrasting cases of Viwandani and Korogocho indicate that merely providing infrastructure and services cannot ensure that food vendors can thrive. Korogocho's upgraded infrastructure has reduced vendors' environmental challenges, yet vendors still struggle with low incomes, insecurity, and political marginalisation. Upgrading strategies will not only need to improve infrastructure and support food vendors' livelihoods in informal settlements, but also promote security, youth employment, and more responsive governance. Gender-sensitive strategies to support vendors will again be crucial, given women's predominance in selling food alongside their extensive time burdens. Above all, we argue that vending in informal settlements already creates key livelihoods and sources of affordable food, which deserve greater support from city planners, elected officials, and other stakeholders. By recognising the centrality of vendors to the urban poor, policymakers can create holistic interventions that nourish food vendors' livelihoods while fostering broader improvements in well-being across their settlements.

2

Methodology

As explained below, our participatory study utilised three main methods of 1) baseline mapping, 2) focus group discussions (FGDs), and 3) a mobile application survey ('mobile app'), capturing a wide range of food vendors. Residents and vendors were engaged in all aspects of data collection, while community forums have shared findings and also begun developing the next steps for advocacy.

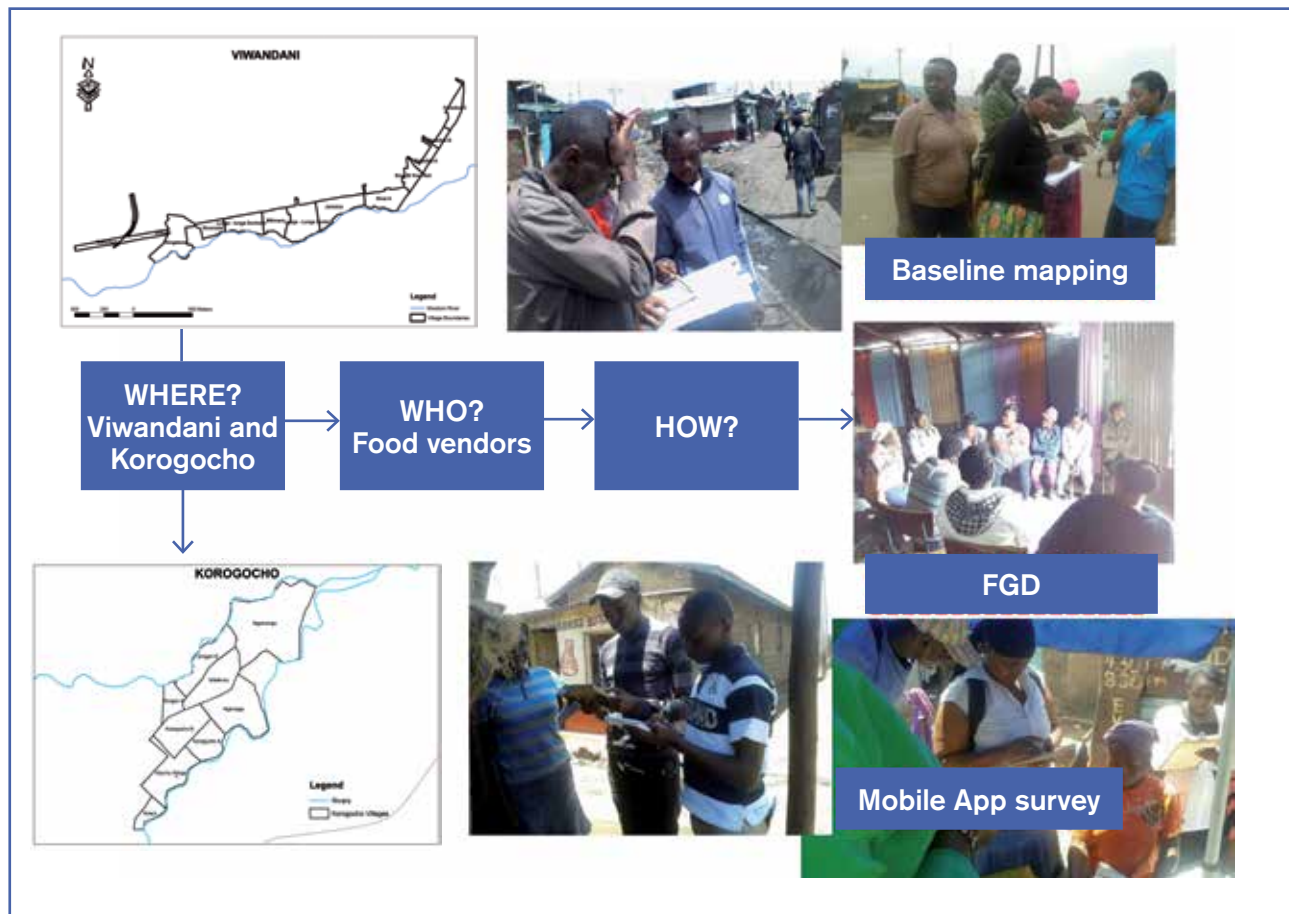
- 1. Baseline mapping:** This entailed mapping the settlements' physical infrastructure (including toilets, water points, transport routes, drainage and solid waste disposal points) and social amenities, such as schools, religious institutions, and community halls.
- 2. FGDs:** These typically involved 10–12 food vendors, who were asked to explore the social, economic and environmental aspects of their businesses. Participants were selected to represent a range of food types, and they explained the key advantages, challenges and policy priorities for vendors in their

settlements. Additionally, 'cognitive mapping' during the FGDs involved the vendors identifying on a map where their businesses are concentrated, flood-prone zones as well as other hazardous locations, and related issues arising from the session. FGDs helped capture key contextual information that would otherwise be missed, and it also complemented our mobile app with vendors.

- 3. Mobile app:** In Viwandani, we utilised a questionnaire on Epi-collect (Aanensen *et al.* 2009), while in Korogocho we used KoBo Collect.¹ These Android phone applications asked food vendors about their social, economic and environmental characteristics; the software was also used to determine vendors' locations through GPS coordinates.

¹ KoBoToolbox is a suite of tools for field data collection: <http://www.kobotoolbox.org>

Figure 1: Summary of methodology



3

Study setting

Although food vending is a common livelihood strategy in both Viwandani and Korogocho, the settlements differ in their levels of insecurity, infrastructure, and services as well as residents' food security. Ongoing research by the African Health and Population Research Centre (APHRC) suggests that food insecurity is widespread while food expenditure remains extremely high. In Viwandani, Korogocho, and the neighbouring settlements of Mukuru and Dandora, food expenditure typically comprises 52 per cent of household income, far exceeding just 13 per cent for education and 12 per cent for rent (Amendah *et al.* 2014). But compared to Viwandani, households in Korogocho were 2.58 times more likely to spend a whole day without eating due to lack of food and were 1.36 times more likely to take out a loan to buy food and other essentials (*ibid.*). Additionally, APHRC research indicates that levels of childhood stunting are higher in Korogocho than in Viwandani, at 52 per cent vs 45 per cent (Mutisya *et al.* 2015). Korogocho has elevated risks of theft and violent crime, making it more insecure than Viwandani (see FGD findings below), although insecurity is still a challenge in Viwandani and informal settlements more generally. Unlike Viwandani, Korogocho has recently benefited from an ongoing slum upgrading programme that has helped to reduce environmental hazards and improve vendors' working conditions. Below we offer further contextual details and a socioeconomic profile of vendors in the two settlements, drawing upon base-mapping and mobile app data.

Viwandani

Viwandani is located 7 km southeast of Nairobi's city centre in Makadara sub-county, and the settlement has thirteen villages (Paradise A, B, and C, Sinali Reli, Sinai, Jamaica, Lunga Lunga Center, Lunga Lunga Donholm, Milimani, Riverside, Kingstone and Tetrapak). In Swahili, 'Viwandani' means 'at the industrial zones', and the settlement accommodates people working in the adjacent industries. Its history dates back to the 1960s when Lunga Lunga Centre was established as a dumping site. The Ngong River, heavily polluted by industrial waste, is located to the south of Viwandani, while the industries are situated to the north of the settlement.

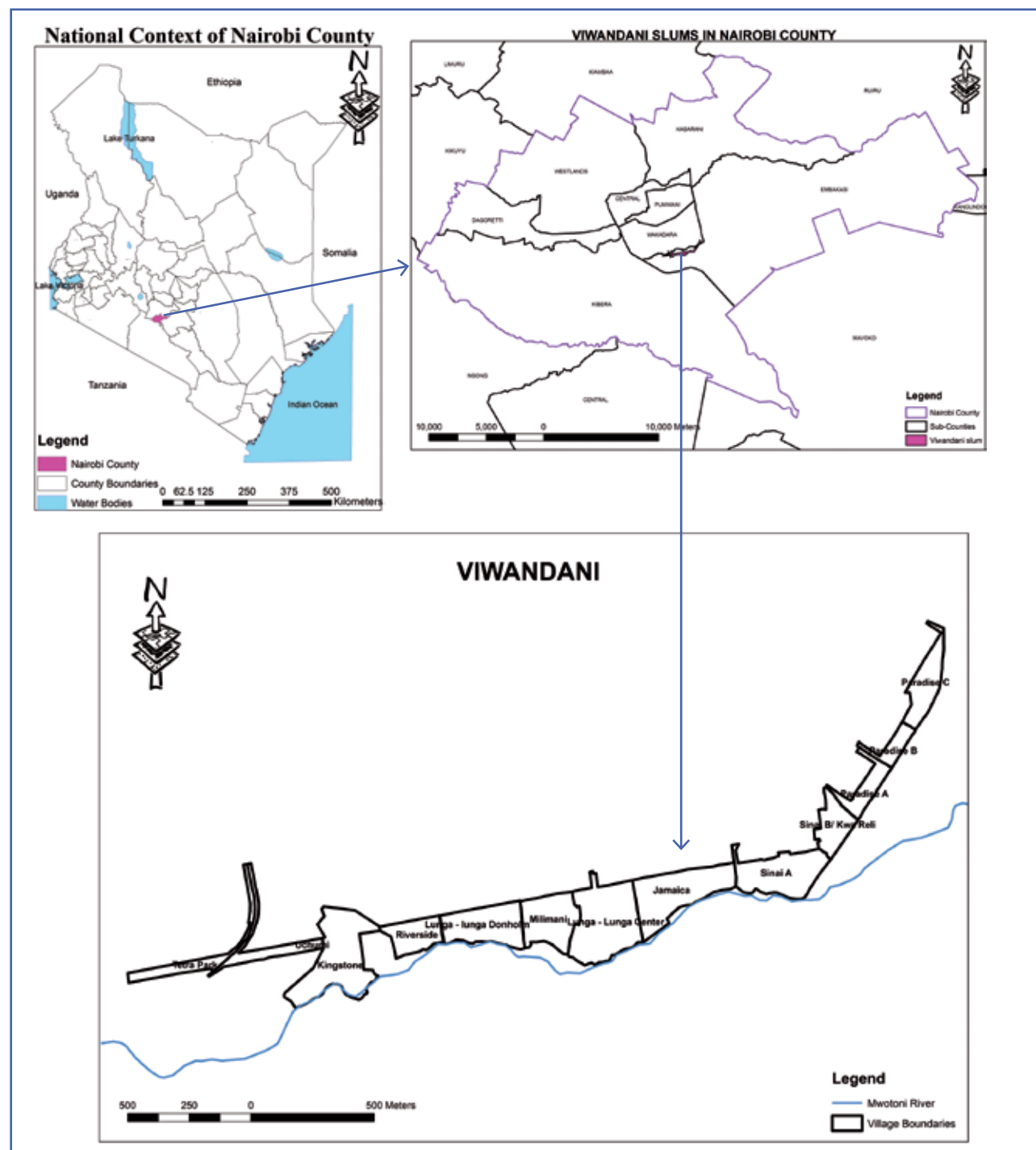
The settlement is located on 129 acres of land, with approximately 21,000 households. The housing typology is structures built in rows, with an average of six dwelling units (rooms) per structure. Most structures have tin walls with iron roofing sheets, but there are emerging dynamics with several permanent apartments being erected (especially in Kingstone).

Findings: a profile of Viwandani's food vendors

Approximately 400 food vendors were surveyed, and they operate at various times and locations throughout Viwandani. Their distribution varies from village to village; most vendors are located at the boundaries of Viwandani, with fewer towards the centre of the

settlement (see map below).² Vendors' location is mainly linear, following the main roads/footpaths, and they sell between 4am and 11am in the villages that are lively and secure. Vendors' operations usually taper off as the security and lighting of a village declines, causing traders to close early (see below for further discussion of security). We begin by providing a detailed analysis of vendors' socioeconomic profile, locations, nearby environmental hazards, and access to infrastructure.

Figure 2: Maps showing location of Viwandani



²The villages at the eastern end are Paradise, Sinai and Jamaica. Tetrapak, Uchumi and Kingstone are located on the western end the settlement.

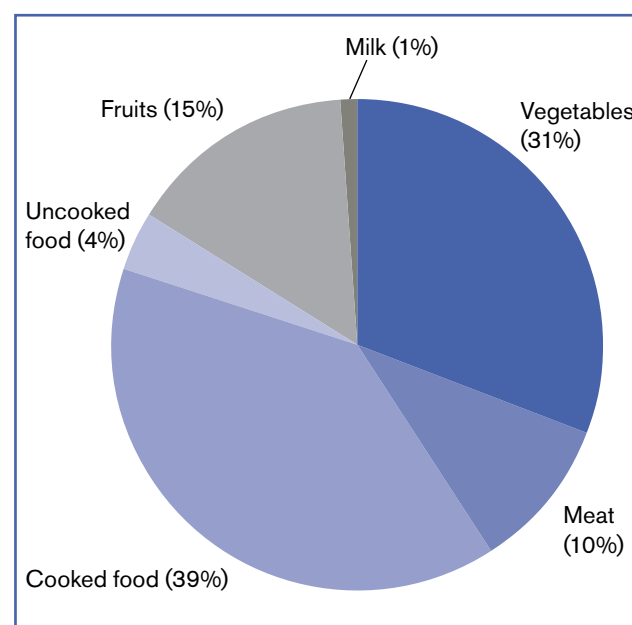
Figure 3: Distribution of food vendors in Viwandani



Categories of foods sold in Viwandani

Our mobile app survey captured several categories of vendors who sell cooked food; uncooked food (dry cereals, beans, etc.); fresh vegetables; fruits; meat; fish; and milk (see chart below). Cooked food (39 per cent) and vegetables (31 per cent) are the most commonly-vended items, which are normally available at all times of the day. However, certain categories of food are only sold in the evening like fried fish and some meat products (eg *mutura*,³ soup, chicken parts).

Figure 4: Food types vended in Viwandani



³ *Mutura* is a meat product made from animal intestines, commonly referred to as 'African sausage'.

Food vendors' selling typologies in Viwandani



1. Mobile unshaded
Photos credit: Grace Githiri



2. Stationary unshaded



3. Stationary shaded

Areas of operation

Most vendors use semi-temporary structures called *vibandas*, and both stationary and mobile vendors may use an umbrella erected on top of their businesses as a shield from the sun or rain. Approximately 35 per cent of food vendors captured in Viwandani were operating in open spaces that were not shaded (see photos above). This is particularly common in the evening, when vendors usually display their items alongside the roads (such as vegetables, fruits, and cooked cereals). Other vendors operate on the frontage of houses along the roads, especially small-scale vendors selling vegetables and cooked food. By contrast, other vendors are better-established and located in separate structures to sell cooked food and meat.

Gender and food types

Our mobile application indicated that 63 per cent of vendors in Viwandani were female, (Table 1 below) although response rates were somewhat low and this may be an underestimate. As in other informal settlements, women were the dominant providers of

cooked foods (69 per cent) and vegetables (80 per cent), which are also the most commonly sold items in Viwandani. Men prevailed in meat (74 per cent) and were also somewhat better-represented in vegetable sales than other sub-sectors.

Food vending and access to infrastructure

Vendors' infrastructure provision was also captured via baseline and cognitive mapping, including the nearby water points and toilet facilities. Water is very important for vendors when washing their commodities as well as utensils, and contaminated or inadequate access to water can pose a major threat to food safety. Similarly, inadequate access to toilets and vendors' poor hygiene practices may create acute public health risks in informal settlements.

There were approximately 255 water points mapped in Viwandani, and the map below at Figure 5 initially suggests that the settlement has no major water shortage. For instance, vendors in Tetrapak and Paradise have no access challenges since water points

Table 1: Gender and food types in Viwandani

	COOKED FOOD	FRUITS	MEAT	MILK	UNCOOKED FOOD	VEGETABLES	% TOTAL VENDORS
Female	66 (69%)	3 (75%)	6 (26%)	1	6 (75%)	81 (80%)	63%
Male	30 (31%)	1 (25%)	23 (74%)	0	2 (25%)	20 (20%)	37%

Figure 5: Distribution of food vendors and water points in Viwandani



Figure 6: Distribution of food vendors and toilets in Viwandani



are located along the roads. But for other villages, the distribution of water points is inadequate. Residents already pay at water points but if they lack a nearby water point, then they must purchase from water vendors selling at higher prices.

We also identified and mapped approximately 255 toilet facilities in Viwandani, which varied from village to village (see Figure 6). Although toilets are fairly accessible in some villages, other vendors do not sell in close proximity to sanitation facilities and this may create major risks to food safety and public health.

Environmental hazards and food vending

We mapped or photographed other environmental hazards and the physical constraints to food safety including rubbish heaps, proximity to dusty roads, and open drainage. For example, a vendor selling on a sack along the road can only operate on the ground if it is not raining or not very sunny. Other vendors may leave their food uncovered, thereby exposing their items to dust from the roads. Flooding and poor drainage can force vendors to stop selling; open drainage is often clogged by rubbish and can expose the food to flies or other insects that may again cause contamination.

Environmental hazards and food vending in Viwandani



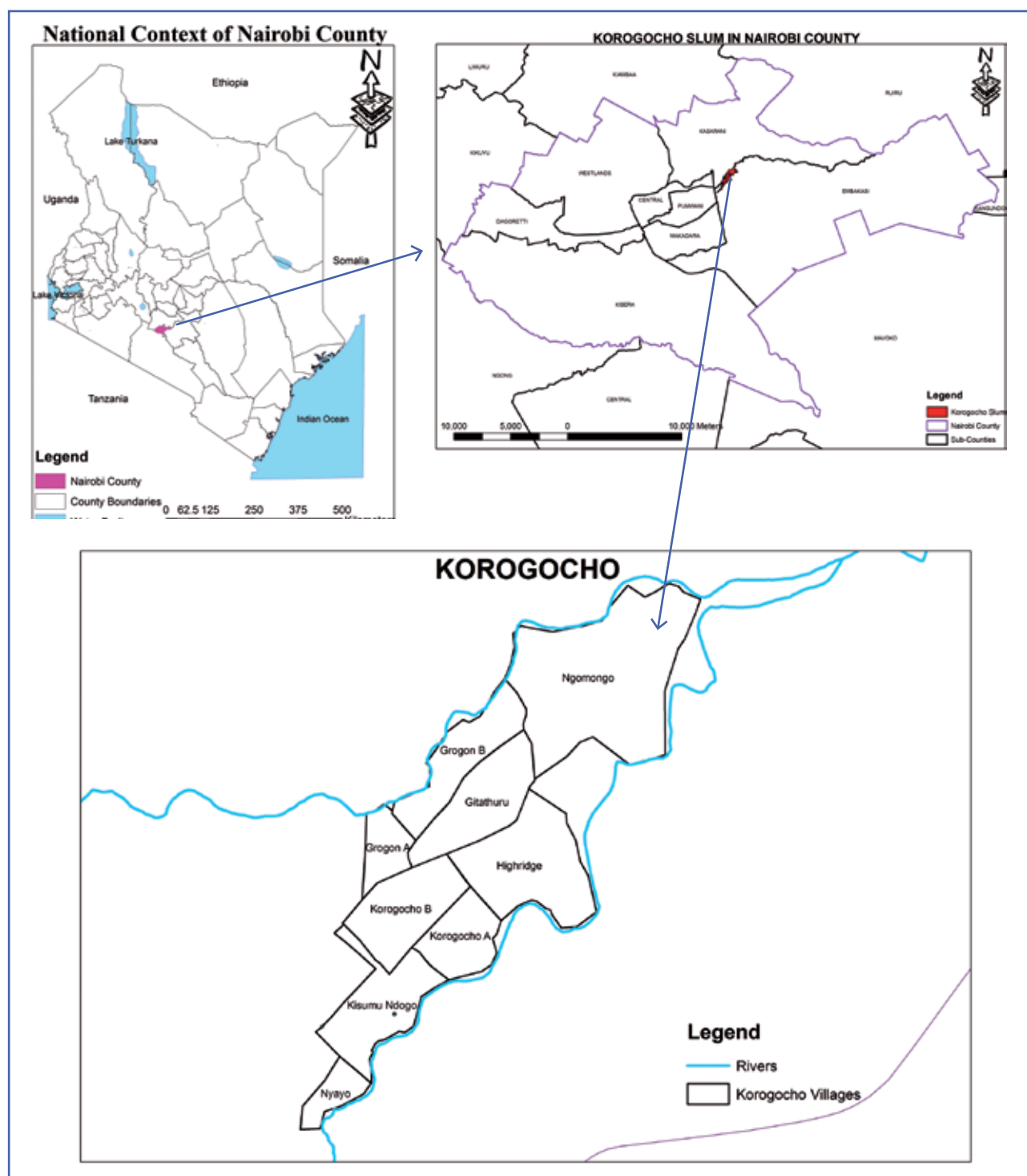
Photos credit: Grace Githiri and Julia Washera

Korogocho

Located 12 km from the city centre in Kasarani sub-county, Korogocho is comprised of nine villages (Grogon A, Grogon B, Ngomongo, Korogocho A, Korogocho B, Highridge, Gitathuru, Kisumu Ndogo and Nyayo). In Korogocho, houses are typically made of mud and timber walls with waste tin cans as roofing

materials. Houses are built in rows with an average of six dwelling units (rooms) per structure. With over 250 dwelling units per hectare, Korogocho is among the highest density settlements in Nairobi. The city's main rubbish dump of Dandora is situated to the east and southeast of Korogocho, which is also bordered by rivers to the east and west.

Figure 7: Maps showing location of Korogocho



Findings: profiling food vendors in Korogocho

More than 600 food vendors were surveyed in Korogocho. Their geographical distribution varies between villages, but vendors are usually concentrated along the main roads. Our findings also indicate that Korogocho's villages of Ngomongo, Kisumu Ndogo and Highridge have the greatest number of vendors.

Vendors' gender and age profiles

As in Viwandani, women are the majority of food vendors in Korogocho, where they total as many as 83 per cent of the vendors surveyed. Most female vendors are between 31–40 years of age (42 per cent), while male vendors are slightly younger, with 38 per cent aged 21–30 and 34 per cent aged 31–40 (see Table 2 below).

As shown in Table 3, for vendors aged 21–30, the most common items sold were cooked foods (47 per cent), vegetables (27 per cent), and uncooked food (14 per cent). The distribution for older cohorts was similar, with 45–49 per cent of vendors over age 30 selling cooked food and 25–32 per cent providing vegetables. Uncooked foods are less common for older vendors, while meat and fish sellers are slightly older. Before selling more expensive items like meat and fish, it therefore appears that vendors may need to acquire more assets and experience.

Additionally, of the vendors surveyed, 94 per cent had stationary locations and just 36 (6 per cent) were mobile vendors. The gender and age profiles were generally similar for stationary and mobile vendors (see Tables 4 and 5), although as already noted, men were slightly younger than women in both mobile and stationary vending. For mobile vendors, 60 per cent of men were aged 21–30 as compared to 38 per cent of female mobile vendors.

Table 2: Vendors' gender and age profiles

AGE COHORT	NUMBER OF FEMALE VENDORS	% FEMALE VENDORS	NUMBER OF MALE VENDORS	% MALE VENDORS	TOTAL NO. OF VENDORS	% OF ALL VENDORS
21–30	143	28%	39	38%	182	30%
31–40	213	42%	35	34%	248	41%
41–50	95	19%	20	19%	115	19%
51–60	38	7%	7	7%	45	7%
over 60	18	4%	2	2%	21	3%
	507		103		610	

Table 3: Types of food sold in Korogocho by vendors' age

TYPE OF FOOD	21–30 YEARS	31–40 YEARS	41–50 YEARS	51–60 YEARS	OVER 60 YEARS
Cooked Food	85 (47%)	111 (45%)	53 (46%)	22 (49%)	9 (45%)
Vegetables	50 (27%)	77 (31%)	37 (32%)	12 (27%)	5 (25%)
Uncooked	25 (14%)	35 (14.1%)	9 (8%)	3 (7%)	1 (5%)
Fish	6 (3%)	6 (2.4%)	7 (6%)	1 (2%)	2 (10%)
Fruits	8 (4%)	8 (3.1%)	3 (3%)	5 (11%)	3 (15%)
Meat	6 (3%)	10 (4%)	5 (4%)	2 (4%)	0
Milk	2 (1%)	1 (0.4%)	1 (0.9%)	0	0
	182	248	115	45	20

Table 4: Stationary vendors in Korogocho

AGE COHORT	FEMALE	% FEMALE	MALE	% MALE	TOTAL	% OF TOTAL
21–30	135	28%	30	34%	165	29%
31–40	204	42%	31	41%	235	41%
41–50	93	19%	19	22%	112	20%
51–60	38	8%	5	6%	43	7%
above 60	17	3%	2	2%	19	3%
	487		87		574	

Table 5: Mobile vendors in Korogocho

AGE COHORT	FEMALE	% FEMALE	MALE	% MALE	TOTAL	% OF TOTAL
21–30	8	38%	9	60%	17	47%
31–40	10	48%	3	20%	13	36%
41–50	2	10%	1	7%	3	8%
51–60	0	-	2	13%	2	6%
Over 60	1	4%	0	-	1	3%
Total	21		15		36	

More than half of vendors (56 per cent) had shaded structures, whereas the rest had open spaces that were either uncovered structures or sold out in the open. Approximately two-thirds of vendors sold their food uncovered, which helped to display their wares but also heightened the risk of contamination (see photos below). In particular, 27 per cent of cooked food vendors (including fish and meat) left their items uncovered.

Table 6: Shaded vs unshaded locations in Korogocho

	NUMBER OF VENDORS	%
Shaded	343	56%
Unshaded	267	44%

Figure 8: Distribution of food vendors in Korogocho

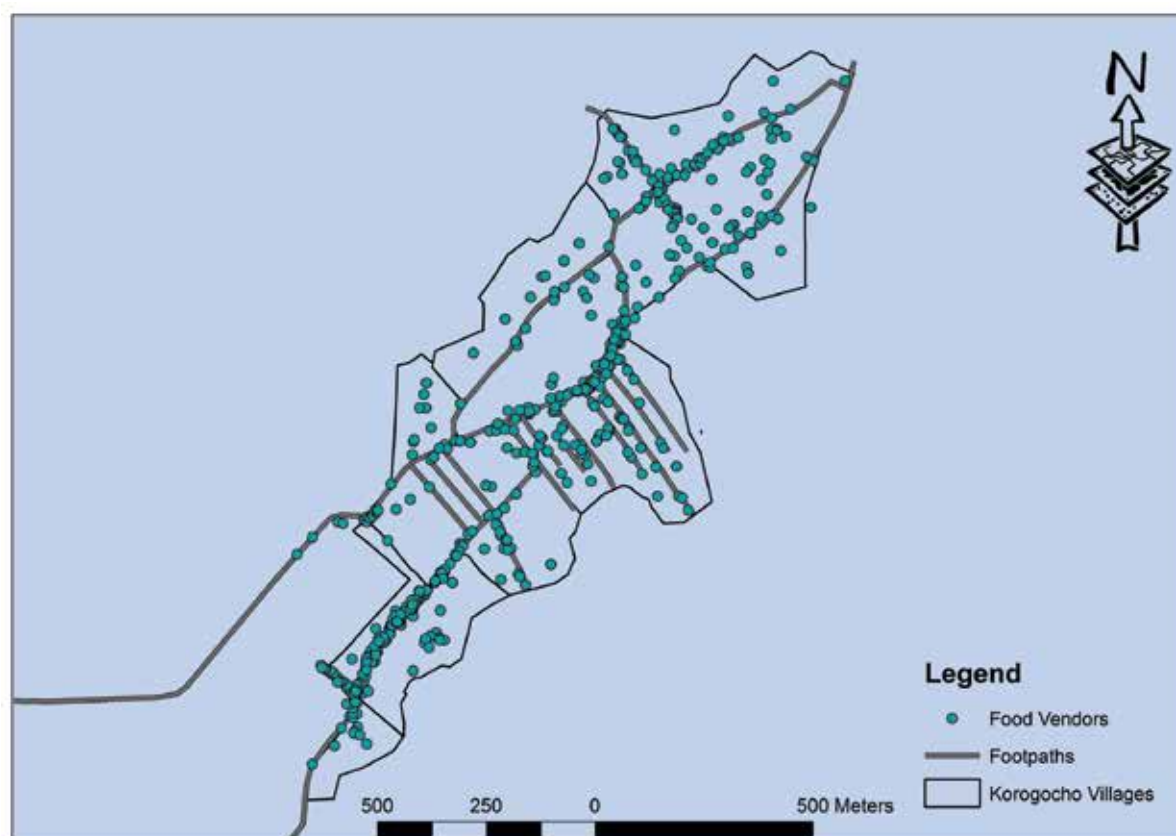
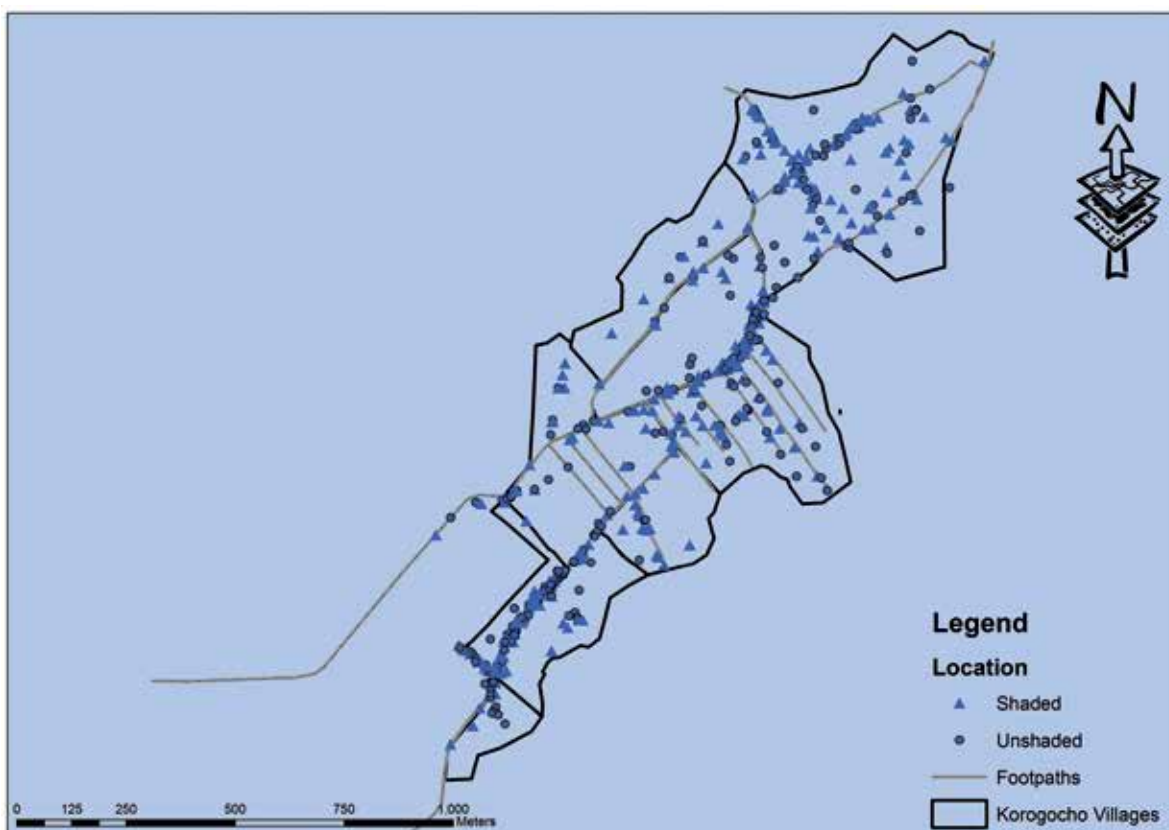


Figure 9: Shaded and unshaded vending locations



Modes of food display and preparation in Korogocho

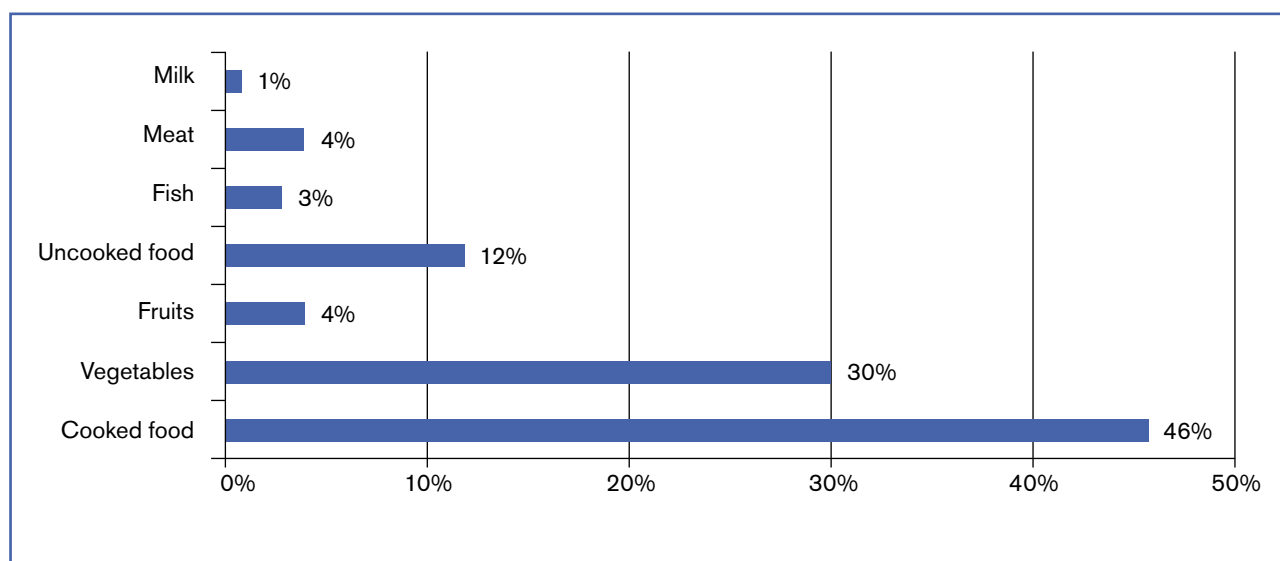


Photos credit: Milkah Njeri and Julia Washera

Types of food

Cooked food was the most commonly sold item (46 per cent), followed by vegetables at 30 per cent (see Figure 10). However, some vendors may simultaneously sell a combination of food types, such as fresh vegetables alongside cooked food; uncooked food, milk and fish; or meat and cooked food.

Figure 10: Types of foods vended in Korogocho (from Mobile App Data)



Types of foods vended in Korogocho.



Photos Credit: Milkah Njeri

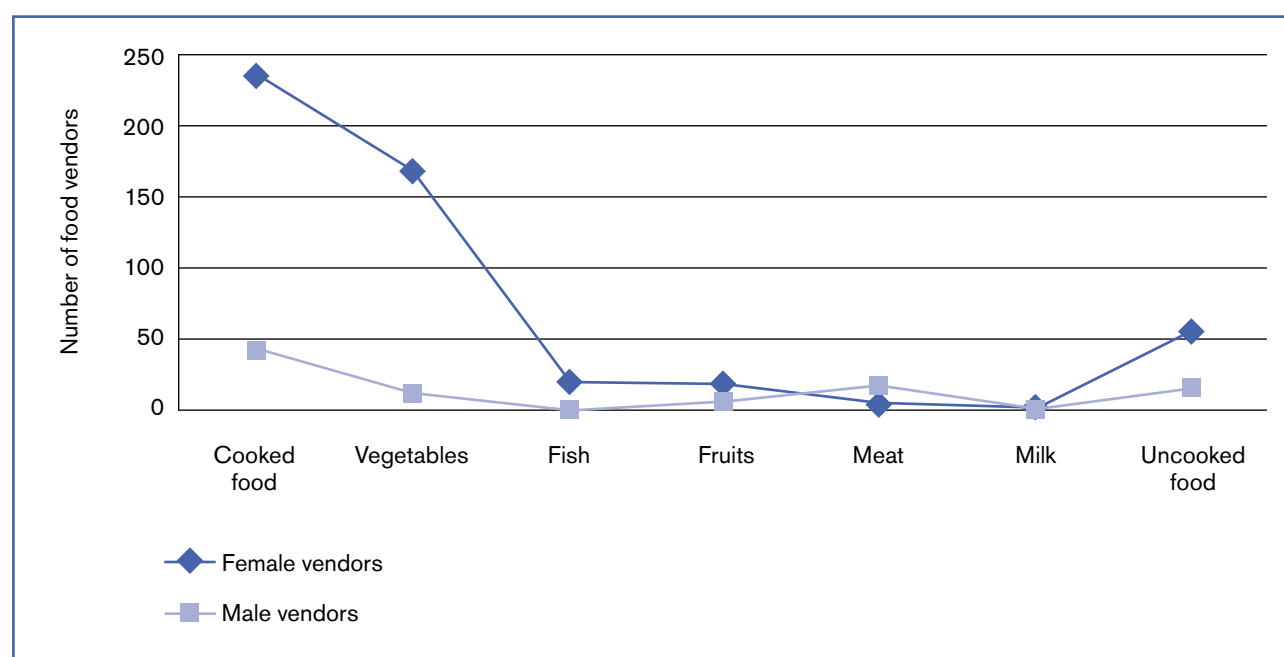
Gendered typology of food vendors

For all categories of items except meat and milk, women are the major providers of food. The gender gap is especially pronounced in cooked food, vegetables, and fish, where women represent 84 per cent to 95 per cent of providers (see Table 7 below). Women are also more likely to sell fruit and uncooked foods, although men's participation is higher in these sub-sectors. Men comprise the vast majority of butchers (78 per cent of meat sellers are male), while 30 per cent of fruit sellers, 23 per cent of uncooked food, and 16 per cent of cooked food sellers are also male. We only surveyed four milk sellers, who were evenly divided between men and women.

Table 7: Gender and food types vended in Korogocho

Vendor's Gender	Cooked Food	Vegetables	Fish	Fruits	Meat	Milk	Uncooked food	Total
Female	236 (84%)	168 (93%)	21 (95%)	19 (70%)	5 (22%)	2 (50%)	56 (77%)	507
Male	44 (16%)	13 (7%)	1 (5%)	8 (30%)	18 (78%)	2 (50%)	17 (23%)	103
Total	280	181	22	27	23	4	73	610

Figure 11: Gender and food types vended in Korogocho

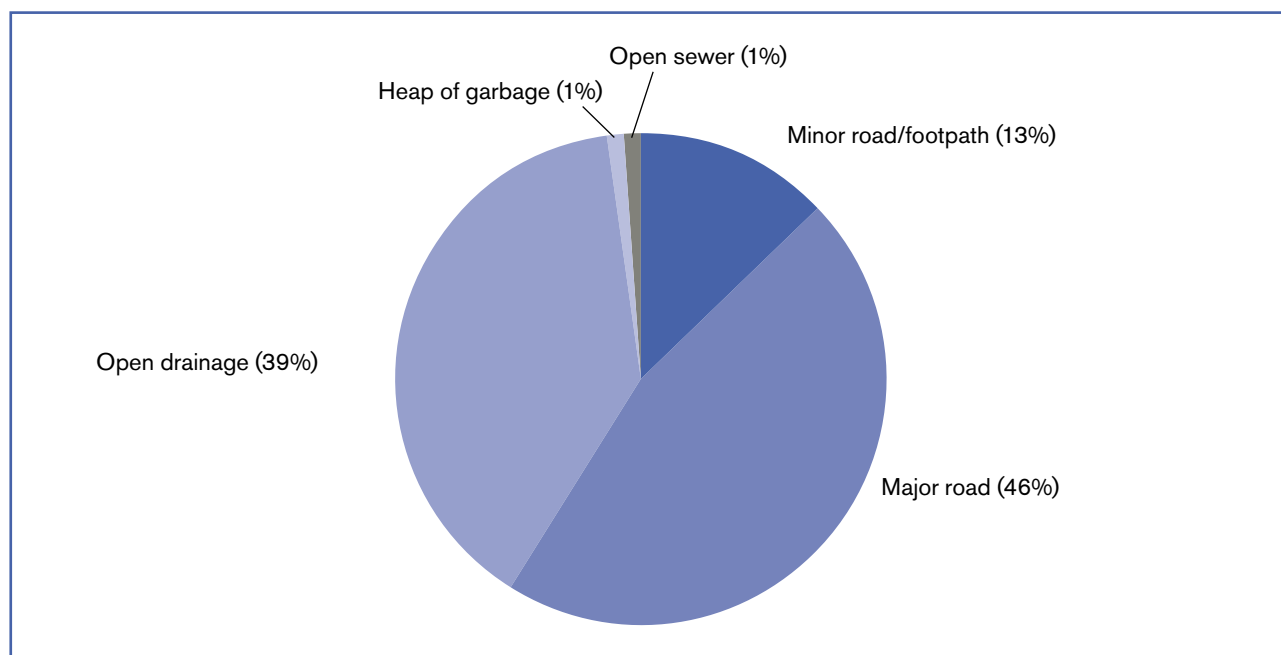


Location

Vendors usually sell along the major footpaths or roads, since the settlement now has improved road networks after the Korogocho Slum Upgrading Project.⁴ These roads help to reduce dust on food, although a few vendors sell near dusty roads where upgrading has not been completed (eg Ngomongo). The upgrading initiative has provided tarmacked roads and concrete

drainage channels, which are now common sites for food vendors' livelihoods. Almost half of vendors are located along major roads, and another 39 per cent are near open drainage. Only a few sell near open sewers and heaps of garbage, indicating Korogocho's relative cleanliness and lower exposure to environmental hazards than in Viwandani or many other informal settlements.

Figure 12: Location of food vendors in Korogocho



Food vendors' locations and infrastructure in Korogocho



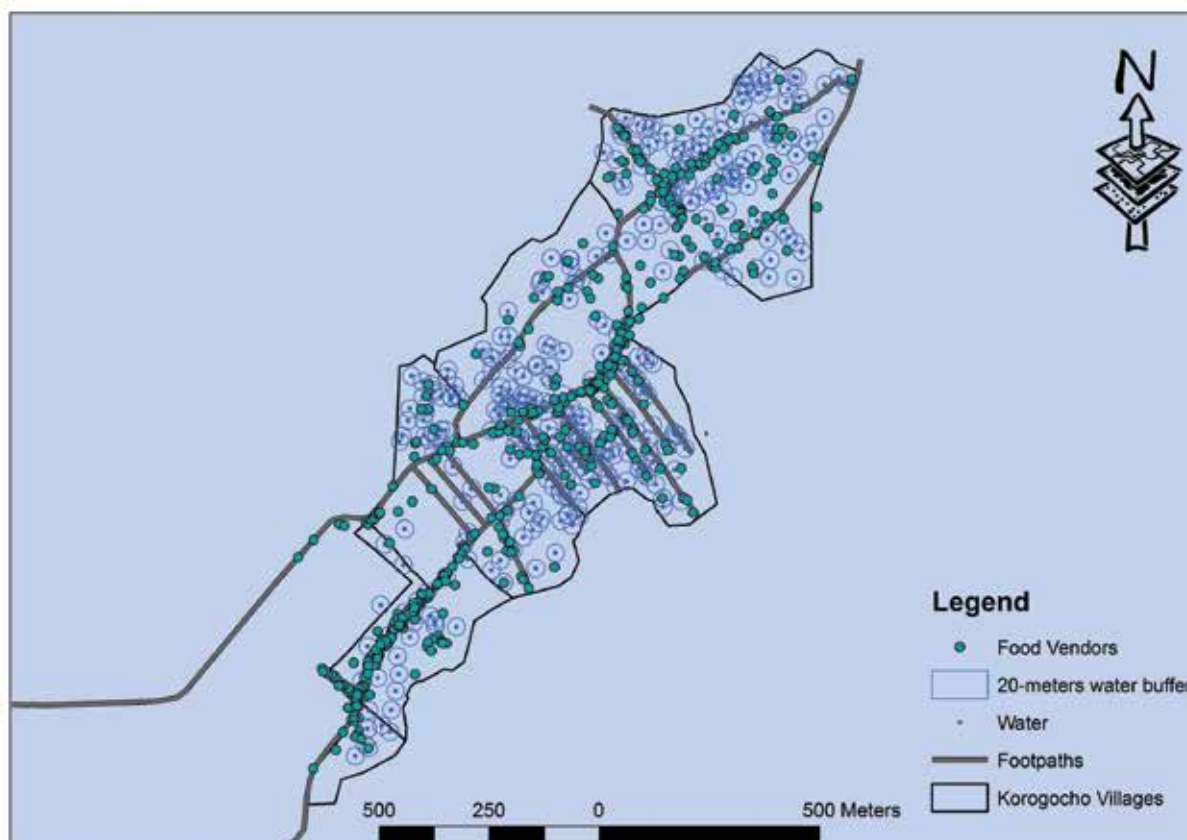
⁴For more information, see www.kiddp.net/project/korogocho-slum-upgrading-programme-phase-i-2/ and <http://mirror.unhabitat.org/content.asp?cid=7726&catid=206&typeid=61>

Food vendors and access to infrastructure

Korogocho's services and social amenities have also benefitted from slum upgrading, including enhanced access to water and sanitation. For instance, there are approximately 433 water points in the settlement. As indicated in Figure 13, water distribution is fair in relation to the 631 food vendors. A 20m buffer has been drawn

around food vendors to show their proximity to water points, which indicates that most traders are within or near the 20m buffer. Additionally, most villages in the settlement have adequate toilets; approximately two plots share a toilet and other plots have a toilet and a bathroom. However, the villages of Kisumu Ndogo and Nyayo still have few toilets and this remains a priority for future interventions.

Figure 13: Food vendors' proximity to water in Korogocho



Vendors' access to water in Korogocho



Environmental hazards to food vending

Food vendors can still operate along open drainage, dusty roads, and garbage heaps, which can expose their items to contamination. Additionally, some have built their vending structures on top of open drainage (see photo below). As described above, almost half

(46 per cent) of food vendors are located near major roads and observation indicates that nearly two-fifths (39 per cent) of the vendors sell near open drainage. Approximately two thirds (66 per cent) of the vendors selling near open drainage left their food uncovered; 15 per cent of these vendors sold cooked food.

Environmental hazards and food vending in Korogocho



Vending place by open drainage



Vending place next to heap of garbage



Vending business built above an open drain



Fish business open next to dusty road

Photos credit: Julia Washera

Number of years in food vending

More than half (55 per cent) have worked in the settlement for up to five years, whereas more than a quarter have worked in Korogocho for over ten years. Women were slightly more likely to have sold in Korogocho for over ten years (29 per cent of women vs 25 per cent of men). Still, the gender breakdown is quite similar, with the majority of women and men selling in Korogocho for up to five years (see Table 8).

Earnings for vendors by food type and gender

Vendors usually report very low earnings of Ksh. 100–500 per day, with 57–70 per cent of cooked food, fruit, uncooked food, and vegetable sellers earning this amount (see Table 9). While about 30 per cent of meat and fish sellers reportedly earn over Ksh. 1,500 per day, these sub-sectors represent a small proportion of vendors overall and most vendors have lower earnings.

Figure 14: Number of years working in Korogocho

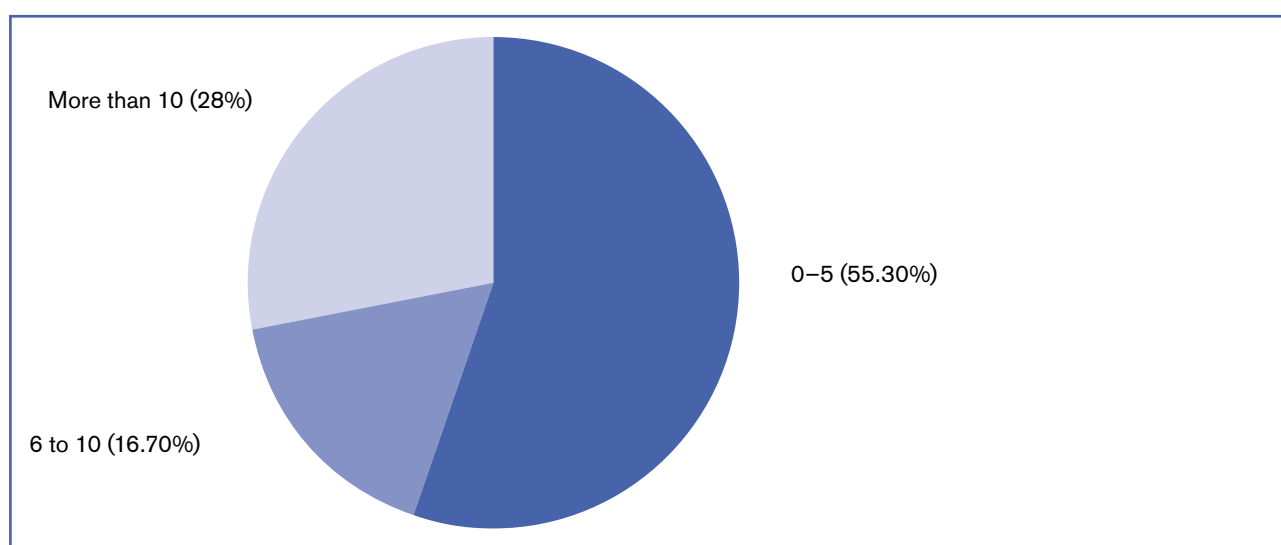


Table 8: Number of years in business in Korogocho

	0–5 YEARS	6 TO 10 YEARS	MORE THAN 10 YEARS	TOTAL
Female	277 (55%)	85 (17%)	145 (29%)	507
Male	60 (58%)	17 (17%)	26 (25%)	103

Table 9: Daily income levels by food type in Korogocho (in Ksh.)

	BELOW 100	100–500	501–1000	1001–1500	1501–2000	ABOVE 2000	TOTAL
Cooked Food	14 (5%)	176 (68%)	48 (18%)	13 (5%)	8 (3%)	13 (5%)	272
Fish		9 (41%)	6 (3%)	1 (4.5%)	3 (14%)	3 (14%)	22
Fruits	2 (8%)	16 (62%)	6 (23%)		1 (4%)	1 (4%)	26
Meat		10 (43%)	5 (22%)	1 (4%)	3 (13%)	4 (17%)	26
Milk		1 (25%)		2 (50%)	2 (50%)		23
Uncooked Food	3 (4%)	39 (57%)	12 (18%)		5 (7%)	9 (13%)	68
Vegetables	4 (2%)	127 (70%)	31 (17%)	8 (4%)	7 (4%)	4 (2%)	181

Income fluctuations and gender in Korogocho

We also investigated the range of earnings for women and men on good and bad days (see Tables 10 and 11), as a way to capture informal workers' often fluctuating, unpredictable incomes. Women's reported earnings even on a good day are typically lower than men's, with over 70 per cent of women vs 48 per cent of men earning less than Ksh. 500 on a good day. Meanwhile, 31 per cent of men make at least Ksh. 1,000 on a good day, as compared to about 10 per cent of female vendors. On a bad day, women are more likely to earn below Ksh. 100 (23 per cent of women vs 14 per cent of men), but again most women and men's earnings were concentrated in the Ksh. 100–500 range. These findings underscore the shared poverty amongst both women and men vendors, although men are somewhat more likely to earn higher incomes from vending than women.

Table 10: Good day income in Korogocho (in Ksh.)

	BELOW 100	100–500	501–1000	1001– 1500	1501–2000	ABOVE 2000	TOTAL
Male	7 (7%)	42 (41%)	22 (21%)	7 (7%)	0	25 (24%)	103
Female	18 (3.5%)	343 (68%)	92 (18%)	18 (3.5%)	17 (3%)	19 (4%)	574
							610

Table 11: Bad day income in Korogocho (in Ksh.)

	BELOW 100	100–500	501–1000	1001–1500	1501–2000	ABOVE 2000	TOTAL
Male	4 (14%)	55 (53%)	18 (17%)	5 (5%)	4 (4%)	7 (7%)	103
Female	117 (23%)	340 (67%)	34 (6.7%)	10 (2%)	2 (0.4%)	4 (0.8%)	574
							610

Table 12: Reasons for closing earlier than vendors' preference

	FEMALE	% FEMALE	MALE	% MALE
Insecurity	139	51%	33	48%
No customers	128	47%	34	49%
Poor lighting	7	2%	2	3%
	274		69	

Insecurity and food vending

Insecurity is a widespread concern in Korogocho, as noted above, and we explored whether vendors are ever forced to close early. Of the vendors answering yes, 51 per cent of women and 48 per cent of men explained that this was due to security concerns (see Table 12). Another 47 per cent of women and 49 per cent of men stated that early closures were due to lack of customers, which could again reflect poor security and their potential clients' fear of crime. Just 2–3 per cent of vendors explained that early closures were due to poor lighting. During the FGDs, we further explored the security threats and coping strategies among vendors in the two settlements (see below).

4

Comparing vendors' socioeconomic profiles in Korogocho and Viwandani

Our findings indicate that women predominate among food vendors, totalling 83 per cent of Korogocho's vendors and 63 per cent in Viwandani. The gendered differences in food sales are especially pronounced in cooked food and vegetables; women comprise 84–93 per cent of these providers in Korogocho and 69–80 per cent in Viwandani. Furthermore, these two types of food represent the most commonly-vended items in the two settlements, with 46 per cent of Korogocho's vendors providing cooked food and another 30 per cent selling fresh vegetables. Similarly, 39 per cent of Viwandani's vendors sold cooked food while 31 per cent provided vegetables. However, a wide range of items are sold throughout the day and some vendors may offer a mix of items, such as cooked and uncooked foods. Women's centrality in food vending is further explored in the FGDs, where we examine how women cope with multiple time burdens and still help to support their families via food vending.

Although we lack income data from Viwandani, both women and men selling in Korogocho generally reported very low daily earnings. In Korogocho, 57–70 per cent of vendors selling cooked food, fruit, uncooked food, and vegetables usually earn between Ksh. 100–500 per day. Women usually reported lower daily earnings than men and lower amounts even on a good day: men were three times as likely to earn at least Ksh. 1,000 on a good day. But like women, most male vendors reported daily earnings of just Ksh. 100–500.

Furthermore, in both Korogocho and Viwandani, vendors usually sell along the main roads and footpaths, and this suggests the importance of enhancing internal road networks in slum upgrading projects. Korogocho vendors often have access to upgraded roads, water, and sanitation, while Viwandani traders typically struggle with infrastructure deficits and are thus more adversely affected by poor weather (due to clogged drainage, mud and poor sanitation). To delve further into these findings, the following section discusses vendors' environmental, political, and insecurity challenges utilising FGDs from the two settlements.

5

Focus group discussions findings in Viwandani and Korogocho

By working inside their settlements, food vendors can enjoy several advantages while still struggling with profound deficits in infrastructure, services, and environmental quality. Key benefits of vending in informal settlements include the proximity to large volumes of customers, reduced transport costs or other expenses, and particular gains for women who can readily combine their livelihoods with childcare and household chores. Another major advantage is the reduced opportunities for bribery by local officials, but vendors still have conflicts with government or health officials (particularly during Nairobi's recent cholera epidemic). Although some traders may act jointly to confront insecurity threats or harassment from the city council, such unity remains rare and this suggests the need for subsequent organising strategies or other interventions. Thus, in addition to experiencing widespread hazards and highly inadequate infrastructure or services, we found that vendors currently lack organisations of their own and feel either abandoned or harassed by local government. Food vendors already play several vital roles in their communities, but offering additional support in the future can promote more secure livelihoods for traders while ensuring access to safe, low-cost foods for their

fellow residents. We begin by analysing key findings from four FGDs in Viwandani, followed by the three FGDs in Korogocho.⁵

Advantages to food vendors and consumers in Viwandani

Vendors highlighted multiple benefits of selling in Viwandani, such as: 1) reduced city council harassment; 2) lower transport costs and rents for their stalls; and 3) higher volumes of customers compared to the central business district (CBD). According to a vendor who formerly sold *mandazi* (fried doughnuts) and tea in town, “because of being harassed by the city council, I left town and came to sell in the settlement” (8 July 2015). She reported her current business of selling groundnuts and coffee was doing well and she had no stress, a welcome change from the council's disruptions in town. Vendors at all four FGDs viewed the reduced harassment as a major benefit of selling in

⁵ FGDs were facilitated by members of *Muungano wa Wanavijiji* and Akiba Mashinani Trust (AMT); sessions lasted 70–90 minutes and were conducted in Swahili, before being translated into English by AMT staff.

Viwandani; several traders declared, “We prefer being in the settlement because we will not have to give to the city council” (12 June 2015). Although some vendors in Viwandani still pay local officials (see below), they generally had a reduced level of government disturbance as well as enjoying the lower operating costs and social benefits of working near their homes, neighbours, and families. These advantages of proximity were particularly important for working mothers, and vending within informal settlements can also benefit consumers in need of affordable, accessible foods.

The proximity of vendors’ work and home has several advantages, since traders have shorter travel times and lower costs (compared to the CBD), as well as improved access to storage and ample customers. A male vegetable seller chose his location due to high volumes of pedestrian traffic; additionally, “because it’s close to my home, when I close down my business I can carry my vegetables back home very easily” (26 May 2015). He appreciated the convenience of working near his home, which he can easily use for storing leftover produce, and working in Viwandani also reduced his transport costs significantly. By contrast, when he previously worked outside, his profits were obliterated by exorbitant transport costs (*ibid.*). A cabbage seller similarly has a kiosk just outside her house, saving her the trouble and expense of a vending site in town, and working near her friends and neighbours had translated into a thriving business. As she explained, “Since I operate near my home, most people around there know me, so I’m able to get many customers” (26 May 2015). Selling in Viwandani can also reduce the trips needed to markets in town, again saving on travel time and expenditures.⁶ In sum, Viwandani vendors can enjoy lower travel expenses and improved access to storage at home, as well as building upon their links to neighbours who doubled as food customers.

Moreover, women particularly appreciated their ability to combine work, childcare, and house chores by selling within their villages. Thanks to the proximity of home and work, female vendors can better care for young children, reduce the costs of childcare and transport, and combine their livelihoods with household chores. As a porridge vendor explained,

“I’m able to prepare my kids to go to school and then open up my business. When they come for lunch, they’ll find me at home still. I’m happy because when my kids come from school, they’ll find me and I think that they don’t lack my love and care. So I’m able to balance my duties at home and my work” (26 May 2015, emphasis added).

She illustrated how food vending can be easily woven into women’s daily routines, so that they can juggle family, chores, and livelihoods and thereby support their children both emotionally and financially. Similarly, another female vendor highlighted how working near home has created additional time for childcare and her household duties. In Viwandani, “I’ll be doing my work and also doing the house chores and also look after my kids. So my kids won’t suffer. But if you are outside there [ie outside Viwandani], sometimes you have to look for someone to take care of your kids and sometimes you don’t have that money” (20 May 2015). Vending inside the settlement can diminish her childcare or transport expenditures, in turn making her earnings stretch further and ensuring more time with family. Working mothers thus derived multiple benefits from selling food, and these women may also use their remaining items to feed their families (see below).

These reduced operating costs can lead to benefits for consumers in lower food prices; on the other hand, food sellers gain from accessing higher volumes of customers than in the CBD. A cereal shop owner noted reported having more customers and faster turnover than in town, while her customers enjoy more affordable sources of food: “I can sell cereals at a cheaper price and still make profit, because compared to town, you sell at a higher price but have fewer customers” (8 July 2015). She added that customers in Viwandani prefer lower-cost types of cereals, but she can still make a profit selling at lower prices than in town, where prices are elevated but customers are more limited. Other vendors similarly reported strong sales in Viwandani, thanks to low prices and high volumes of clients. As a female vegetable seller said, “I can sell my tomatoes slowly if I charge a higher price, but if I charge a lower price, they move faster” (26 May 2015). Selling foods at low prices, reflecting customers’ limited budgets, has facilitated higher volumes of sales and helped vendors to easily reach their friends or neighbours with affordable food.

In a related advantage, vendors in Viwandani already have strong relations with their clients and providing food can strengthen these social networks while improving access to low-cost meals. For instance, vendors can meet their demands for low-priced items by selecting affordable types or quantities of food. A vegetable seller said that she usually chooses more affordable varieties, since she knows that Viwandani residents prioritise cheaper food. She declared, “I know my customers’ needs very well, so I’m able to serve them well. For example, most people here would want four tomatoes at Ksh. 10. If I buy the big tomatoes that cost Ksh. 5 each, no one would buy them” (8 July 2015).

⁶For instance, a female vegetable seller explained that by working in the settlement, “you don’t have to pay any fare going to town...If I have to go to town, I don’t go there every day. If I buy a crate of tomatoes, it’s only every three days so the fare is less” (20 May 2015).

Sellers also emphasised their ability to relate well to customers, thereby putting them at ease and improving food sales. A woman who sells *githeri*⁷ argued that “business is easy in the settlement; all you need is to know how to talk to your customers” (8 July 2015). Vendors can also loan food to customers (see below for further discussion in Korogocho), which can benefit particularly vulnerable households. As fellow residents who readily understand their customers’ needs and financial hardships, vendors are uniquely well-placed to speak to them and to source affordable quantities or varieties of food.

Disadvantages and challenges to vending in Viwandani

Yet these benefits exist alongside several overlapping challenges, such as insecurity; acute environmental hazards but meagre services or infrastructure; fire outbreaks and the government’s minimal emergency response; and vendors’ poor storage or refrigeration. There are also particular challenges facing mobile vendors and those selling along the main road, who experience higher levels of city council harassment. Many of these disadvantages can intersect, as vividly captured by a cooked food seller along the main road who has grappled with several political and environmental concerns. She summarised her surrounding challenges of dust, open sewers, limited space, collisions with cars, and council harassment, “The business is near the road on one side, and just behind there’s an open sewer line. So the county council people really harass me because of the environment. Also it’s dusty – the passing vehicles usually blow dust on my food and hit the cooking pots” (8 July 2015). During a recent cholera outbreak, many vendors suffered from punitive strategies deployed by Nairobi’s City Council or health officials. Yet besides these forced closures or other harsh responses to cholera, most vendors felt neglected and ignored by government.

Furthermore, vendors rarely act collectively to address concerns like insecurity, environmental hazards, or political marginalisation. Vendors usually lack organisations of their own, although some are participating in *chamas* (savings groups). A woman selling eggs and sausages explained vendors’ lack of organisation by observing, “We’re located in different areas so it’s hard for people to come together, and also because the mobile vendors move about to many places” (12 June 2015). At present, there are

few opportunities for food vendors to overcome their dispersed, highly competitive trades and address their shared challenges. But in one encouraging finding, vendors did consistently state their willingness to pay if the government finally provided them with adequate infrastructure or services.

a) Insecurity and coping mechanisms

Food vendors have various coping strategies to deal with insecurity, including the use of security guards or gangs, relocating businesses, and selling near streetlights. After dark, vendors typically hire guards to watch their businesses and guards also escort vendors to the *matatu* (mini-bus) stop when they depart for markets in town. Vendors pay these Maasai guards Ksh. 10 or 20 at night to patrol their vending area and in the early morning for accompanying them to the bus, sometimes as early as 3am (20 May and 8 July 2015). A *githeri* seller acknowledged that vendors may also recruit gangs to guard their items; as she explained, “that way they won’t steal from you, so they work together with the Maasais” (8 July 2015). Insecurity can still endanger vendors’ lives and livelihoods: for instance, a meat vendor had to relocate one of his butcheries due to insecurity, and he also noted that women traders are still attacked in the morning when going to market (20 May 2015). He admitted that “because the stalls are far apart, we usually don’t come together to do much”. Other vendors voiced their fears now that streetlights were not working in their area (26 May 2015), though in villages with adequate lighting, vendors did feel safe selling at night. As a vegetable seller noted, “Security has really improved, especially because of the streetlights and also electricity inside the settlement” (12 June 2015).

Vendors explained that security is still largely an individual concern, which the trader can handle either proactively or just accept the loss of food. Some food sellers are already friends with the people who steal, helping them to maintain relations and avoid conflict (12 June 2015). As a porridge and chapatti vendor declared, “Most of the time, we’re friends with the thieves! ... If that person steals from me, I can go after him and tell him to give whatever he had stolen back!” (12 June 2015). Although her strong relations with thieves emboldened her to confront them, another vendor said that thieves ask to ‘borrow’ food from him, but he just had to give them his items (12 June 2015). Theft may be a less acute problem for vendors who feel able to resist, but insecurity is still a pervasive concern. Although some vendors confronted thieves, appreciated streetlights, or felt safer thanks to Maasai guards, these traders still have very limited means of addressing insecurity.

⁷ A mixture of maize and beans, *githeri* is a common staple food in Kenya.

b) Environmental hazards: poor infrastructure, inadequate services, and exposure to pollutants

Vendors also suffer from Viwandani's minimal services, highly inadequate infrastructure, and hazardous environment, which regularly result in losses and stresses for these workers. They typically experience several environmental concerns such as inadequate sanitation, flooding, non-existent solid waste collection, and unsafe illegal electricity, all of which can imperil their businesses and food safety:

Female *githeri* seller: "Because there are no toilets, people usually use buckets and then they'll pour the contents [into] the open sewer lines. These are the same ones that pass nearby our businesses [and] there is a very bad smell. Also, people throw away rubbish into the same."

Female vegetable seller: "Some people use plastic bags [or 'flying toilets'] instead of buckets, and they throw these near our businesses. So in the morning, we find these bags near our businesses..."

Female cereal seller: "When it rains, some houses get flooded and so we can't do our businesses from there. Another problem caused by flooding is that our electricity connection isn't well-done and people get electrocuted by the water" (8 July 2015).

These food traders bemoaned the inadequate sanitation and 'flying toilets,' particularly in the context of slums' minimal sewerage and solid waste collection. In turn, vendors struggled to dispose these bags before opening their businesses or to deal with the smells of poorly-disposed waste. Heavy rains typically flood their homes and vending sites (especially given the inadequate drainage and lack of all-weather roads), and floods also heighten the risk of electrocution from illegal wires. Vendors thus face overlapping challenges when striving to maintain food safety and their livelihoods, as a result of their low incomes, multiple environmental hazards, and limited services or infrastructure.

Vendors regularly encounter other environmental concerns, including dust and unaffordable or inaccessible sources of water, while foods can be exposed to chemicals or effluents from nearby factories. For fruit sellers, dust and heat are especially problematic, as fruit can easily be burned or dirtied, and they usually sprinkle water to cope with dust (8 July 2015). However, utilising water only reduces the appearance of dirt and may sharply increase vendors' expenditures. Water can be extremely expensive in times of rationing or shortage, with prices doubling

from Ksh. 5–10 per 20-litre jerrican. Furthermore, given Viwandani's location in the industrial area, vendors and other residents are regularly exposed to air or water pollutants. According to a vegetable seller, "the dust and chemicals that come from the factories also get on the vegetables that we're selling, so sometimes that's really bad" (26 May 2015). He also noted that the water emanating from factories "blocks our sewer lines—the water comes from an animal-skin processing factory that's nearby, so it's usually full of animal skin" (*ibid.*). The hides could impair the functioning of nearby sewers, likely resulting in further exposure to liquid or solid waste (and the associated smells, pests, etc.). Finally, particulates from the factories can affect vendors' cooked foods, especially if the items are uncovered and become contaminated.⁸ Air- and water-borne pollution from Nairobi's industrial area, combined with multiple environmental health risks in informal settlements, can thus create major threats to food safety and vendors' livelihoods.

c) Fire outbreaks, poor roads, and inadequate emergency services

Informal settlements like Viwandani regularly experience fire outbreaks, often due to improper electrical wiring, and many vendors voiced their concerns over inadequate roads and fire-fighting services. They identified fire as the greatest challenge during hot weather, and faulty wiring can result in deaths or major injuries (8 July 2015). But fire trucks cannot enter Viwandani due to poor road access, and a chapatti seller argued for constructing bigger roads, "because right now if there's fire, there's no way a fire truck can access the villages inside the settlement" (8 July 2015). A vegetable seller similarly worried "how [a fire] will be put out by the fire extinguishers, since there are no roads to those houses" (20 May 2015). Other vendors lamented the government's insufficient emergency response, both during and after the fire outbreaks. A vegetable vendor criticised Nairobi's County Government, which "only comes after the fire has been put out", and a hotel owner reported that the previous Member of the County Assembly "used to come when a fire broke out [and] he'd donate blankets and food. But the current one doesn't do that" (26 May and 20 May 2015).

Fires not only destroy vendors' sites but can also lead to lost stock or rising rents, and interventions may be needed to promote fire safety and permanent shelter construction. A cereal seller explained that "when the premises are burned, the owner puts up a new structure and charges a higher price... [My rent] moved from Ksh. 600 to 1,200 then from Ksh. 1,200 to 4,500" (8

⁸ A vendor noted the potentially negative impacts on cooked food, since factories "emit lots of black particles in the air. So people who make cooked foods along the roadside have to cover them very well, or sometimes they have to leave because the particles are so many and no one is going to buy the food" (20 May 2015).

July 2015). Furthermore, she linked fire risks to the broader challenge of impermanent housing, and she decided not to maintain a large stock of cereals in her temporary shelter.⁹ With permanent housing, she would invest in greater amounts of stock, but currently she is afraid of her cereals being destroyed by a blaze. Although vendors did not discuss the risks of fire from their own foods, this may be another key concern since cooked items are often prepared over an open flame. Moreover, given the settlement's high densities, fires can spread rapidly and result in widespread destruction of businesses and homes. As a butcher noted, "It might not be my house that's burning but if a neighbour's house burns, then mine is at risk because of how close they are" (20 May 2015). Future initiatives with local government, Kenya Power, and communities can help to bolster emergency response services, with benefits for food vendors and their fellow residents more generally. In the meantime, fire can produce a highly damaging combination of reduced food sales, destroyed stock, and increased rents for vending stalls, as well as a cruel demonstration of the government's neglect of informal settlements.

d) Minimal storage or refrigeration and coping strategies with leftovers

Vendors' inadequate storage facilities and lack of refrigeration can pose further challenges to food safety, so that traders must utilise various coping strategies for their leftovers. Several vendors consume the remainders with their families, thereby helping to improve food access in their own households. Produce vendors may negotiate with livestock keepers, or they can exchange a couple eggs for vendors' leftover vegetables (12 June 2015, also below on livestock). Rabbit keepers may buy vendors' remaining vegetables (26 May 2015), but it is still uncommon for livestock keepers to purchase leftover produce. Vendors can also loan food to customers; as a fruit and eggs seller explained, "it's a consolation, since at least we'll get money for the food later" (12 June 2015). Alternatively, vendors may dispose of their leftovers in open drains and create challenges for other businesses and residents. A hotel owner noted that because "most people don't have places where they can dispose of dirty water or leftovers, they pour water on the road. My hotel is near the road and in the morning, I'll find the food leftovers and the water" (20 May 2015). Due to poor solid and liquid waste management, leftover food can further clog the drains or otherwise negatively affect vendors' working environment.

Cooked food vendors also admitted to reselling their leftovers and often concealing them in their freshly prepared items, which confirms earlier findings in other informal settlements. For instance, a coffee vendor typically adds water and sugar to her old coffee, then sells it the next day (20 May 2015). Another vendor acknowledged that with leftover *githeri*, she combined her old and new *githeri* to sell it the next day:

"When you don't sell all the githeri, you reuse it. So the following day, you'll cook another githeri and the remaining one, you clean it very well, you rinse it very well so that it's dry. When you wake up in the morning, you clean it again. When the new githeri is ready, the remaining one you put on top... Do you have a fridge? No, I don't have a fridge. My fridge is using water" (20 May 2015).

Her tactics of cleaning and rinsing the old *githeri*, then mixing it with the fresh stew are fully in keeping with previous findings (Ahmed *et al.* 2015), since vendors in Mathare, Mukuru, and Kibera similarly combined old cooked foods with fresh items. This vendor memorably declared her "fridge is using water", obviously an imperfect substitute to support food safety and revealing vendors' poverty as well as inadequate access to storage and electricity. Another vendor who sells both chapatti and *mandazi* adjusted the quantities of the two foods in order to reduce his leftovers at the end of the day. He noted the risk of losing customers if he tries selling old food to them, so he will make less chapatti in the evening in hopes of selling his leftover *mandazi*. But if he has leftover chapatti in the morning, he will warm them "and sell them to close family and friends. I make sure to tell them that they were from the previous day, but they are still okay" (26 May 2015). Like other cooked food vendors, he may sometimes resell leftovers, but still sought to reduce the amount of them and informed his trusted customers that they were remainders.

These strategies for leftovers consistently reveal how precious food is in informal settlements and vendors' difficulties in disposing their items, due to non-existent refrigeration and rubbish collection. The most benign strategies seem to be: 1) eating or sharing with family; and 2) trading or reselling to livestock-keepers, which help in reducing food waste and promoting rapid consumption of leftovers. Consumption of leftovers can also support food security in these households. But leftovers can also be disposed in: 3) drainage channels or left outside of businesses, contributing to local environmental degradation. Vendors may try

⁹ As this cereal seller explained, "When you build permanent houses, at least if we have some savings, it can be permanent even if it's just one room. In my business, I don't restock that much because I fear there can be fire every time and if you have a bigger stock, the chances are you'll lose more. So I wait for my stock to go down before I buy more, because of that fear of fire" (8 July 2015).

to minimise leftovers but: 4) resell them the next day, as acknowledged by the chapatti and *mandazi* seller. Other cooked food vendors used various tactics, such as rinsing or warming their leftovers and adding new ingredients (as in the coffee and *githeri* sellers). Such deceptive strategies are best seen as an indication of vendors' poverty and inability to afford the foregone income of unsold food. Furthermore, food safety concerns could often be alleviated by access to improved storage, electricity for refrigeration, and solid waste collection. FGD participants already recognised the need for better storage - as a butcher argued, "food vendors should have good storage facilities and ways of handling the leftovers, so that vendors can avoid a situation of selling bad food" (20 May 2015). Future interventions may help to address these risks by training vendors and providing adequate infrastructure, rubbish collection and safe storage for leftovers such as communal fridges (see Summary and conclusions for further recommendations).

e) Livestock conflicts and lack of compensation from owners

Although vendors sometimes dispose of leftovers with livestock keepers, FGDs also uncovered persistent conflicts between the two groups. Many vendors complained of goats eating their vegetables without any compensation; one vendor even closed her vegetable business and shifted to selling *githeri* due to the recurring consumption of her produce by goats (8 July 2015). Although a couple of traders said they were rarely disturbed by livestock, it seems more common for goats to consume their foods (especially if a vendor steps away briefly from the site). Vendors have limited redress since it is either difficult to identify the owner of the goats, or the owner is a village elder and so is impossible to confront him or her. As one vendor explained, "Sometimes you can know the owners of the goats - but they're the mamas of the village, so you can't go to complain to them" (26 May 2015). Such disputes between vendors and livestock keepers are also common in Mathare, Mukuru, and Kibera (Ahmed *et al.* 2015). Promoting conflict resolution and better utilisation of public space, within and beyond Viwandani, may bolster food security and ensure complementary rather than combative relations between the various food providers in informal settlements.

f) Bribery, flooding, and other challenges of hawkers and vendors along the main road

Mobile food traders and vendors along the main road are more regularly harassed by the council than their counterparts inside Viwandani, and mobile vendors are especially vulnerable to extreme weather. Lacking even the fragile kiosks of stationary vendors, hawkers have few defences and cannot shield themselves during heavy rains. As a mobile coffee seller noted, "I make the coffee outside, so when it rains it's hectic because it's going to be rained on...it's stressful when it rains" (26 May 2015). Viwandani's inadequate roads are especially problematic in the rainy season: a mobile groundnuts and coffee seller noted that "roads are impassable" during rains and thus she cannot move around to sell (8 July 2015). Mobile vendors also must cope with open drainage and sewers, since they often serve customers living in such areas (12 June 2015). Poor roads, minimal drainage, and open sewers are common concerns in informal settlements, of course, but these challenges may be particularly intractable for mobile vendors.

Furthermore, mobile vendors and those selling near the main roads are more visible to local authorities; as a result, they must pay bribes more frequently than traders working inside Viwandani. Mobile vendors can meet multiple officials in a single day or even the same official twice per day, and each encounter may require a fee of Ksh. 15 to 25 (12 June 2015).¹⁰ Vendors along the road similarly lamented the council's extractions, which usually total Ksh. 100 per week and may again entail multiple payments on the same day.¹¹ By contrast, vendors inside Viwandani usually escape such payments; the city council "fears coming in the villages because they know they have not done their work here" (hotel owner, 20 May 2015). As noted above, vendors often appreciated the opportunity to avoid council harassment by working inside Viwandani, but such advantages largely accrue to traders in the interior. Alternatively, mobile vendors may avoid payments by relocating frequently to evade the city council. According to a female mobile vendor selling eggs and sausage, "that's why we prefer being mobile: because when we see the city council here, we just go to another place where they are not there" (12 June 2015).

¹⁰ According to a mobile vendor, the council sometimes "comes back twice in a day - like they'll come in the morning and also in the evening...We usually do not pay the statutory amount [of 50 shillings]...So you pay an amount like 25 shillings to one of the county officials, then later in the day you pay another person a smaller amount, like 15 shillings" (12 June 2015).

¹¹ Based upon the 8 July 2015 FGD, multiple payments are common for vendors along the road:

Female bar owner: "Sometimes they'll come and you pay one person, after some time that person will tell another different person to collect more...But when I refuse, they arrest me."

Female fruit seller: "I have a kiosk along the main road. I want them to stop harassing me...When the city council comes with their vehicles, you have to pay 200 shillings per day [otherwise it is 50 shillings per day, twice a week]."

There is also an important trade-off between location, profitability, and council extractions: vendors along the main road may be harassed more often, but they can access a larger pool of customers. Reflecting these desirable selling locations, the rents are higher for kiosks along the main roads. While some vendors inside the settlement pay Ksh. 2,000 per month, rent is more expensive near the main roads and may even reach Ksh. 5,000 monthly (20 May 2015). Vendors along the main road may enjoy bustling sales, along with higher rents and greater frequency of council harassment; alternatively, traders may sell inside Viwandani with lower-volume sales, but with cheaper rents and limited governmental disruptions. The underlying challenge of improving relations with government officials is discussed below, as it is common to food vendors and residents of informal settlements more generally.

g) Vendors' contentious government relations, but willing to pay fees if services provided

Although active resistance to government has been rare, vendors were vehemently opposed to the council and often voiced their indignation or frustration at pervasive state neglect. Some vendors declared that when the council enters Viwandani, "people have whistles so that if the city council people come and you blow your whistle, people will help you to fight the city council people" (8 July 2015). By contrast, other FGDs did not detail such resistance even as they recounted vendors' profound discontent with government.¹² For instance, two vendors had never received governmental assistance and if there is a fire, they said the authorities only come after it has been extinguished (26 May 2015). A tea and mandazi seller similarly declared, "We feel like there is no government because there's nothing that we've seen done by the government" (26 May 2015). Such feelings of abandonment may reflect the broader marginalisation of Nairobi's informal settlements, and vendors have to date rarely organised or mobilised themselves in response (although see Box 1 on a new Food Vendors' Association).

Nairobi's recent cholera epidemic led to highly conflictive interactions with government officials, who took a short-sighted, highly punitive stance towards vendors. Sales of street foods in Viwandani fell sharply, due to fears of cholera alongside harassment by the city council, police, and health officers. "Who could you sell food to when there's an outbreak? People were not buying food," according to a woman selling porridge and chapatti (12 June 2015). Some traders reportedly

continued operating by presenting a façade of closed doors,¹³ which suggests the government's feeble enforcement of its restrictions. Health officials appeared briefly during the epidemic, but an egg-and-sausage vendor said that "after the outbreak has gone down, the health officials usually disappear" (12 June 2015). A hotel owner also noted that during the cholera epidemic, policemen were "going around checking whether the food vendors have licences and are maintaining standards of hygiene and cleanliness. So they are arresting people on the basis of the cleanliness and licences" (20 May 2015). Yet the harsh official response only deepened vendors' suspicion of government and missed a vital opportunity to catalyse food safety or capacity-building among vendors.

However, in a more promising finding, vendors did express a willingness to pay fees to the county government as long as services are finally delivered in Viwandani. As a butcher said, "For now, we wouldn't want to pay because we've not seen any benefits from [the government]. But if we start seeing the benefits, we'd have no problem paying" (20 May 2015). Similarly, vendors in other FGDs refuse to pay fees due to the lack of services, but if roads, drainage, and other infrastructure networks are delivered, they would be willing to pay (12 June 2015, 8 July 2015). These objectives can inform future advocacy and upgrading strategies, using food vending as the entry point for broader improvements in Viwandani and other informal settlements (see recommendations below). Such initiatives may also enhance responsiveness and residents' trust in government, helping to overcome the extractive, conflictual relations or overwhelming neglect of vendors and other residents of informal settlements.

Summary of FGDs in Viwandani

Confirming earlier findings from Mathare, Mukuru, and Kibera (Ahmed *et al.* 2015), vendors in Viwandani again voiced their frustration with limited services and surrounding environmental hazards. They similarly struggled with managing leftovers in the absence of adequate storage, electricity for refrigeration, or rubbish disposal services. Additionally, Viwandani's proximity to factories can often expose vendors to pollutants and effluents that may contaminate their foods. Fires are commonplace and vendors blamed faulty illegal wiring and inadequate emergency services, with the latter stemming from inadequate roads, high densities, and limited government responsiveness. Vendors also

¹² For instance, in response to the question, "What activities do you do together as vendors?", there was a long pause before a vendor replied, "We usually tell each other whether the people from the county council are around" (12 June 2015).

¹³ A vendor recalled how during the cholera outbreak, a hotel owner prepared food and closed the doors "but not completely, just so the health officials who come around may think that the hotel is closed but she's actually selling the food!" (12 June 2015).

struggled with widespread insecurity; conflicts with livestock keepers; and local government's neglect or bribery (particularly along the road and for mobile vendors). Nevertheless, vendors identified multiple benefits of selling in Viwandani, such as lower rents and transport costs, access to higher volumes of customers, and ability to combine their livelihoods with childcare. Overall, vendors felt less harassed by the council than vendors in the CBD, and they provided affordable, accessible foods to their customers, who were already their friends and neighbours. Although many of these findings are echoed below, we note that insecurity is a greater challenge in Korogocho while upgraded infrastructure has sometimes helped to enhance environmental quality and vendors' livelihoods.

Advantages to food vendors and consumers in Korogocho

a) Cost Savings and Strong Links to Customers in Korogocho

Vendors once again highlighted the lower costs of selling in Korogocho, such as reduced rents and bus fares, and they appreciated being well-known to their customers. Typically, vendors buy their supplies from an internal food market in Korogocho, thereby avoiding transport costs, and they often enjoyed low or free rents by working near their homes. According to a female porridge and *mandazi* seller, "A good thing is the low rent and also the accessibility of the market [inside] the settlement" (29 October 2015). As a female vegetable seller similarly observed, the lack of transport costs or rent has resulted in "whatever amount I earn – whatever small profits I make – it's mine" (26 October 2015). Furthermore, a hotel owner explained that by working in his settlement, "so many people know me [and] are happy with the food prices...because it's close to my home, I can wake up early and serve the customers who come early" (26 October 2015). Having saved time and lowered their transport costs, food vendors can extend their working hours, increase their earnings, and cement their social ties by catering for their neighbours or friends.

Confirming their strong links to fellow residents, sellers regularly loan food to vulnerable customers, and vendors also provide affordable meals throughout the day. As a cooked-food seller noted, "a person could easily survive

from morning up to evening spending 50 shillings on food" (28 October 2015). Another cooked-food seller agreed that for just a few shillings, vendors help to feed local families all day: "We start measuring rice at 20 shillings...For beans, we start selling at 10 shillings. If you have a family, and you have 50 shillings, you can buy rice and soup for 10 shillings [for five people]. And that can cover a day" (28 October 2015). Not only do vendors sell at very cheap prices, but they frequently allow residents to borrow food. Vendors were often frustrated by this widespread practice of borrowing (many clients delay or fail to repay), yet they could not refuse since their reputation was at stake.¹⁴ Offering low-cost or free food is one of sellers' key contributions to their settlement, but it may only increase sellers' hardship and threaten their business viability. The imperative of offering very cheap or loaned meals, unsurprisingly, has created financial strains for vendors, such as difficulties in adapting to more expensive food prices (see below).

b) Household reliance on vendors' earnings, including female breadwinners

Although vendors differ in their histories and locations of sale, selling food has often supported their families for years (see Table 8), and many women traders have served as primary breadwinners. One woman who has sold vegetables for 15 years can pay rent, school fees for her own and several adopted children, and remittances to her extended family, despite her husband's lack of stable employment:

I've done the work of selling cabbage for 15 years. The business has really helped me a lot because my husband is unemployed... Through it, I've been able to bring up my children and adopt four other children, take them through school and also I'm able to feed my grandmother back in the village. ...The little I get has been able to sustain us. I'm also able to pay rent (26 October 2015).

Similarly, a woman selling vegetables for five years has single-handedly provided for her kids; as she explained, "it's a good business because you're able to feed your children and take them to school without having to depend on your husband if he doesn't have the money" (26 October 2015). However, other vendors' earnings may be inadequate: for instance, a woman selling fish

¹⁴ "Some customers will tell you that they don't have money, they beg you to lend them something. But I'll tell them, 'right now I haven't sold anything. If I make a few sales, you can come back later' but you can't tell them directly, 'I won't lend to you.' ...Because if you say you can't, he'll start saying you are a bad trader and other people will start avoiding and not buying from you" (28 October 2015, female *bhaja* seller).

¹⁵ "Another challenge is that, since I started my business in 1991, I've done it for so many years, I do a lot of work –yet the money keeps coming and going. How do you spend the money from the business? I pay rent, I pay school fees. Sometimes my relatives, like my mother, want some money but I also need that money so it goes. Then I start again. So this is the problem" (28 October 2015).

and tomatoes since 1991 lamented that “the money keeps coming and going” since her limited earnings must cover rent, school fees, and remittances to her mother.¹⁵ Still, vending has given these women a measure of financial independence and often sustained their families, even in the absence of formal employment or other reliable sources of income.

Men can similarly support their families via food vending, and both female and male sellers had a range of formal or informal jobs prior to their current livelihoods. One vendor had several previous businesses but has sold *mandazi* since 1999, and now he is “able to pay [his] house rent, to feed [his] children, and pay their school fees” (26 October 2015). A meat vendor previously sold illegal alcohol (*chang'aa*) but after police harassment, he started selling food in 2007 and also sold sausage outside Korogocho. While he had higher earnings selling food outside of Korogocho, he still noted that “there are many people who come and open shops here, and the shops do well here” (28 October 2015). Some female vendors had worked in formal factories but shifted to selling food due to their low wages, and they preferred the greater certainty of self-employment. For instance, a vegetable vendor for the past six years previously worked in a company but still had to borrow money; by contrast, she viewed food vending as “a good job because if you do it well and practice savings, you're sure of paying your child's school fees, buying clothes, and also having some money for yourself” (26 October 2015). Vending in Korogocho can also offer much-needed flexibility to working mothers but, as noted below, some may still struggle with heavy time burdens.

c) Flexibility for working mothers, or gendered time burdens of food vending?

Female vendors dominate several segments of food vending (see Table 7), and these women often experience a complex set of benefits and burdens from vending in their settlements. In particular, women with children often enjoyed multiple advantages by working in Korogocho, but it was still a challenge to juggle their livelihoods with childcare and domestic tasks. A cooked-food seller chose to work in Korogocho “because I don't incur any [bus] fare and when the kids go to school, they can come for lunch at my place of work” (26 October 2015). Not only did she eliminate the need for transport and school lunches, but also “there is no stress [*hakuna stress*]” thanks to her reduced costs. A woman selling vegetables near home explained that she can easily complete her house chores while still

being available to sell food, and she also appreciated the decrease in transport costs (26 October 2015). Similarly, a produce and *mandazi* seller vividly described a typical day where she can interweave her housework, childcare, and food vending:

“I wake up early, and I start cooking my mandazi. At 8am I'm through, so I go and pick my kid and prepare her for school. Then after taking her to school, I'll enter the house and do my house chores very fast. We're not many, just my child and me, so I wash the clothes fast. I shower, then I go back to work. Then at around 3pm, I go and pick my child and then prepare lunch. I take her home, I bathe her, then I go back to work with her. Then we close work at around 9pm” (28 October 2015).

This schedule again illustrates how food vending can be melded with childcare (eg preparing her daughter for school, making lunch, and bathing her), as well as household chores. Her daughter also joins her at work in the evening, underscoring the close interplay between women vendors' reproductive and productive roles.

However, other women can experience stubborn challenges such as limited time with their children or inability to help with school homework due to their demanding schedules. As a vegetable seller regretfully noted, there can be a “problem because sometimes my kid [has] homework and you're supposed to help, but I don't have the chance to do it... Sometimes cooking food at lunchtime is very hard, so I'll buy rice and beans” (28 October 2015). She must buy cooked food from other vendors at lunch, and time constraints often prevent her from helping with her child's homework. Additionally, a *githeri* seller with older children must leave them to look after her youngest child; she usually departs too early in the morning to see them and often arrives home when they are already asleep (26 October 2015).¹⁶ Her vending site is not located near her house, and her story illustrates that even selling inside the settlement does not necessarily result in additional time with family. Although expenses may be diminished by lower transport fares and operating costs in informal settlements, female vendors still have multiple time burdens from their livelihoods, cleaning, washing, or other reproductive tasks. However, in a positive recent development, Korogocho's improved infrastructure has brought widespread gains for both female and male food vendors.

¹⁶ “I have other bigger kids who take care of the small one when I'm in the business. When I close the business, that's when I come home and cook dinner for them, or sometimes they eat the leftovers from the previous day. They eat and go to sleep. So I find them asleep” (26 October 2015).

d) Upgraded infrastructure and reduced environmental hazards for vendors

Korogocho recently benefited from infrastructure upgrading, and the project has supported meaningful gains in vendors' livelihoods while reducing the hazards common in settlements like Viwandani. The Korogocho Slum Upgrading Project (KSUP) has significantly enhanced access to water, sanitation, roads, and drainage in many parts of the settlement. A vegetable vendor was grateful for improved roads, reduction in dust, and clean water, which can help in washing and selling her produce. During the ongoing road construction, "They've already laid the stones, so even now there's not much dust...When I'm chopping *sukuma* [kale] for someone, I have to make sure I wash them with clean water...Right now, Korogocho is very good" (28 October 2015). Water provision has also improved: prices are more affordable (Ksh. 1–5 per 20-litre jerrican) and FGD participants agreed that water is typically not a challenge. Additionally, vendors noted that formerly-commonplace 'flying toilets' (plastic bags filled with human waste) are now rare, although many still hoped for additional toilet construction. A meat seller also appreciated the decline in floods after upgrading the roads and drainage: "Before there was drainage, water was flooding everywhere. It was stagnant everywhere; there was a lot of mud. But now we have good drainage and good tarmacked roads, so it's fine" (28 October 2015). Infrastructure improvements can thus bolster vendors' livelihoods and promote access to food by eliminating the mud, stagnant water, and floods that previously hampered food vending in Korogocho.

A more persistent challenge in Korogocho has been the vandalised public lighting and the process of road construction, as vendors along the road were displaced and later struggled to rebuild their livelihoods. Several vendors' kiosks were destroyed to make way for the roads, or workers had to reduce the size of their stalls to accommodate the road. According to a cooked-food vendor, "those people who had kiosks along the road were demolished, and they were not given any alternative. So this was very hard for us because we had to look for alternatives by ourselves..." (28 October 2015). Other challenges stem from the settlement's profound insecurity and criminal activities by local youth. Although some areas now enjoy improved security lights, youths in other villages have tampered with lighting and exacerbated vendors' night-time security concerns. As a butcher lamented, "The security lights will be put up but then the youths will destroy them" and while vendors can switch to kerosene lamps, these can still be blown out in the wind. He therefore has to close early, which "affects the business because you don't have enough time to sell stuff that can get spoiled" (29 October 2015). As discussed below, vendors often

identified youth unemployment as a root cause of the insecurity that plagues their businesses.

Disadvantages and challenges to vending in Korogocho

a) Widespread poverty and rising food prices

Vendors in Korogocho were especially concerned by rising food prices, since their low-income customers cannot afford any corresponding increases in the buying price. As a *mandazi* seller lamented, "when you're going to buy the inputs, they're a bit pricey and people still expect you to sell [at] a very cheap price" (26 October 2015). For the past decade he has sold *mandazi* at Ksh. 5, despite the price of flour increasing steeply from 87 shillings to 130 shillings. Similarly, a woman selling chips cannot raise her prices in line with higher potato prices, as she could if she worked outside Korogocho: "Right now, the price of potatoes is very high. So outside there [ie in a formal estate] you buy chips for 50 shillings at the minimum, but here you must sell at 10 or 20 shillings" (29 October 2015). Facing steep increases in food prices, she believed vendors' businesses "might end up even collapsing because you know [that] our selling prices don't change" (29 October 2015). Vendors consistently noted that in Korogocho, they usually sell food in larger quantities and at cheaper prices than in formal estates, but still cannot raise prices due to their customers' entrenched poverty. With vendors struggling to make profits or even to recover loans from customers, they may resort to reselling their remaining foods alongside other coping strategies with leftovers.

b) Consumption, disposal, or reuse of leftovers

As in Viwandani, Korogocho vendors have several ways of dealing with leftovers, ranging from fridges and household consumption to more improvised strategies that can often threaten food safety. Vendors may eat leftovers themselves or with their households, and they may also give to neighbours or livestock (since livestock sellers usually refuse to pay, vendors no longer ask for payment). In a far-sighted tactic to avoid food spoilage, a vegetable vendor noted that tomatoes can last for three days and at the market she will deliberately select tomatoes that are "not that ripe." As she explained, "if you take all ripe tomatoes, sometimes you don't have customers. If they are so ripe, they get bad and then you throw them away" (28 October 2015). As well as striving to minimise losses through careful selection and purchasing patterns, vendors can use proactive

strategies to preserve their fish or meats. Fish vendors will usually dry, smoke, and/or fry their items to extend the shelf-life: according to a female fish seller, “I smoke my fish, dry it, and then I can sell it for as long as a week” (26 October 2015). Meanwhile, some meat sellers have access to refrigeration, which is crucial since residents only purchase small amounts of meat and the leftovers would quickly spoil. One butcher utilises a shared fridge that charges him Ksh. 5 to store leftover meat (28 October 2015), while another has purchased his own small fridge:

“Whatever remains, I put it in the fridge so that the customers the following day can buy quality meat... Probably I'll go and buy 20 kg; I sell for three or four days because most people here don't have that money to buy meat. So they buy in small quantities. So per day, I sell around 5 kg of meat. That's why it's necessary to have a fridge so that the meat doesn't get spoiled” (29 October 2015).

Although he can afford a fridge and clearly recognised the importance of cold storage, such facilities are quite rare and cooked-food vendors sometimes resort to riskier tactics. Several vendors admitted to reselling old chapatti and *mandazi* the next morning, since they spoil slowly, or can give to their families or neighbours.¹⁷ Just as in Viwandani, vendors reported mixing leftover and fresh foods together in an attempt to conceal the older items. For instance, a chips seller will combine her leftovers with freshly-prepared items in the morning: “I'll put the chips in a separate basin, cook fresh chips, and then mix with the chips from yesterday” (26 October 2015). The food safety implications are uncertain and may vary widely, based on the types of food or handling techniques, although some practices likely pose risks to consumers. With leftover foods representing a loss to low-income vendors who already face rising prices and unpaid debts, it will be vital to expand access to shared fridges or other improved alternatives.

c) Vendors' relations with the city council

Vendors in Korogocho usually make weekly payments to the city council on a sliding scale based on their business size, although some refuse to pay since they receive nothing in return from the officials. Typically, larger shops pay Ksh. 50, as against Ksh. 30 for market vendors and Ksh. 25 for small kiosks. The least successful businesses usually do not have to pay “since [the council officers] know the income from those is just small... So they just leave you alone” (female cooked-

food vendor, 28 October 2015). These concessions for smaller-scale sellers are a key difference from vending in town, where traders must often pay the council daily without negotiations or delay. Based on our three FGDs, Korogocho vendors' relations with the council are fairly amicable unless the traders refuse to pay. As a female vegetable seller noted, “they don't harass us –even if you tell them you don't have money because you haven't sold anything, they understand and come back later” (29 October 2015). Although council harassment is rare, she added that “the problem is when you become rude to them, because they'll come with their vehicles and take your things.” Relations also vary within Korogocho, since in some areas, the council comes twice weekly and vendors may resist making payments. For instance, a *githeri* seller refuses to pay the council “because they never come to sweep my place, so I tell them I don't have money. And sometimes they'll force me to give them what I have, and I totally refuse” (26 October 2015). Overcoming the widespread neglect and residents' suspicion towards government are key challenges to address in the future, but many vendors viewed Korogocho's insecurity as their most pressing concern.

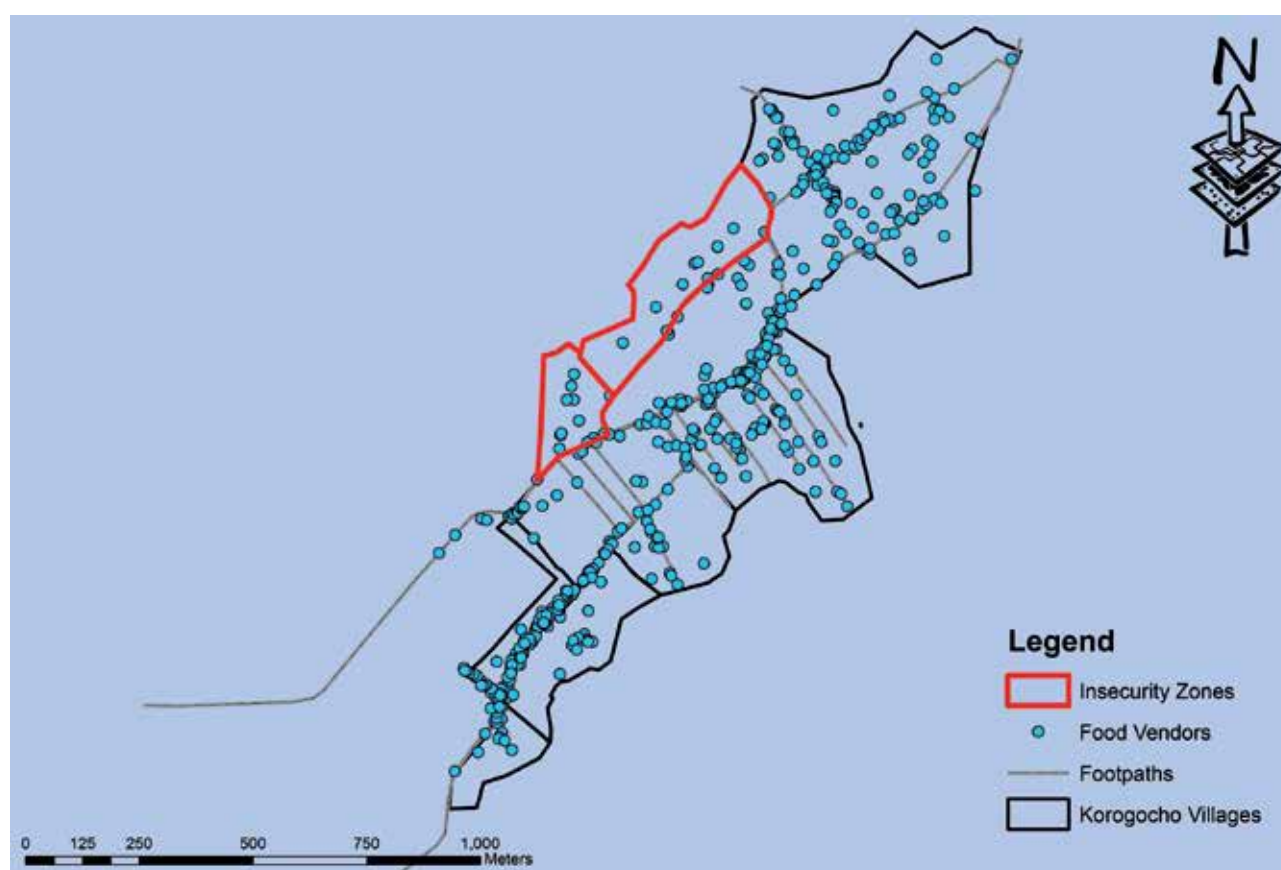
d) Acute insecurity and need for youth employment

While some villages in Korogocho are relatively secure, other areas are highly crime-prone and such insecurity has an extremely negative impact upon food vendors' livelihoods. As shown in Figure 15, insecurity has prevented vendors from operating in several zones of Korogocho.

Fear of crime can affect vendors and customers alike, since clients are often unwilling to buy and vendors may have to close early or conserve their unsold leftovers. According to a chips seller, “Security isn't good because most youths are idle and sometimes customers fear to buy things from us” (29 October 2015). She argued that insecurity has knock-on effects in terms of lost business and unsold leftovers: “So if [customers] get harassed, then we lose business. And that's the reason why sometimes we have a lot of leftovers, because people have developed that fear. If they're seen getting their money to buy things, then they are robbed.” Other vendors agreed that after buying food, youths may follow their clients in hopes of stealing the food and any remaining money (29 October 2015). Potential clients may refrain from visiting their businesses because of fear of crime, again leading to reduced sales and more unsold leftovers.

¹⁷ For instance, a *mandazi* seller usually gives the remainder to his family to eat for breakfast, while his other types of leftovers are given to a neighbour (26 October 2015).

Figure 15: Insecurity zone affecting food vendors in Korogocho



Such intractable challenges of insecurity are exacerbated by poor relations with the police and few dispute resolution mechanisms, forcing vendors to rely upon each other or friendly passers-by for protection. Several vendors concurred that the police only heighten their challenges: complaints are not kept anonymous, which exposes vendors to the risk of retaliation. A meat seller explained that vendors do not report thieves to the police “since they know you reported them, and they’ll make you move away from Korogocho or they’ll kill you” (28 October 2015). With few official avenues for dealing with insecurity and limited alternative selling locations available to non-residents,¹⁸ vendors must instead seek support from fellow traders or passers-by. A woman selling *mandazi* noted that construction-workers usually congregate in her area and “protect [her] because it’s early in the morning,” but if not, the thieves “will come and take everything” (29 October 2015). In the village of Ngomongo, vendors have taken security into their own hands and felt unafraid to work; “if someone tries to attack another person, the public deals with him”

(female cereal seller, 26 October 2015). Meanwhile, others argued for ignoring the youth and continuing their daily routines without confrontations. According to a cooked-food seller, “if you mind your own business, they [thieves] will leave you alone” (28 October 2015). Whether ignoring or resisting thieves, vendors’ coping strategies are often insufficient and insecurity can take an immense toll on their livelihoods as well as on their mental and physical well-being.

Furthermore, vendors often identified youth unemployment as the underlying cause of insecurity and argued strongly for improving youths’ job opportunities if food businesses are to improve. As a vegetable seller explained, “Youths need jobs. If they get employed, they’ll also come and buy from us. But right now, these guys are just idle along the road and people can’t pass. We just pray to God that the youths get employed because life here is very hard” (29 October 2015). She noted stirringly that idle youth contribute to the profound difficulties in their settlement, while if youth are able

¹⁸ FGD Moderator: Why haven’t you moved from that insecure place? Female produce seller: “Because of low incomes – if I had money, I could move from that place and go very far.” There are many places where people pass by, why can’t you go there? “It’s very hard to get a space there if you’re not a resident of that area” (29th October 2015).

to support themselves, they will also buy food from vendors in a virtuous circle. A *githeri* seller agreed that with improved jobs, youth would buy from vendors rather than stealing: “if you give them some jobs, the issue of robbery will reduce and businesses will improve” (29 October 2015). Vendors thus argued that insecurity is a function of the wider challenge of youth unemployment, requiring broader strategies to not only ensure access to affordable food in informal settlement but also promote livelihoods and skills for youths.¹⁹

Summary of FGDs in Korogocho

Vendors' cost savings, strong ties to customers, and the ability to support their families all represented important benefits of selling food in Korogocho. Their cheap, accessible street foods are vital to their customers, who are often very low-income residents. A recent upgrading initiative has enhanced infrastructure provision, which has mitigated local environmental hazards and

supported vendors' livelihoods (by improving water access, reducing floods, eliminating impassable roads etc.). Vendors also appreciated the proximity of home and work, though some working mothers still struggled with multiple time burdens and limited time with their families. Additionally, entrenched poverty has resulted in 1) frequent borrowing of food and 2) vendors' inability to raise their selling prices, which is particularly crippling given the recent spike in food and fuel costs. In turn, vendors struggle with the foregone income of unsold leftovers, leading some cooked-food sellers to reuse or disguise their leftovers (although coping strategies with leftovers varied widely). Furthermore, vendors often had estranged relations with the City Council and felt abandoned or harassed, as in other informal settlements. Above all, they highlighted the acute insecurity in Korogocho, which has led to curtailed operating hours and even no-go areas (starkly captured in the preceding map). But as argued below, multi-pronged interventions can support community safety, enhance vendors' livelihoods, and support food security in African informal settlements.

¹⁹ For a recent review of urban violence in the global South, see Muggah (2014) and the rest of this special issue of *Environment and Urbanization* (no. 26). See also Gupte et al. (2014) for discussion of urban youth unemployment, food insecurity, and violent crime in African cities.

6

Summary and conclusions

Our findings from Korogocho and Viwandani indicate that food vendors already offer major contributions, but cannot thrive in the context of widespread poverty, insecurity, and poor infrastructure. Viwandani's vendors struggle with multiple environmental hazards, while Korogocho's traders have improved infrastructure delivery alongside entrenched insecurity and poverty. Taken together, the cases suggest the need for interventions that extend beyond physical planning. Without previous upgrading projects, Viwandani's vendors regularly suffer from fire, dust, floods or other extreme weather events that can also negatively affect food safety and public health. By contrast, the upgrading project in Korogocho has already improved roads, drainage, and other vital infrastructure, so that vendors' foods are usually free from dust or mud. Most vendors in Korogocho also enjoy improved access to water and sanitation, which can again foster food safety and health benefits for their customers. However, youth unemployment and insecurity remain key concerns in Korogocho, and food vendors continuously experience fear of crime or actual assaults. They often highlighted the need for youth employment, and additional efforts to improve relations with police may also foster community safety. Based on our comparative discussion of Korogocho and Viwandani, it is clear that solely improving infrastructure and services will be insufficient to promote food security and vendors' livelihoods.

Future interventions must also incorporate community safety, youth employment, and political empowerment for vendors to overcome their longstanding neglect or harassment by local government.

We suggest that poverty and gender dynamics are key to understanding the importance of food vending; poverty and gender aspects also help to explain vendors' challenges in informal settlements. Catering to residents and passers-by that lack bus fares or the time to shop outside of their settlements, vendors provide a wide assortment of accessible, cheap foods. Such affordability is enhanced by vendors' flexibility and appropriate quantities, as clients can often borrow food or buy smaller amounts to fit their limited budgets. For vendors in informal settlements, selling food can be an attractive livelihood and means of reducing their own travel, childcare, rents, and fees to the city council (as compared to traders in the CBD). Furthermore, selling food in informal settlements can offer particular advantages to mothers with young children. Our surveys indicate that women are the dominant providers of fresh vegetables and cooked foods, the most commonly-vended foods in both Korogocho and Viwandani. Additionally, FGDs revealed how women frequently combine food sales with childcare, cleaning, and other chores. Female vendors may even generate the primary source of household income, underscoring how vending

can represent an essential livelihood for residents with few other employment options. Yet with multiple time burdens and often low earnings, women vendors may still struggle to support their households or spend time with their children. Additionally, rising food prices and rampant borrowing are common concerns for male and female vendors, particularly in Korogocho where food insecurity is especially prevalent (Mutisya *et al.* 2015). The widespread poverty and gendered burdens that help explain food vending can, by the same token, motivate gender-sensitive strategies to bolster these workers' livelihoods and advance food security.

Subsequent research and advocacy can continue to explore food purchasing patterns and develop practical ways of supporting vendors when upgrading informal settlements. For instance, studies with consumers can reveal how food consumption may vary by residents' location, earnings, age, gender, or household structure. Although we suggest that residents in informal settlements often buy from these vendors, it remains important to examine the mix of food sources and better reveal the (largely informal) pathways through which low-income households can access food. Future studies of vendors' cooking fuels can also provide key lessons for reducing fire risks; improving access to clean fuels may promote respiratory health and well-being, especially for the women and children disproportionately affected by unclean cooking fuels (Smith *et al.* 2013). Additionally, practitioners can develop innovative ways to maintain and strengthen food vendors' livelihoods when upgrading informal settlements. As noted above, food vendors in Korogocho were often forcibly relocated from their sites in order to improve local roads. Such heavy-handed tactics reveal how upgrading interventions lack awareness of the vital livelihoods and their spatial concentration within informal settlements. Our maps indicate that food vendors strongly depend upon road or footpath networks,²⁰ as well as upon adequate infrastructure and services more generally. Future upgrading interventions should ensure that vendors' fragile businesses are strengthened rather than destroyed, and in case of necessary removals, traders will require well-located alternative sites.

More generally, we suggest that by creating integrated strategies to support food vendors in informal settlements, policymakers may promote broader improvements in well-being and health. Providing essential infrastructure and services will benefit vendors and other residents alike; efforts to improve food storage and handling will again support gains in vendors'

livelihoods and community health. FGD participants in Viwandani repeatedly advocated for enhanced infrastructure and services, including water, sanitation, drainage, roads, public lighting, and rubbish collection. Such holistic initiatives would not only support food safety and vendors' livelihoods, but may also create wider gains for fellow residents and workers who currently lack adequate infrastructure.²⁰ Additionally, housing is often a key site for storing vendors' stock or ingredients, which will require shelter interventions such as adequate space and flood-proof materials to promote food safety. Complementary interventions may include shared storage and refrigeration for perishable items, and trainings in food handling and hygiene. Traders may also require improved access to capital, business skills, affordable childcare, and other capacity-building activities that respond to women and men's particular needs. Above all, we suggest that income-generating activities like food vending should comprise a central focus of upgrading strategies, which have often narrowly targeted housing or infrastructure and thus missed key opportunities to support resilient livelihoods.

We also argue for strengthening food vendors' organisations and broader networks to advance more inclusive, equitable urban food systems. Although vendor-centred approaches can improve access to healthy street foods in informal settlements, these workers cannot compensate for an absent state, and street foods are just a single piece of the urban food security puzzle. Developing collective strategies and networks with other stakeholders will also be necessary, both at the settlement and urban levels. Vendors' organisations can help to manage shared storage or refrigeration facilities, buy foods in bulk, and advocate for pro-poor urban food policies (see Box 1 below for Food Vendors' Association, which has organised traders in Nairobi's informal settlements as part of this project). Furthermore, building a broader coalition of food providers, urban policymakers, and food security advocates can help to create appropriate, multi-pronged solutions to urban food security. Food vendors from informal settlements can work hand-in-hand with traders based at other markets, who may similarly lack adequate services, infrastructure, and official recognition (Grace and Roesel 2014). Strategies can be developed in close partnership with food vendors themselves, while also encouraging further dialogue with local/county government, health officers, the police, CBOs, and NGOs active in informal settlements.

²⁰ For more information on enhancing streets in slum upgrading projects, see UN-Habitat (2014) *Streets as tools for urban transformation in slums: A Street-Led Approach to Citywide Slum Upgrading*, Nairobi, 85 pages.

²¹ For further discussion of integrated slum upgrading strategies and their potential to support health in Kenyan, Brazilian, and other cities, see Corburn (2013).

BOX 1: NAIROBI'S FOOD VENDORS' ASSOCIATION (FVA)

The FVA began in late 2013, formed by the Kenyan Federation of Slum-Dwellers, *Muungano wa Wanavijiji*. Its members live in several of Nairobi's informal settlements such as Korogocho, Viwandani, Mathare, Huruma, Mukuru, and Kibera. Participants include vendors selling meat, vegetables, cooked and uncooked foods, as well as livestock keepers. The FVA has championed food security issues in informal settlements and the need for improved infrastructure, services, and recognition for vending. FVA groups engage in collective activities like jointly purchasing maize flour or soap, and they are participating in savings scheme from which they can get loans to expand their businesses (up to three times the value of their savings). Leaders of the FVA are all women who have energetically mobilised new groups, as well as supporting this research project and sharing findings

in the community. Additionally, FVA members are being trained in food safety and hygiene as part of this ongoing action-research project, with support from *Muungano's* partners APHRC and ILRI.

The FVA sees itself as a change agent that can spearhead strategic initiatives and advocate for improved living conditions in the settlements. For instance, FVA groups undertake clean-up exercises to create collective responsibility (among food vendors, livestock keepers and residents more generally), which aim to promote local environmental health and well-being. Future activities will include advocacy with local government and vendor mobilisation to build on the findings of this research project.

We suggest that vendors in informal settlements may be unusually well-placed to advance food security, as well as to promote broader improvements in livelihoods, community health, and well-being. As part of a wider urban food security agenda (sketched above), supporting vendors in informal settlements may be an especially promising strategy to benefit low-income households, who would otherwise struggle to access affordable food sources. Vendors already have deep ties to their fellow residents, while their ability to sell food is strongly influenced by the provision of (or deficits in) housing, infrastructure, and services in informal settlements. Tackling the shelter and environmental shortfalls in informal settlements can, in turn, strongly

support vendors' livelihoods and thereby help to reach the urban poor with safe, affordable food sources. Additionally, by prioritising jobs and improving security in settlements like Korogocho, upgrading policies can support equally vital transformations in living conditions and community empowerment. Further research and partnerships with vendors can help to develop locally-appropriate strategies that can realise the potential of food vending in informal settlements. By nourishing these workers' livelihoods, policymakers can finally recognise the pivotal role of street food, and vendors in informal settlements can lead the way towards more equitable and inclusive food systems.

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Vendors in African informal settlements play vital but overlooked roles in alleviating food insecurity. Many vendors are women selling affordable food to their fellow residents. Using participatory research, we offer a gender-sensitive analysis of how food vending intersects with environmental hazards, insecurity, and governmental neglect in Nairobi's informal settlements. We argue that improving food security must form part of a wider set of upgrading initiatives to promote jobs, community safety, and political empowerment. Food vendors in informal settlements are a key entry-point for such interventions. By nourishing and recognising these livelihoods, vendors can lead the way towards equitable food systems.

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