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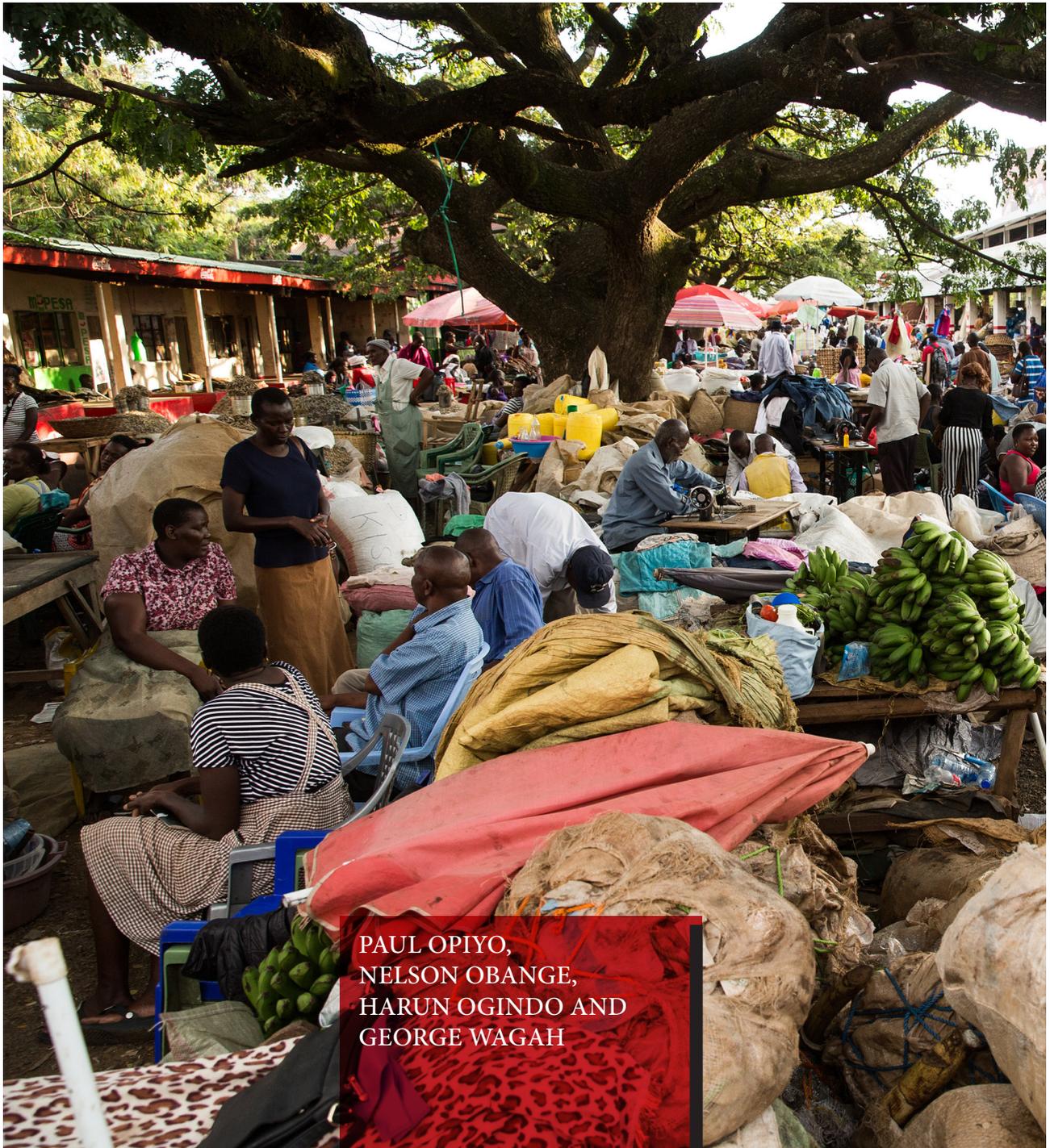


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CONSUMING URBAN POVERTY WORKING PAPER

The Characteristics, Extent and Drivers of Urban Food Poverty in Kisumu, Kenya

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Consuming Urban Poverty Project

Working Paper Series

The Consuming Urban Poverty project (formally named the Governing Food Systems for Alleviating Poverty in Secondary Cities in Africa) argues that important contributions to debates on urbanization in sub-Saharan Africa, the nature of urban poverty, and the relationship between governance, poverty and the spatial characteristics of cities and towns in the region can be made through a focus on urban food systems and the dynamics of urban food poverty. There is a knowledge gap regarding secondary cities, their characteristics and governance, and yet these are important sites of urbanization in Africa. This project therefore focuses on secondary cities in three countries: Kisumu, Kenya; Kitwe, Zambia; and Epworth, Zimbabwe. The support of the Economic and Social Research Council (UK) and the UK Department for International Development is gratefully acknowledged. The project is funded under the ESRC-DFID Joint Fund for Poverty Alleviation Research (Grant Number ES/L008610/1).

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This working paper is the fourth in the CUP series available at <https://consumingurbanpoverty.wordpress.com/working-papers>



Summary

Kisumu – Kenya’s third-largest city – experiences a very high level of food insecurity that is directly linked to poverty. Given the precarious employment status of many in Kisumu, and the high levels of food insecurity, conventional responses to urban food security that seek to increase availability of food, generally through production support, will not effectively address food insecurity in Kisumu. In Kisumu, most residents access food through the market: through the formal supermarket sector, municipal markets, or the informal sector. All play a role in the food system; all are important. For the poor, however, study findings suggest that the informal sector is of critical importance. Although the boundary between the formal and informal sectors is often blurred, municipal markets, kiosks and street traders play a key role in the food economy of Kisumu. The population of Kisumu is growing rapidly, with a high percentage of residents under the age of 30 years. Urban services and infrastructure are significantly lacking, particularly in the informal settlements. The intersection of youth, unemployment, infrastructure, poverty and levels of food insecurity highlights the systemic nature of the poverty and food-security challenge in Kisumu. This calls for very different programmatic responses to address these challenges. Food poverty can be addressed from both the supply and demand sides, by boosting production and removing bottlenecks in the supply chain, as well as creating more economic opportunities for employment and improving household incomes. But a key consideration in addressing food poverty is to integrate food into planning and infrastructure thinking and design. Food intersects with space and makes food-sensitive planning a responsibility of a wide variety of city planners and development practitioners. The long-term development and health-related consequences of food poverty place Kisumu City at risk of continued food insecurity and long-term under-development, well into the future, unless food security is urgently placed on the city’s development agenda.

Keywords : food insecurity, food poverty, informal sector

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1. Introduction

1.1 Kisumu City: context and background

In Africa, the fastest urban growth takes place in settlements of less than 500 000 inhabitants, which account for 62% of the continent's urban population (United Nations, 2014). Despite the demographic importance and potential role of such cities, urban planning efforts in developing countries have focused disproportionately on the problems of large cities (United Nations, 2014).

Kisumu, the principal city of western Kenya and the third largest in the country, provides a useful case study to understand the nature and dynamics of urban poverty and food security in secondary African cities. The city has grown from a railway terminus and inland port on Lake Victoria, serving as a point of contact for trading agricultural produce in 1901, to become a sub-national administrative, commercial and communications centre. The city has grown from a small town of 32 431 residents shortly after independence in 1969, to 152 643 in 1979, 192 733 in 1989, 322 734 in 1999, and 404 467 in 2009. It is estimated that Kisumu's population now exceeds 500 000. The city is strategically located at the confluence of a major transport system in the Great Lakes region. This makes it economically important beyond the local catchment area in Kenya (Mireri, et al., 2007), and significant for food trade. Part of the northern corridor, which is the busiest and most important road transport route in East and Central Africa, also passes through the city. The northern corridor provides a gateway from the seaport city of Mombasa to the Great Lakes region's landlocked economies of Uganda, Rwanda, Burundi, eastern Democratic Republic of Congo (DRC) and South Sudan. There is also a trunk road from Isebania at the Kenya- Tanzania

border, which passes through Kisii and links Kisumu to South Sudan via Kakamega, Kitale and Lodwar.

The decade following Kenya's independence in 1963 was characterised by robust sugar, cotton and fishing industries in Kisumu (Aguilo, et al., 2007). In the 1980s and 1990s, however, Kisumu's economy stagnated under economic liberalisation (Aguilo, et al., 2007). Kisumu's elevation to city status in 2001 saw bustling city streets and new construction projects (Geissler, 2013). However, this prosperity appears to have been solely fuelled by the city's growing non-governmental organisation (NGO) sector, as manufacturing and investment levels in Kisumu were low and believed to be declining in 2007 (Aguilo, et al., 2007; Mireri, et al., 2007). Kisumu faces considerable economic challenges, including the city's heavy billion-Kenyan shilling debt and high unemployment (World Bank, 2016). Kisumu also contends with high levels of HIV/AIDS, with a county seroprevalence of 15.4% - more than twice the national average of 7.4% (Kwena et al., 2012). HIV infection rates are particularly high in the area's fish-trading communities (Camlin, et al., 2013). Environmental issues are also of grave concern, given the significant level of lake pollution and the severe depletion of Lake Victoria's fish stocks (Juma, et al., 2014; Makokha, et al., 2008; Abila, 2016; Albright, et al., 2004). Furthermore, Kisumu faces poor living conditions in densely populated informal settlements, a precarious governmental environment mired in significant debt, and a complicated food system that relies heavily on sourcing food from outside the city.

The city sits on the north-eastern tip of Lake Victoria's Winam Gulf (Figure 1). The land north of the city rises steeply towards the Nandi, Riat and Kisian hill chains, while the land stretching to the south-east flattens into the Kanyakwar and Kano plains, valued for agriculture and quarrying (AFD, 2013; UN-Habitat,

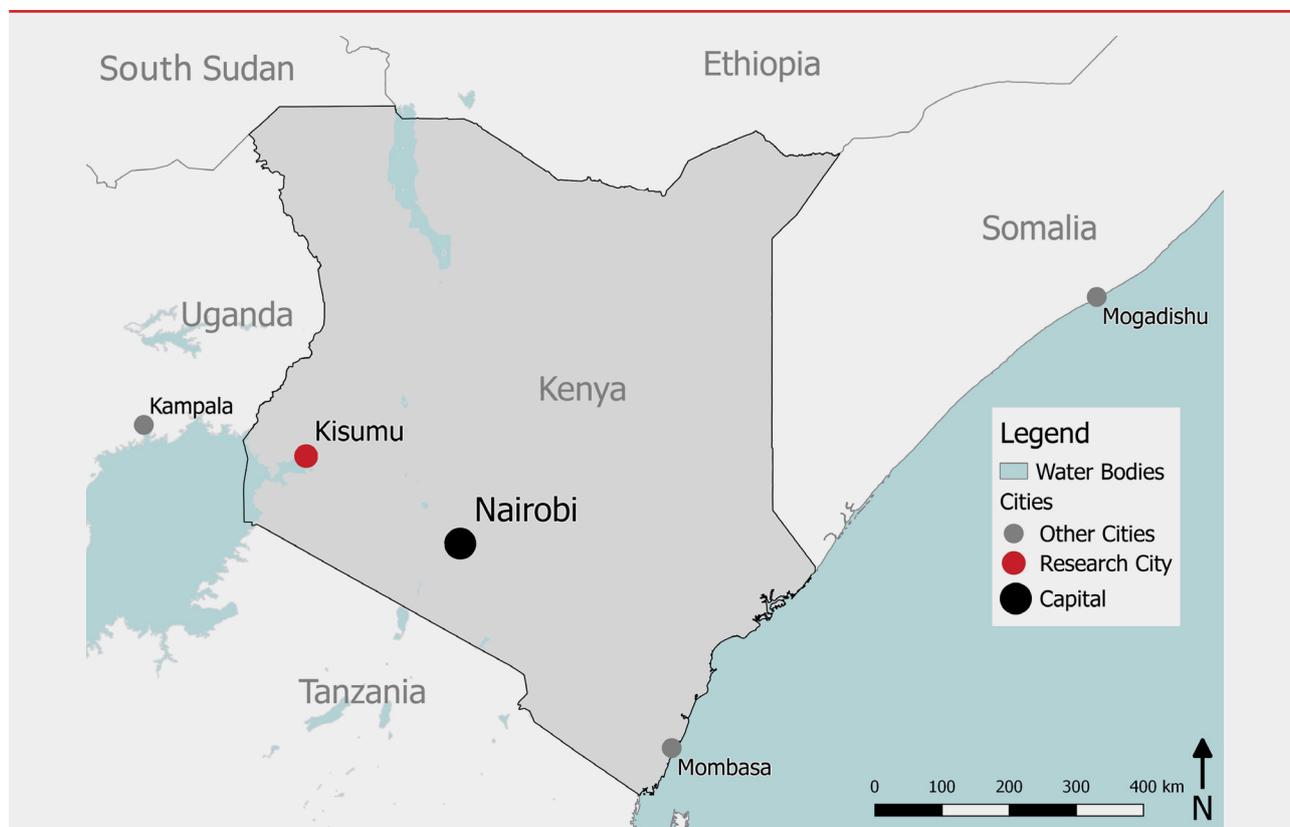


Figure 1: Kisumu located in the East African regional context

(Source: Alexander & Park-Ross for CUP)

2005). The original city sits on a small hill that early settlers prized for its drainage and location overlooking Lake Victoria (UN-Habitat, 2005). In 1971, the city boundary was extended to include Manyatta and Nyalenda informal settlements and some rural land, increasing the city's area to a total of 53 km² (UN-Habitat 2005). This was an important development as Kisumu's informal settlements were included in the municipal boundaries, effectively putting its service provision under the city's purview. This was particularly significant as, just a year later, in 1972, more than half of Kisumu's residents were found to be living in the town's informal settlements (UN-Habitat, 2005).

At 30%, unemployment in Kisumu is high, and significantly higher than the national average of 13% urban unemployment for citizens aged 20-24 (World Bank, 2016). In 2007, the informal sector employed some 52% of the city's working population and supplied a monthly income of approximately KES4 000 (USD40) (AFD, 2013). In informal settlements, this proportion rises to about 70% employment in the informal sector (UN-Habitat, 2005). The most recent statistics are from 2007, when approximately 60% of the city's population resided in informal settlements on just 8% of the city's land (Mireri, et al., 2007). The city has a high level of food poverty (53%), compared to Nairobi (8.4%) and Mombasa (38.6%) (Mireri, et al., 2007).

Research carried out by the African Food Security Urban Network (AFSUN) in low-income areas of 11 cities in nine different sub-Saharan countries found high levels of food insecurity and wider food-system related challenges that precipitated food insecurity, poor dietary diversity and wider nutritional challenges (Frayne, et al., 2010). The AFSUN research also challenged several urban food security perspectives, highlighting that, for the majority of the urban poor, food is accessed through the market rather than production, and that while income poverty impacts food security, it is not the only determinant (Battersby, 2011, 2016). Issues such as housing type, family structure and even the gender of the household head all contribute to the state of food insecurity in African cities (Frayne, et al., 2010). A further finding from the AFSUN research was that understanding food security enabled a wider understanding of how poverty manifested in poor households, how households responded to income-related challenges, and the role that food played in daily and monthly household budget decisions. By using a food lens, the AFSUN research offered new perspectives on urban poverty. These findings provided the motivation for an enquiry into the state of food security and food poverty in Kisumu, Kenya.

History and context play important roles in how the food system in Kisumu developed and currently functions, the effectiveness of the system, and what it reveals about food poverty and poverty in general. The next section provides an overview of the survey components, and the methodologies and research approaches applied to support the findings presented in this paper. This is followed by a brief description of the Kisumu food system and the presentation of findings from the different surveys and research activities.

1.2 Document layout

Section 2 provides a description of the methodologies applied during the study, and discusses the sampling strategy and limitations of statistical interpretations. Section 3 offers a brief foregrounding of the state of poverty in Kisumu and how food security is understood. Section 4 deals with the household profile, in which data on household size, age of household members, gender, household structure, educational level, work status and

food responsibilities are presented, and their implications on food security discussed. Section 5 considers the socio-economic status of households in terms of dwelling structures, income and expenditure, and their implications on food security. In Section 6, findings related to characteristics, extent and drivers of food poverty are discussed, using analyses of the Lived Poverty Index (LPI), Household Food Insecurity Access Scale (HFIAS), Household Food Insecurity Prevalence (HFIAP), Household Dietary Diversity Score (HDDS), Months of Adequate Household Food Provisioning (MAHFP), and food prices. Here, findings on food hazards, urban food sources, and attitudes towards supermarkets and urban agriculture are also discussed. In Section 7, social protection grants and their importance in household food security are discussed. The final section summarises and then draws on study findings to offer conclusions and recommendations.

2. Methodology

The Consuming Urban Poverty (CUP) project wanted to understand urban food poverty in two ways: firstly, through a quantitative review comprising food security and multidimensional poverty surveys, drawing on established food security and poverty research modules (FANTA and MPI) used to gain a broad understanding of multiple factors causing food poverty, the responses to food poverty, and how these factors intersect with broader poverty issues; and secondly, through qualitative in-depth interviews with selected households that sought to drill down into these broad issues and engage in urban food poverty in greater depth, and better understand household food access and food-system coping strategies.

2.1 Household survey

The household survey addressed the extent and nature of household food security and food-sourcing strategies. It drew on the Food and Nutrition Technical Assistance (FANTA) food security assessment tools (HFIAS, HDDS and MAHFP) (Coates, et al., 2007; Swindale and Bilinsky, 2006). The survey also addressed income and expenditure, livelihoods, access to infrastructure and services, the household structure, and the household asset base. The surveys were georeferenced to enable examination of possible connections between household poverty and spatial characteristics.

2.2 Household survey components

The household survey used five tools to assess levels of food poverty in Kisumu:

1. The LPI captures the household's level of deprivation in the previous year based on five parameters: enough food to eat, enough clean water for home use, medicine or medical treatment, enough fuel to cook household food, and a cash income (Mattes, 2008).
2. The HFIAS is used to establish the degree of food insecurity during the month prior to the survey. A HFIAS score was calculated for each household based on answers to nine 'frequency-of-occurrence' questions. The minimum score is 0 and the maximum is 27; the higher the score, the more food insecurity the household experienced (Coates, et al., 2007).
3. The HFIAP indicator uses the responses to the HFIAS questions to group households into four levels of household

food security: food secure, mildly food insecure, moderately food insecure, and severely food insecure (Coates, et al., 2007).

4. The HDDS investigates how many food groups were consumed within the household in the previous 24 hours. The maximum number is 12. An increase in the average number of different food groups consumed provides a quantifiable measure of improved household food access (Swindale and Bilinsky, 2006). A HDDS of 6 or below is considered a proxy indicator for malnutrition.
5. The MAHFP indicator captures changes in the household's ability to ensure that food is available above a minimum level for the year. Households are asked to identify which months, during the past year, they believe they did not have access to sufficient food to meet their household needs (Bilinsky and Swindale, 2007).

2.3 Sample size

The 2009 Kenyan National Survey (KNS) data estimated the population of Kisumu to be 500 000, or 100 000 households (KNBS/SID, 2013). Allowing for a confidence interval of 10% at a 95% level of probability, the sample size required is 383 households (using the sample size table derived from the formula by Krejcie and Morgan, 1970). To enable cross-tabulation between variables, the targeted sample size was 800. Ultimately, 841 households were interviewed. This sample size provided a confidence interval of 7% at a 95% level of probability.

Kisumu can be divided into three discrete geographical zones: Western Kisumu (Zone A), the area west of the main A1 road and north of the east-west B1 road; Eastern Kisumu (Zone B), located north of the B1 road and east of the A1 road; and the entire area south of the B1 road referred to as Southern Kisumu (Zone C) (Figure 2). Colonial planning and geography of the city's growth mean that each zone contains a mix of high- and middle-income, poor, and peri-urban neighbourhoods. Neighbourhoods in each of these discrete zones were purposefully selected, informed largely by ease of access (working relationships with local gatekeepers or chiefs, security, etc.) and distribution within the neighbourhood types (Table 1). Two neighbourhoods of Kisumu were excluded from the sample: Kaloleni, with 3 658 households; and Northern, with 2 107 households. The proportional nature of the sample means that it is self-weighting, so no weights needed to be calculated for statistical analysis of the results.

The sample of households interviewed is proportional to the populations of the different geographical zones and neighbourhood types. In this respect, the sample estimates are representative of the different population sizes of these areas.

The limitation of the sample design is that the three neighbourhoods selected within each neighbourhood type were not proportional to the sizes of their populations. So, to the extent that these neighbourhoods are dissimilar in size, the sample is not an equal probability sample. Kisumu has three main informal settlement neighbourhoods – one each in the south, the east, and the north-west – all of which were covered in the survey.

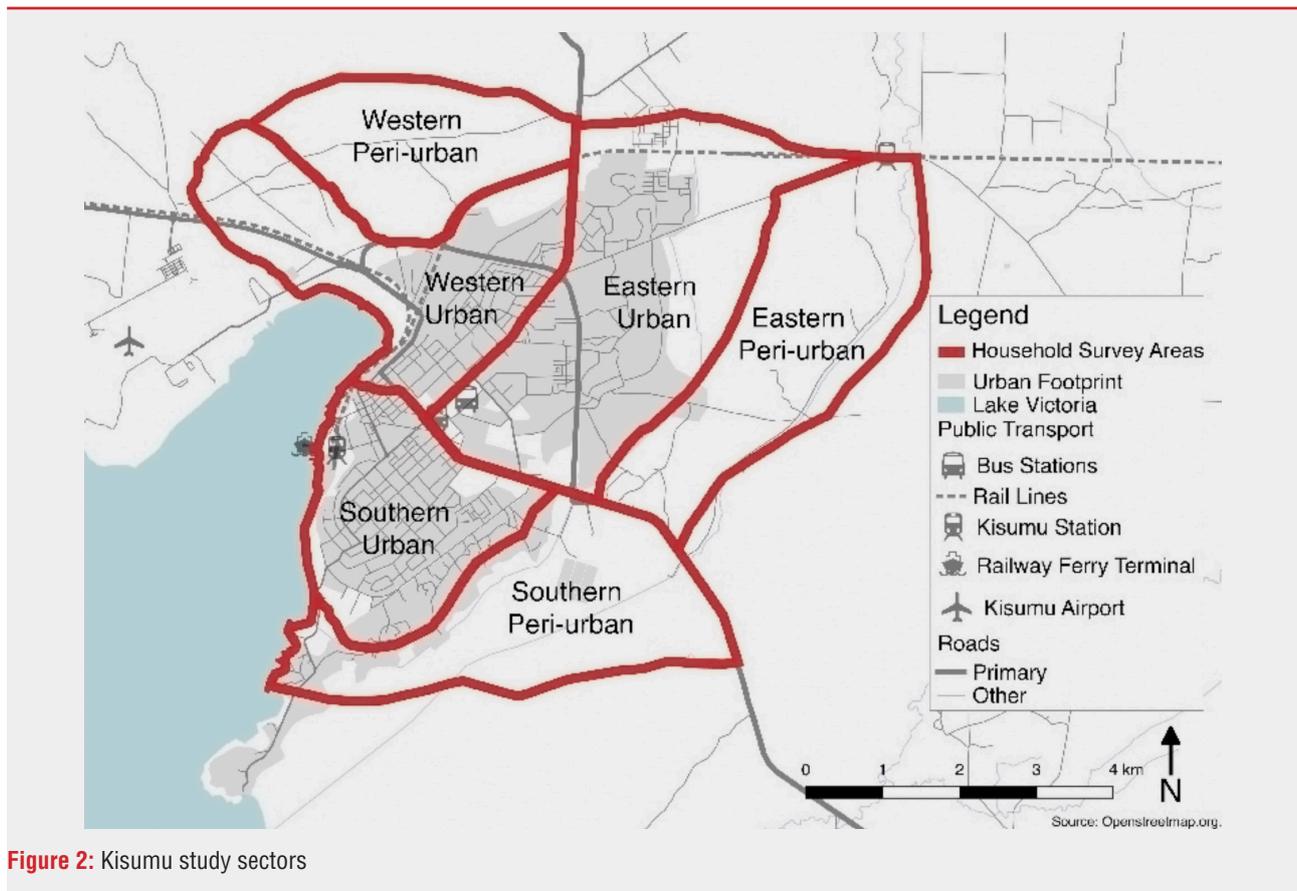


Figure 2: Kisumu study sectors

(Source: Alexander & Park-Ross for CUP)

The selected residential areas were further divided into sections, each of which was then divided into urban and peri-urban segments (Figure 2). Residential areas classified as high-, middle- and low-income were then randomly selected in each sub-area. In accordance with the city's population distributions, 65% of the households sampled were located in low-income settlements. A systematic sampling was done, targeting every third house along a road in the formal settlements, and a household in every third plot in the informal settlements. Whenever an interview in the third house/plot was not possible, the next house/plot was tried until an interview was successful. The questionnaire was administered either to the head of the household or a responsible adult in the household. The quantitative survey was supported by 50 in-depth household interviews distributed across Kisumu.

Table 1: Sampled areas for household survey

Sector	Urban			Peri-urban		Total	
	High and middle income	No. of households	Low income	No. of households	Peri-urban		No. of households
Western (A)	Tom Mboya / Mountain View / Robert Ouko	26	Nyawita / Obunga / Bandani	140	Kanyakwar / Kanyamedha / Kogony	45	211
Eastern (B)	Kenya Re / Migosi / Lolwe	42	Manyatta A and B	241	Chiga / Mbeme / Nyalunya	40	323
Southern (C)	Milimani CBD / Railways	35	Nyalenda A and B	224	Kasagam / Kasule / Molem	48	307
Total		103		605		133	841

2.4 In-depth household interviews

To obtain more detailed, qualitative accounts of food poverty, the project conducted a series of in-depth interviews in selected households in the study areas. Fifty interviews were conducted. The sample size for the in-depth household interviews was proportionately distributed according to the population density of the residential areas. Respondents were key informants who had lived in the neighbourhood for a longer than average period. The research team were guided by leaders of social groupings, village elders and resident associations in identifying respondents for the in-depth interviews (Table 2). The in-depth interviews were exploratory in nature as they were used to understand household experiences regarding food. These interviews included questions on foods that were important to the households, household food sources, purchasing patterns, changes in food availability and purchasing power throughout the year, challenges in household food security provisioning, and ways in which households strategised to militate against food shortages. These interviews provided a deeper understanding of issues such as the socio-cultural context in which lived food security experiences are situated.

Table 2: Distribution of respondents for in-depth household interviews

Sector	Urban households				Peri-urban households				
	High income	No.	Middle income	No.	Low income	No.	No.	Total	
Western (A)	Tom Mboya	2	Mountain View	2	Nyawita Obung/ Bandani	8	Kanyakwar	2	14
Eastern (B)	Kenya Re	2	Migosi	2	Manyatta A and B	12	Chiga	2	18
Southern (C)	Milimani	2	CBD / Railways	2	Nyalenda A and B	12	Kasagam / Nyamasaria	2	18
Total		6		6		32		6	50

2.5 Limitations on statistical interpretations

The household survey was conducted in January and February 2017, thus the data relate to that period. The dates over which the surveys were conducted could have impacted on the survey results for three principle reasons. Firstly, January is generally the driest month of the year, which impacts on food availability. It also potentially impacts household water and sanitation conditions, which impact food utilisation and therefore food security. Secondly, Kenya was in the midst of a challenging political period with disputes and protests targeting the electoral commission and other processes. While the election was only due to take place in August 2017 the run-up to it was tense. The third reason only emerged from the findings of the survey, when January was identified as one of the most challenging months for many households. Although the data refers to the sampled areas of the city, an attempt was made to get a fairly representative sample for the entire city. While the findings are not statistically representative of the entire city of Kisumu, they are deemed to reflect the general trends.

The interactions between the food system and food security in Kisumu, and the levels of multi-dimensional poverty experienced in the city that the surveys sought to understand, are complex. The next section describes the Kisumu food system, which provides context for the findings on poverty and food insecurity in the city.

3. Kisumu's food system and food security

Kisumu's food system comprises various food-system actors. As will be demonstrated, residents of Kisumu generally gain access to food through the market. This market is diverse, with formal supermarkets, municipal-approved trader markets, non-approved markets, neighbourhood house shops or kiosks, and street vendors. Food enters Kisumu through various channels. There is limited food production within Kisumu City or Kisumu County, with most of the food consumed in Kisumu brought in from other counties in Kenya and from outside the country's borders. In 2016, CUP conducted a reverse value chain analysis on five key food items – *ugali* (maize meal or sorghum meal), fish, green vegetables, porridge and eggs – which revealed that the main production sources of these food items in Kenya are mostly located 75–150 km from Kisumu (Sibanda & Von Blottnitz, 2018). Some maize, fish and eggs are imported from Uganda, and some fish is imported from China. Food-processing industries have not grown in Kisumu to the same extent as they have in other cities in Kenya. There are sugar-milling companies in the satellite towns of Kibos, Chemelil and Muhoroni, and Kisumu has two maize-milling plants and one fish-processing plant. Other food-processing enterprises are involved in small-scale food preservation and packaging targeting the local market.

Road transport is the main way in which food reaches Kisumu. However, transport was singled out in the CUP food retail survey as the highest cost after stock purchases (82% of cases). This is due to a number of factors, including the country's poor road network and the distance from the food sources to Kisumu. Spoilage is the second highest reported cost after transport (51% of cases).

There are both formal and informal food systems operating in Kisumu, as well as formal and informal food-system governance structures in the distribution system. How these different systems impact on access to and affordability of food requires deeper analysis. Some evidence has emerged from the food-systems research conducted in Kisumu (see [CUP Working Paper 5: Characteristics of the Urban Food System in Kisumu, Kenya](#)), but further analysis is required.

Some of the findings from the food-systems research offer insight into how power and economics intersect within Kisumu's food system. Interviews with traders revealed that associations are established to lobby for the welfare of traders and improve access to food for traders and consumers. However, some traders complain that some trader associations have turned into cartels. County government and city authorities have created market places and regulate food trade at these sites and in other areas of the city. Whether these have adequately facilitated access to food by the poor remains inconclusive. The authorities are often viewed as a hindrance to food access because, while they impose taxes and levies on food traders, they do not offer the required essential services to traders or consumers. The costs of registration and general operational factors are passed on to the consumer, making food more expensive.

It is important to consider the extent to which Kisumu's food system meets the city's resident's food-security needs. The most widely accepted definition of food security states that 'food security, at the individual, household, national, regional and global levels exists when all people, at all times, have physical and economic access to sufficient, safe and nutritious food to meet their dietary needs and food preferences for an active and healthy life' (FAO, 1996). From this definition, four main dimensions of

food security are identified: food availability, access, utilisation and stability. For food-security objectives to be realised, all four dimensions must be fulfilled simultaneously.

Food availability addresses the 'supply side' of food security and is determined by the level of food production, stock levels and net trade (FAO, 1996). The rich agricultural lands to the east of Kisumu are dominated by sugarcane plantations and rice farms. However, these have not contributed much to food availability in Kisumu. Imported sugar and rice are cheap and readily available in Kisumu compared to the same items produced locally, due to the high cost of production and unreliable climatic conditions.

The situation is further complicated by poor orientation of the local population towards food-crop production based on socio-historical factors. The majority of residents are of Luo ethnicity, traditionally oriented towards fishing in Lake Victoria and rivers rather than food-crop production. Although Kisumu is deficient in terms of food production, imported food is available.

An adequate supply of food at the national or city level does not in itself guarantee household-level food security. Concerns about insufficient food access have resulted in greater policy focus on incomes, expenditure, markets and prices in achieving food-security objectives (FAO, 1996). Earlier poverty-related research in Kisumu found that poverty and unemployment levels are high, with close to 50% of city residents living in absolute poverty (where the poverty line is estimated at USD1 per day), compared to the national average of 29% (UN-Habitat, 2005). High poverty levels also limit economic access to food. The locations of food retail outlets are generally related to the city transport system and physically accessible to residents. Peri-urban markets get food supplies from traders who buy from the main markets in the city and bulk break in the smaller peri-urban markets. The assumption that peri-urban areas supply food to cities is thus not entirely true for Kisumu. The footprint of supermarkets in Kisumu has grown in the last two decades: in the early 1990s there were only two supermarkets in Kisumu; by 2016 there were eight major supermarket brands, with a total of 15 branches in Kisumu.¹ Despite the growth of supermarkets, food retail in Kisumu is mainly informal.

Utilisation is commonly understood as the way the body makes the most of the various nutrients found in food. Sufficient energy and nutrient intake by individuals is the result of good care and feeding practices, food preparation, diversity in the diet, and intra-household distribution of food. Combined with good biological utilisation of food consumed, this determines the nutritional status of individuals (FAO, 1996). Food utilisation in Kisumu is rapidly changing. Malnutrition is prevalent among the poorer residents of the city, with 15% of children under five years old categorised as moderately or severely underweight by WHO standards (KIRA, 2014). Over-nutrition is growing among the town's rapidly increasing number of middle-class consumers. Consumption of foods generally viewed as unhealthy (e.g. fried and salted snacks, fried foods and sugared drinks) is growing at the expense of traditional foods.

Even if food availability, access and utilisation were adequate today, periodic inadequacy compounds or undermines food security. Adverse weather conditions, political instability and/or economic factors (unemployment, rising food prices) may have an impact on food-security status (FAO, 1996). Changing

¹ It is worth noting that, in the latter half of 2017, a number of Kisumu's supermarkets started closing their doors and/or reduced their operational times and product offering.

weather patterns have also impacted on food security in Kisumu; for example, during dry seasons, vegetables are transported from Bomet and Nakuru, which are over 100 km away, making them more expensive and therefore inaccessible to the poor.

Kisumu has remained a centre of political activity, with political factors affecting its socio-economic development. Opposition politics often pits the local political leadership against the central government. Kisumu is also prone to politically motivated violence (KIRA, 2014). The high number of unemployed youth are vulnerable to political manipulation and violence, negating stability of food access, as witnessed during post-election violence in 2007/2008 and protests following the disputed presidential election in 2017.

Several factors influence food security, in all its dimensions, in Kisumu. This paper presents the findings of the household food-security surveys conducted in Kisumu under the CUP food systems and food poverty work package. Using data from food-poverty surveys and household interviews, the paper contributes to discussions on food poverty as an indicator of the workings of persistent, pervasive and systemic urban poverty. It also discusses the extent and drivers of food poverty, concluding with suggestions for addressing urban food poverty, particularly highlighting the importance of appropriate urban-scale food-system governance.

4. Household profile

This section provides an analysis of the demographic, social and economic characteristics of the households surveyed. The focus is on characteristics such as age, gender, level of education attendance and attainment, type of dwelling structure, and socio-economic conditions of households including status of employment. The household profile data facilitates interpretation of the key demographic and socio-economic indices in relation to food poverty, while simultaneously providing an assessment of the representativeness of the survey.

A household was defined as a person or group of people, related or unrelated to each other, who live together in the same dwelling unit and regularly eat from the same pot for at least six months in a year.

4.1 Household size

The average size of the households surveyed was 4.16 persons. This average household size was very close to the 2009 Kenya Population and Housing Census (KPHC) estimate of 4.3 persons per household (KNBS/SID, 2013). The urban national average household size in Kenya is 3.5 (KNBS/SID, 2013). The findings imply that household population density in Kisumu tends to be higher than the general urban household size in Kenya (KNBS/SID, 2013). Wide variations in the average household sizes are also observed across households. The largest household membership was found to be 15 members and the smallest, only one member (see Table 3 and Figure 3 for details on the distribution of households).

Table 3: Household roster

No. of household members	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	Total
Western urban	12	19	37	46	29	16	5	4	0	1	1	0	0	0	1	171
Western peri-urban	1	4	7	12	11	9	4	1	0	0	0	0	0	0	0	49
Eastern urban	16	36	60	63	49	23	10	7	1	3	2	0	0	0	0	270
Eastern peri-urban	2	1	7	12	10	8	5	1	0	0	0	0	1	1	0	48
Southern urban	24	34	46	65	46	21	9	5	4	2	0	0	0	0	1	257
Southern peri-urban	2	2	6	9	11	9	2	2	0	0	1	1	1	0	0	46
Total	57	96	163	207	156	86	35	20	5	6	4	1	2	1	2	841

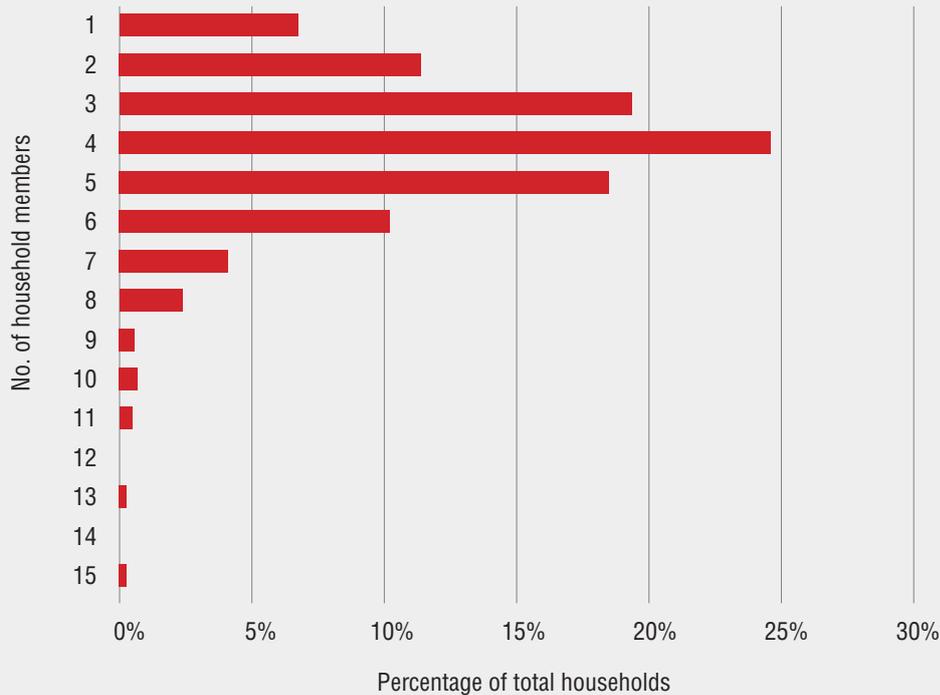


Figure 3: Frequency distribution of household size

4.2 Age

A survey of the households' demographic characteristics by age shows that most household members are relatively young. As shown in Table 4, 37% are children under the age of 16. When viewed cumulatively, 74% are 30 years old or below and 92% are 45 years or below.

Table 4: Age distribution of household members (n=840)

Age	Percentage	Cumulative percentage
0-15	36.7	36.7
16-30	36.8	73.6
31-45	18.4	92.0
46-60	6.1	98.0
> 61	2.0	100.0

Table 4 also indicates that 36.8% of the population were youth between the ages of 16 and 30 years. This age group primarily comprises school- and college-going youth and young school leavers, most of whom are unemployed. Some 61% are in the economically productive age group of 16–60 years. Only 2% are above the age of 60 years, attributable to the cultural practice of the elderly retiring to their rural homes and low life expectancy. The youthfulness of the population is a factor that requires far greater consideration. That over 70% of the population were found to be under the age of 30 years presents significant developmental, educational and economic questions. Put plainly, in the next 15 years almost 40% more people than the current Kisumu population will be entering the workforce and looking for employment, in an environment where extremely high levels of unemployment already exist. This has profound implications for the nature and structure of the city's economy, and for food

security, where most of the food accessed in Kisumu is through the market. If there are high levels of unemployment, this could be exacerbated by high food insecurity.

4.3 Gender

Gender plays a significant role in food security through its influence on access to resources, services and labour market opportunities (Asian Development Bank, 2013). Gender-based inequalities tend to impede the attainment of food and nutrition security (BRIDGE, 2014). Tackling food insecurity therefore requires a better understanding of the intricate links between gender and food security. The survey sought to establish the gender of household members and household heads, which has been recorded in Table 5.

Table 5: Gender of household members and household heads

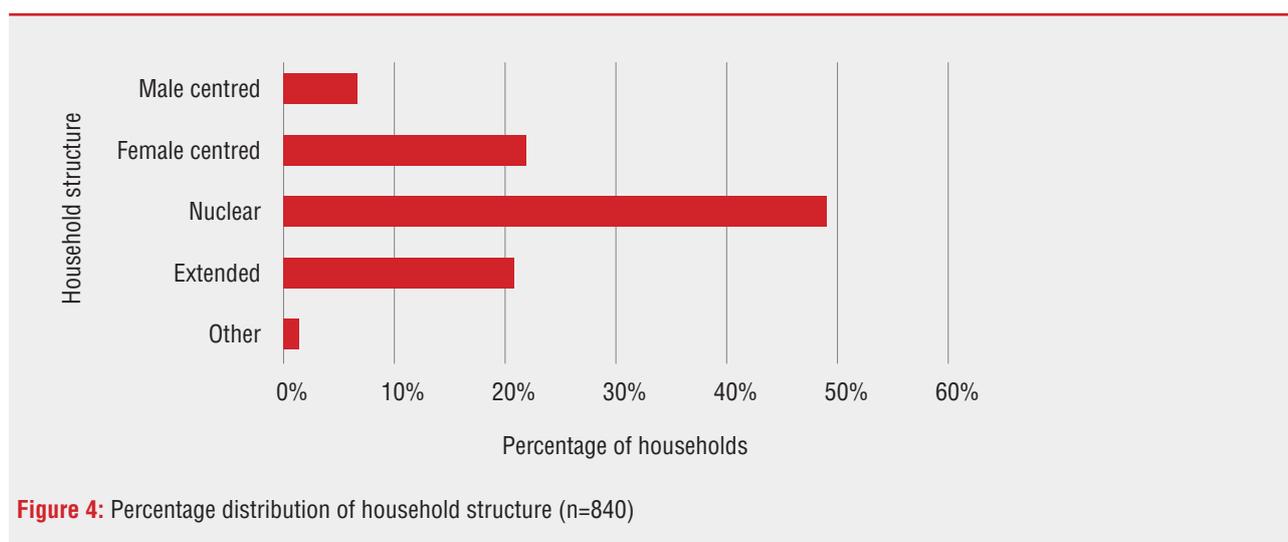
Gender	Household members		Household heads	
	N	%	N	%
Male	1 627	46.6	641	77.4
Female	1 868	53.4	187	22.6
Total	3 495	100.0	828	100.0

In the households surveyed, 47% of household members were male and 53% were female. The 2009 KPHC established that the urban population of Kisumu East District (mainly Kisumu City) was 50% male and 50% female (KNBS, 2010). Historically, rural-to-urban migration in Kenya was highly gendered, with males migrating to urban areas in search of employment, leaving their spouses in the rural areas. However, evidence from the 2009 KPHC and the CUP surveys suggests that these assumptions may no longer hold true. Given the discourse on migration and urbanisation (see KNBS, 2014), this is an area that requires further enquiry.

The household survey questioned the birthplace of the household head and that of all household members. What was found was that, while 46% of household heads were born in Kisumu, 63% of household members were born in the city. This could mean that the impact of in-migration on the demographic structure of the city is waning as endogenous growth starts to dominate.

4.4 Household structure

Household social and cultural contexts play important roles in household food-security status (Dastgiri, et al., 2006). Studies have found that female-headed households are vulnerable to food insecurity, particularly in societies where women may not enjoy the same rights, in law and culturally, as men (Dodson, et al., 2012). The survey therefore categorised households along gendered lines, identifying households as female-centred, male-centred, nuclear, extended, or other. Female-centred households were defined as those without a regularly present male as husband or father, while male-centred households were defined as those with no regularly present female as wife or mother. Nuclear family households were defined as those consisting of male and female couples, with or without children, while extended families were defined as nuclear family living with other relatives who are not members of the nuclear family. The frequency distributions for household structure are presented in Figure 4.



4.5 Highest level of education

Education is a key indicator of access to potential development opportunities and possible future pathways to development. The survey sought to determine the highest level of education attained by all household members. The data was analysed for three categories: for all household members, for household members five years old and above, and household members 18 years and older.

The highest level of education attained for all household members is presented in Figure 5. The survey found that 4% of all household members had no formal schooling, 32% attended or completed primary school education, and a cumulative 34% had some high school education or had completed high school. Some 8% had some post-secondary school qualification, other than university education, while 9% had some university education or had completed university. Only 1% had postgraduate education. Skills levels were established to be low, with 69% having completed secondary school or lower. This could be a contributing factor to the high dependency and unemployment levels manifest in Kisumu, and the need to generate livelihoods as soon as basic schooling is completed.

It is important to look at the highest levels of educational attainment of members of households of school-going age. The school-going age for children in Kenya is three years old, the age at which most children start kindergarten, although this is optional. At age five children attend pre-school, before starting primary Grade 1 on turning six or if due to turn six during the calendar year. The survey found that 6% of the sample were too young for school and another 6% were attending pre-school.

The findings indicate that, of those of school-going age, cumulatively 76% completed secondary school and 9% had some post-secondary qualifications not obtained from university, 5% had some university education, 6% completed university, and 1.5% had postgraduate qualifications.

In order to make better inferences about skills levels, the highest levels of education attainment were analysed for adults of working age (18 years or older). The results are shown in Figure 5.

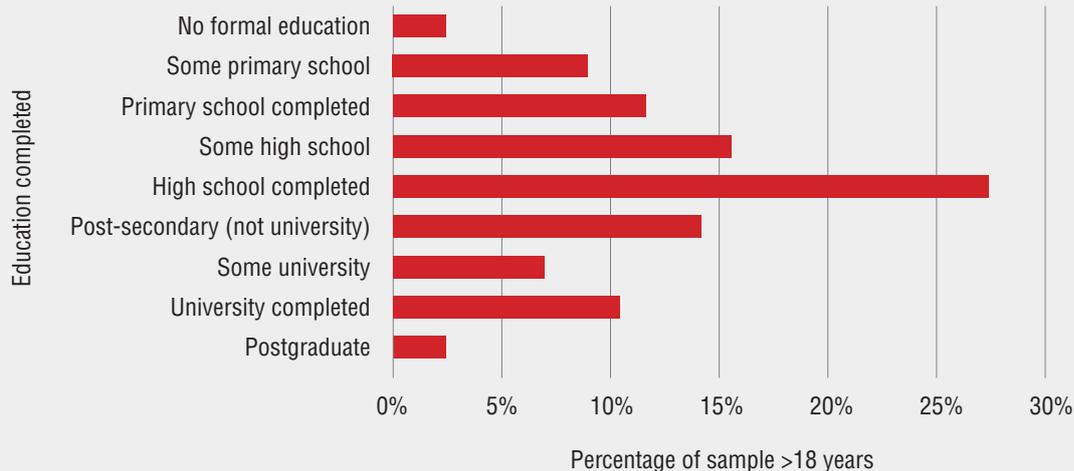


Figure 5: Highest level of education for household members aged >18 years (n=2013)

The data indicates that of all adults of working age, 2% had no formal schooling, 9% attended but never completed primary school, and 12% completed primary school. This means that a cumulative 23% did not go beyond primary school education. It has also been established that 16% had some secondary school education but never completed high school, and 27% completed secondary education. Cumulatively, therefore, 66% of adult members of households surveyed attained high school education and lower. Those with post-secondary qualifications other than university totalled 14%, 7% had some university education, 10% completed university, and 3% had postgraduate qualifications. This relatively low education level among the population has implications for the labour market and Kisumu's economic growth potential. This is particularly important in the context of a changing national economy increasingly dominated by IT and service-related jobs. The education levels found by the survey influence the nature of the economy in Kisumu.

4.6 Work status of household members

The survey recorded the work status of all household members (Figure 6). As mentioned previously, the largest proportion of all household members were children, scholars and students (49%), followed by those who were actively working part-time, full-time or were self-employed (38%). The unemployed, including homekeepers, those looking for work, those not actively looking for work, and the medically unfit and disabled, comprised 13% of the total. Fewer than 1% were pensioners. The implication of this is that only 39% were either working or pensioners, supporting the balance of the population (62%), who were children, students, unemployed, homekeepers, or medically unfit and disabled. This high dependency ratio impacts the food security situation of households, particularly in an urban environment where food is mainly purchased from the market.

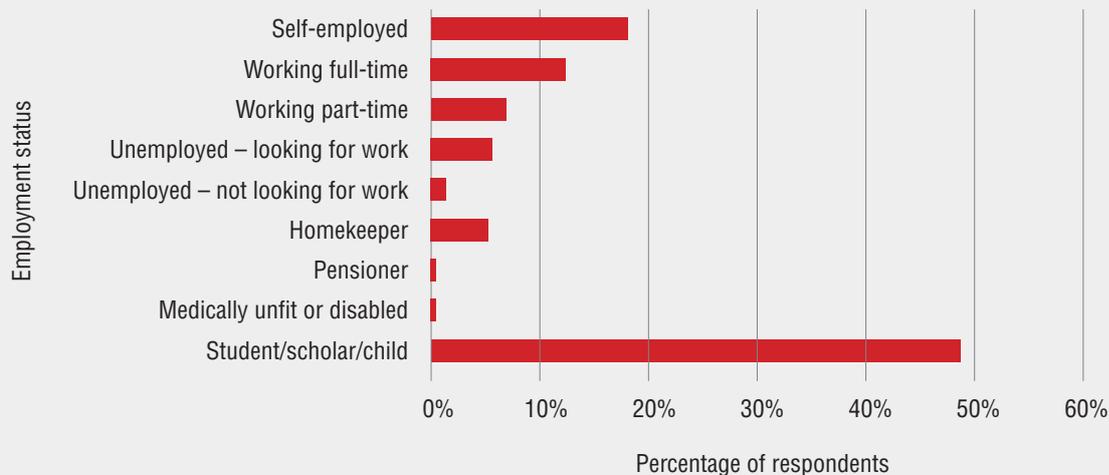
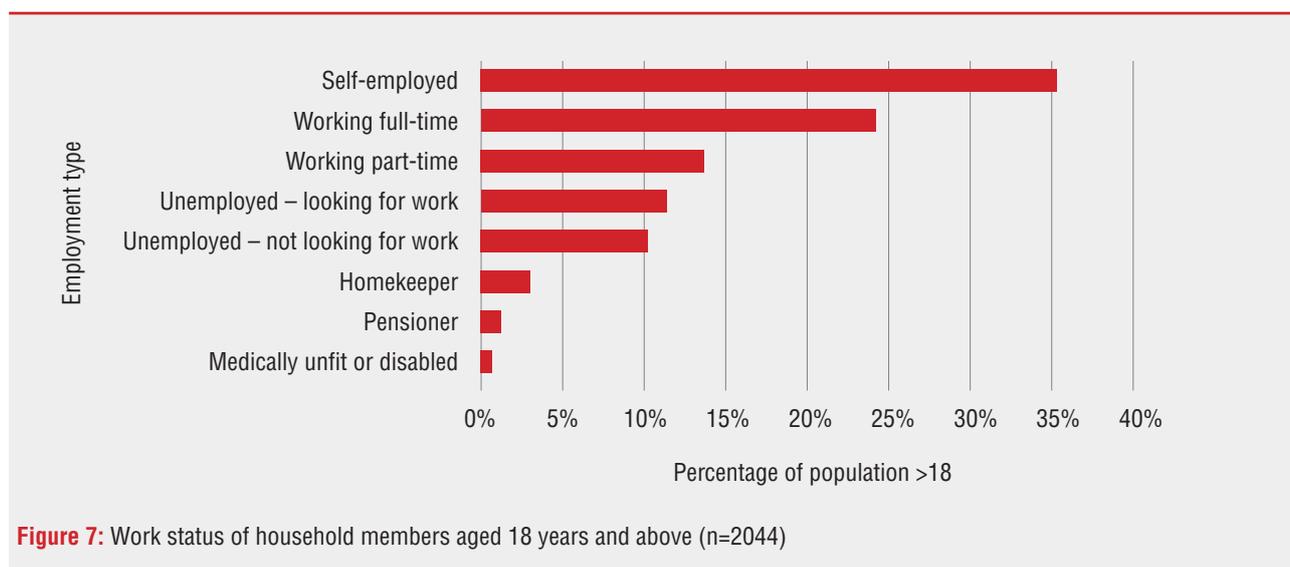


Figure 6: Work status of all household members (n=3482)

The legal working age in Kenya is 18 years. This is also the age at which school-going children are generally expected to have completed the first 12 years of formal education. Due to the relationships between unemployment, cash income and food poverty, it is important to have information on the work status of household members (Figure 7). The survey established that 73% of household members aged 18 years and above were working, whether this was part-time or full-time, employed by others or self-employed. Pensioners comprised 1% of the sample while the unemployed made up 27%. The unemployed included 11% looking for work, 10% unemployed and not looking for work, 3% homekeepers, and 1% medically unfit or disabled. The UNDP Human Development Report 2016 indicates that 39% of the national population of working age were unemployed and 8% of the unemployed were below the age of 35 years (UNDP, 2016). The figure established by this survey for Kisumu (27%) is lower than the national average. This can be explained by the variance in the definition of working age and the differentials

in unemployment figures between urban and rural areas. Perhaps the primary reason for this difference is the definition of employment. It is clear from the survey that respondents who are self-employed or employed by others in the informal sector consider themselves employed, but this is not necessarily how they are defined by other surveys; this survey allowed self-definition by respondents. Unemployment has a negative effect on the food security of households in the city as they depend mainly on food purchased from the market. As discussed in *CUP Working Paper 5: Characteristics of the Urban Food System in Kisumu, Kenya*, the so-called informal economy is precarious and does not generate significant returns, particularly for households whose only income is derived from the informal economy. The 27% reported unemployment represents unstable or precarious livelihood opportunities for a large proportion of the population. This, coupled with the precarity of other forms of employment, offers insights into the food-security status of Kisumu residents.



4.7 Household food responsibilities

The survey sought to determine which food-related responsibilities each member of the household engaged in. The replies for each responsibility per household categorisation are reflected in Table 6.

Table 6: Food responsibilities within the household (n=4492) (multiple responses possible)

	Head of household	Spouse/partner	Son/daughter	Adopted/foster child/orphan	Father/mother in-law	Brother/sister	Grand-child	Grand-parent	Son/daughter-in-law	Other relative	Non-relative
Buying food	723	439	276	3	3	50	21	1	14	27	21
Preparing food	303	570	521	12	6	74	56	2	21	62	48
Allocating food	77	94	7	0	0	3	0	1	3	0	3
Growing food	19	13	10	0	0	2	0	0	1	1	4
None of the above	51	29	734	9	9	17	101	9	0	43	7

The survey further sought to establish who makes food-purchasing decisions in the households. The results indicate that heads of households are not necessarily the prime decision makers when it comes to food-purchasing decisions, with the spouse or partner of the household head making key decisions in just under 60% of the cases. The household head was reported to make food-purchasing decisions in 36% of the cases. Other family members also make food-purchasing decisions, but these are relatively low compared to the proportion of decision making by household heads and their spouses/partners. In-depth household interviews also revealed that women are mostly responsible for buying, preparing and allocating food in households. Even in instances where men provided the money, the women were still mainly responsible. The reason for this is related to cultural practices in the region, where it is traditionally considered the responsibility of the female to buy, cook and allocate food.

5. Household data

This section presents findings on household dwelling structures, income and expenditure. These are important measures of the socio-economic status of urban households that have a direct impact on their food-security status. It is important to state that

household income should only be seen as indicative; in both the household survey and the in-depth interviews there was a real reluctance to divulge household income details. This is perhaps due to concerns about undeclared income and tax implications, or that income was earned through unregistered informal businesses, or simply a general resistance to providing personal information to a student enumerator. As such, the sample of those providing income information is small and should not be viewed as statistically defensible. In addition, while the honesty of respondents is assumed at all times, the research teams were unable to test the accuracy of the data provided.

5.1 Household dwelling structures

Given that there is a strong relationship between household economic conditions and food poverty, information on housing characteristics such as access to electricity and source of drinking water, among others, is useful to explain the interrelationship of social and economic conditions in neighbourhoods, and likely exposure to food insecurity. Figure 9 presents the frequency and percentage distributions of households by type of dwelling structure.

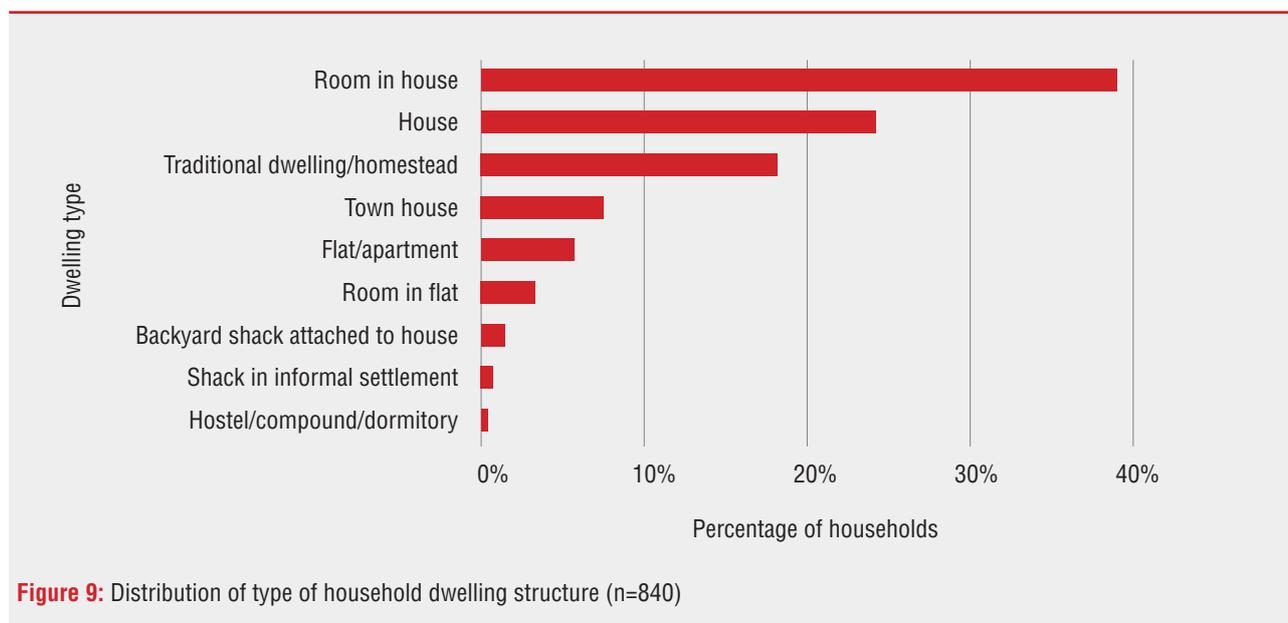
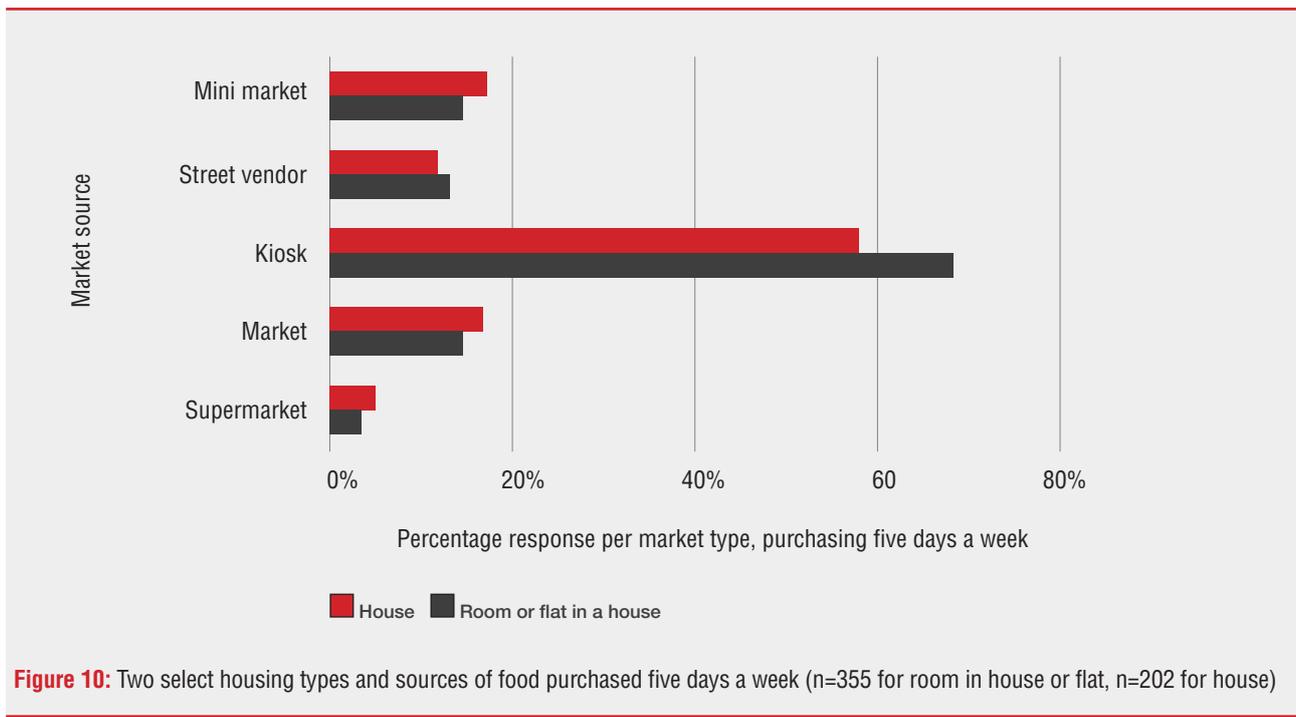


Figure 9: Distribution of type of household dwelling structure (n=840)

The most common dwelling structure is a room in a house (39%). In the informal settlements, most residents stay in single rooms in a row (locally called *landi*). From the in-depth interviews it emerged that, even in the formal middle-income settlements (e.g. Railways and Migosi), a new phenomenon is emerging whereby households sublet a housing unit, with each household occupying a room in the house and sharing common facilities. This practice is attributed to high levels of poverty and unemployment; households striving to stay away from informal settlements, despite their inability to afford a house in a formal settlement area; and some house owners segmenting housing units to retain occupancy and supplement their income. Some residents also opt for this type of arrangement in order to live near to their places of work. The high prevalence of renting single rooms has significant implications for food storage and preparation, raising questions about the location of food preparation space and the possible utilisation of other forms of food access, such as street-side prepared food vending. This has further policy implications as it reinforces the importance of these services and their relationship to the household dwelling type. Other common types of dwelling structure are regular houses (24%), town houses (7%) and flats/apartments (6%). Some 18% occupy traditional dwellings/homesteads, mostly in the peri-urban and extended areas of the city. The type of dwelling structure has an effect on the food security of households. For example, some of those residing in flats/apartments, often middle-income households, indicated that they would like to have kitchen gardens, but are unable to due to a lack of space. An interesting finding of the in-depth household interviews is that, even those living in traditional homesteads in peri-urban areas depend on the markets for food, due to poor harvests at their farms. Those residing in single rooms in informal settlements, usually without electricity and running water, did not have storage space or facilities to preserve food. From the in-depth interviews with these households, it was clear that many purchase food on a daily basis. This was confirmed when the purchases taking place and sources of those purchases were assessed (Figure 10). This influences how households engage with the food system – from how and where food is prepared to the nature of food retail – and the possible negative consequences of this (for example, their purchasing needs mean that they cannot benefit from economies of scale that are possible at supermarkets).



5.2 Household income and expenditure

Considerable difficulty was experienced in measuring total household income and expenditure as many households were uncomfortable divulging these details. In some instances the respondents were unsure how much each working member of the household earned from their various activities. Thus, household income could not be accurately determined. Since urban households are very different from rural households, this raises important research-related questions about the continued use of ‘household’ as a unit of measurement in poverty and food-security studies. However, the various sources of income and expenditure were determined and estimates of income and expenditure from each were established.

5.2.1 Household income sources

Respondents were asked to provide information on the various sources of income for the household and specifically the amount earned. This was a multiple-response variable and respondents were expected to indicate all sources. Figure 11 shows the mean income per source. The frequency distribution for household income sources is detailed on the y-axis. This is a measure of

responses, not households, given that this was a multiple-response variable, and is limited as not all respondents were comfortable answering questions about their household income.

The responses revealed a wide range of sources of household income. Formal-sector wages (163 cases) was the most frequently mentioned source of household income, followed by informal-sector wages (109 cases), then casual wages – formal and informal (104 cases). When the mean wage-derived income from formal-sector income (KES44 866) (USD450) is compared with the combined income from informal-sector wages and casual wages (KES26 250) (USD265), the latter is significantly lower. The small sample limits conclusions that can be generalised, but it does point to some of the income-related challenges associated with high levels of unemployment. While informal-sector entrepreneurialism may be celebrated, the precariousness of those relying on such wages requires far greater attention. A further point of interest is the reporting of a mean income of almost KES40 000 (USD400) earned from renting property. With due appreciation of sample size limitations, this finding adds weight to earlier points made about housing typologies and property rentals.

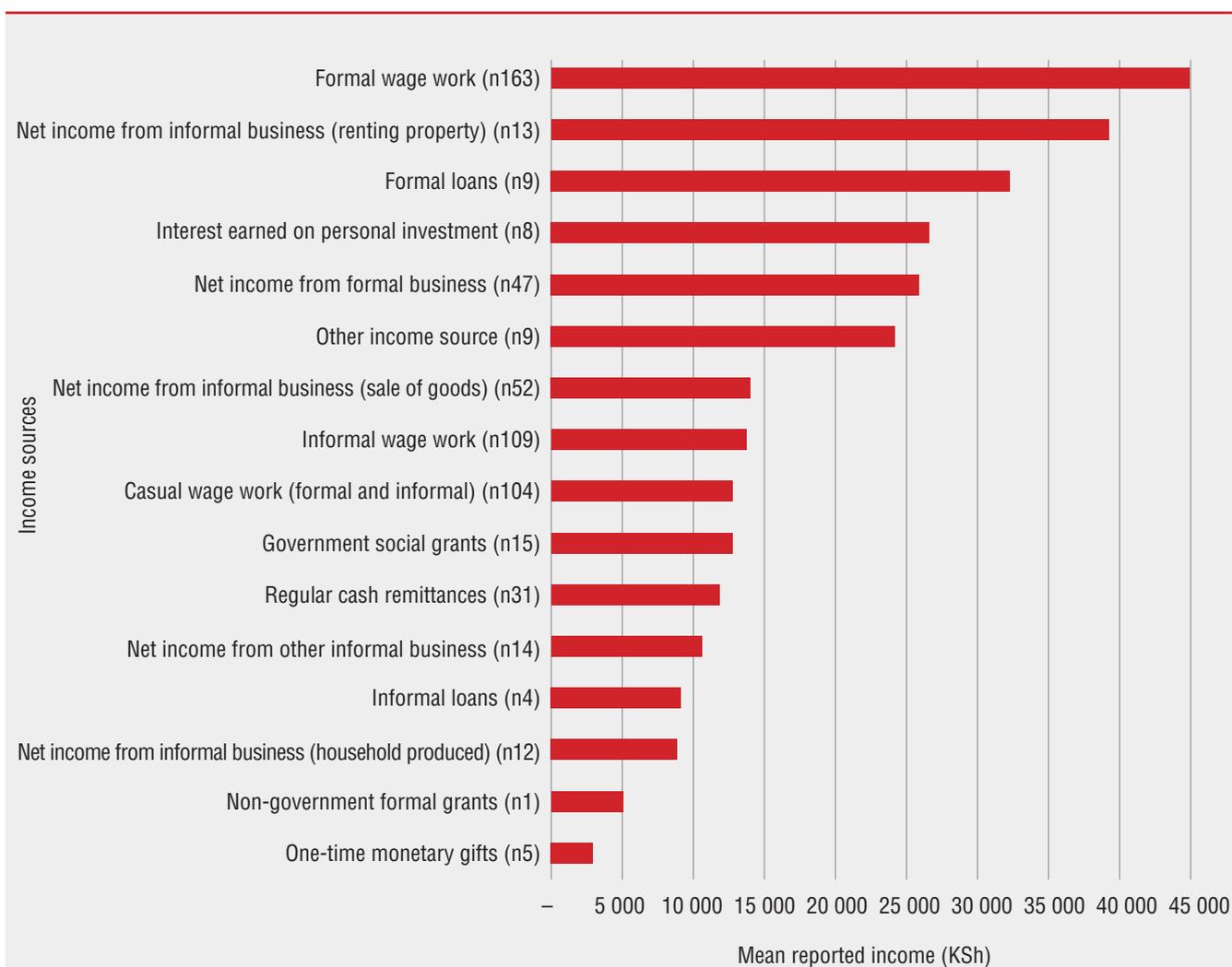


Figure 11: Distribution of household income sources

Overall, it is apparent that informal sources of income, including casual work, were more prevalent (360 cases) compared to formal sources of income (210 cases). That there is more informality than formality in the city's economy is consistent with findings of the Institute of Economic Affairs (IEA), which reported that, in 2016, 83% of the country's workforce worked in the informal sector and 17% worked in the formal sector (IEA, 2017). However, what is important when considering questions of income poverty and its impact on food security is to assess both the place of work and the different incomes derived from different types of work, and the vulnerabilities these may present.

5.2.2 Average total household income

Economic access to food is an important dimension of household food security. Food may be physically available in the market,

but cash income determines whether a household will be able to purchase it. The survey sought to determine the average total household income from all sources. As noted in the previous section, households get income from a variety of sources. The total used for calculating the average indicated in Table 8 is derived from all the sources mentioned in each household.

Out of the 840 households surveyed, 514 disclosed their income from various sources. The average household monthly income was KES28 464 (USD285). The smallest reported monthly income was KES65 (USD6.5), while the highest was KES250 000 (USD2 500), demonstrating a wide range between low-income and high-income earners and an indicator of the inequality present in many urban areas. The monthly household incomes of the 514 households were further analysed by frequency and percentages (Table 7 on the following page).

Table 7: Frequency and percentage distribution of monthly household incomes in KES

Total monthly household income	Frequency (n)	Percentage (%)	Cumulative percentage (%)
0 – <10 000	141	27.4	27.4
10 000 – <20 000	138	26.8	54.3
20 000 – <30 000	80	15.6	69.8
30 000 – <40 000	42	8.2	78.0
40 000 – <50 000	22	4.3	82.3
50 000 – <60 000	28	5.4	87.7
60 000 – <70 000	18	3.5	91.2
70 000 – <80 000	10	1.9	93.2
80 000 – <90 000	6	1.2	94.4
90 000 – <100 000	3	0.6	94.9
100 000 and above	26	5.1	100.0
Total	514	100.0	

The reported data indicates that 82% of the respondent households earned less than KES50 000 (USD500) per month. These low levels of household income are indicative of the dominance of informal-sector employment (about 63% of the population are employed in the informal sector). This confirms the contention by Aguilo, et al. that, in 2007, the informal sector employed about 52% of the city’s working population and supplied a monthly income of about KES4 000 (USD40) (Aguilo, et al., 2007). It also supports UN-Habitat’s finding that this proportion increased to about 70% employment in the informal sector in the informal settlements (UN-Habitat, 2005). Low household incomes are a hindrance to economic access to food in a city where foods are imported and, therefore, more expensive.

5.3 Household expenditure

5.3.1 Frequency distribution of household expenditure

Households were asked where they spend their household budgets. This was a multiple-response question which reflects the measure of responses and not households. Households were required to indicate all the expenditure types they had incurred in the preceding month. The frequency of responses is presented in Figure 12. The most frequent expenditure types, in order of response frequency, were: food and groceries, housing and rent, fuel, education, transportation, entertainment and clothing. All of the most frequent types of household expenses can be classified as basic requirements for daily living. The entertainment component was engaged with more deeply in the in-depth interviews, where it was found that part of the household spend was on digital TV channels, video shows and liquor.

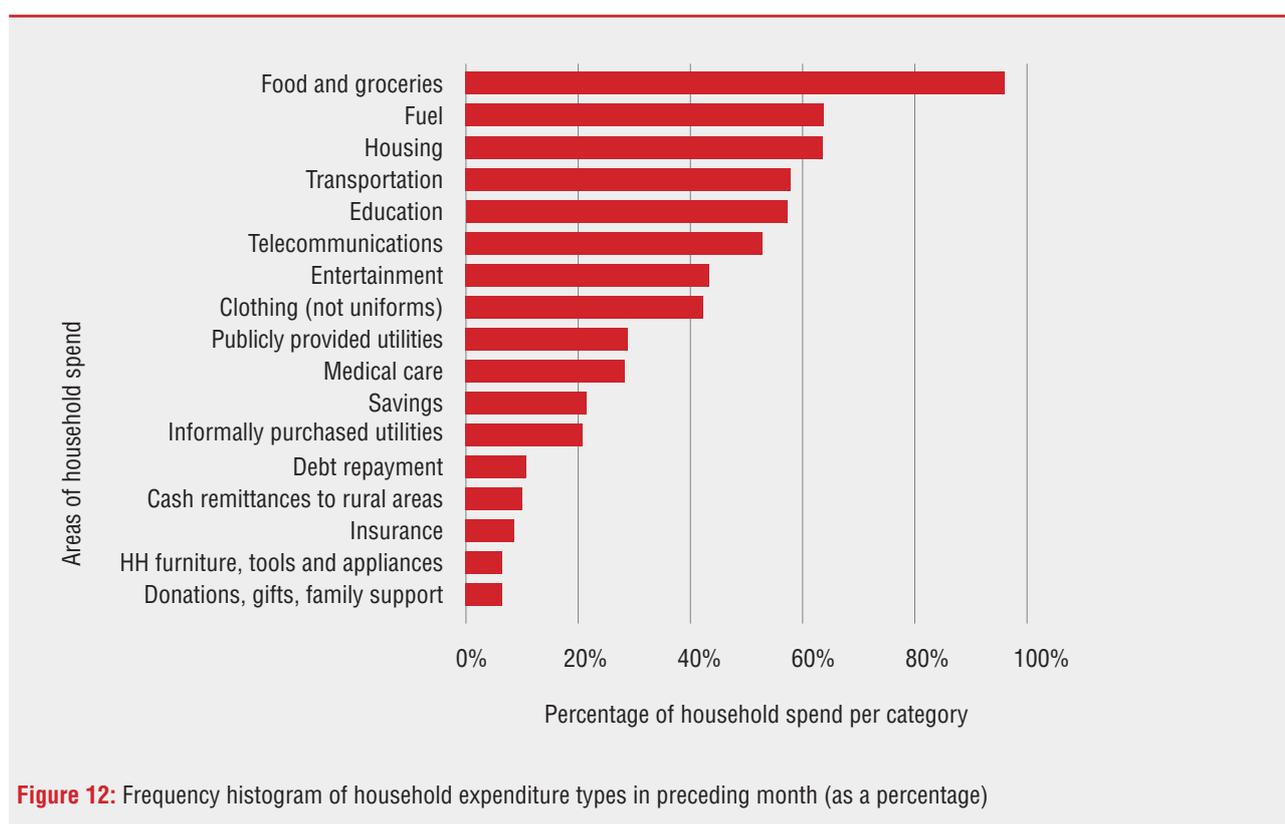


Figure 12: Frequency histogram of household expenditure types in preceding month (as a percentage)

5.3.2 Average expenditure by type

In addition to questions about areas of household expenditure, questions were asked about household spend on specific expenditure types. Since this was a survey across all income categories, the averages may be skewed in favour of the more affluent. This is perhaps evident in the amounts spent in some of the categories, such as household appliances. However, what is clear is that almost all households reported spending money on food in the preceding month, and that the average spend in the ‘food and groceries’ category was one of the highest. The findings on average expenditure in the month preceding the survey by type is presented in Table 8.

Table 8: Average monthly expenditure by type (KES)

Expenditure type	Responses (n)	Average expenditure (KES)
Education	449	14 922
Furniture and household appliances	30	10 952
Food and groceries	626	6 903
Cash remittance to rural areas	73	5 874
Housing and rent	505	4 803
Savings	110	4 666
Debt payments	72	4 086
Medical care	164	3 185
Insurance	64	2 791
Clothing	250	2 777
Transportation	339	2 390
Donations, gifts and family support	41	2 302
Entertainment	295	1 724
Publicly provided utilities	217	1 640
Telecommunications	230	1 480
Fuel	473	1 173
Informally purchased utilities	163	861
Other monthly expenses	2	600

Note: In Kenya the bulk of the school fees and other educational expenses are normally paid in January, at the beginning of the school year. As the survey was conducted in January and respondents were asked to recall expenses in the past month, this would have impacted on the reported educational expenses. This does not negate the investment in education argued later in this paper.

Assessing household expenditure in the preceding month offers insight into spending profiles and reflects the primacy of food, housing and fuel, alongside education, transportation and entertainment as important household costs. While fewer households reported expenses such as debt repayments, cash remittances to rural areas, insurance and the mutuality costs associated with family donations and support, these impact on already constrained household budgets. Household expenditure in Kenya averages KES3 440 per adult equivalent per month nationally. However, there are differences between urban and rural areas, with a household expenditure per adult equivalent per month of KES2 270 in rural areas compared with KES6 010 in urban areas. In Kisumu, average monthly reported expenditure on education tops the household budget at about KES14 922, albeit from only 449 responses or just over half the sampled households, while average monthly expenditure on food and groceries is about KES6 903 (USD69). Education takes up a big proportion of monthly household budgets. In the in-depth interviews, households reported education as an investment to free themselves from future poverty. The CUP household interviews revealed that some poor households are prepared to go without food to ensure their children are in school, but the high level of youth unemployment negates the rationale for

this investment. Over the past decade and a half, the Kenyan government has offered a free primary education programme to relieve parents of the burden of school fees and free day secondary education was scheduled to begin in 2018.² It is hoped that these programmes will lead to an increase in household expenditure on food. Another possible area of state intervention is school feeding programmes.

The previous two sections of this paper have presented information on reported household income and the extent of expenditure. What is evident is that monthly expenditure is high, while incomes are low. These findings lead to the obvious conclusion that the poor in particular may be struggling to make ends meet. Combined with the evidence on types of dwelling structure and the nature of employment, questions arise about how poverty manifests in Kisumu. The next section will engage this policy question, asking questions that extend beyond income poverty and engage with current conditions in Kisumu.

² Despite the programme starting, there have been delays in implementation that are partly due to delayed funding from government.

6. Levels of food poverty

6.1 Lived Poverty Index (LPI)

This study used a multi-dimensional poverty measurement tool, the LPI, to better understand poverty in Kisumu. The LPI captures a household's level of deprivation in the preceding year based on five parameters: enough food to eat, enough clean water for home use, medicine or medical treatment, enough fuel to cook household food, and a cash income (Mattes, 2008).

The respondents were asked how often, if ever, their household had gone without one of the five LPI criteria in the preceding year. The respondents answered the question: 'never', 'just once or twice', 'several times', 'many times' or 'always'. Cases with one or more missing values for the five LPI criteria were excluded from the LPI score computation. Table 9 shows valid cases for each question. Considering all missing values across the five criteria, 819 valid cases are included in the calculation of the LPI score.

Table 9: Cases and variables used to calculate LPI

Over the past year, how often, if ever, has your household gone without:	Never %	Just once or twice %	Several times %	Many times %	Always %	Total n=
Enough food to eat?	46	31	19	4	0	827
Enough clean water for home use?	43	38	15	3	1	839
Medicine or medical treatment?	50	32	14	3	0	839
Enough fuel to cook household food?	50	33	14	3	0	837
A cash income?	35	36	19	7	2	833

Deprivation is not uniform across the LPI categories, with insufficient food to eat affecting 54%, not enough clean water for home use affecting 57%, not enough fuel to cook household food affecting 50%, and a not enough cash income received affecting 65% at some point during the preceding year. Apart from lack of medicine and medical treatment across households, which reflected a relatively low overall percentage, more than 50% of the households surveyed lived in poverty according to the LPI parameters. Of the five parameters used to assess the LPI, income poverty, at 65%, is the highest and most critical. Given the importance of the market as a source of food, the figure of 65% of households lacking a cash income offers potential insights into the relationship between income and other household expenses. It is, however, interesting to note that income poverty is high but anxiety about food is low. This could be due to normalisation of food poverty, where households are accustomed to having limited food or perhaps cutting out a meal to meet other expenses.

The LPI is incremental – as the score value increases, so too does the level of lived poverty. Scores range from 0.00 (no lived poverty, no absence of basic necessities) to 4.00 (constant absence of basic necessities). The descriptive analysis of 819 valid responses shows a mean of 0.81. However, the household distribution of food index scores around the mean is negative. Although the food insecurity score in Kisumu is negatively skewed and relatively low, the overall LPI was below 1.00.

A categorical analysis of households within the four poverty conditions over the preceding year indicated that 74% lived without poverty, compared to a cumulative percentage of 26% who lived in poverty (Table 10).

Table 10: LPI categories

LPI categories	n=	%
0.00–1.00 (Never – Seldom without)	602	74
1.01–2.00 (Seldom – Sometimes without)	182	22
2.01–3.00 (Sometimes – Often without)	35	4
3.01–4.00 (Always – Always without)	0	0
Total	819	100.0

Comparing Kisumu's LPI to that of the rest of Kenya, the overall Kisumu LPI at 0.81 appears to be higher (better) than the Kenyan average of 0.91 (Mattes, et al., 2016).³ However, when the LPI for poorer communities are considered, locational challenges become evident. Whereas the Kisumu LPI is higher than the overall Kenyan LPI, the LPI figures for all of the peri-urban areas are lower (worse) than the Kenyan LPI (Western peri-urban = 0.9, Eastern peri-urban = 1.07, and Southern peri-urban = 1.10).

Table 10 offers insights into the nature and extent of lived poverty across the city. It is a generalisation of the phenomenon of lived poverty and does not provide clear details about how different Kisumu communities respond to questions of lived poverty. Figure 13 provides further detail of the state of lived poverty on a community scale. This figure will be engaged further when the question of food poverty is discussed.

³ This was recorded in November and December 2014 and, as such, only presented here to be indicative rather than a direct comparison as the time difference is too great. As discussed later, December was found to be a month where poverty appears to be least present, perhaps skewing this finding.

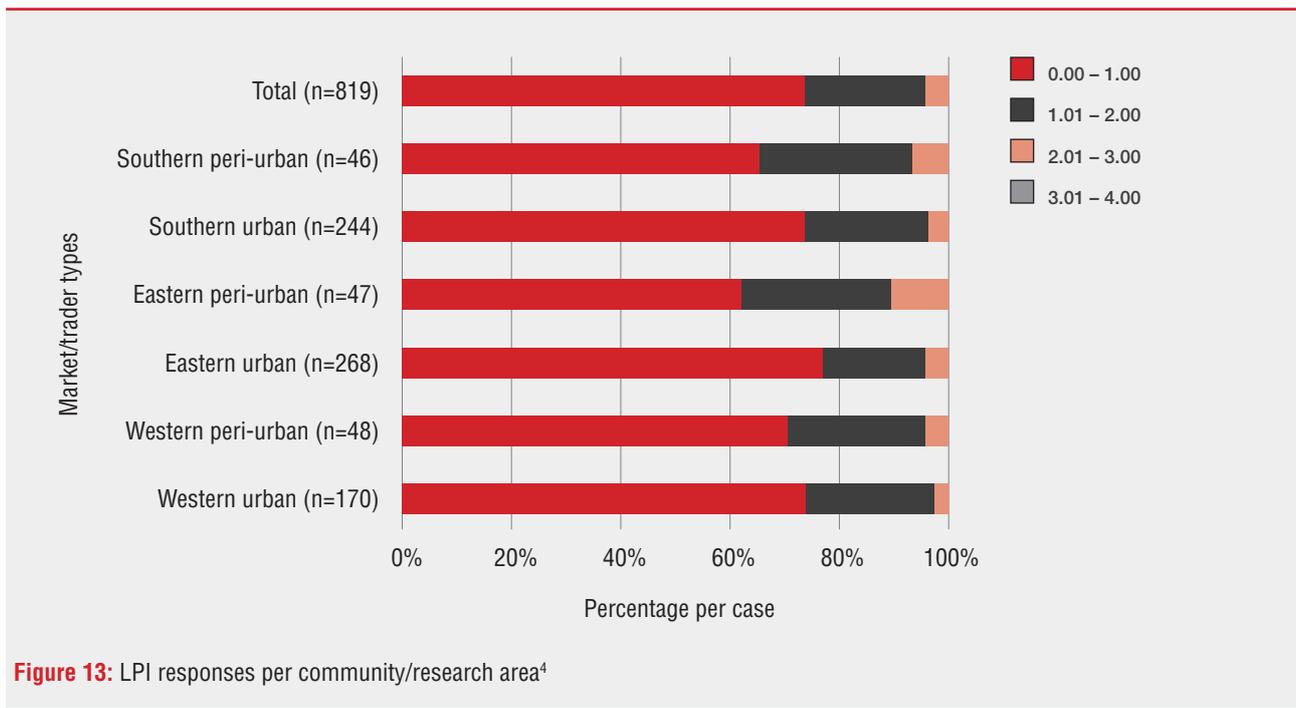


Figure 13: LPI responses per community/research area⁴

⁴ Given the sample sizes of the peri-urban areas, broad generalisations require some consideration.

Across Western peri-urban (Kogony and Kanyakwar), Eastern peri-urban (which extends to Chiga and Nyamasaria) and Southern peri-urban (Kasagam and Nyamasaria) communities, higher levels of lived poverty were reported compared to the more centrally located urban areas. Despite the smaller samples in peri-urban areas, these findings point to issues beyond simple income poverty determining the nature of lived poverty. Given the challenges associated with living in peri-urban areas, from infrastructure deficits to high transport costs associated with accessing services and employment, context does matter and, although communities may arrive at a space poor, certain spaces mean that poverty is more intractable. These challenges have a direct bearing on food security and the food-security status of communities.

The next section provides insights on the food-security component of the household survey and reports on the findings in the order the survey questions were asked. These responses are assessed in relation to some of the findings already reported in this paper, including the LPI.

7. Household food insecurity

Food security is often mistakenly assumed to be about ensuring sufficient food availability. This survey used a broader food security definition: ‘when all people, at all times, have physical and economic access to sufficient safe and nutritious food that meets their dietary needs and food preferences for an active and healthy life’ (FAO, 1996). This definition implies that, although food security entails the question of production or availability, three other dimensions need to be present: accessibility, utilisation and stability.

These dimensions require that sufficient food is available, generally through food production or food imports; secondly, that the food that is available is accessible, mostly through the market but also through social networks or other non-monetary food-access channels. The third dimension is one of ensuring that the food that is available and accessible can be consumed in a manner that is socially appropriate, ensures the requisite nutritional requirements for a healthy life, is safe to consume, and can be prepared in a way that ensures health and wellness. The final dimension is stability. While stability was originally conceived to represent a stable food supply and the avoidance of breaks in supply resulting from disruptions such as drought, today this dimension rests of the assertion that consumers need to be able to plan and budget their food-access processes. This planning requires adequate supply, but also stable and consistent food prices. It also requires stable and consistent prices of items that support food preparation, such as fuel and water access.

It should also be stressed that while hunger is an outcome of food insecurity, food insecurity is far more than hunger. Communities may have access to certain foods, but if these foods do not provide for the requisite nutrition, are inappropriate culturally, or even if the supply is unstable, communities would be deemed to be food insecure.

7.1 Household food consumption

To be able to understand household food-consumption habits, the respondents were asked where each household member consumed their main meal the previous day. Table 11 shows the frequency of responses for each location.

Table 11: Location of main meal the previous day

Location of main meal the previous day	n=	%
Home	3 057	88
Another household	59	2
Workplace	79	2
Restaurant	26	1
Takeaway	5	0
Street food	6	0
School	229	7
Did not eat a meal	8	0
Total	3 469	100.0

The responses indicate that 88% of residents had their main meal at home and approximately 7% (mainly children) had their main meal at school. The in-depth household interviews and observations also revealed that families prefer to cook and eat together at home because it is cheaper and for social reasons. Women or female children do the cooking as a cultural norm, and the food is then consumed by the family in accordance with its familial eating practices. The sampled respondents also seemed to indicate that, even when the household had another structure (for example, a commune of students), the main meal was generally eaten at home. Although most single people reported a preference to eat street food, in restaurants or from informal food kiosks, the numbers reported in Table 11 reflect that this is not the norm (only 11 respondents).

The following section reports on the different FANTA modules used in the survey. Individually, these offer interesting insights, but it is when they are read together that the complexities and nuances of food security become evident.

7.2 Household Food Insecurity Access Scale (HFIAS)

The study sought to determine the extent of food insecurity relating to access to food at household level. The study used the HFIAS scale. Nine indicators were calculated to help understand the characteristics of and changes in household food insecurity (access) in the surveyed population. Each indicator was further disaggregated to examine the frequency of experience of the condition across the surveyed households. The following nine indicators were used and provide summary information on household food insecurity access-related conditions in the past four weeks:

1. Fear of not having enough food last month
2. Not eating preferred food last month
3. Eating a limited variety of food last month
4. Eating food that you didn't want due to no resources
5. Eating a smaller meal due to limited food
6. Eating fewer meals last month due to food inadequacy
7. Had no food to eat last month due to no resources
8. Ever slept hungry at night last month due to no food
9. Went a whole day without eating anything in the last month

The 829 cases with valid values across all nine HFIAS questions are included in the calculation of the HFIAS score. The HFIAS is incremental: as the score increases, so too does food insecurity, from 0 (least food insecure) up to 27 (most severely food insecure). The mean HFIAS score for Kisumu is 7.64, which is slightly better than the scores recorded for a smaller sample of two slums in Nairobi, the capital city of Kenya, where the reported HFIAS score was 8.5 (Kimani, 2014). Although the HFIAS score is in the lower quartile range of the 0–27 scale, it differs significantly across the communities. The highest score, and thus the highest food insecurity rating, is experienced in the Southern peri-urban area (10.44), which is higher than the Nairobi sample, while the lowest score was reported in the Eastern urban research site (6.80) (Table 12). Across communities, Southern peri-urban, comprising Kasagam and Nyamasaria (poor neighbourhoods), reported the highest HFIAS score. The same communities recorded the highest LPI score. Like LPI, food insecurity is more severe in peri-urban neighbourhoods than the more urbanised neighbourhoods closer to the urban core of Kisumu.

Table 12: HFIAS score by community (n=829)

	Western urban	Western peri-urban	Eastern urban	Eastern peri-urban	Southern urban	Southern peri-urban
Number of households	n=171	n=49	n=264	n=46	n=254	n=45
Average score	7.47	9.43	6.80	9.72	7.41	10.44
Standard deviation	6.07	6.47	5.78	5.30	6.46	4.86
Median score	8	9	6	9	6	11

7.3 Household Food Insecurity Access Prevalence (HFIAP)

The HFIAP module is an indicator that uses responses to the HFIAS questions to group households into four levels of household food insecurity: 'food secure', 'mildly food insecure', 'moderately food insecure', and 'severely food insecure' (Coates, et al., 2007).

The CUP household survey sampled households across all income categories in Kisumu. Table 13 shows the HFIAP findings from across the sampled households in Kisumu.

Table 13: HFIAP (n=829)

HFIAP	n=	%
Food secure	167	20
Mildly food insecure access	71	9
Moderately food insecure access	218	26
Severely food insecure access	373	45
Total	829	100

According to the HFIAP data in Table 13, 20% of the sampled households in Kisumu were food secure, while 9% were mildly food insecure. The other 71% were either moderately food insecure (26%) or severely food insecure (45%), which implies a high prevalence of food insecurity among households in Kisumu. However, across the different communities, the intensity of food insecurity differs (Table 14).

Table 14: HFIAP by community (%)

	Western urban	Western peri-urban	Eastern urban	Eastern peri-urban	Southern urban	Southern peri-urban
Food secure	22,8	12,2	22,3	6,5	22,8	4,4
Mildly food insecure access	5,8	6,1	10,3	6,5	10,2	4,4
Moderately food insecure access	28,7	28,6	29,5	28,3	21,7	20,1
Severely food insecure access	42,7	53,1	37,9	58,7	45,3	71,1
Total	100	100	100	100	100	100

Household food insecurity access prevalence is higher in the peri-urban areas and severity is again highest in the Southern peri-urban neighbourhoods of Kasagam and Nyamasaria, followed by the Eastern peri-urban areas of Chiga, Mbeme and Nyalunya. Reduced farmlands due to urban sprawl, coupled with recurrent flooding, are possible reasons for higher food insecurity in these neighbourhoods. The in-depth household interviews revealed that residents of these neighbourhoods mostly depend on the market for food supplies, in contrast to earlier years when these peri-urban areas were supplying food to the city.

The general reporting of HFIAP goes one step further and denotes those reporting moderately and severely food insecure access as food insecure. The extent of food security, and the finding that 71% of the surveyed households in Kisumu are food insecure, provides an indication of the extent and scale of food poverty in Kisumu.

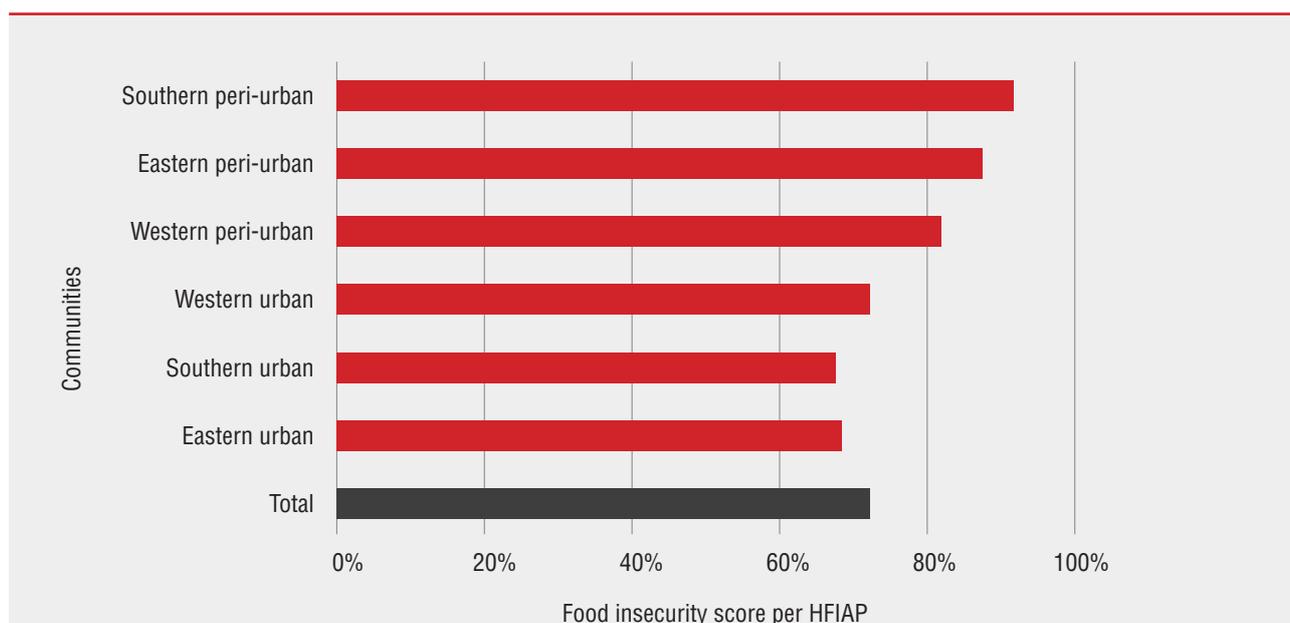
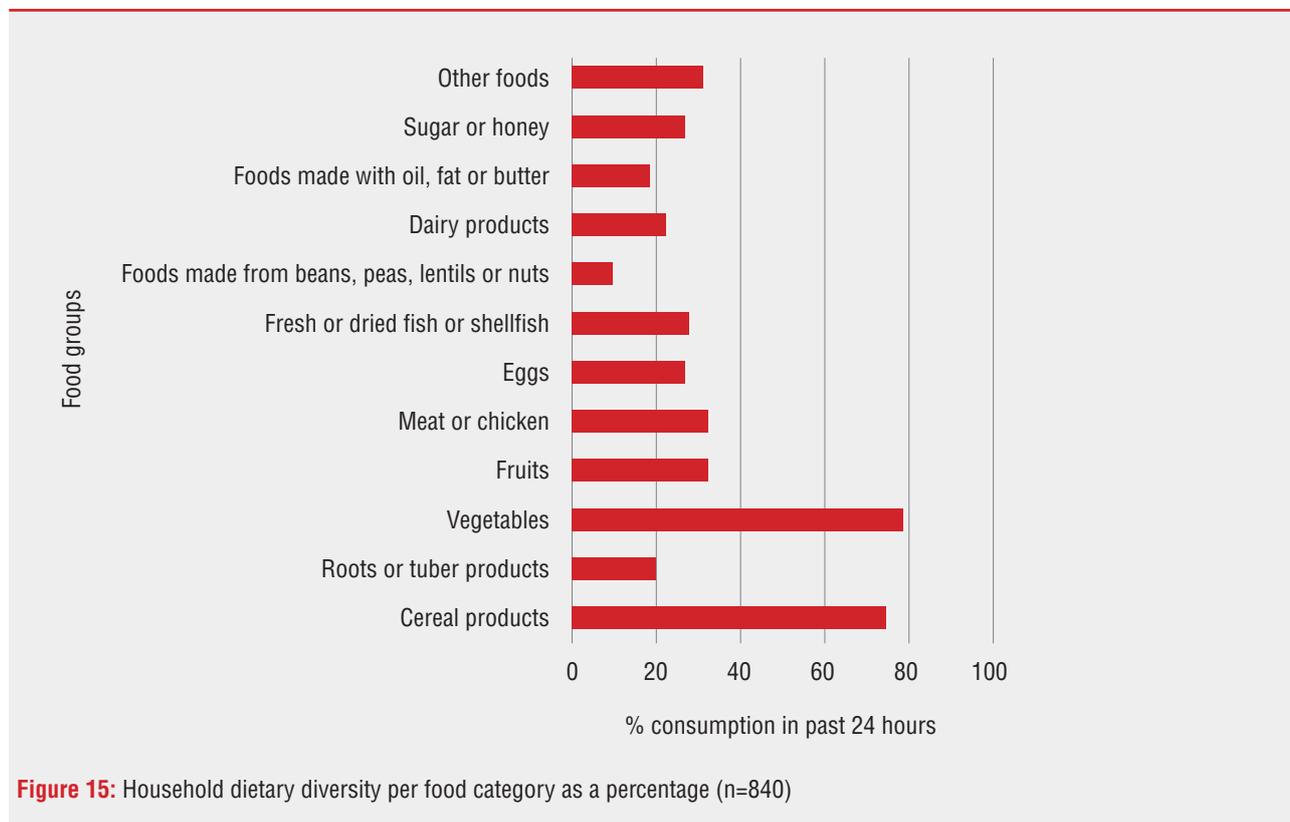


Figure 14: Food insecurity score as a percentage by area per the HFIAP (n=829)

7.4 Household Dietary Diversity Score (HDDS)

Given the central importance of food access and utilisation, and to a lesser extent stability, in the overall FAO food security definition (FAO, 1996), it is important in a food-security survey to assess the nature of the household diet. The Kisumu survey used the FANTA-aligned HDDS, a reliable determination of the variety of food groups consumed within a household in the previous 24 hours (Swindale and Bilinsky, 2006). The HDDS considers a maximum of 12 food groups, where a finding that less than six food groups are consumed is a proxy indicator for malnutrition. An increase in the average number of different food groups consumed provides a quantifiable measure of improved household food access and likely nutritional benefits. The respondents were asked whether any of the household's members ate specific foods from the designated food groups the previous day. The responses and details of the food categories are presented in Figure 15.



Although all food groups are consumed across the population of Kisumu, meaning that all are available, the extent of access across households varies. For example, the households surveyed predominantly reported consuming mostly cereal products (74%) and vegetables (79%). Two foods form part of the staple diet of most Kenyans: *ugali* and *sukuma wiki*. However, the general absence of other foods in the diet raises questions about the quality of diet of most of the sampled respondents.

The HDDS for surveyed households across Kisumu was found to be low, at 4.05. This indicates the overall state of the Kisumu diet and, given that a HDDS measure of 6 or below is seen as a proxy indicator for malnutrition, raises significant questions about the overall human development implications for Kisumu. The HDDS is incremental; as the score increases, so too does dietary diversity, from 0 (least diverse – none of the types of foods eaten) up to 12 (most diverse – all types of foods eaten). In Kisumu, 86% of households had a HDDS of six or less, pointing towards high levels of nutritional challenge.

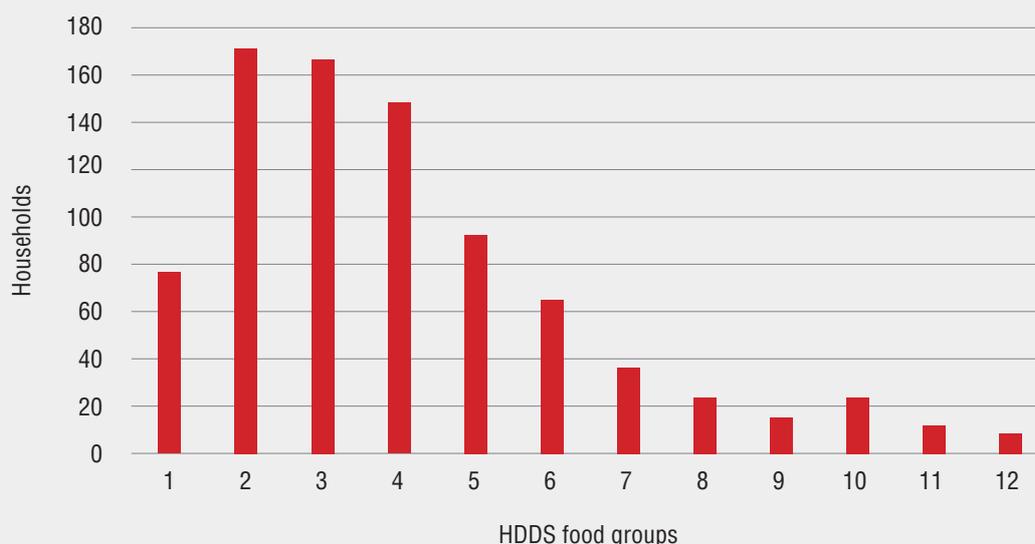


Figure 16: HHDS per household (n=834)

Figure 16 indicates that the distribution of HHDS is skewed towards lower dietary diversity, which reinforces the finding of 4.05 as the average. While some of the surveyed households reported consuming foods from all HHDS food categories, most were consuming far less. While the overall HHDS reported from the surveyed households in Kisumu is low, it was found to be even lower in poorer communities.

When the specific food groups consumed are considered, a more specific trend of diets limited to certain food groups becomes evident. Figure 15 reflects evidence of certain traditional dietary patterns, specifically the consumption of *ugali* and *sukuma wiki*. The reported foods consumed raise other questions about possible changes in diet in Kisumu. Although fish has always been part of the traditional diet in Kisumu, the low reported level of fish consumed offers insights into possible food-system changes and stock scarcity that is driving up fish prices. These questions all require further investigation, but demonstrate how an enquiry into the food system can raise other development-related issues.

This report has documented the levels and intensity of food insecurity through HFIAS and HFIAP scores, reinforced through discussing the nature of diets and the utilisation of food. An essential dimension of food security and stability is the ability to plan and allocate sufficient funds to food purchases. In rural areas, food availability is often seasonal and the 'hungry season' is a familiar term, indicating a period of eroded food security and increased vulnerability.

7.5 Months of Adequate Household Food Provisioning (MAHFP)

The MAHFP module within the broader FANTA tools captures changes in a household's ability to ensure that food is available above a minimum level year-round. The respondents were asked about the number of months in a year the household had adequate food provisioning. Some 831 households responded to this question and the results are presented in Table 15. It was established that 51% of households experienced some months without enough food to meet their food needs. The MAHFP mean score for Kisumu was 10.31.

January was reported as the most challenging month. Household interviews indicated that this was not driven by agricultural seasonality, but by overspending in December and the resultant debt, coupled with the need to pay certain key fee items, such as school fees, at the beginning of the year. The months shortly before the harvest months track worse than other months, but this is not severe, and certainly not as severe and January.

Table 15: MAHFP (12-month recall) for each household

No. months	n=831	%	Cumulative %
0	16	1.9	1.9
1	5	0.6	2.5
2	6	0.7	3.2
3	4	0.5	3.7
4	4	0.6	4.3
5	8	1	5.3
6	17	2	7.3
7	31	3.7	11.0
8	36	4.3	15.3
9	95	11.4	26.7
10	83	10	36.7
11	118	14.2	50.9
12	408	49.1	100.0

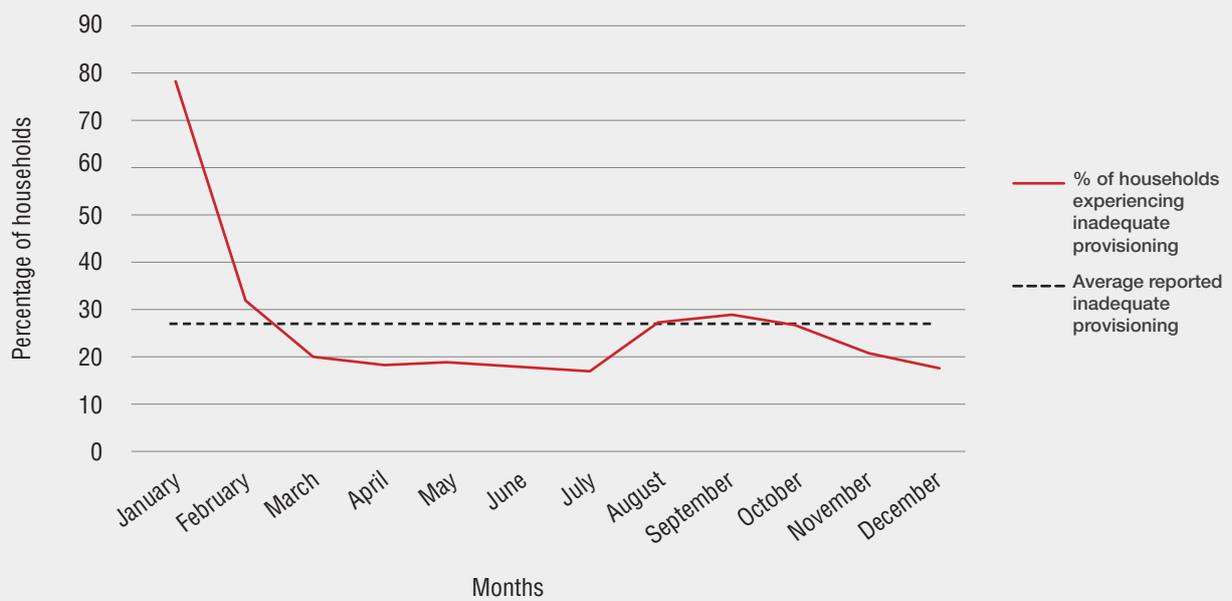


Figure 17: Months of adequate food provisioning (Kisumu)

The MAHFP figures appear to contradict the earlier reported levels of food insecurity. For example, how, if households report limited months of food insecurity, can the food insecurity rating be as high as 71%? Questions like these will be addressed later in this paper. However, food prices, the food system and historical food trends all impact on how food security is experienced and perceived.

7.6 Household food insecurity and food prices

Given the reliance of households in Kisumu on the market, urban dwellers are likely to be particularly vulnerable to rapid food price increases. The survey sought to establish whether or not a household had gone without certain types of food because of unaffordable pricing. The responses are presented in Figure 18.

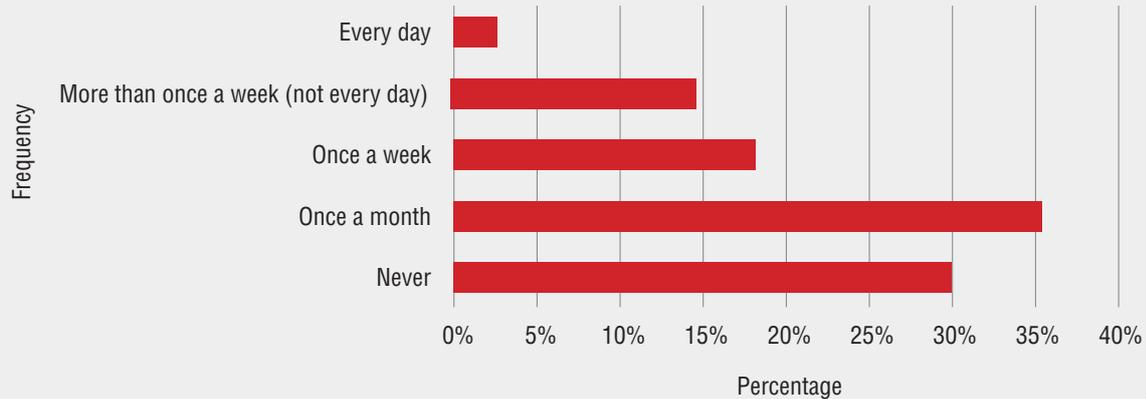


Figure 18: Frequency of missing foods due to unaffordable prices (percentages) (n=834)

Of the 834 households, 72% of respondents reported missing certain foods because they were unaffordable. Households went without certain types of food about once a month (35%); about once a week (18%); or more than once per week, but not every day of the week (15%). About 2% of households went without certain foods on a daily basis due to unaffordable prices. The types of food they missed are indicated in Figure 19.

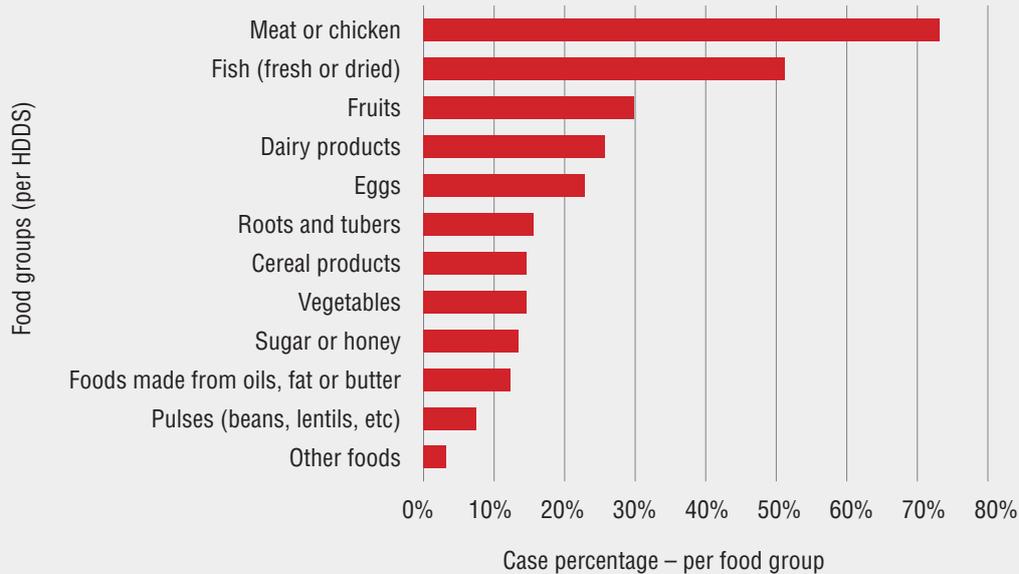


Figure 19: Percentage of households and types of food missing due to unaffordable prices (n=585)

Foods in the protein category were mostly reported as being missed by respondents due to affordability challenges. The foods that most households reported going without, ranked from the most unaffordable, were meat or chicken (73%), fish (51%), fruits (30%), dairy products (26%), and eggs (23%). The implication is that these foods are the ones that are sacrificed by most households whenever household budgets are constrained. The general nutrition transition argument that urban residents consume high amounts of protein is not entirely true for a food-poor city such as Kisumu, where costs determine what households eat (largely cereals and vegetables). It is apparent that the most unaffordable, or the foods sacrificed by most households are mainly animal proteins (meat, chicken, fish and eggs), fruits and dairy products. This finding raises questions about the nature of the food system and the factors that drive food availability and supply. Kisumu is on the banks of Lake Victoria, where fish has been one of the traditional staples. The removal of a key staple, and a food item that is central to the cultural identity of many Kisumu residents, indicates a significant food-system failure – one driven not only by affordability, but also other factors, including resource access and pollution.

7.7 Challenges to overall food access

Threats and risks, be these at a macro level (political instability, economic crises, etc.), or a more localised level, at the city-scale or even the household scale, interfere with a household's food-security status, particularly for poor households. The survey sought to determine if there were any threats or risks that prevented households from having enough food to meet their needs within the previous six months. Response to this question are based on memory and the results are presented in Figure 20 on the following page.

Factors that result in reduced or constrained access to food were identified as a hindrance to access to food in 57% of survey responses. These factors can be classified as income related, social, environmental and political. The most common income-related challenges derived from the income earned by a household and the apparent instability of that income stream. These challenges included reduced income of household members, loss of employment or reduced employment. Political challenges also impacted on food access and included insecurity or violence and a response of 'political problems/issues' (particularly prevalent in Kisumu over the survey period), theft of money or food. Other challenges were more socially oriented but still had economic implications, including death of the head of the household, death of other household members, accidents involving a household member, relocation of the family, reduced or cut-off of remittances from relatives, taking in orphans of deceased parent(s). Environmental challenges included health risks/epidemics (e.g. cholera), floods, fire and drought, and other challenges that have both environmental and cost-related implications, including increased cost of water, increased cost of energy, and pests (e.g. insects, rats, mice).

The relationship between the challenges encountered by and the precarity of a household offers an indication of the vulnerability of households in Kisumu. The absolute reliance on income and a safe and stable environment are key factors that determine the day-to-day food security of households. Many households are in a severely precarious situation where the daily struggle to ensure adequate supply of food is borne out in the reported challenges.

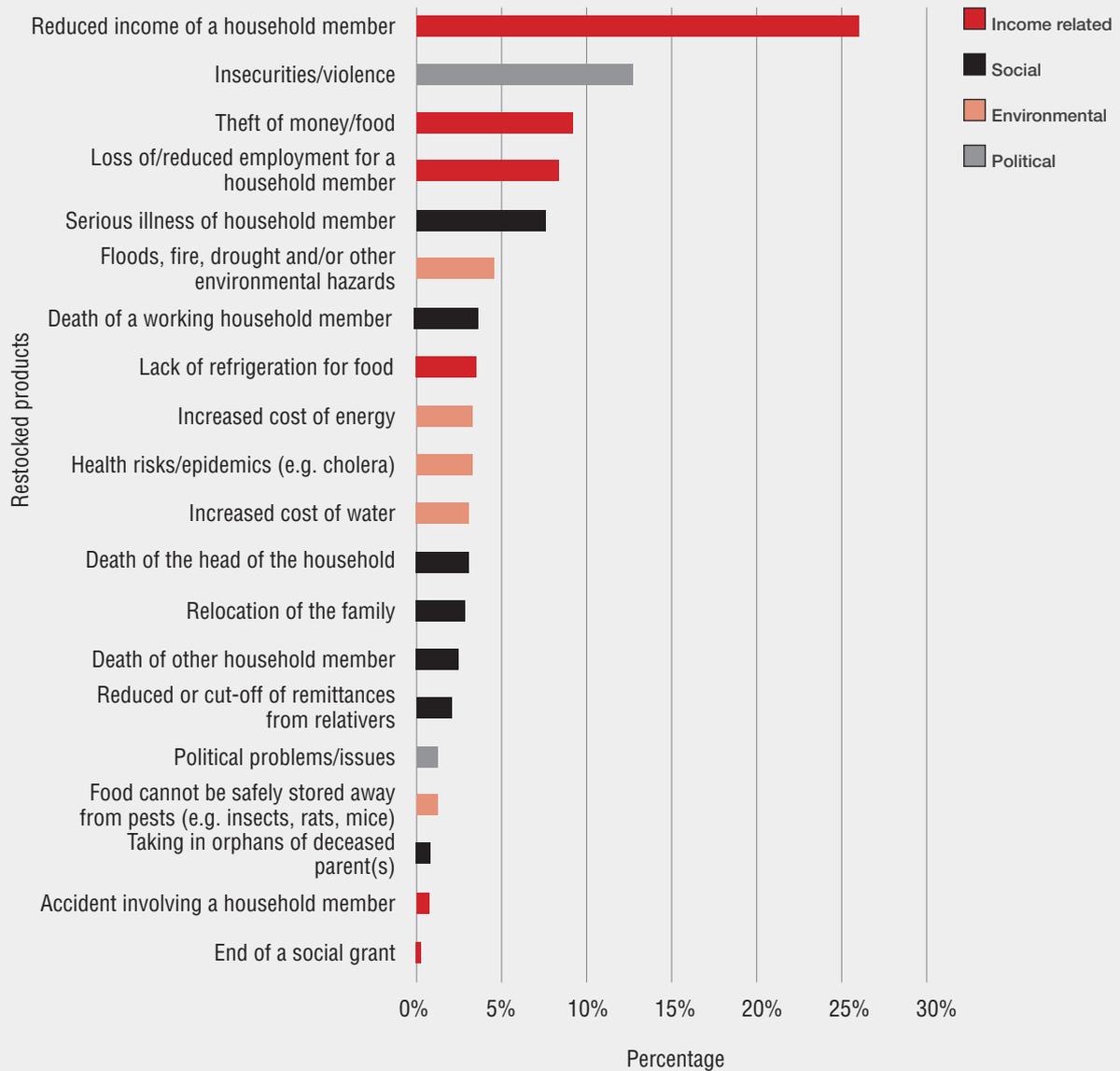


Figure 20: Food threats and risks experienced by households (percentages) (n=840)

7.8 Urban food sources

Households were asked to indicate by proportions where the total food consumed by the household is purchased. Some 70% of households source more than 75% their total food consumed within Kisumu, and a further 19% of households source 51–75% of their total food consumption from the same area. When asked whether households purchase food or get it from other sources, it was established that 67% purchase more than 75% of the total food consumed. As to what proportion of total food consumed

is purchased from supermarkets, supermarket purchases were generally low. Only 3% of surveyed households reporting purchasing more than 75% of total food from supermarkets, while 10% purchased 51–75% of total food consumed from supermarkets (Figure 21). Most households depend on food purchased from sources other than supermarkets, which implies that food is purchased from informal sources and markets within Kisumu. The recent expansion of supermarkets has not yet significantly impacted the economic viability of informal traders.

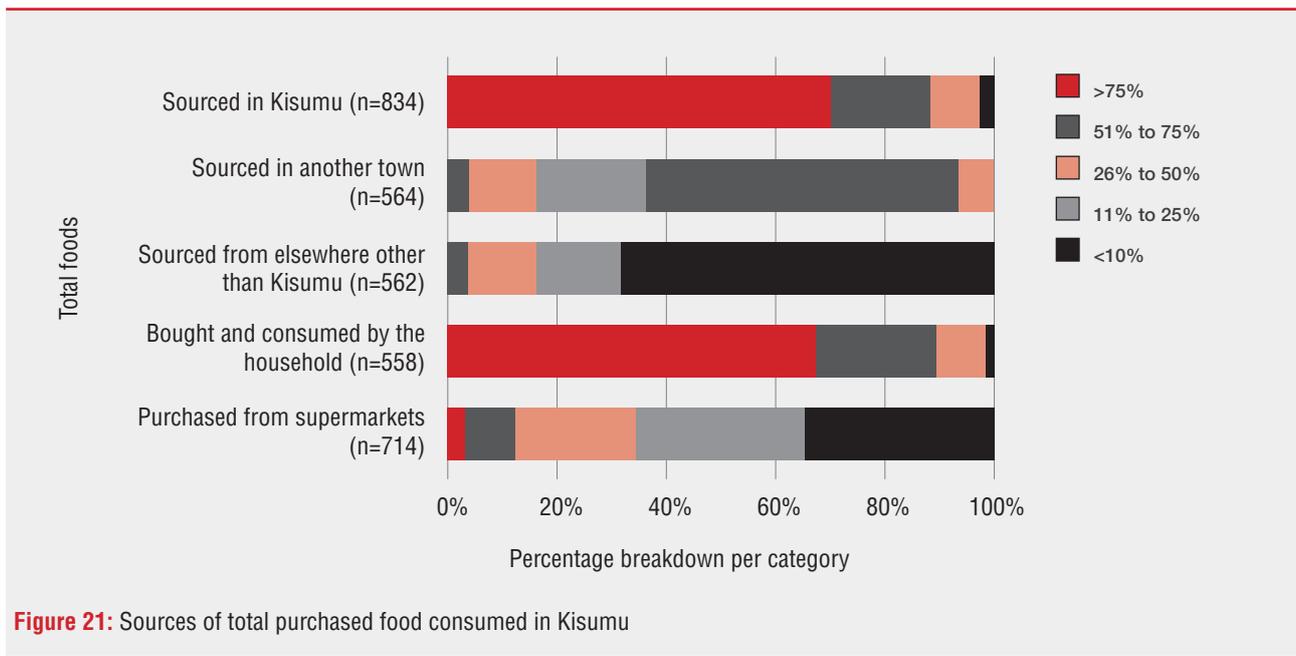


Figure 21: Sources of total purchased food consumed in Kisumu

The surveyed households were also asked where they obtained their food over the past year, and how frequently they obtain food from these sources. This was a multiple-selection question. Respondents were asked to select all the sources from which they obtained food and indicate the frequency of sourcing food from those sources: at least five days a week; at least once a week; at least once per month; at least once in six months; or at least once per year (Figure 22).

Households obtained food from multiple sources on a day-to-day basis – a practice informed by a number of factors. While daily market purchases could have certain links to traditional food practices, and to a time when supermarkets were not present, other factors emerged through the household interviews. The dependence on daily sources of income and the lack of storage facilities meant households needed to buy food in small quantities on a daily basis. For example, the frequency of obtaining food from various sources indicated that 82% of households obtained food from house shops at least five days a week, and 75% sourced food from informal traders in Kisumu (kiosks, tuck-shop sellers, vendors, traders and hawkers) at least five days a week. When asked how frequently they sourced food from supermarkets, only 7% of households sourced food from supermarkets at least five days a week, 40% once per week, and 48% at least once per month. When asked about how frequently they obtained food from the markets, 25% did so at least five days a week, 64% at least once per week, and 10% at least one per month.

Most households in Kisumu obtained food for day-to-day use from house/estate shops, locally referred to as kiosks, and informal traders. The in-depth interviews also established that households obtain food from supermarkets on a weekly or monthly basis, and that purchases often coincide with weekly or

monthly income payments. Food purchases from municipal or open markets take place mostly on a weekly basis.

In recent years, there has been a significant increase in the number of supermarkets opening either in shopping malls or as stand-alone stores. However, the viability of these supermarkets requires further interrogation. During the CUP research cycle, there was a marked decline in the number of supermarkets, and reduced operating times. Several supermarkets closed, while others were bought out by brand-name stores, such as the Botswana-registered Choppies. Several supermarkets remained open for extended hours and one store was open 24 hours a day; whether this was a deliberate strategy to compete with informal traders could not be established. Another trend observed during the research period was the opening of large malls, often without apparent clients to fill the stores. In some instances supermarkets were mall tenants, but it appears that both the proliferation of supermarkets (stand alone and in malls) and the viability of supermarkets in the new malls reached a tipping point, where actual customers and rent costs converged to undermine business operations.

This trend was playing out within the context of an interesting tension at play in Kisumu. City planners and international development agencies focused on a project to ‘formalise’ street trading, in the form of trader malls, or were actively promoting mall developments, often with formal food retail outlets as key tenants. Given the decline in the supermarket sector and the dominance of more localised ‘neighbourhood’ retail options, these development plans and aspirations did not seem to align with the actual food system and food-system practices of Kisumu.

Different foods were noted to have different purchasing cycles. Out of the 691 households that provided complete information

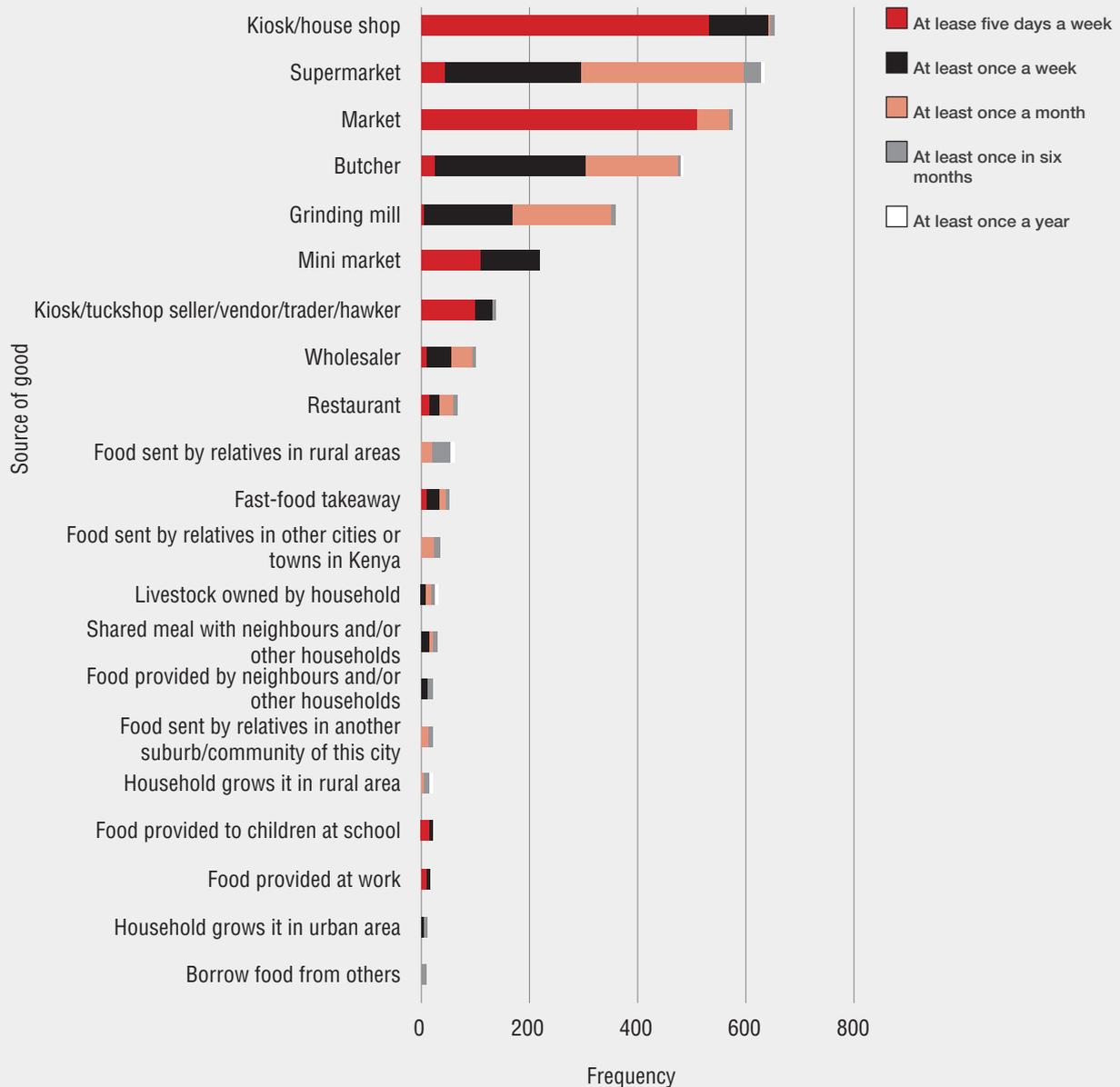


Figure 22: Food access points

on food purchases, it was found that *ugali* was purchased mostly weekly (31%) or bimonthly (35%). The majority of households (51%) purchased maize flour for *ugali* from grinding mills, while 43% bought maize flour from supermarkets in their neighbourhoods. While many households reported excluding fish from their diets as a result of cost, or did not consume fish in the past 24 hours according to the HDDS, respondent households (n=834) that purchased fish, did so mostly on a weekly basis (62%) from the Kisumu municipal fish market or from other informal sources in their neighbourhoods. Green vegetables are purchased on daily basis, mainly from food kiosks, largely located at road sides; eggs are purchased on weekly basis from food kiosks within neighbourhoods; and porridge is purchased daily, weekly or monthly from supermarkets, grinding mills, food vendors and food kiosks, among others (Figure 23).

While these different food-purchasing trends may only focus on five of the key food items, they offer insights on how the food

system functions, how communities navigate their daily food purchasing and preparation routines, and how traders who sell these different food types operate within the wider food system. What this reflects is a diversified food retail system with equally diverse food-purchasing habits (see [CUP Working Paper 5: Characteristics of the Urban Food System in Kisumu, Kenya](#) for more details). Perhaps more importantly though, these different food purchase patterns provide insights on actual meals, their frequency and other food ways (Feenstra, 1997). Green vegetables, for example, appear to be eaten on a daily basis and are seldom stored or refrigerated. While fish was reported as being excluded from diets due to cost, with eggs excluded, albeit to a lesser extent, it appears that these foods are perhaps still consumed, but on a weekly basis rather than more regularly. These points remain assumptions and offer opportunities for further food-system research, and engagement with households on their food purchasing and how this relates to their food preparation practices.

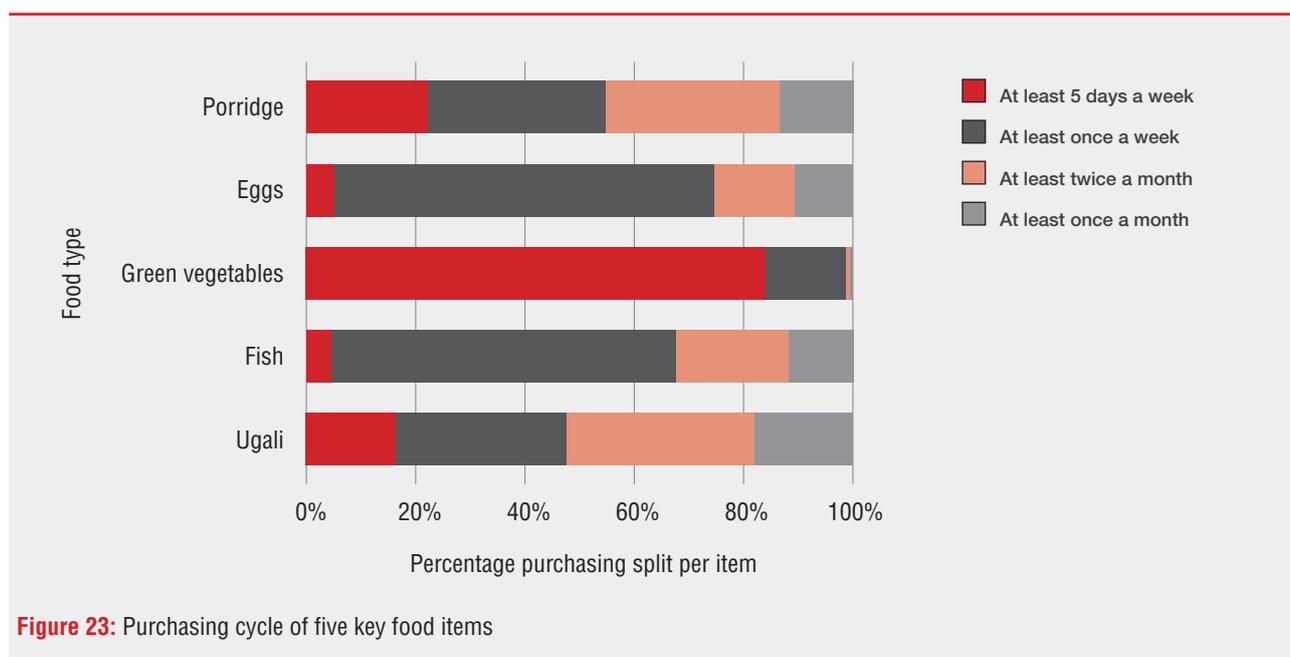


Figure 23: Purchasing cycle of five key food items

7.9 Attitudes towards supermarkets

Understanding the role of supermarkets in the Kisumu food system was deemed an important area of enquiry when considering food poverty in Kisumu. A number of factors informed this decision: firstly, the increase in supermarkets throughout Africa, generally linked to the so-called supermarket revolution (Reardon and Hopkins, 2006), and the increase in supermarkets in Kisumu in particular. A further factor, generally informed by food-system literature, albeit predominantly northern-oriented literature, on food deserts (Wrigley, 2002; Cummins and Macintyre, 2002; challenged by Battersby (2012)) and the notion that supermarkets can provide more affordable and healthier food options to communities. These factors prompted the need to test and understand the attitudes of Kisumu households to supermarkets. In the first instance, respondents were asked if they regularly (at least once per month) shop at supermarkets. Over a third of surveyed households (65%) responded that they regularly frequented supermarkets. These respondents were further asked about their views or their attitude towards supermarkets, testing five parameters. The responses are detailed in Table 16.

Table 16: Attitudes towards supermarkets reported by regular shoppers

Responses as a percentage	Agree	Neither agree nor disagree	Disagree
Food is cheaper at supermarkets (n=544)	48.5	19.3	32.2
Food is better quality at supermarkets (n=544)	86.2	7.7	6.1
Supermarkets have a greater variety of foods (n=543)	76.8	7.0	16.2
We can buy in bulk at supermarkets (n=544)	71.9	9.6	18.6
Supermarkets are where we get social grant pay-outs so we shop there (n=492)	13.0	17.5	69.5

The responses revealed that households prefer supermarkets for a number of reasons: food is cheaper at supermarkets (49%); food is better quality at supermarkets (86%); supermarkets have a greater variety of foods (77%); and bulk buying offers benefits at supermarkets (72%). In a few cases (13%), households buy from supermarkets because they offer social protection-related pay-outs.

Those who do not regularly shop at supermarkets were also asked about their views on five parameters (Table 17).

Table 17: Attitudes towards supermarkets among non-regular shoppers

Responses as a percentage	Agree	Neither agree nor disagree	Disagree
Supermarkets are too far away (n=288)	29.5	22.9	47.6
Supermarkets are too expensive (n=285)	42.1	27.7	30.2
Supermarkets do not provide credit (n=283)	58.6	23.7	17.7
Supermarkets are only for the wealthy (n=280)	28.6	31.8	39.6
Supermarkets do not sell the food that we need (n=285)	24.9	32.3	42.8

These findings support the argument that households purchase food from informal traders because they offer food in smaller quantities, which is affordable for households on a day-to-day basis (Battersby, 2012). Households build personal relationships with informal traders conveniently located within residential areas and at roadsides. That a significantly large group of respondents, albeit from a smaller sample, indicated that they did not use supermarkets because they do not provide credit, points to the different operating strategies used by the informal sector to retain customers, while competing in a competitive retail environment (see *CUP Working Paper 5: Characteristics of the Urban Food System in Kisumu, Kenya*). The implication is that the informal economy will continue to thrive to enable food access for the poor. House shops and kiosks are important sources of foods purchased on a daily basis. Supermarkets are also important sources of food, particularly for items purchased in bulk. Choosing a food retailer is linked to transportation. In the interviews, households revealed that they would purchase foods from supermarkets once a week or once a month, despite certain benefits, to reduce expenditure on transport to the supermarket. This may partly explain why supermarkets are opening branches in residential areas and at major transport confluences.

7.10 Urban agriculture and its role in food security

Urban agriculture is often promoted as a strategy for enabling food access, particularly for the food insecure (Cofie, et al., 2003; Lee-Smith, 2010). Kisumu has had a long history of urban agriculture with varying levels of official sanction. Considering

the primacy given to urban agriculture in academic literature (Thornton, 2018; Mackay, 2018), and many policy debates, the research sought to investigate the relationship between food poverty and urban agriculture. The survey sought to establish the significance of urban agriculture in Kisumu, and the attitude of households towards urban agriculture, for which a two-stage set of questions was developed. The first stage was to determine household participation in urban agriculture. Respondents were asked whether they grew any of their food in the city, and the survey results indicated that only 15% of respondents did this. Secondly, the opinions of households that were not engaged in urban agriculture was sought to determine their attitudes towards urban agriculture.

Urban agriculture is relatively insignificant in Kisumu, despite active promotion by policy makers and NGOs. Among the majority (85%) who were not engaged in urban agriculture, it was established that 16% felt that farming was for rural people; 23% said that they lacked interest in farming; and 18% felt that they lacked the skills to grow food. A large proportion of respondents (46%) felt that it was easier to buy food than grow it, and about 30% felt that people would steal whatever they grew. Therefore, the insignificance of urban agriculture is not only attributed to lack of land, which 60% said was a reality for them, but to other factors like insecurity and lack of time. This is consistent with the findings of the in-depth household interviews in which many households indicated that they would have wished to grow some of their food, but that the type of dwelling units and the neighbourhoods in which they lived hindered them from doing this.

Table 18: Reasons for not engaging in urban agriculture

Percentage response	Agree	Neither agree nor disagree	Disagree
Farming is for rural people (n=712)	16.2	13.6	70.2
We have no land on which to grow food (n=714)	59.2	11.7	29.1
We have no interest in growing food (n=710)	23.0	14.3	62.7
We lack the skills to grow food (n=710)	18.2	16.0	65.8
We do not have access to inputs (n=707)	29.1	18.0	52.9
We do not have the time or labour (n=710)	37.5	16.9	45.6
It is easier to buy our food than grow it (n=710)	45.7	16.8	37.5
People would steal whatever we grow (n=660)	30.3	22.4	47.3

Those who practised urban agriculture were asked where they grew the crops that they produced. This was a multiple-response variable (Table 19). Urban farming is popular among people who own their residential plots (63%) and within residential areas, but outside own plot (32%), denoting some degree of permanency and networks, and that those with their own residential plots had homes and were predominantly middle class. Some residents undertake agriculture on ancestral farms or leased farms, mostly within the urban fringe. Some households indicated that they engage in 'farming' but do so at their rural homes and not within the city. The crops grown were mainly maize (67% of cases), vegetables (75% of cases) and fruits (25% of cases).

Table 19: Urban agriculture locations – multiple response (n=121)

Sites of production	
On own housing plot	76
Hanging garden	3
Within residential area, but outside own plot	39
On riverbed	12
Other urban land	4

Livestock farming was found to be an important activity in Kisumu, with over 26% of respondents engaged in the activity.

This is significant as it is a larger proportion than those engaged in urban agriculture production. Given some of the policy and stated health responses to animals in proximity to urban spaces, this finding was somewhat unexpected. This raises questions about supplementation of protein supplies and other food system-related activities. Livestock included chickens, ducks, rabbits and goats, all of which can be housed in or near residential units. Most households keep chickens, although cows, goats and sheep are also kept. Some of the livestock are called ‘free range’, left to roam around and scavenge for food, with little or no attention, before coming back home in the evening, which raises questions about final use. Some livestock may be kept, not for food, but as a form of insurance; hardy animals that have little maintenance costs and can be sold when households need extra income.



Figure 25: Livestock on the Kisumu landfill site (Photo: Haysom)

8. Social protection / Cash transfers

One of the most common interventions used by governments and NGOs to mitigate the impact of poverty and food insecurity among the most vulnerable households is social-protection programmes. The survey sought to establish if there were any cash transfers, food aid or other social-protection types received by households. The survey also sought to understand the sources and importance to the food security of beneficiary households.

Of the 840 households surveyed, only 7% of respondents received any form of grant. The most frequent was child grant (27 cases), followed by old age pension (16 cases), food for work (6 cases), and disability grant (3 cases). There was also one case each of food aid, food vouchers and foster care grant. The in-depth household interviews revealed that, although social grants are offered by government, the largest proportion of grants are offered by NGOs, including religious groups. Even those who have not received grants indicated that they had heard about them or they knew someone who received them. For those who received social grants, the monthly average amount received per household was KES11 790 (USD120) with a minimum grant of KES50 (less than USD0.50). The estimate provided by Anker and Anker (2017) of the average monthly living wage for a metropolitan area in Kenya of KES27 500 (USD273) is higher than the value of the grant.

Apart from pensions, the 'other' forms of cash grants were child grant, old persons grant, and foster care grant. Grants-in-kind included food-for-work and food vouchers. For those households that received social grants, 60% received cash through electronic deposit into bank accounts, 21% received grants through cash pay-points, and 2% received food grants through supermarkets. The remainder (11%) received grants through chiefs' offices (Table 20).

Table 20: Sources of social grants – multiple selection

Place of receipt of grants	Grants reported
At a cash or grant system pay-point	11
At a supermarket	1
Electronic deposit into bank account	32
Chief's offices	6

The survey further sought to determine the use of social grants. Although the number of households reporting receiving some form of grant was negligible, it is useful to consider where these grants were being spent. Given the role that NGOs play in providing grants, it is worth noting that a number of grants were targeted and directed at specific development needs, such as food and education. This is evident in the responses of the 53 grant recipients: 57% of respondents reported spending the grant on education and 40% on food and grocery purchases. A further 30% was used to cover medical expenses.

It was noted from the in-depth household interviews that NGOs preferably provide support for the education of children from vulnerable households, followed by food and groceries, and then medical expenses. Apart from old-age pensions, social grants are mainly provided by NGOs targeting poor households affected by HIV/AIDs in the informal settlements.

Social grants were seen as important in the food security of households that received the grants. While the sample was small

(n=53), 55% of households that received grants felt that they were very important, and a further 32% felt that the grants were important in their food security. Only 8% were neutral on this question, and 6% felt that social grants were not important in the food security of their households.

9. Summary of findings

The average size of households in Kisumu was found to be 4.16, which is higher than the urban national average household size in Kenya of 3.5. Household population density in Kisumu therefore tends to be higher than most other urban households in the country. It was found that 37% of the households surveyed were made up of children below the age of 16 years and, cumulatively, 74% of surveyed residents were aged 30 years or below. This youthful population is mostly unemployed or of school-going age, thereby depending on a smaller proportion of the population that is working. Therefore, addressing poverty and the development of Kisumu hinges on addressing youth unemployment and targeting development initiatives towards the youth.

There appears to be a change in residential typologies – the physical structures in which households live. The survey found high rates of renting rooms in houses (39% of households), including single rooms in informal settlements and sublet rooms in houses in middle-income settlements. This points to homeowners or main tenants needing to supplement their incomes by using their assets. Although the reported incomes were derived from a small sample, some of the highest informal incomes reported were from housing rental. In some cases, houses are managed by landlords who no longer rent out whole houses, but do rent out rooms. This raises questions about the nature of the economy and how households are managing their budgets. Those who reside in single rooms in informal settlements are usually without electricity, refrigeration facilities and running water, and experience higher levels of food poverty. It was identified that the young and the unemployed cannot afford to rent whole houses and, as a result, live in sublet rooms. These emerging housing trends appear to point to an oversupply of middle-income housing units and a shortage of low-income housing units in the city. Downscaling to single-room accommodation raises further questions about how the physical household and the food system interact. If a household is renting a room, where is food stored and where is food prepared? How do housing choices interact with the informal economy? How do housing choices interact with food security and nutrition? These are all areas that require further analysis.

The measurement of household income and expenditure, and the application of these measurements in poverty studies are challenged by difficulties experienced in this study. Many households were uncomfortable divulging their incomes and, more importantly, many respondents were unsure how much each member of the household earned. This raises further questions about the definitions of 'household' income and poverty, and the use of household as a key site of analysis in development work. Despite the fact that the income question was not responded to in a way that would enable defensible statistical conclusions, it was established that more households had informal sources of income compared to formal sources. However, the monthly average earning from formal sources was much higher than monthly average earnings from informal sources. The data indicates that total average household incomes are very low, with about 70% earning less than KES30 000 (USD300) per month.

Household expenditure profiles reflect the primacy of four

key expenses: food, housing, fuel and education. Education is an important household cost in Kisumu, often seen as an investment to relieve households from future poverty. The survey found that households sometimes reduce expenditure on food to pay for education. However, in terms of food security, the rationale for this investment is negated by the high level of youth unemployment. The Kenyan government has been implementing a free primary education programme, aimed at cushioning poor parents from the burden of school fees. Whether this programme has delivered as intended remains unanswered. High education expenses appear to indicate that households still spend a significant amount on education. The survey also identified a number of education-oriented social-protection measures, all NGO led. However, these were extremely limited, with only 28 out of 840 respondents reporting receiving education-oriented social protection. It seems that neither the state-subsidised primary school education programmes, nor the NGO-driven social-protection programmes, are able to release any funds from education to enable increased food purchases.

The informal sector is the main source of income and food for most of the sampled respondents. While supermarkets are an essential part of the Kisumu food system, and have a role to play, informal and municipal market structures are more important, particularly for the poor. However, informal food retailers, specifically those trading along street edges and in unauthorised areas, such as parks and adjacent to municipal markets, are often viewed by city authorities as illegal and should be moved to formal markets. The city is even considering the construction of trader malls, supported by international donor funding, in order to relocate traders from various parts of the city to centralised trading areas. Kiosks in residential areas are not part of the formalisation discussions, although they are issued with temporary licenses. Within neighbourhoods, kiosks were identified as an important food access point, often adopting innovative trading strategies to either retain or support customers, and even offering credit to community members to enable food purchases (see [CUP Working Paper 5: Characteristics of the Urban Food System in Kisumu, Kenya](#) for more detail). The informal food retail sector not only provides affordable food to the majority of residents, but the CUP household survey also found that it is a key source of livelihood for many residents.

The LPI indicates that poverty is higher in peri-urban neighbourhoods. Generally, this is attributed to urban sprawl and diminishing land for food production, but this view is not supported by the evidence from the surveys. While it is accepted that there are many reasons for lower LPI scores in peri-urban areas, the survey results seem to indicate that there is a lack of infrastructure, resulting in longer distances to places of work (transport and time costs) and reduced services. To demonstrate the different costs associated with poor services, an example is used from the Kitwe CUP site. Here it was found that sachet water sold in poor neighbourhoods was 560% more expensive than the price paid for piped municipal water.⁵ Policies to alleviate food poverty in Kisumu should therefore pay attention to the peri-urban areas of the city, particularly in terms of service and infrastructure provision.

Food poverty is seemingly normalised in Kisumu. The general view is that a HDDS of 6 or less is an indicator of potential nutritional challenges – a proxy of possible malnutrition and food insecurity. Applying the HFIAP, the CUP study found high levels of food insecurity: 71% of respondents were either moderately

food insecure (26%) or severely food insecure (45%), which implies a high prevalence of food insecurity among households in Kisumu. The low HDDS scores in Kisumu, coupled with the high levels of food insecurity, point to extreme levels of food insecurity and a severe development challenge. However, an essential question remains: If here are such high levels of food insecurity and low levels of dietary diversity, with their attendant nutritional challenges, why has there not been great political fallout? Other countries have experienced food riots. Why, in light of such food access challenges, are the residents of Kisumu seemingly willing to accept this situation?

A possible, or at least partial, answer to this question can perhaps be found when the findings from the MAHFP are read together with the findings from the HFIAP and HDDS. While the HFIAP found high levels of food insecurity (71%) and the HDDS found low levels of dietary diversity, the reported months of inadequate provisioning were lower than would be expected given the other two indicators. The sampled households appear to be living with deep and pervasive food insecurity, where nutrition and wellness are compromised by access to only limited dietary diversity. However, interviews revealed that a diet based on the key staples of *ugali* and *sukuma wiki* is viewed as adequate. This chronic rather than crisis food insecurity has become normalised. This is perhaps why urban food security is not seen as a critical issue by policy makers, activists or even city residents themselves.

It is broadly argued, through various pronouncements related to the notions of a nutrition transition, that diets change in an urban environment where urban residents consume greater amounts of protein and higher quantities of processed foods. These changes in consumption drive weight-gain and compound the nutrition challenges faced by society. The findings from the CUP survey suggest that urban residents are not consuming high levels of protein. Instead, protein items are being excluded from diets. In the context of urban poverty, the communities surveyed were unable to afford protein or are suspending the consumption of key proteins in order to purchase greater volumes of other foods. The data indicates that the foods most households go without due to unaffordable prices were mainly animal proteins (meat, chicken and fish), dairy products and eggs. Households are also excluding fruits from their diets as these are also becoming unaffordable. The general nutrition transition argument is not entirely true for poor residents of a poor city such as Kisumu, but may be true for the upper- and middle-income categories of residents.

There is a further link between poverty and household dietary status. Reduced income or loss of employment of a single household member seems to result in an almost immediate decline in the dietary quality in the household. Reduced income, loss of employment, or death of a working household member contributes about 36% to hindrances to food access. While other reasons are important – for example, illness of a household member, theft and insecurity – households seem to be more precarious to sudden changes in income. Generally, the poor develop networks and systems to navigate extreme poverty, but those who are not the extreme poor generally do not have such strong networks and, as such, fall ‘fast and deep’ into poverty, often taking far longer to navigate ways out.

The high level of food insecurity and the costs associated with accessing decent food, coupled with the physical environment and associated challenges in which many households live, means that households need to be highly strategic in how food is accessed. The surveyed respondents reported making use of diverse food retail options, choosing to access food through formal and informal

⁵ This calculation was made by the CUP research team members using the unit price paid for water and comparing this with the water sachet cost.

food outlets. Purchasing decisions were linked to household scale infrastructure aspects, such as access to refrigeration and storage, and even food preparation options. Households were also highly strategic in terms of where and when food was purchased, using supermarkets for bulk purchases and neighbourhoods for daily purchases. When incomes were constrained, households engaged informal retailers in their neighbourhoods, often negotiating food purchases on credit to ensure the household is fed. The survey found that, for poor households in Kisumu, food access is a daily struggle, with decisions about children's meal options (and even places of purchase), where foods would be purchased and what the meal would comprise, being part of the everyday food ways of the poor.

The study found that, in Kisumu, food insecurity was high, while the nutritional content of diets was low. Demographically, the city has a young population, with 74% of the population aged 35 or younger. If this population is not getting adequate nutrition, this hinders development opportunities and handicaps the poor from the outset. For a city like Kisumu to attain its development potential, city officials and policy makers need to pay far greater attention to these challenges. Traditionally, issues of food insecurity have been seen as the responsibility of national government. This view cannot continue. Cities play an active role in the urban food question, from authorising markets to licensing traders. Their role needs to change from one of administration and enforcement, to a developmental role, and one that sees food as a key pillar of urban development into the future.

10. Conclusion

Kisumu experiences a very high level of food insecurity that is directly linked to poverty. Food poverty can be addressed from both the supply and demand sides, by boosting production and removing bottlenecks in the supply chain, as well as creating more economic opportunities for employment and improving household incomes.

The intersection of youth, unemployment, infrastructure, poverty and levels of food insecurity highlights the systemic nature of the poverty and food-security challenge in Kisumu. This calls for very different programmatic responses to address these challenges. The urgency is compounded by the high percentage of Kisumu residents under the age of 30 years. The ever-expanding youth bulge presents a significant development challenge. Given the precarious employment status of many in Kisumu, and the high levels of food insecurity, conventional responses to urban food security that seek to increase availability of food, generally

through production support, will not effectively address food insecurity in Kisumu. In Kisumu, most residents access food through the market: through the formal supermarket sector, municipal markets, or the informal sector. All play a role in the food system; all are important. For the poor, however, the evidence from this work suggests that the informal sector is of critical importance.

The informal sector is very important in food access and to the general economy of the city. Although the boundary between the formal and informal sectors is often blurred, municipal markets, kiosks and street traders play a key role in the food economy of Kisumu. Supermarkets, though important, have not had a significant impact on the food system with their espoused benefits of lower food prices. These retail outlets were not found to be aligned to the needs of the majority of the poor. To address food poverty, the focus should be on municipal markets and the informal sector, with the aim of supporting them to supply affordable, safe and nutritious food to residents.

The population of Kisumu is growing rapidly, with infrastructure and services unable to cope. Urban services are significantly lacking in the informal settlements. Poor residents are unable to preserve food due to a lack of refrigeration facilities, and they pay more per unit of water and food. Accommodation rental costs consume a large proportion of household incomes, which places further strain on household budgets. The provision of low-cost housing, with water and electricity, is therefore a possible point of intervention in efforts to alleviate food poverty in Kisumu. The peri-urban areas are significantly more vulnerable.

The population of Kisumu is largely youthful, challenged by poverty and low skills, confining the majority to unemployment or low-paying jobs in the informal sector. Households engage in a practice of long-term investment, spending a large proportion of their incomes on education, in the hope of alleviating future poverty. However, the high level of youth unemployment appears to indicate that this 'investment' is not breaking the cycle of poverty. Development interventions should therefore target the youth, with opportunities for skills development and employment creation in the formal sector.

Even though the current Integrated Strategic Urban Development (ISUD) plan recognises food poverty as a major challenge, no specific plans are set out to deal with the issue. The long-term development and health-related consequences of food poverty place Kisumu City at risk of continued food insecurity and long-term under-development, well into the future, unless food security is urgently placed on the city's development agenda.

CUP-related reading and resources

Kisumu-related policy briefs

[Policy Brief #1: Informal Food Retail and Food Security in Africa: Myths and Facts](#)

[Policy Brief #2: The Importance of the Informal Food Sector in the Kisumu Food System](#)

[Policy Brief #3: Enhancing Food Security through Urban Infrastructure and Services](#)

[Policy Brief #4: Food Security in Kisumu: A Call for Greater Engagement in the Urban Food System](#)

Consuming Urban Poverty project books

[Urban Food Systems Governance and Poverty in African Cities](#)

[Tomatoes & Taxi Ranks: Running our cities to fill the food gap](#)

[CUP website](#)

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