

# Improving health, wellbeing and nutrition: What limits or enables the uptake of healthy diets in Nairobi's informal settlements?

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**Abstract**

Current patterns of urban population growth, poverty, food insecurity, and poor health and nutrition are becoming increasingly urban challenges, with those living in informal settlements being the most affected. Although health and nutrition conditions are relatively better in Kenya's urban centres, the situation is worse among low-income urban populations living in informal settlements. High levels of stunting, wasting, underweight and micronutrient deficiencies, especially among children, are common in urban informal settlements and are manifestations of malnutrition, largely associated with socioeconomic inequalities, inadequate hygiene and dietary risk factors. Furthermore, there is an increased clustering of non-communicable diseases (NCDs) among residents of low socioeconomic status, especially due to health inequalities and diet-related diseases. This working paper presents the findings from an investigation into the state of health, wellbeing and nutrition (HWN) in Nairobi, Kenya, with a particular focus on what factors enable or limit the uptake of healthy diets in low-

income and marginalised urban populations in Nairobi City. The concept of “healthy diets” is gaining currency among policymakers, who are becoming increasingly aware of the crucial importance of health and nutrition for wellbeing, both for individuals and for wider society. The findings in this working paper will contribute to our knowledge of health, wellbeing and nutrition in Nairobi’s low-income settlements and will help to inform wider debates and initiatives in the city.

**Keywords:** healthy diets, food security, informal settlements, low-income, health, wellbeing, nutrition, Nairobi

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## List of boxes, figures and tables

Box 1: Household food security in Nairobi

Box 2: Importance of school feeding programmes

Box 3: Levels of government in Kenya

Figure 1: Malnutrition outcomes among children in urban areas by residence

Table 1: Income and household food insecurity variables in Nairobi

Table 2: Prevalence of malnutrition outcomes in Kenya

## Acronyms

APHRC	African Population and Health Research Center
CBOs	Community-based organisations
CEC	County Executive Committee
FBOs	Faith-based organisations
FGDs	Focus group discussions
HDDS	Household dietary diversity score
HFIAS	Household food insecurity access scale
HWN	Health, wellbeing and nutrition
MAHFP	Months of adequate household food provisioning
MCAs	Members of the County Assembly
MSF	Médecins Sans Frontières (Doctors Without Borders)
NCD	Non-communicable diseases
NGOs	Non-governmental organisations
NHIF	National Health Insurance Fund
PCPs	Priority complex problems
SHOFCO	Shining Hope for Communities
UHC	Universal health coverage
UNICEF	United Nations Children's Fund
WHO	World Health Organization

## Summary

This working paper presents the findings from an investigation into the state of health, wellbeing and nutrition (HWN) in Nairobi, Kenya, with a particular focus on what factors enable or limit the uptake of healthy diets in low-income and marginalised urban populations in Nairobi City. The study was conducted as part of an African Cities Research Consortium research project that aims to build evidence and support coalitions of urban reformers to collectively solve complex problems in African cities.

## Study context

Since its independence in 1963, food insecurity and poor health and nutrition have remained key challenges in Kenya. The prevalence of severe food insecurity has increased in recent years. According to the Food and Agriculture Organization of the United Nations (FAO) in 2021, 28% of the population was severely food insecure, compared to 15% in 2015, while according to the Kenya National Bureau of Statistics, a large majority of Kenya's population are eating inadequate quantities of food and low-quality diets (KNBS, 2021).

Although health and nutrition conditions are relatively better in Kenya's urban centres, the situation is worse among low-income urban populations living in informal settlements (Kimani-Murage et al., 2014). Current patterns of urban population growth, poverty, food insecurity, and poor health and nutrition are becoming increasingly urban challenges, with those living in informal settlements being the most affected. Using the household food insecurity access scale (HFIAS), Kimani-Murage et al. (2014) estimate that 85% of households in these settlements are food insecure and have poor access to public primary healthcare services. High levels of stunting, wasting, underweight and micronutrient deficiencies, especially among children, are common in urban informal settlements and are manifestations of malnutrition, largely associated with socioeconomic inequalities, inadequate hygiene and dietary risk factors. Furthermore, there is an increased clustering of non-communicable diseases (NCDs) among residents of low socioeconomic status, especially due to health inequalities and diet-related diseases.

## Study objectives and methods

Given that health, wellbeing and nutrition are complex and closely linked, the study applied health and food systems lenses to examine the multidimensional nature of wellbeing. It notes linkages to other systems including healthcare provision, water and sanitation, and waste and energy systems, in as much as they affect health and nutrition. As such, the study sought to answer the following specific questions, with a particular focus on informal settlements:

- What are the state and patterns of ill health and poor nutrition in Nairobi?

- What policies and political settlements<sup>1</sup> influence the state and patterns of ill health and poor nutrition in Nairobi?
- What factors enable and limit the uptake of healthy diets among urban low-income communities in Nairobi?

The study objectives were achieved through a mixed-method approach that combined a desktop literature review, community-based focus group discussions (FGDs) and key informant interviews. The data generated was categorised into different thematic areas and analysed using content analysis.

### Structure of this working paper

The working paper is divided into seven main sections:

- The first section introduces the context of the study and the concept of healthy diets in urban food, nutrition and health systems.
- The second section focuses on key development challenges affecting health, wellbeing and nutrition. In particular, it focuses on the challenges of rapid urbanisation, food insecurity and poor nutrition in Kenya, and the prevalence of food insecurity and poor nutrition outcomes in Nairobi's informal settlements, as well as some of the coping strategies household use to tackle food and nutrition insecurity.
- The third section then presents the state and non-state actors engaged in health and nutrition; core systems of health and nutrition in Nairobi; policies, programmes and strategies governing health and nutrition outcomes; other relevant interventions; and systems failures, fragmentation and externalities.
- Following on from this, the fourth section presents a discussion of the impact of political settlements on food security, health and nutrition outcomes in Nairobi, including the significance of health and nutrition to city and national political elites.
- The fifth section provides an analysis of community perceptions of healthy foods and diets, as well as the relationship between healthy diets, good health and diet-related communicable and non-communicable diseases. It assesses household sources of food and food consumption preferences and patterns, and factors that enable and limit the community's uptake of healthy diets.
- Finally, the sixth section presents a discussion of the key findings, while Section 7 provides a short conclusion.

### Key findings

The study sought to understand access, sources and types of healthy foods, food consumption, preferences and healthy diet promotion, and identifying linkages between food, health and other systems related to health, wellbeing and nutrition (Koyaro et al., 2022). The following key findings emanate from the overall analysis of the literature

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<sup>1</sup> ACRC defines a political settlement as “an agreement or common understanding among powerful groups within a society about the basic rules or institutions of the political and economic game.” (Kelsall, 2021).

review, FGDs and key informant interviews and relate particularly to the importance of healthy diets:

### *Links between health and diets*

Good health is normally associated with high-quality health infrastructure and good nutrition is also associated with food availability and accessibility. However, recent emerging trends in ill health suggest other risk factors to ill health. The rise in communicable and non-communicable diseases (NCDs) are increasingly being associated with poor lifestyles and poor diets. In Kenya, NCDs (some of which are diet related) account for more than half of total hospital admissions and total hospital deaths.

### *Governance of health, food and nutrition systems*

Meeting the challenges of food insecurity, poor nutrition and poor health in Kenya will require improving access to adequate food of acceptable quality to all Kenyans and improving health and nutrition outcomes. This is reflected in a number of national- and county-level government policies, programmes and strategies, such as Kenya's National Food and Nutrition Security Policy (MOPHS, 2011) and the Nairobi City County Food Systems Strategy (Nairobi County, 2022). Health and nutrition outcomes are also shaped by specific national and county donor-driven interventions, as well as interventions by non-state actors (such as non-governmental organisations, community-based organisations and faith-based organisations) at the community level.

In Nairobi, a number of different government actors, development organisations and donor agencies are committed to supporting nutrition-specific interventions and nutrition-sensitive food production and consumption to achieve their development goals. However, they each have different interests and targets. There is a lack of coordination, cooperation and collaboration between these different actors, which is inhibiting them from taking an integrated approach to improving health and nutrition conditions. The main collaboration challenge is the slow pace of bureaucracy, making it difficult for many national and local governments to form partnerships. In addition, the national government and the Nairobi County government have a poor understanding of local and community-level realities.

### *Influence of politics on health and nutrition outcomes in Nairobi*

Given the extent of food insecurity, the provision of food – rather than nutrition and healthy diets – is at the centre of political settlements in Nairobi, especially in urban areas where high food prices remain a major challenge to the low-income urban households, and particularly the costs of staple food crops such as maize. Politics – especially around election – are normally framed around the basic needs of low-income households to ensure they vote in favour of whichever party they perceive to be in touch with their locals needs. As such, the problem of healthy diets is connected to the political settlement from a broader perspective of food.

### *Income and costs*

At the household level, low and irregular income is perhaps the single most important determinant of diets in urban areas because it dictates people's choices in terms of what foods they can afford to purchase and/or prepare at home, particularly given the rising costs of food and energy. During the FGDs, participants observed that financial stability determines the health of an individual or a family, while lack of money and poverty was associated with poor nutrition, stress and poor health conditions.

Households employ various negative coping strategies, such as reducing the frequency of meals and the quantity of food consumed. Others opt for cheaper and nutritionally poorer diets to cater for their immediate hunger needs, which are not necessarily the best in terms of nutrition. Most urban residents in Nairobi's informal settlements also have minimal opportunities for food production and rely almost entirely on purchasing their food from markets, informal vendors and supermarkets. However, most informal food vendors rely on wholesale food markets to purchase ingredients. These markets are dominated by cartels or middlemen who dictate prices by creating inflated margins. This in turn increases food prices so that food becomes less affordable, especially for low-income earners in informal settlements.

### *Knowledge and awareness of healthy diets*

A lack of awareness and knowledge of nutritionally adequate diets and limited resources to support implementation of nutrition programmes are major constraints to good nutrition. Knowledge or awareness of nutrition and the ability to identify healthy foods is a key enabler of healthy eating. While the FGD participants demonstrated a good understanding of what constitutes a healthy diet and healthy living, they also called for training and awareness-raising initiatives due to their lack of knowledge on the nutritional value of some of the food that they consume. They noted that community health volunteers play an important role in improving health and nutrition conditions in informal settlements. However, as these volunteers are unpaid, they are limited as to how much time they can devote to their volunteer work in relation to their own sources of livelihoods.

### *Food safety, food hygiene and WASH*

Malnutrition is not only caused by insufficient food intake or unhealthy diets, but also by other factors. Poor access to water, sanitation and hygiene (WASH) services in informal settlements impacts on health and nutrition outcomes. In addition, the lack of regulation in the informal food sector and multiple environmental hazards can compromise food safety. FGD participants were concerned that gastrointestinal infections are linked to unhygienic environments and poor food handling, especially for those living in urban informal settlements, who rely to a large extent on food purchased from informal food vendors. Promoting food safety and hygiene measures in community food environments, as well as in household cooking and food preservation environments, would improve health, wellbeing and nutrition outcomes.



### *Access to cheap fast food and ultra-processed foods*

FGD participants noted an increasing tendency to rely on cheap street foods, fast foods and ultra-processed foods because they are easily available and affordable at neighbourhood shops and retail outlets in informal settlements. In particular, children are more likely to consume these foods due to the rising availability. Combined with interrelated factors such as unhygienic food environments, malnutrition-related outcomes may affect children's physical, mental and psychological development and wellbeing. In terms of the impact of informal street food on the uptake of healthy diets, street food vendors can play an important role in the provision of affordable and both healthy and unhealthy food to low-income communities, as an increasing number of households relying on them as a source of food. Given their potential to make healthy diets more widely available to the low-income residents, informal food vendors should be included in relevant policies and programmes.

### *Access to interventions such as school feeding programmes*

In informal settlements, children are especially vulnerable to food insecurity and poor nutrition. Schools are important avenues of enhancing access to and uptake of healthy diets, especially in low-income settlements of Nairobi. School nutrition policies are associated with positive weight-related, dietary and other outcomes among school children. Schools provide an ideal setting for nutrition services, nutrition education and a healthy food environment, and ensuring community involvement and participation to promote nutrition and healthy food choices and eating habits among children, which can help reduce children's vulnerability to hunger, malnutrition and NCDs. In Nairobi, various school meals programmes aim to provide public primary school children and early childhood development centres with daily school meals. However, the FGD participants said that these programmes do not benefit children in formal or informal privately-owned schools.

### **Concluding remarks**

Current patterns of urban population growth, poverty, food insecurity, and poor health and nutrition are increasingly becoming an urban challenge, with those living in informal settlements being the most affected. Incidences of nutrition-related outcomes of unhealthy diets such as stunting, wasting, underweight and micronutrient deficiencies are prevalent among children in these settlements, and are manifestations of poor health and nutrition. In addition, the lack of access to improved sources of water and human waste-disposal systems, clean energy for cooking and lighting, and habitable housing conditions, all interplay to explain why low-income and marginalised populations in Nairobi experience worse health and nutrition outcomes. This calls for city-level interventions and reforms to address these challenges.

## 1. Introduction

This working paper presents the findings from an investigation into the state of health, wellbeing and nutrition (HWN) in Nairobi, Kenya, with a particular focus on what factors enable or limit the uptake of healthy diets in low-income and marginalised urban populations in Nairobi City. The study was conducted as part of an African Cities Research Consortium research project that aims to build evidence and support coalitions of urban reformers to collectively solve complex problems in African cities.

Health, wellbeing and nutrition is a vast domain encompassing several systems that govern or impact on access to affordable, quality health services, basic infrastructure (such as WASH and housing) and basic foodstuffs. This working paper focuses on “healthy diets” as a concept that is gaining currency among policymakers, who are becoming increasingly aware of the crucial importance of health and nutrition for wellbeing, both for individuals and for wider society. It examines the factors limiting or enabling the uptake of healthy diets in Nairobi, paying special attention to low-income groups and the residents of informal settlements. The findings in this working paper will contribute to our knowledge of health, wellbeing and nutrition in Nairobi's low-income settlements and will help to inform wider debates and initiatives in the city.

### 1.1. How diet affects health, wellbeing and nutrition

Since Kenya's independence in 1963, the interrelated issues of food insecurity, poor nutrition and poor health have remained key issues. The prevalence of severe food insecurity has increased in recent years: according to the Food and Agriculture Organization of the United Nations (FAO), in 2021, 28% of the population was severely food insecure, compared to 15% in 2015. During the Covid-19 pandemic, a survey by the Kenya National Bureau of Statistics found that 58% of Kenyans were eating inadequate quantities and low-quality diets (KNBS, 2021).<sup>2</sup> Meanwhile, non-communicable diseases (NCDs), some of which are diet related, account for more than half of total hospital admissions and total hospital deaths (Onyango and Onyango, 2018). But while food security, health and nutrition conditions are relatively better in Kenya's urban centres, this may not be the case among low-income urban populations living in informal settlements (Kimani-Murage et al., 2014).

The World Health Organization (WHO) defines good health as “a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity” (WHO, 1995). This is indicative of the multiple but interrelated determinants of health that cut across various factors affecting the human person. Similarly, the

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<sup>2</sup> Food security 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. According to a recent report by the High Level Panel of Experts on Food Security and Nutrition of the Committee on World Food Security, the “concept of food security has evolved to recognize the centrality of agency and sustainability along with the four other dimensions of availability, access, utilization and stability” (HLPE, 2020).

concept of wellbeing broadly encompasses the health, social and economic status of an individual as they relate with the environment and its inhabitants.

Key among determinants of health is food and nutrition, which are important physiological needs. The lack, inadequacy or poor quality of food and nutrition impacts negatively on human health and wellbeing. But while good nutrition is normally associated with the availability and accessibility of food, recent emerging trends suggest otherwise. The rapid increase in communicable and non-communicable diseases are being increasingly associated with unhealthy diets and lifestyles. A lack of awareness and knowledge of nutritionally adequate diets and limited resources to support implementation of nutrition programmes may be major constraints to good nutrition (MOALF, 2017). According to Amore et al. (2019), knowledge or awareness of nutrition and the ability to identify healthy foods is a key enabler of healthy eating.

In addition, in many regions globally, there has been a dietary transition that features the growing demand for both dietary animal products and processed food which has direct health consequences, and low- and middle-income countries present the next frontier for market expansion of ultra-processed foods. Persuasive marketing of processed food through radio, television and social media has penetrated all areas of society, driving dietary transitions towards foods that are high in calories, fats and sugars (FAO and WHO, 2019). Families, and in particular caregivers, adolescents and children, are greatly exposed to influential marketing of these processed foods (UNICEF, 2020). This promotes NCDs such as obesity, cardiovascular disease, diabetes and some cancers.

Instead, Brouwer et al. (2021) recommends the “adoption of a healthy diet perspective, so that the needs and preferences of consumers are at the heart of food system solutions to enable long-term consumption shifts by linking healthy food consumptions to markets, distribution, production and agriculture”. This is to increase the availability and accessibility of sustainable, safe and healthy diets desirable to consumers. This is possible when the stakeholders involved in health and nutrition make use of adequate information on diets, dietary trends, consumer motives and food environment characteristics, to identify possible pathways.

For example, governments can promote health strategies by including retail, manufacturing or agricultural incentives to reduce the price of healthier food products. Governments can also use fiscal policies as disincentives to buy unhealthy food (such as sugar, sweetened beverages and junk food), or removing industry tax benefits for the production or manufacture of unhealthy foods, though this might be politically difficult (Mozaffarian et al., 2018). Some tax policies may disproportionately burden low-income households who spend more of their incomes on food, but this may nevertheless have wider societal benefits for health and nutrition.

However, healthy diets are unaffordable for about 3 billion people globally because of “the high cost of nutrient-rich non-staple foods, driving consumption patterns among the poor toward cheap, monotonous starch-heavy diets” (Brouwer et al., 2021). As this

working paper shows, this is arguably the case in both Nairobi and in Kenya more generally, where both food insecurity and poor nutrition remain key challenges, particularly in informal settlements.

## 1.2. Study objectives and methodology

To understand what enables or limits the uptake healthy diets in low-income and marginalised urban populations in Nairobi City, the study applied health and food systems lenses to examine the multidimensional nature of wellbeing, while also noting linkages to other systems including water and sanitation, waste and energy systems, in as much as they affect health and nutrition. As such, the study sought to answer the following specific questions, with a particular focus on informal settlements:

- What are the state and patterns of ill health and poor nutrition in Nairobi?
- What policies and political settlements influence the state and patterns of ill health and poor nutrition in Nairobi?
- What factors enable and limit the uptake of healthy diets among low-income residents in Nairobi?

The study objectives were achieved through a mixed-method approach that combined a desktop literature review, eight focus group discussions (FGDs) and key informant interviews:

- **Literature review:** The desktop literature review focused largely on analysing the state and patterns of ill health and poor nutrition in Nairobi, with a particular focus on informal settlements. The aim was to map the HWN domain, including understanding the policy landscape and key systems and actors, and to explore patterns of food security and related ill-health with special attention to their relation to socioeconomic factors (such as income and education) and spatial dimensions (such as residence in under-serviced informal settlements), and to identify existing or potential policies and strategies that can be leveraged or developed in response.
- **Focus group discussions:** Eight FGDs were conducted with selected community members in Mathare and Viwandani informal settlements in Nairobi, to gain further insights on issues related to health and nutrition at the community level. The focus groups were divided into four broad categories: women only, men only, mixed genders and young mothers.
- **Key informant interviews:** Interviews were conducted with 10 key informants, focusing on the political settlements and interventions related to health and nutrition in Nairobi. The key informants included relevant national government officials, Nairobi City County government officials and civil society actors such as NGOs in health and nutrition sectors. In addition, the study brought together a wide range of stakeholders in a number of stakeholder workshops.

## 2. Health, wellbeing and nutrition: key development challenges

The following sections outline some of the key development challenges impacting on the domain of health, wellbeing and nutrition in Nairobi, and in Kenya more generally, that may limit access to and the uptake of healthy diets. In particular, it focuses on the challenges of rapid urbanisation, food insecurity and poor nutrition in Kenya, and the prevalence of food insecurity and poor nutrition outcomes in Nairobi's informal settlements, as well as some of the negative coping strategies households use to tackle food and nutrition insecurity. All of these factors, including access to improved sources of water and human waste-disposal systems, clean energy for cooking and lighting, and habitable housing conditions, interplay to explain why low-income and marginalised populations in Nairobi experience worse health and nutrition outcomes.

### 2.1. Rapid urbanisation and urban poverty

It is now widely accepted that urbanisation is inevitable and managing its trends and patterns constitutes a major challenge, especially in sub-Saharan African countries (Mitlin, 2021a). As such, the challenge of building sustainable and food-secure cities is a critical development issue of the 21<sup>st</sup> century. Current patterns of urban population growth, poverty, food insecurity, and poor health and nutrition are becoming increasingly urban challenges, with those living in informal settlements being the most affected (Battersby and Watson, 2018).

Kenya's urban population has increased from 285,000 in 1948 to 14.8 million in 2019 (Republic of Kenya). Its urban population is disproportionately concentrated in Nairobi – and urban poverty is disproportionately concentrated in Nairobi's informal settlements (Pape and Mejia-Mantilla, 2019). The growth and development of Nairobi has led to significant social, economic, environmental and spatial development challenges, including increased urban poverty and urban food and nutrition insecurity.

Urban poverty in Nairobi is closely linked to low or erratic earnings, or otherwise precarious income-generating activities. The main source of income for households in informal settlements is from casual labour, which is temporal in nature, low and erratic (Nairobi County, 2020; Sverdlik, 2017). This has an impact on people's ability to buy or prepare healthy and nutritious food. In urban areas, household income is particularly significant because the main source of food (up to 90%) is purchased (Oxfam GB et al. 2009), and households in informal settlements spend a significant proportion (40–70%) of their income on food purchases (Corburn et al., 2018; Garenne et al., 2009).

Past evidence has shown that a lack of finances substantially hinders access to a healthy diet (Garenne et al., 2009; Pradeilles et al., 2021; Vilar-Compte et al., 2021; Bartlett and Tacoli, 2021; Bai et al., 2021; Wambiya et al., 2021). Previous studies carried out in informal settlements of Nairobi have shown that the food problem is one of access and utilisation rather than availability (Owuor, 2018; Pradeilles et al., 2021). Protein foods such as fish, meat, poultry and certain fruits have been identified as especially unaffordable and only purchased when there is adequate money (Owuor,

2018). Low incomes and high poverty levels hinder households from purchasing food items such as meat that are considered expensive. Cost then becomes a significant barrier to affording nutritious foods and in household dietary diversification, particularly for low-income families (UNICEF, 2020).

Access to affordable cooking fuel is another important factor that influences household food choices. Price increases in energy fuels have been shown to aggravate food insecurity and nutrition by making less money available for food purchase (Oxfam GB et al., 2009). Residents in informal settlements choose the least costly or most affordable source of energy such as firewood and charcoal (Mutisya and Yarime, 2011). Some households choose to buy pre-cooked food from streets vendors to save on energy costs (Tacoli, 2016).

As such, informal settlements are associated with food insecurity and malnutrition (Kimani-Murage et al., 2020), and an estimated 85% of households in Nairobi's informal settlements are food insecure and also have poor access to public primary healthcare services (Kimani-Murage et al., 2014). There is an increased clustering of NCDs among residents of low socioeconomic status, especially due to health inequalities and diet-related diseases. High levels of stunting, wasting, underweight and micronutrient deficiencies – especially among children – are common in urban informal settlements and are manifestations of malnutrition, largely associated with socioeconomic inequalities, inadequate hygiene and dietary risk factors.

Furthermore, most low-income residents living in urban informal settlements depend more on unregulated informal food sources and healthcare services, which can significantly compromise the quality of food and healthcare available to them (although, as discussed later, informal food vendors can also play an important role in making healthy diets more widely available to the low-income urban households; they often provide much-needed cheap sources of protein and vegetables, and include traditional dishes). In addition, the widespread availability of cheap but unhealthy ultra-processed foods can contribute to poor health.

## 2.2. Food insecurity

In Kenya, food insecurity is a key developmental challenge. Generally, food insecurity in Kenya is high in arid and semi-arid areas and among low-income households, mainly living in informal settlements (MOALF, 2017). However, insights into food security in Nairobi can only be obtained from small-scale studies carried out at selected sites within the city. Most of these studies have been done in the major informal settlements of Nairobi (see for example Box 1).

### **Box 1: Household food security in Nairobi**

In 2018, the Hungry Cities Partnership conducted a study on the state of household food security in Nairobi (Owuor, 2018). The study used the food security assessment methodology developed by the Food and Nutrition Technical Assistance (FANTA)



project to measure aspects of food insecurity (Coates et al., 2007 in Owuor, 2018). There are three main metrics:

- **Household food insecurity access scale (HFIAS):** The HFIAS score measures the degree of food insecurity (access) in the household. The minimum score is 0 and the maximum is 27. The higher the score, the more food insecurity the household has experienced.
- **Household dietary diversity score (HDDS):** Dietary diversity refers to how many food groups have been consumed within the household in the previous 24 hours. The scale runs from 0 (low diversity) to 12 (high diversity).
- **Months of adequate household food provisioning (MAHFP):** The MAHFP indicator captures changes in the household's ability to ensure that food is available above a minimum level throughout the year. Households are asked to identify in which months (during the past 12 months) they did not have access to sufficient food to meet their household needs.

Based on the data collected for this study, Table 1 provides a summary of the food security situation in Nairobi by income quintiles. The lower-income (lowest quintile) the household, the lower (worse) the mean HDDS scores, the higher (worse) the mean HFIAS scores, and the lower (worse) the mean MAHFP scores.

**Table 1: Income and household food insecurity variables in Nairobi**

Income quintiles	Mean household dietary diversity score (HDDS)	Mean household food insecurity access scale (HFIAS)	Mean months of adequate household food provisioning (MAHFP)
1	5.19	9.89	9.74
2	5.70	7.94	10.41
3	6.10	6.65	10.48
4	6.42	4.36	10.91
5	7.37	2.06	11.71

Source: Owuor (2018)

Most urban residents in Nairobi have minimal opportunities for food production and have to rely almost entirely on purchasing their food from various markets and supermarkets (Oxfam GB et al., 2009). In particular, food markets play a significant role in food availability. Studies have indicated that the majority of households in Nairobi consume a variety of different food groups, depicting a more diverse diet. A study on Kenya urban food and nutrition security by Nzuma and Ochola (2012) reported that urban households were consuming cereals, tubers, vegetables, sugar, milk and oil on average six days a week.

However, a major concern relating to food consumption and dietary diversity has been the low consumption of high-protein foods and micronutrient-rich foods such as meat, fish and eggs (Garenne et al., 2009; Kimani-Murage et al., 2020; Nzuma and Ochola,

2012; Oxfam GB et al., 2009). Rising food prices have recently heightened food insecurity and low-income households already spend a higher percentage of their incomes on food and fuel than those in wealthier households. Households, particularly in the lower-income quintiles, have been shown to consume animal proteins on average three days a week and this may indicate a high risk of protein malnutrition (Garenne et al., 2009; Nzuma and Ochola, 2012). Low-income households may compensate for the lack of meat-based meals through other cheaper sources of protein such as beans and nuts (although these are not less healthy from a nutritional perspective) or, alternatively, may sometimes rely on unhealthy fast foods and snacks.

### 2.3. Poor nutrition

Nutrition is a major building block in the foundation of optimal growth, development and overall human wellbeing. However, malnutrition and poor diets are ranked as the number one driver of the global burden of preventable diseases and are therefore a development challenge and a threat to achieving global and national socioeconomic goals (Willett et al., 2019). The underlying causes of malnutrition are multidimensional and have been identified as insufficient access to food, poor health services, lack of safe water and sanitation, and inadequate child and maternal care. For example, Goudet et al. (2017) found that children of mothers who went in search of employment were not fed during the day. Meanwhile, inadequate child-feeding practices such as limited exclusive breastfeeding in the first six months of life also contribute to high rates of malnutrition (USAID, 2018). In informal settlements, women have indicated an inability to exclusively breastfeed due to their own poor nutritional status (Goudet et al., 2017).

Although the prevalence of undernourishment in Kenya slightly declined from 28.5% (2004–2006) to 26.9% (2019–2021) (FAO et al., 2022), the country is experiencing a triple burden of malnutrition, with the coexistence of undernutrition, overnutrition, and mineral and vitamin deficiencies (see Table 2).

**Table 2: Prevalence of malnutrition outcomes in Kenya**

<b>Prevalence of undernourishment in the total population</b>	<b>28.5%</b> (2004–2006)	<b>26.9%</b> (2019–2021)
<b>Prevalence of severe food insecurity in the total population</b>	<b>15.0%</b> (2014–2016)	<b>26.1%</b> (2019–2021)
<b>Prevalence of wasting in children under 5 years of age</b>		<b>4.2%</b> (2020)
<b>Prevalence of stunting in children under 5 years of age</b>	<b>27.8%</b> (2012)	<b>19.4%</b> (2020)
<b>Prevalence of obesity in the adult population (18 years and older)</b>	<b>5.9%</b> (2012)	<b>7.1%</b> (2016)
<b>Prevalence of overweight in children under 5 years of age</b>	<b>4.6%</b> (2012)	<b>4.5%</b> (2020)

Source: FAO et al. (2022)



Stunting, wasting, underweight and micronutrient deficiencies are all manifestations of undernutrition. Malnutrition is reported to be spatially heterogeneous and also known to interact with various environmental factors. Undernutrition, particularly among children under five years of age, is still a major health challenge in Kenya. The prevalence of stunting in Kenya is 19.4% (as of 2020), which is a significant decline from 27.8% in 2012 (FAO et al., 2022). Stunting has the highest rate of prevalence compared to wasting and underweight. In other words, Kenyan children are more likely to be stunted than underweight or wasted. However, of the three forms of malnutrition, reduction in the prevalence of stunting has been the greatest. Wasting, unlike stunting, tends to be seasonal and indicates a recent weight loss, although it can persist for an extended time. The prevalence of wasting in children under five years in Kenya is 4.2% (FAO et al., 2022). The 2014 Kenya Demographic and Health Survey (KDHS) indicated the prevalence of underweight children under five years of age to be 11%. The prevalence of underweight declined from 18% in 1998 to 16% from 2003 then 11% from 2014 (KNBS, 2015). Nairobi has the lowest prevalence of underweight children (4–7%) in Kenya (KNBS, 2015; Nzuma and Ochola, 2012).

Micronutrient deficiencies are prevalent among rural populations and low-income urban households in Kenya (MOALF, 2017). Micronutrient deficiencies are predominant among women and children under the age of five years (MOPHS, 2012). The Kenya National Micronutrient Surveys conducted in 1999 and 2011 identified vitamin A, iron and zinc as important micronutrient deficiencies in Kenya. Women, particularly pregnant women, and preschool children have a high prevalence of anaemia, iron deficiency and iron deficiency anaemia. Preschool children also have a higher prevalence of vitamin A and zinc deficiency compared to other population groups. In addition, protein and energy malnutrition are significant nutritional deficiencies (MOALF, 2017).

A recent study on the cost of hunger study in Kenya (Scaling Up Nutrition, 2020a) provided multisectoral recommendations to tackle malnutrition, such as including nutrition as a component in social protection programmes for highly vulnerable populations; enhancing budgetary allocations at the national level for nutrition interventions; establishing early childhood education feeding programme budget lines within county governments; strengthening the implementation of the nutrition component within community health strategies; and disseminating and implementing comprehensive school health and nutrition programmes as stipulated in the Kenya School Health Policy of 2018 (Section 3.3.4; see also Box 2).

## **Box 2: Importance of school feeding programmes**

Schools are important avenues for enhancing access to and the uptake of healthy diets. School feeding or school nutrition programmes are implemented in a number of countries because they are deemed beneficial for the physical, mental and psychological development of school children and adolescents, particularly in low- and

middle-income countries (OECD). School nutrition policies are associated with positive weight-related, dietary and other outcomes among school children (Wang et al., 2021).

According to MOE and MOH (2018), schools provide an ideal setting to promote good nutrition to all learners, including those with special needs and disabilities. This includes offering nutrition services, nutrition education and a healthy food environment, and ensuring community involvement and participation to promote nutrition and healthy food choices and eating habits among children (for example, by providing low-cost fruit and vegetables and supporting farm-to-school programmes and school gardens as ways of improving children's nutrition). School feeding and school farming programmes can improve access to and uptake of sustainable and affordable healthy diets among children in low-income communities. These interventions can reduce children's vulnerability to hunger, malnutrition and NCDs, while at the same time increasing their awareness of health and nutrition, as well as their resilience to ill health and poor nutrition conditions associated with their environments.

#### 2.4. Prevalence of food insecurity in Nairobi's informal settlements

A study conducted in 2019 using HFIAS scores and household food insecurity access prevalence (HFIAP) indicators that covered the informal settlements of Nairobi indicated that 87% of the study households were food insecure (Wanyama et al., 2019). However, major differences in food insecurity situations exist within and between informal settlements. For example, in Korogocho and Viwandani, based on the household food insecurity access scale (HFIAS), Kimani-Murage et al. (2014) found a high prevalence (85%) of household food insecurity with at least half of the households being severely food insecure. Even then, the prevalence of severe food insecurity in Korogocho was twice as much (64%) compared to Viwandani (33%). This heterogeneity was related to various factors associated with food insecurity, including levels of income, sources of livelihoods, household size, dependency ratio, and illness. Furthermore, in Korogocho and Viwandani, Kimani-Murage et al. (2011) found that children in female-headed households had lower food security scores. In Mathare, female-headed households are highly vulnerable to food insecurity and malnutrition (Garenne et al., 2009). Kimani-Murage et al. (2020) also identified refugees living in informal settlements as vulnerable groups.

In informal settlements, children are especially vulnerable to food insecurity and poor nutrition. Households with higher numbers of children have poor food security outcomes, where children receive insufficient proportions of food with less required nutrients and often skip a meal (Goudet et al., 2017). Furthermore, male children have been found to be more vulnerable to food insecurity (Kimani-Murage et al., 2011). In addition, Kimani-Murage et al. (2011) identified orphaned children in informal settlements as a category of individuals that is vulnerable to food insecurity. Maternal orphans were found to have high food insecurity scores compared to paternal orphans. There are currently no definite numbers about the proportion of adolescents who are undernourished in urban informal settlements. However, given the poor living

conditions in these settlements, it is possible that a large proportion of adolescents are also undernourished.

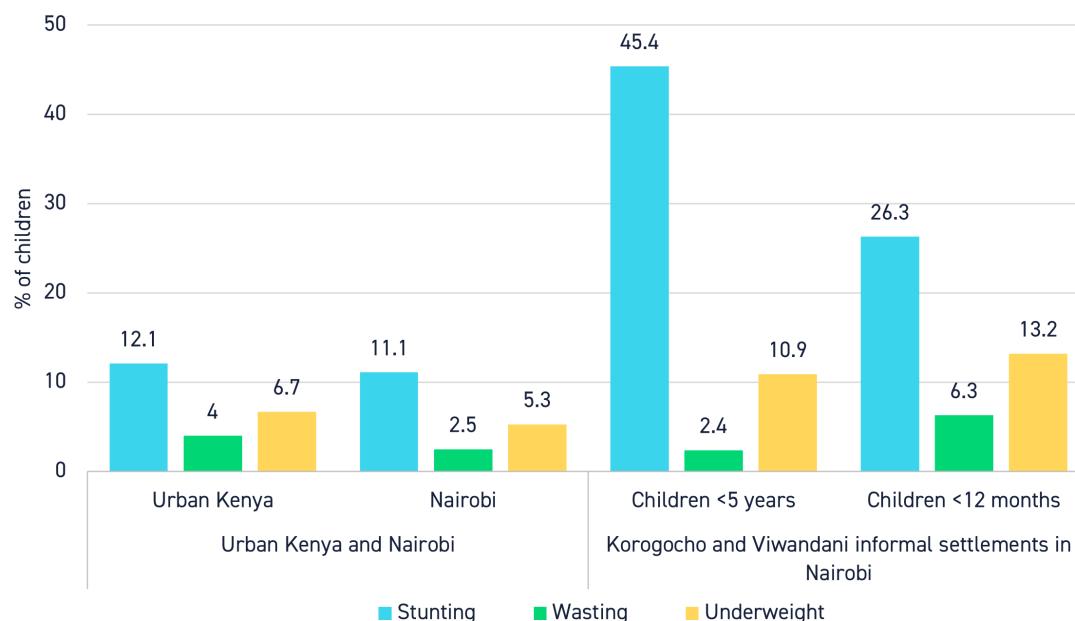
In terms of food consumption and dietary diversity, the 2019 Nairobi County Standardized Monitoring and Assessment in Relief and Transition (SMART) survey<sup>3</sup> showed that more than 70% of households in informal settlements had consumed five food groups, including vegetables, cereals, fruits, fats and oils within the last 24 hours at the time of the survey (Nairobi County, 2020). Garenne et al. (2009) and Oxfam GB et al. (2009) also found that households in Nairobi's informal settlements had a dietary diversity (HDDS) score averaging 6.4. However, dietary diversity varies with income and age groups. For example, Garenne et al. (2009) noted that the top-income quartile households had a dietary diversity of 6.8 food groups compared to 5.4 food groups among the bottom income quartile. In terms of gender, a more recent study found that women's dietary diversity in Nairobi's informal settlements was satisfactory, with more than half (60%) of the women meeting the minimum dietary diversity (Nairobi County, 2020). However, dietary diversity among children has been shown to be below the household dietary diversity score (HDDS) recommended minimum. Concerns also remain about the low consumption and supplementation of iron and folic acid (ibid).

## 2.5. Prevalence of poor nutrition outcomes in Nairobi's informal settlements

The lack of availability of aggregated data at higher units of administration masks the extremely high prevalence of malnutrition in Nairobi's informal settlements. Olack et al. (2011) found a high prevalence of stunting (47%) among children under five years of age in Nairobi's informal settlements. Indeed, the prevalence of stunting among children under five years of age in Nairobi's informal settlements is on average 22–31% (de Vita et al., 2019; Kimani-Murage et al., 2011; Nairobi County, 2020; USAID, 2018) but has been found to be as high as 52% (Mutisya et al., 2015). Stunting varies within the informal settlements, with age, gender and household food security status. For example, Mutisya et al. (2015) found that the proportion of stunted children was higher in Viwandani (52%) compared with Korogocho (45%). Figure 1 gives a summary of malnutrition outcomes among children in Kenya's urban population, in Nairobi and in Nairobi's informal settlements.

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<sup>3</sup> The SMART survey is a standardised, simplified, cross-sectional field survey method for collecting quality, up-to-date and timely nutrition data for decisionmaking. It was developed to harmonise methods for nutrition assessments, especially during emergencies. Today, national health ministries, NGOs and United Nations agencies conduct SMART nutrition surveys in both emergency and development contexts. See [www.ennonline.net/fex/58/smartmethodologyafrica](http://www.ennonline.net/fex/58/smartmethodologyafrica).

**Figure 1: Malnutrition outcomes among children in urban areas by residence**

Source: KNBS (2022); Kimani-Murage et al. (2015) ; de Vita et al. (2019)

Children aged 6–24 months in Nairobi's informal settlements have been found to have a higher prevalence of stunting compared to children living outside of informal settlements (de Vita et al., 2019; USAID, 2018). In terms of gender, male children in Nairobi's informal settlements have a higher prevalence of stunting compared to female children (APHRC, 2014). For example, there is a significant difference in stunting among boys (28%) compared to girls (20%) (Nairobi County, 2020). In addition, stunting has been shown to increase with rising levels of household food insecurity, with children from severely food insecure households having the highest risk of stunting (de Vita et al., 2019). For example, Mutisya et al. (2015) found that the risk of stunting increased by 19% and 22% among children from moderately food insecure and severely food insecure households, respectively.

Meanwhile, the 2017 Nairobi Slums Nutrition Survey estimated wasting among children in the informal settlements at 4.6% (Nairobi County, 2020). In addition, a study by de Vita et al. (2019) indicates that the prevalence of wasting is much lower than stunting and underweight in Nairobi's informal settlements, and is more prevalent in children aged below three months. Even so, the study found no relationship between wasting and household food insecurity. However, there was a significant association between moderate and severe food insecurity and both stunting and underweight.

Although Nairobi has the lowest prevalence of underweight children compared to other counties in Kenya, studies have again shown that this generalisation of data at the city level hides the higher prevalence of underweight in informal settlements. In fact, children born in Nairobi's informal settlements have lower birth weights compared to their counterparts in the city and at the national level. The prevalence of underweight children in Nairobi's informal settlements ranges from 13% to 16% (de Vita et al., 2019;

Kimani-Murage et al., 2011; Nairobi County, 2020). However, gender disparities among children exists. For example, male children in Nairobi have a higher prevalence (11–12%) of underweight compared to female children (9–10%) (KNBS, 2015; Nairobi County, 2020).

Differences in prevalence of underweight in children are also found with age. De Vita et al. (2019) found a higher prevalence (17%) among children aged 6 to 8 months old and the lowest (11%) among children less than five months old. The measure of underweight provides a reflection of current and past nutrition experience of a population and therefore has been shown to have a strong association with household food security (de Vita et al., 2019). Furthermore, poor maternal health and nutrition has been indicated as a cause of birthing underweight children (Nairobi County, 2020).

## 2.6. Poor access to water, sanitation and hygiene (WASH) services

Evidence has shown that malnutrition is not only caused by insufficient food intake or the lack of uptake of healthy diets, but also by other factors that go beyond food availability and access. Poor access to water, sanitation and hygiene (WASH) services is a great challenge in informal settlements and has an effect on health and nutrition outcomes (Kimani-Murage et al., 2020). Lack of safe drinking water in informal settlements has been linked with undernutrition and illnesses such as diarrhoea or cholera (Goudet et al., 2017; de Vita et al., 2019).

Most studies (Ahmed et al., 2015; APHRC, 2014; Garenne et al., 2009; Mbae et al., 2020; Oxfam GB et al., 2009) have highlighted the fact that residents of informal settlements have prioritised the need to address the lack of access to safe drinking water. Access to clean water in Nairobi is inequitable, with the majority of the city's population who live in informal settlements lacking connections to piped water (Ono and Kidokoro, 2020). Consequently, most of the population living in informal settlements purchase water from water vendors at relatively higher prices. Past evidence has shown that up to 75% of households in informal settlements purchase water at higher prices compared to high- and middle-income households (UN-Habitat, 2006). Sometimes, the available water is contaminated and needs to be treated before use (Bauza et al., 2020; Kimani-Murage et al., 2020). However, a significant proportion of households in informal settlements fail to treat their drinking water (Garenne et al., 2009; Nairobi County, 2020). For example, FGD participants said that plastic water pipes in the settlements are often immersed in drainage and sewerage lines. This is a common practice in both Viwandani and Korogocho and is likely to contaminate water used for domestic purposes, thus spreading waterborne diseases and contributing to poor health and malnutrition.

In addition, the lack of regulation in the informal food sector and multiple environmental hazards can mean compromised food safety (Pradeilles et al., 2021). There are safety concerns regarding the location and preparation of these foods and the potential impact on health (Sverdlik, 2017). Food safety measures can also be compromised by the lack of refrigeration facilities, unsafe storage practices, and exposure to

environmental hazards such as dust and air pollutants. As such, there are increasing food safety concerns, especially among people living in urban informal settlements, who have greater access to and rely to a larger extent on such food products.

Promoting food safety and hygiene measures in community food environments, as well as in household cooking and food preservation environments, would improve health, wellbeing and nutrition outcomes.

However, in terms of the impact of informal street food on the uptake of healthy diets, as Owuor et al. (2017) and Tacoli (2017) note, street food vendors can play an important role in the provision of affordable and both healthy and unhealthy food to low-income communities, with an increasing number of households relying on them as a source of food. For many low-income residents in informal settlements, their only meals come from informal vendors of cooked food. Food vending is also an important income-generating activity for low-income residents, but informal food vendors are normally subjected to financial extortions, bribes and illegal fees, which also increases costs. Moreover, WASH facilities and waste management in most markets and food vendors are inadequate, affecting both consumers and vendors. Given the potential of formal and informal food vendors in making healthy diets more widely available to low-income residents, it is surprising that they are rarely included in policies and programmes.

## 2.7. Coping with household food and nutrition insecurity

Households in Nairobi's informal settlements employ various strategies to cope with food and nutrition insecurity. These include taking children out of school, reducing expenditure on non-food items, and reducing the frequency of meals and the quantity of food consumed (Goudet et al., 2017; Oxfam GB et al., 2009). As our FGDs revealed, others opt for cheaper but nutritionally poor foods such as chips and other fast foods to cater for their immediate hunger needs, which also reduces dietary diversity. During the Covid-19 pandemic, the number of meals consumed in informal settlements drastically fell, sometimes to just one meal per day, and households started depending on well-wishers who regularly donated food (Solymári et al., 2022).

The FGD participants argued that their households' daily wages and monthly incomes are insufficient to afford a basket of food items that make a healthy and balanced diet. According to the FGDs, households make food-purchasing decisions based on the cheapest options due to the costs of both food and fuel, which is often food bought from vendors or cooked-food *vibandas* (food kiosks). However, not all of these options are unhealthy and often they provide much-needed sources of protein and vegetables, although the availability, ease of preparation and cheapness of some unhealthy fast foods and ultra-processed foods was a concern. Other coping strategies mentioned included relying on interventions from NGOs to provide supplementary food to malnourished children, as well as school feeding and school farming programmes in schools.

A photovoice study exploring the urban physical food environments that drive dietary behaviours in Kenya and Ghana found that key influences of dietary behaviours



depended heavily on the availability of food at home (including home gardens) and economic access (Pradeilles et al., 2021). When food was unavailable or when there was no money, people would eat whatever was available at home. A coping mechanism that was observed in the study that contributed to overall food availability was home gardening, which was done more in Kenya. This provided cheap access to a more diverse diet. However, this was not an option for some urban households because of the lack of space or unproductive land (Pradeilles et al., 2021). For our FGD participants, barriers to uptake included the lack of space, lack of time and the theft of food from plots, which have deterred many households from practicing urban farming.

### **3. Actors and interventions supporting health and nutrition outcomes**

Based on the review of relevant literature, this section presents the state and non-state actors engaged in health and nutrition; core systems of health and nutrition in Nairobi; policies, programmes and strategies governing health and nutrition outcomes; other relevant interventions; and systems failures, fragmentation and externalities.

#### **3.1. State and non-state actors involved in health and nutrition**

In Kenya, there are a number of different government actors, development organisations and donor agencies that are committed to supporting nutrition-specific interventions (which address the immediate causes of malnutrition, such as supplementation) and nutrition-sensitive food production and consumption (food of adequate quantity and quality that is affordable, nutritious, culturally appropriate, safe and sustainable) to achieve their development goals.

The state actors in health and nutrition are largely the relevant ministries and departments of the national government and the county government of Nairobi. At national government level are the Ministry of Health (especially the Department of Preventive and Promotive Health) and the Ministry of Agriculture, Livestock, Fisheries and Co-operatives. The Nairobi City County government's relevant departments include built environment and urban planning; environment, water, food and agriculture; and health, wellness and nutrition. The functions of the health, wellness and nutrition department include preventive, curative, protective and reproductive health services, public health, epidemiology and disease control, school health, and nutrition, among others.

In Nairobi, the Nairobi City County government is the key policymaker through its county assembly that is comprised of members of the county assembly (MCAs), who are elected by the people via Kenya's political electoral cycle. The county assembly exercises the representative, legislative and oversight authority of the Nairobi City County government. This implies that there is a need for political goodwill and that the political party politics of the regime in power is important. The technical aspects of such policies are led by the various departments with delegated responsibilities and functions of the county government. These departments are headed by county

executive committee (CEC) members with their chief officers. The CEC is responsible for the preparation of county policies, plans and budgets for approval by the county assembly, for the preparation of laws for consideration by the county assembly, and for implementation of all laws passed by the county assembly.

The non-state actors in health and nutrition in Nairobi include non-governmental organisations (NGOs), community-based organisations (CBOs), faith-based organisations (FBOs), the private sector, experts, researchers, civil society groups and communities. However, the national government and the county government of Nairobi also collaborate with a number of development partners to address the challenges of health and nutrition, such as UNICEF, United Nations Human Settlements Programme (UN-Habitat), World Food Programme (WFP), United Nations Population Fund (UNFPA), United States Agency for International Development (USAID), Slum Dwellers International (SDI) Kenya, Food and Agriculture Organization of the United Nations (FAO) and WHO, among others.

At the national level, the main actor is the Kenyan government, which sets out its national development agenda that needs to be cascaded to the 47 county governments (see Box 3). Some of these national development agendas are embedded in various global and regional agendas. Furthermore, the county governments are semi-autonomous but rely on the national government for part of their budgetary allocation – despite having power to generate their own internal revenue. However, Nairobi City County government is the main actor in Nairobi and has its own development priorities. In addition, the different national and county government ministries and departments have different plans, targets and goals. Meanwhile, non-state actors are supposed to work in collaboration with the national government, county governments and communities, bringing another level of power relation between the actors.

### **Box 3: Levels of government in Kenya**

Kenya has two levels of government: the national government and 47 county governments, Nairobi City County being one of them. The devolved functions to the county governments include agriculture; county health services; control of air and noise pollution, public nuisances and outdoor advertising; cultural activities, public entertainment and public amenities; county transport; animal control and welfare; trade development and regulation; county planning and development; pre-primary education (ECD), village polytechnics, homecraft centres and children facilities; implementation of specific national government policies on natural resources and environmental conservation; county public works and services; firefighting services and disaster management; control of drugs and pornography; and ensuring and coordinating the participation of communities and locations in governance at the local level.

### **3.2. Core systems supporting health and nutrition in Nairobi**

Food and health are the two core systems supporting health and nutrition in Nairobi. Both systems include formal and informal sectors. The elements of a food system are



food production, aggregation, processing, distribution, consumption and disposal, with each element having an impact on health, wellbeing and nutrition (FAO, 2018). Moreover, a food system encompasses a range of interlinked actors and activities that are important in food systems governance that can promote food and nutrition security. The range of governance actors include the government, civil society organisations (NGOs and community-based organisations) and the private sector.

As such, food systems governance can enhance food availability and affordability, food diversity and safety, healthy and nutritious food, production of local and traditional foods, and post-harvest management and reduction of food wastage. It also improves household incomes and food security, urban food environments and consumer outlets, supports small and medium-sized enterprises (SMEs) in the food system, and may help to promote gender- and youth-inclusive dimensions in the food system. At the urban level, there is need to improve the governance of urban and peri-urban farming, food distribution, food retail and food safety (Smit, 2016).

On the other hand, a health system consists of all organisations, people and actions whose primary role is to promote, restore or maintain health (WHO, 2007). This includes efforts to influence determinants of health as well as more direct health-improving activities. A well-functioning and equitable health system has three main goals: to improve the overall health conditions in society, to enhance the responsiveness of the health system to the legitimate expectations of the population, and to make sure that low-income households are not impoverished or pay an excessive share of their income in obtaining needed healthcare.

Even then, there is no doubt that health and nutrition conditions of a community is a function of various wider factors, including the broader physical and human environment, housing conditions, household sources of water, access to sanitation and healthcare services, sources of cooking energy, and access to education, among others (see for example Walnycki, 2022). As such, other city systems that interplay with health and food systems include housing, safety and security, and structural transformation. For example, housing environments in most urban informal settlements are very poor in terms of their public health conditions (Mwau et al., 2020). On the other hand, the intersection between health and nutrition and structural transformation domains revolves around access to employment, income and livelihood sources.<sup>4</sup> For example, access to an economic activity and adequate income helps to determine a household's access to healthy diets and quality healthcare.

### 3.3. Policies, programmes and strategies governing health and nutrition outcomes

Health and nutrition outcomes in Kenya and Nairobi are governed by existing national and county governments policies, programmes and strategies. They are also shaped by specific national and county donor-driven interventions, as well as interventions by

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<sup>4</sup> ACRC defines “structural transformation” as movement of workers from low-productivity sectors to high-productivity sectors.

non-state actors (NGOs, FBOs and CBOs) at the community level. The national government enacts relevant policies that are cascaded to the county governments. The county governments are supposed to enact their county-specific strategies and plans guided by the national government's policies and agenda.

The challenge of food insecurity, poor nutrition and poor health in Kenya, as well as the need to improve access to adequate food of acceptable quality to all Kenyans, is reflected in a number of relevant policies, programmes and strategies, which are outlined in the following sections. However, most of them make very little specific references to urban areas, informal settlements or low-income urban households. This calls for urban-specific interventions on food security, health, wellbeing and nutrition. Moreover, there is little public knowledge on the outcomes and lessons from monitoring and evaluation of these policies, programmes and strategies.

### *3.3.1. The Constitution of Kenya (2010)*

The 2010 Constitution provides the overarching legal framework to ensure a comprehensive rights-based approach to food, health and nutrition (Republic of Kenya, 2010). It provides the right to adequate food in the context of economic, social and cultural rights that are essential for people to live in dignity. It provides that every person has a right to the highest attainable standard of health, which includes the right to healthcare services, including reproductive healthcare. It also provides the right for every Kenyan to be free from hunger and have adequate food of acceptable quality. The constitution also provides that every person has the right to a clean and healthy environment, every child has a right to basic nutrition, shelter and healthcare, and that minorities and marginalised groups have reasonable access to water, health services and infrastructure.

### *3.3.2. Kenya Vision 2030*

The Kenya Vision 2030's Third Medium Term Plan (2018–2022) aims to transform Kenya into a newly industrialising, middle-income country providing a high-quality of life to all its citizens (Republic of Kenya, 2018). It includes policies, plans and programmes to help eliminate hunger and food insecurity, such as promoting food and nutrition security, reducing food prices to ensure affordability, and enabling more inclusive and sustainable food and agriculture systems.

### *3.3.3. Kenya Health Policy (2014–2030)*

The Kenya Health Policy aims to ensure significant improvements in Kenya's overall health status in line with the Constitution of Kenya 2010, the country's long-term development agenda Vision 2030, and global commitments (MOH, 2014). The key objectives of the policy are to eliminate communicable diseases, halt and reverse the rising burden of non-communicable conditions, reduce the burden of violence and injuries, provide essential healthcare, minimise exposure to health risk factors, and strengthen collaboration with the private sector and other health-related sectors. The policy acknowledges the health risks associated with informal settlements, and the

need for the protection and promotion of health interests and rights of marginalised communities in informal settlements.

#### *3.3.4. Kenya School Health Policy (2018)*

Kenya's School Health Policy recognises the importance of innovative health interventions in education (MOE and MOH, 2018). In terms of nutrition, the policy aims to ensure that learners are well nourished so that they can thrive and achieve their full potential by promoting nutrition-related interventions. The strategies that fall under this are optimising school nutrition services, promoting a healthy food environment, enhancing nutrition education in schools, and parental and community involvement in school nutrition. In terms of health, the plan aims to enhance the prevention and control of communicable and non-communicable diseases by early identification and timely response. However, while this policy does not make any specific references to urban areas, informal settlements or low-income urban households, it recognises the fact that the policy should be disseminated for implementation in all counties, sub-counties, public and primary schools, as well as public and private secondary schools in Kenya.

#### *3.3.5. National School Meals and Nutrition Strategy (2017–2022)*

In a partnership between the Ministry of Education with the Ministry of Health and Ministry of Agriculture, Livestock and Fisheries, the National School Meals and Nutrition Strategy was developed to guide the implementation of Kenya's school meals initiatives at pre-primary and primary schools (MOE et al., 2017). The strategy aims to have a sustainable, cost-effective set of school meals initiatives that will address the key outcomes of different sectors such as enrolment, retention and transition rates, food and nutrition insecurity, and health and hygiene practices.

The commitment from the government of Kenya is to ensure that school children are well nourished and healthy and are able to learn and develop to their full potential. The strategy emphasises that counties, communities and schools should have their own initiatives and that partners follow the guidelines. The strategy is anchored on a three-pillar approach: the regular provision of meals every school day throughout the year, acknowledging nutrition and nutrition education as core components of school meals, and linking smallholder farmers with the demand for school meals by procuring directly from these suppliers where possible. It also emphasises that meals should be culturally sensitive, using available local produce. The strategy recognises the fact that schools in Kenya operate under different contexts: public or private, and in urban and rural areas with different socioeconomic backgrounds. As such, it acknowledges that diverse modalities or combination of modalities fit best within the reality of different contexts.

#### *3.3.6. National Strategic Plan for the Prevention and Control of Non-Communicable Diseases*

This plan aims to strengthen the national health system's capacity to manage NCDs and promote a healthy lifestyle (MOH, 2021). It aims to reduce by a third premature mortality due to NCDs by 2025 to achieve a nation free from the preventable burden of

NCDs. Some activities focus on the link between uptake of healthy diets and NCDs, such as engaging with other NCD-related health-sector programmes and prevention and control initiatives, establishing national regulatory and fiscal policies to promote healthy diets, regulating the marketing of unhealthy foods to children, introducing preschool and school-based oral health programmes, developing and disseminating health promotion messages on physical activity, and promoting healthy diets. The strategic plan acknowledges the protection and promotion of NCD interests and rights of marginalised communities in informal settlements. With regards to minimising exposure and risk factors, the strategy aims to strengthen health promotion and education aimed at supporting behavioural change.

### *3.3.7. National Food and Nutrition Security Policy (2011)*

The National Food and Nutrition Security Policy provides an overarching framework covering the multiple dimensions of food security and nutrition improvement (MOPHS, 2011). The policy aims to achieve good nutrition for optimum health for all Kenyans by increasing the quantity and quality of food available, making it accessible and affordable to all Kenyans at all times, and protecting vulnerable populations using innovative and cost-effective safety nets linked to long-term development.

The policy addresses associated issues of chronic, poverty-based food insecurity and malnutrition, as well as the perpetuity of acute food insecurity and malnutrition associated with frequent and recurring emergencies, and the critical linkages thereof. The policy recognises the need to improve food accessibility for low-income residents in both urban and peri-urban areas and that a growing number of urban and peri-urban dwellers require a special focus to ensure adequate, safe and nutritionally diverse diets. It also acknowledges that special measures are needed to help the lowest-income and most vulnerable in urban areas to meet their minimum food and nutrition requirements. In addition, the policy states that urban agriculture has the potential to improve overall food security and nutrition conditions in urban and peri-urban areas. However, regulatory guidelines are required to ensure the safety and quality of food produced, sold and consumed in urban and peri-urban areas.

The policy enumerates the following key priority areas in order to improve food accessibility for low-income households in the urban and peri-urban areas:

- Supporting and simplifying regulatory frameworks governing formal and informal sectors in urban and peri-urban areas with a focus on creating employment and alleviating poverty.
- Supporting and promoting capacity building to enhance urban and peri-urban small businesses, entrepreneurial skills and agricultural production.
- Providing suitable zones for informal-sector activities and supporting access to markets for their goods.
- Supporting small business enterprises to access affordable financial resources.

- Implementing and monitoring special measures to help the lowest-income and most vulnerable in urban areas meet their minimum food and nutrition requirements.

### 3.3.8. *Kenya Nutrition Action Plan (2018–2022)*

At its Third National Nutrition Symposium in 2020, the government of Kenya came up with new measures to tackle malnutrition with the aim of improving Kenyans' health, nutrition and quality of life, boosting immunity against diseases such as Covid-19, and improving social and economic growth (Scaling up Nutrition, 2020b). The Kenya Nutrition Action Plan outlines a multifaceted approach to manage the root causes of malnutrition, supported by UNICEF and other partners (MOH, 2018). The plan promotes cross-sectoral collaboration to address the social determinants of malnutrition sustainably. It also aims to prevent, control and manage micronutrient deficiencies and diet-related risk factors for NCDs and promote the integrated management of and prevent acute malnutrition. In addition, it focuses on nutrition in agriculture and food security, the sectors of health, education and WASH sectors, and in social protection programmes.

### 3.3.9. *Kenya Agri-Nutrition Implementation Strategy (2020–2025)*

The Kenya Agri-Nutrition Implementation Strategy offers practical guidance on strategic interventions for decisionmakers at national and county government levels for implementing nutrition-sensitive agriculture programmes (MOALFC, 2020). The aim is to contribute towards sustained reduction of high malnutrition levels through coordinated agri-nutrition actions by state and non-state actors and empowering communities to produce and consume adequate, safe and nutritious foods in Kenya. However, this strategy does not make any specific references to urban areas, informal settlements or low-income households.

### 3.3.10. *Nairobi City County Food Systems Strategy (2022)*

This is the main Nairobi City County government strategy that governs health and nutrition outcomes in Nairobi. The strategy is a step forward in localising and implementing the National Food and Nutrition Security Policy of 2011, as well as achieving SDG 2 on zero hunger.<sup>5</sup> Its vision is that all Nairobi City County residents will have affordable, accessible, nutritious and safe food by increasing food production, ensuring a stable food supply and stable incomes, reducing food losses, and promoting the welfare of food consumers (Nairobi County, 2022). These objectives will be realised by promoting sustainable food production systems, promoting and supporting safe and effective food storage and the processing and preservation of various foods, supporting investment in infrastructure necessary for food marketing as well as access to food marketing information by stakeholders, supporting income-generating activities for food-poor persons while helping the lowest-income and most vulnerable persons to

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<sup>5</sup> Nairobi is one of the counties of Kenya that has the mandate to formulate its own policies, strategies and development plans. However, these must be aligned with local, national, regional and global development goals.

access food, supporting water harvesting, promoting safe practices in food production while addressing urban food safety and quality, encouraging the monitoring of food consumption and dietary indicators and strengthening nutrition surveillance, and implementing effective food relief and safety nets while providing food emergency responses. This strategy is still new and time will tell whether the new Nairobi City County government will implement it fully.

### *3.3.11. County Integrated Development Plan for Nairobi City County*

Nairobi's County Integrated Development Plan (CIDP) 2023–2027 provides a framework for county planning, budgeting, funding, monitoring and evaluation of programmes and projects in the medium term in response to development issues identified by the county's citizens (County Government of Nairobi, 2023). The plan emphasises economic growth, poverty reduction, income generation, employment creation, improved service delivery and business development as the drivers of its development agenda. In terms of early childhood development and education (ECDE), it proposes building on existing models and favourable policies to implement school feeding programmes in all public early childhood development (ECD) centres and primary schools. This will include the preparation and distribution of meals which will be facilitated by constructing and equipping centralised school kitchens in each of Nairobi's 17 sub-counties. This may exclude a number of school-going children in informal settlements who have no access to public primary schools or ECD centres and who are enrolled in private non-formal schools. However, towards post-Covid-19 recovery, the CIDP proposes plans to construct multistorey kitchen gardens for families in three informal settlements (Korogocho, Mukuru and Kibra).

### *3.3.12. Food4Education and Nairobi City County school meals programme*

In August 2023, the largest school meals programme in Africa will begin in Nairobi, aiming to provide 400,000 lunches for children in 225 primary schools and early childhood development centres every day, and employing 3,500 people. The programme is a collaboration between Kenyan non-profit organisation Food4Education and Nairobi City County.

Food4Education is a private NGO that runs school feeding programmes.<sup>6</sup> The organisation has been in existence since 2018. They leverage the demonstrated effectiveness of school meals for improving education outcomes. Food4Education provides subsidised school meals to public primary school students on school days (Monday to Friday). Currently, they are feeding about 66,000 primary school children in approximately 88 schools in the urban and peri-urban areas of Kiambu, Kisumu, Nairobi and Mombasa counties. In Nairobi, the programme serves areas such as Mathare, Korogocho and Dagoretti.

Food4Education operates under a “hub and spoke” model, where food is prepared in a central kitchen (hub) and distributed to schools, with each kitchen serving schools

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<sup>6</sup> See [food4education.org](http://food4education.org).



within a 15–20km radius. They offer foods such as rice and beans or lentils, *githeri* and vegetables and fruit. The organisation sources large volumes of food from aggregators and then stores it for later. Once food is cooked in the central kitchens, it is distributed to schools using smart logistics (spokes). Children use smart watches that are connected to a virtual wallet to “tap to eat” and 15 shillings are deducted for each meal. The parents credit the virtual wallets using mobile money. The programme is currently supported by donors, mainly consisting of foundations and corporations. Some of the kitchens have been built with the support of the Kenyan National Government Constituency Development Fund (NG-CDF).

### 3.4. Other relevant interventions

In addition to policies, programmes and strategies governing health, wellbeing and nutrition in Kenya, other recent reforms and interventions in health and nutrition by state and non-state actors are also relevant in Nairobi.

#### 3.4.1. African Population and Health Research Centre Food System Lab

The African Population and Health Research Centre (APHRC) has designed a Food System Lab in Nairobi which forms the larger part of the Nairobi Food System Vision.<sup>7</sup> The lab aims to end hunger and all forms of malnutrition in Nairobi by 2030. The lab is focusing on implementation of innovative urban farming with the aim of promoting a sustainable food system. The lab is working with community-organised groups to promote farming at household level in informal settlements, for example by promoting vertical gardening using limited space to maximise food production.

#### 3.4.2. Mazingira Institute's urban farming

The Mazingira Institute is a civil society organisation that works with urban farmers.<sup>8</sup> Especially in Nairobi, it has conducted extensive research on urban agriculture and has collaborated with APHRC to diversify diets in informal settlements by introducing urban farming. Mazingira Institute and APHRC's food security work in Nairobi's informal settlements informed the development of the Nairobi Food Strategy 2017–2018.

#### 3.4.3. Shining Hope for Communities (SHOFCO) WASH programmes

SHOFCO is a grassroots movement that catalyses large-scale transformation in urban informal settlements by providing critical services for all, community advocacy platforms, and education and leadership development for women and girls. SHOFCO has scaled up its WASH programmes in Nairobi's informal settlements. SHOFCO operates over 24 water kiosks in Kibera, most of them operating on cashless payment systems. In addition to this, SHOFCO operates three early childhood development centres in Kibera, Mukuru and Mathare slums. The childhood development centres also train teachers to recognise symptoms of malnutrition and measures to address

<sup>7</sup> See [aphrc.org/blogarticle/promoting-access-to-nutritious-food-in-nairobi-urban-poor-settings](http://aphrc.org/blogarticle/promoting-access-to-nutritious-food-in-nairobi-urban-poor-settings).

<sup>8</sup> See [mazinst.org](http://mazinst.org).

nutrition-related problems, including putting affected children into a nutrition programme consisting of minerals supplementation and fortified take-home meals.

#### 3.4.4. Nairobi Metropolitan Services water supplies

The (now defunct) Nairobi Metropolitan Services has sunk 93 boreholes with elevated water tanks including 12 in Kibra division, 10 in Mukuru and eight in Mathare. As of June 2021, 750,000 people from informal settlements have benefited from these community water projects (Solymári et al., 2022). The Nairobi Metropolitan Services was a citizen-centric public service that was formed in March 2020 following an agreement that led to the transfer of four core functions from Nairobi City County government to the national government. These functions were: health services; transport services; public works, utilities and ancillary services; and physical planning and development. Nairobi Metropolitan Services ceased to exist in September 2023 when the national government transferred its functions and management back to the Nairobi City County government.

#### 3.5. Systems failures, fragmentation and externalities

Despite the number of policies, programmes, strategies and actors involved in HWN, the situation in Nairobi is still characterised by fragmented, piecemeal and stand-alone strategies that often lack multisectoral approaches to problem solving. According to Subhash and Kumar (2017), “by engaging multiple sectors, partners can leverage knowledge, expertise, reach, and resources, benefiting from their combined and varied strengths as they work toward the shared goal of producing better health outcomes”. For example, Nairobi’s CIDP (2018–2022) recognised the fact that there was a need to improve cross-sectoral cooperation for health promotion and public health, in the areas of water and sanitation, reproductive health, gender, HIV/AIDS, nutrition, school health and tobacco control.

Currently, there is little synergy between the national government and the county government of Nairobi’s operations and development strategies. Although piecemeal and stand-alone strategies may be effective within that particular component, there is no connectedness of interventions across the various components in the health, food and nutrition systems. In addition, most of the policies, programmes and strategies are not city specific and rarely focus on the most disadvantaged or vulnerable groups in society. Emphasis is usually placed on planning for the formal sector, despite the fact that the informal sectors in health, food and nutrition play an equally important role in contributing to better health and nutrition. Informal sectors need recognition, good governance structures and a supportive environment to perform their roles better. The Federation of Kenya Employers (2021) notes that there is need to integrate the informal economy’s space and infrastructure needs into national and county physical planning activities.

The failures of health, food and water and sanitation systems, among others, especially in the informal settlements of Nairobi, are exhibited by numerous social, economic,



environmental and spatial development challenges, inequalities and injustices. This requires a radical change of mindset and new strategies and governance structures. In terms of externalities, the Covid-19 pandemic has had a major impact on health, wellbeing and nutrition (Kimani et al., 2021). Unemployment was a major outcome of the epidemic which led to the loss of incomes and livelihoods. Consequently, this impacted on the ability of households to economically access basic necessities such as food. Global recession, market shocks and inflation have also had an impact, with subsequent price increases.

According to the key informants who participated in this study, the main reasons for system failures and fragmentations are largely attributed to governance issues in relation to the structure and functioning of the national and county governments. Furthermore, they indicated that there is a lack of funding and prioritisation of development projects. In some cases, there is a lack of stakeholder participation, as well as participatory community engagements. In addition, while the political elite retains control of Nairobi, their vision for the city remains blurred. Besides an unresponsive state apparatus, the governance of Nairobi City is complicated by a populace that does not treat the city as their home, but as a place to work, and then retire in the countryside. Many Kenyans identify themselves with their rural homes, and according to the 2019 Population and Housing Census, only 9.3% of households in Nairobi live in houses that they own, with the majority living in rental units (KNBS, 2019). This limits opportunities to bring duty bearers to account in the city in addressing deep-rooted service-provision challenges.

Health, wellbeing and nutrition are complex and multidimensional in nature and context. It is imperative that sectors other than health should be involved, such as agriculture, water and sanitation, and health. For example, the agriculture sector can influence the underlying determinants of nutrition outcomes, including the improvement of food availability and access, and enhancing household food security, dietary quality, income and women's empowerment. However, evidence is extremely limited on how and what agriculture can contribute to nutrition, although some studies claim that agricultural development programmes lead to an increase in dietary diversity at the household and sometimes maternal and child level. This is because some agricultural development programmes promote production diversity, micronutrient rich crops, dairy and/or small animal rearing (Ruel et al., 2018).

#### **4. Impact of politics on food security, health and nutrition in Kenya**

Issues of health, food and nutrition remain key to Kenya's national, county and city-level politics and political settlements. During every election period, issues of food and health dominate the campaign trails and campaign pledges. For example, during the recent 2022 elections in Kenya, President William Ruto's campaign promises (with his Kenya Kwanza Coalition) included that his government will: provide universal healthcare, finance primary healthcare, establish Level 6 (national referral) hospitals in every county, establish a national fund for chronic and catastrophic illnesses and injury,

roll out a mandatory national insurance scheme, and employ more healthcare workers. Furthermore, he promised to reduce the price of maize meal, which according to Kenyans was relatively high. In fact, the former president, Uhuru Kenyatta, while campaigning for the Azimio One Kenya Coalition party, subsidised the price of maize flour, while all the presidential candidates promised to lower the price of maize flour and provide affordable universal healthcare. Generally, the national election campaigns were driven by three key issues: lowering the high price of *unga* (maize flour), lowering the cost of living, and providing affordable healthcare.

Sixty percent of Nairobi's population live in informal settlements, thereby making up the bulk of voters. Nairobi is a hotly contested city county as it hosts the national government and has the largest share of income streams in the country. Thus, politics – and especially during election periods – are normally framed around the basic needs of low-income households to ensure they vote in favour of whichever party they perceive to be in touch with their locals needs. Campaign promises, as listed in manifestos, normally focus on the aspirations of the people and are informed by their needs. Political campaign promises and manifestos also inform the key development agenda of the ruling party. They provide the political goodwill needed to establish and operationalise development agendas that are geared towards achieving their pledges. In addition, the current political formation in Nairobi City County government is that the governor is a member of a different political coalition (Kenya Kwanza Coalition) from the majority members of the county assembly who are from the Azimio One Kenya Coalition.<sup>9</sup> The county assembly is the legislative arm of the county government responsible for the formulation of laws that regulate the conduct and activities within the county and provides oversight. This implies that since the Kenya Kwanza Coalition is a minority in the county assembly, it can be difficult for the governor to implement his agenda without the support of the Azimio One Kenya Coalition. Put differently, the Azimio One Kenya Coalition members of the county assembly can politically sabotage the governor's agenda.

According to the key informants who participated in this study, food per se, rather than nutrition and healthy diets, has always been at the centre of political settlements in Kenya and in Nairobi. The high cost of living and high food prices affects most urban low-income households and has been of major concern to political leaders, with specific attention to the price of *unga*. Political focus has always been on staple food crops such as maize, not on proper nutrition. In fact, the "*unga* crisis" was a key political issue during the 2012, 2017 and 2022 general elections, especially in urban areas where high food prices remain a major challenge for low-income households. As such, the problem of healthy diets is connected to the political settlement from a broader perspective of food. While politicians may not benefit directly from this focus on food, it may contribute to legitimacy for national leaders.

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<sup>9</sup> The United Democratic Alliance (UDA) under the Kenya Kwanza Coalition is the ruling party in Kenya.

During his campaigns across the city, Sakaja Arthur Johnson (the current Nairobi City County governor and also a member of the ruling party's Kenya Kwanza Coalition) promised Nairobi residents that if elected his county government would provide free lunches to all primary school-going children and build 20 new markets for food distribution. This was further affirmed during his inauguration as governor when he unveiled his manifesto dubbed "Let's Make Nairobi Work" and the four pillars of the campaign: order, dignity, hope and opportunity. Within that context, his promises include, among others, to provide healthy lunches for all children in Nairobi's public primary schools, create a working universal health coverage (UHC) programme, and increase the capacity of early childhood development centres.

The Nairobi City County governor has recently initiated a school feeding programme for the 205 public primary schools across the city, with a total enrolment of about 193,058 children. Started in Nairobi in August 2023, it is the largest school meals programme in Africa, aiming to provide 400,000 lunches for children in 225 primary schools and Early Childhood Development centres every day, and employing 3,500 people (Oniango, 2023). The programme is a collaboration between Kenyan non-profit organisation Food4Education and Nairobi County. The governor argues that this will not only improve school-going and transition rates, but will help about 65% of the city's vulnerable households who can only afford one meal in a day. However, many informal settlement dwellers are not served by public primary schools and there is no clear policy that non-formal private primary schools in the informal settlements will be included in the school feeding programme. In addition, our key informants noted that there is need to involve more stakeholders in evaluating and redesigning the school feeding programme, so as to increase its acceptability, especially by schools running their own feeding programmes, and that there is also need to include informal schools in scaling up the Food4Education school feeding programme.

On healthcare, the governor intends to prioritise providing quality healthcare through an integrated hospital information management system (IHIMS) and to facilitate the supply of medicine to public hospitals across Nairobi. He has further pledged to deliver clean and safe water for all households, ensure affordable and decent housing, ensure a clean and green Nairobi, address the city's waste-management challenges, deliver a digital single-business permit, and implement a 50-million-shilling Biashara Kenya credit fund per administrative ward.<sup>10</sup>

In addition, the governor has pledged to build 20 new markets to accommodate over 543 local traders. According to the key informants who participated in this study, the establishment of the 20 new markets promised by the current governor is a way of decentralising food distribution outlets and to mitigate the overall effect of centralised markets have on the prices of food to the end consumer, in the hope that it can

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<sup>10</sup> The Biashara Kenya Fund is intended to promote, expand and facilitate access to credit to currently financially marginalised segments of Kenyan society. Under the Biashara Fund, women, youth and persons living with disabilities will be eligible for loans if they are in a registered group.

alleviate food insecurity, safety and by extension create employment in the respective areas. According to the proposed plan, the 20 markets will be spread across all the Nairobi sub-counties and will integrate both wholesale and retail sections. In addition, they will have wash centres for food and cold storage, as well waste management. It should be noted that the sets of relationships shaping food environments such as markets is complex. Decisions around food retail zoning and permissions and the complex relationships shaping food environments would merit further study but were beyond the scope of this research.

Historically, Nairobi County gets up to 80% of its food supply including fresh farm produce from outside its boundaries (Owuor et al., 2017). Food is transported from other counties by road and is brought to the major markets where local traders, who retail the food in kiosks and shops, buy and sell in small quantities. However, the wholesale food markets have been dominated by cartels or middlemen who control the markets (Racaud et al., 2018). They dictate prices that the farmers should sell at and inflate the prices to the buying retailers, keeping the inflated margin. This, in turn, increases food prices and, as such, food becomes unaffordable, especially for low-income earners living in informal settlements. The cartels that control the markets have long enjoyed the protection of the sitting politicians who also benefit from income from informal imposed levies (known as “rents”).

In addition, informal food vendors are normally subjected to financial extortions, bribes and illegal fees not only from the Nairobi City County by-laws enforcement officers but also from the residential neighbourhood officials – yet some of them pay the daily legal market fees to the county government. This in turn increases food prices. Furthermore, the majority of those employed in the informal sector, including informal food vendors, are always sought after as a potential voting bloc. This is an area of considerable complexity that warrants further study but was beyond the scope of this research.

## **5. Key findings from community focus group discussions**

The previous sections have provided an overview of the key development challenges in the domain of health, wellbeing and nutrition in Nairobi specifically, and in Kenya more generally, as well as the core systems, key actors and interventions influencing or supporting health and nutrition and the uptake of healthy diets. They have also explored the significance and influence of politics on food security, health and nutrition in Nairobi. This section focuses on the key findings from the eight FGDs held with community members in Mathare and Viwandani settlements in Nairobi. The key informants also agreed with the key issues identified by the FGDs as limiting or enabling the uptake of healthy diets in Nairobi's informal settlements.

The FGDs took place just before the general elections and therefore the study team avoided discussing politics with the participants, which could lead to potential conflict within the groups due to differences in political opinions. While the FGD participants themselves did not specifically link political factors or wider structural inequalities to health, nutrition and food (such as city-level provision of services or issues such as

cartels and inflated food prices discussed in Section 4), general factors such as the prevalence of poverty and unemployment were implied during discussions, especially in relation to income.

The focus groups were divided into four broad categories: women only, men only, mixed genders, and young mothers (Koyaro et al., 2022). The analysis presented here covers the following thematic areas:

- Community's understanding of healthy foods and diets, good health and diet-related communicable and non-communicable disease.
- Household sources of food and food consumption preferences and patterns.
- Factors that enable and limit the community's uptake of healthy diets.
- Groups vulnerable to food insecurity and poor nutrition in Mathare and Viwandani.
- Factors that contribute to poor health in Mathare and Viwandani.
- Access to healthcare services in Mathare and Viwandani.

### 5.1. Community understanding of healthy foods and diets

The FGD participants translated healthy foods and diets as *lishe bora* (good foods) or *chakula bora* (and good nutrition) in Swahili. However, most participants' descriptions of healthy foods and diets revolved around the common notion of "a balanced diet of carbohydrates, proteins, vitamins and green vegetables" that the community can easily access.

"What I understand by healthy food is food which contains a balanced diet like carbohydrates, protein and vitamins, and also access to clean water." (Mathare, male participant)

They also described the benefits of healthy foods and diets as important for "making the body strong, for good health, to prevent and help fight against disease, to boost immunity and contribute to long life".

"The reason people eat healthy food is to build the body, there is also food that makes the body strong and helps build the immune system of the body." (Viwandani, male participant)

However, despite their understanding that both the quantity and quality of food matters, the FGD participants appeared to have little knowledge of the recommended quantities and qualities (combinations and types) of food groups in a household's diet. Some of the foods they considered healthy included milk, fish, nuts, red and white meat, maize, beans, rice, pumpkin seeds, *ugali* (a type of corn meal made from maize or corn flour), chapatis, *githeri* (a traditional one-pot meal made of corn or maize with beans), cassava, sweet potatoes, mung beans, arrowroot, bonebroth soup, *omena* (a type of fish), green vegetables, traditional vegetables (including leafy greens such as *managu*, *mchicha* and *saga*) and fruit (such as watermelons, bananas, mangoes, pawpaw and

oranges). Foods considered unhealthy or less healthy were traditional alcohol (*chang'aa* and *busaa*), sweets, chocolates and pizza.

According to the FGDs, unhealthy diets largely constitute eating predominantly starchy foods on a daily basis, such as frequently eating *ugali* and stew without green vegetables, consuming a combination of potatoes and cabbages, alternating maize flour porridge with potatoes, and cooking white rice with potatoes. Some households consistently feed their children on maize flour porridge for each meal throughout the day and this was considered unhealthy. They also considered feeding on expired or spoiled food (from donations) as unhealthy.

## 5.2. Community understanding of good health and diet-related communicable and non-communicable diseases

Among the participants, there was a fairly good understanding of good health and how it relates to wellbeing. According to the FGDs, good health means the absence of disease and having a strong physical appearance. However, participants observed that financial stability determines the health of an individual or a family. Lack of money and poverty was associated with poor nutrition, stress and poor health conditions. It was noted that eating a balanced diet, taking frequent exercise (walking, jumping, dancing, yoga), practicing good environmental and bodily hygiene, avoiding stress and praying to God are some of the ways of keeping healthy. However, some of these strategies are rarely practised in informal settlements. Good health was not only associated with good nutrition, but also with other environmental factors.

“Good health carries very many things, it can come from food, it can come from the environment, and it can come from water and sanitation [...] for example, poor sanitation brings diseases.” (Mathare, male participant)

The FGDs identified and articulated a number of diet-related NCDs. The most common were hypertension (referred to as “pressure diseases”) and diabetes (referred to as “sugar disease”), affecting mostly the elderly and women in both Mathare and Viwandani. Other NCDs affecting the community in various degrees include mental problems, depression, heart attacks, ulcers and cancer. Among children, key NCDs are kwashiorkor (a disease marked by severe protein malnutrition and bilateral extremity swelling), stunted growth, marasmus (a deficiency of all macronutrients: carbohydrates, fats, and protein) and rickets (a condition that affects bone development in children).

Although not necessarily diet related, common communicable diseases affecting the community are cholera, diarrhoea, typhoid, stomach ache and H-pylori. Participants linked these gastrointestinal infections to unhygienic environments and poor food handling. Cholera and diarrhoea were found to be common among children. Other communicable diseases include HIV/AIDS, sexually transmitted infections (STIs), rickets, malaria, respiratory infections and tuberculosis.



### 5.3. Household sources of food and food consumption: preferences and patterns

#### 5.3.1. Sources of food

There is minimal food production among the households in Mathare and Viwandani. At most, two out of ten participants were involved in any form of urban agriculture and no young mothers were involved in urban farming activities. As a result, most food is purchased, and the most common source of food is from local street food vendors, who are located in the neighbourhoods and offer convenient and affordable access to food.

“We mostly get our food from the local *vibandas* [food kiosks] and from the *mama mbogas* [female vegetable hawkers] in our localities.” (Mathare, female participant)



In makeshift informal food kiosks known as *vibandas*, locals can buy a variety of cooked foods such as *githeri* (cooked maize and beans), rice and chapatis. Photo credit: Veronica Mwangi.

The *vibandas* offer a variety of cooked foods such as beans, *githeri*, rice, chapatis, animal parts (such as cow legs, heads and tongue; chicken feet, heads, intestines and liver; and fish) and *ugali*, while the *mama mbogas* (meaning “vegetable mothers”) offer a variety of vegetables, fruits and cereals.



Fruit and vegetables sold by an informal local food vendor. Photo credit: Sam Owuor.



Local food vendors source their food from the major food markets in the city such as Korogocho, Muthurwa, Gikomba and Marikiti. Most members believe that foods from these markets originate from upcountry and therefore perceive them to be safe and healthy. The households also access food items such as flour, sugar and rice from shops in the neighbourhood, but not from supermarkets. These neighbourhood shops offer smaller quantities of essential food products (known as “*kadogo*” or “little” economy) and sometimes sell on credit, depending on the relationship between the buyer and seller. As such, the FGD participants noted that local informal food vendors and neighbourhood shops are their regular and important sources of household food items.

By contrast, supermarkets are located far from most households and are not a popular source of food. Participants argued that they would incur transport costs to access supermarkets and would require a larger amount of money to purchase several items in bulk.

“At the supermarket, we cannot make it because one has to purchase many things and in larger quantities and I do not have money [...] Going to the supermarket you will use a *matatu* [form of public transport], adding more expenses.” (Viwandani, female participant)

### 5.3.2. Food consumption preferences and patterns

The most common foods consumed in Mathare and Viwandani are *ugali* and *githeri*. *Ugali* is consumed with different accompaniments such as vegetables (green vegetables, cabbage), meat (chicken feet and liver, fish), milk and beans. *Githeri* is normally cooked or fried with a variety of other food items such as green vegetables, tomatoes, carrots, potatoes or with salad (raw cut tomato and onions) as a cheap option. Rice was also identified as an alternative to *ugali* and *githeri* but considered less popular because of its relatively higher price. Foods that require several ingredients such as *pilau* (spiced rice) are considered luxurious and consumed only occasionally. Fruits are also considered a luxury because they are relatively expensive. Families that could afford to eat fruit in their daily diets were considered to be well off.

Food preferences are a result of a number of factors and perceptions. For example, male adults seemed to prefer foods that are filling and provides them with energy such as *ugali*. Children were said to have a liking for softer foods such as rice or chapati and tasty fried snacks, such as *mandazi* (a form of fried bread that is a popular Swahili dish).

“Like a man or a father, you can't cook for him rice thinking it can satisfy him [...] You know that there is nothing that will be left for tomorrow [...] He will obviously eat all that rice and still say he is not satisfied [...] he will definitely go to the *vibanda* for *ugali*.” (Mathare, female participant)

Households may have preferences for different types of food. However, these preferences are constrained by their ability to purchase the preferred foods:

“What is brought on the table is what everyone will consume. So, there is no time to choose. If you choose, you will stay hungry because there is no way all people will eat the same food and you want different food. Even if you don't like to eat that type of food, you will have no other option but to eat it.” (Mathare, male participant)

Participants argued that catering to everyone's food preferences within a household would lead to an increased food budget and would be unsustainable. As such, household members' food preferences were not a major consideration in food-purchasing decisions. The main consideration was the amount of money available. However, in some cases, culture is an important consideration. For example, members from central Kenya prefer *githeri*. In some cases, perception matters. For example, some women do not like *sukuma wiki* (kale) because it causes acidity or their children do not like it.

Most participants were of the opinion that many households in Mathare and Viwandani depend on only two meals a day: breakfast and supper. Breakfast is largely tea with *ugali* (leftover from the previous night), bread (bought from the shop), chapatis and *mandazi* (bought from street food vendors). Lunch is rarely prepared at home but a light meal (such as rice or chapatis with beans) can be purchased from the *vibandas*. Food is typically prepared in the house in the evening. Households prepare food by shallow frying or boiling, depending on their cultural background and experiences of food preparation. In some cases, food is prepared in such a way that it is sufficient to feed all family members. For example, fish is cooked in soups so that it is enough to share among household members.

Most households with families make breakfast and dinner at home. Even when cooked food is bought from the *vibandas*, it is brought home to be supplemented with either tea or *ugali*. For example, *mandazi* bought from street food vendor is used with tea made at home, while cooked, fried or roasted animal parts (such as cow legs, heads and tongue; chicken feet, heads, intestines and liver; and fish) are used with *ugali* made at home. However, the participants noted that some single men and women prefer to eat from the *vibandas* to avoid cooking at home.

#### 5.4. Factors that enable or limit the community's uptake of healthy diets

##### 5.4.1. Household income

According to the participants, most households have to make their food consumption choices according to their daily wages or monthly incomes at their disposal. In other words, household preferences and food choices largely depend on the cost and affordability of particular food types. The FGD participants argued that their households' daily wages and monthly incomes are insufficient to afford a basket of food items that make a healthy and balanced diet.

“We don't take a healthy diet because our income is low and therefore, we cannot afford three meals a day. As long as I get half a kilogramme of maize flour and some vegetables, I am good to go.” (Mathare, female participant)

“In as much as we consider healthy foods and a balance diet, money becomes a factor [...] If it's not enough, you rearrange the budget and reduce the expense.” (Viwandani, female participant)

“Most of the time we eat what is available, we are not keen on a balanced diet or how healthy the food is [...] There those who can afford a healthy diet and there those of us who cannot afford.” (Mathare, female participant)

Access to income is related to access to employment. Many people rely on casual jobs or self-employment in the informal sector. They explained that daily wages from casual jobs range between 100 and 200 Kenyan shillings, which is insufficient to cater for their household's various competing needs, including food. Consequently, households make decisions on the cheapest options, which are not necessarily the best in terms of nutrition. In addition, low incomes and high poverty levels hinder households from purchasing food items such as meat that are considered expensive.

The FGD participants observed that a wide range of healthy (and unhealthy) foods are locally available in Mathare and Viwandani; for consumers, everything depends on the price of food and the household's ability to pay. For example, *sukuma wiki* (an East African dish made with collard greens and cooked with onions and spices) and traditional vegetables are readily available (except during the dry season). Cooked street foods such as chapati, *githeri*, *mandazi* and beans, as well as seasonal fruits, are also readily available. In addition, meat (protein) can be purchased from the local butchers, while meat from animal parts is cheaply available from street food vendors and at cooked-food *vibandas*. The animal parts are sourced from slaughterhouses such as Kariokor and Burma.

“If it was not for those cheap foods that are being sold at the roadside, for example chicken heads and fruits, many people would not afford any uptake of proteins and vitamins in their diets [...] With five shillings you can eat a banana.” (Mathare, male participant)

#### 5.4.2. Number of household members

Households with many children and dependents were said to have more difficulties in meeting their food and nutritional needs, especially when most household members are not working. As such, large households often compromise their dietary diversity intake and quantity and quality of food. The situation is made worse with low incomes and high poverty levels.

“So, if I have 100 shillings and I have children and grandchildren and I want them to eat, that 100 shillings is not enough because the price of *unga* is high, the price of food is high and I have got many mouths to feed and little money.” (Mathare, female participant)

“I have so many kids in my house. When I do not have money, I just go buy vegetables and prepare because affording a good meal is expensive [...] So long as the kids get full, that is fine.” (Viwandani, female participant)

### 5.4.3. Cost of cooking fuel

The FGD participants noted that the price of gas and kerosene has increased recently, and it is becoming increasingly expensive to cook food at home. As such, some people, especially single men and women, prefer eating cooked foods from food vendors. Foods that take time and lots of energy to prepare, such as *githeri*, are increasingly being sourced from cooked-food vendors. The members explained that one can buy a cooked chicken head for as low as 5 shillings, cooked chicken intestines for 10 shillings, and cooked chapati and beans for 20 shillings. Moreover, these foods are available from as early as 5am until midnight.

“I consider other expenses [...] I eat from the *vibandas*, for example chapati and beans worth 50 shillings, [but] it will be much more expensive for me to cook the same meal in the house, considering the purchase of other ingredients such as oil and cost of gas or charcoal.” (Mathare, male participant)

“We women don't use gas nowadays because its price has really gone up, same as kerosene [...] It's better to buy the already-made food, for example rice and beans.” (Mathare, female participant)

### 5.4.4. Household members responsible for purchasing and preparing food

Participants argued that the adult household member tasked with food purchase and preparation plays a major role in determining the type and variety of food to be consumed in the household and the portions served. Traditionally, decisionmaking about household food consumption is left to the female spouses or female heads. This is because of their knowledge of food, food purchases and food preparation. However, it is typically the male spouse who provides the money for food. In some instances, men buy food items such as meat as opposed to vegetables.

“It is the man who gives money but buying the food, it is the women who decide what will be eaten today.” (Mathare, female participant)

### 5.4.5. Availability of cheap, fast and ultra-processed foods

Participants observed that a variety of fast and ultra-processed foods such as salted and sweet snacks, ready-to-drink juices and sodas, assorted sweets, chocolates and cakes, crisps, biscuits, *bhajia* (a snack made of spicy potatoes), *mabuyu* (a popular Kenyan candy made from baobab fruit) and chips, among others, are readily available at the neighbourhood shops and retail outlets. This is driving the increased consumption of these food products, especially among children. In addition, convenient foods such as noodles and Indomie (a brand of flavoured instant noodles) are becoming popular with younger mothers due to the ease of preparation. Children learn about the availability of various processed foods from their fellow children, peers, television advertisements and from their parents. One of the participants explained that:

“It is because fast foods and processed foods are hard to resist. They are also relatively cheaper and advertised on a daily basis. Sometimes those promoting them give free

samples [...] which may increase the rate at which people, and especially children, like them.” (Mathare, male participant.)

#### 5.4.6. *Food safety and hygiene measures*

Despite the popularity of street foods, FGD participants noted that poor access to water and sanitation, poor sewerage coverage, poor drainage and poor solid-waste management have indirect negative effects on food safety and hygiene and can compromise food safety among street food vendors. They were concerned that gastrointestinal infections are linked to unhygienic environments and poor food handling.

“I am never so certain about the safety of the foods we buy because you will never know how the food has been cleaned or what type of water was used to cook the food or where it has come from.” (Mathare, female participant)

There are also concerns about some unethical practices by food vendors. One concern relates to the quality of cooking oil used in the preparation of street foods. It was reported that some food vendors use oils that are not meant for cooking food, while others reuse cooking oil several times. Most of the food vendors were reported to be operating without licenses while enforcement of safety and hygiene regulations in the informal settlements is near non-existent.

#### 5.4.7. *Knowledge and awareness of health and nutrition*

Some participants felt that there is inadequate knowledge about what constitutes healthy food or a healthy diet and called for training and awareness-raising initiatives. Whereas people seemed to have general knowledge about foods that could be considered healthy, there was a view that there is lack of knowledge on the nutritional value of food.

“You find that you may eat food in less amounts and quantities but the nutrients it gives you is best, but you do not have that knowledge.” (Mathare, female participant)

Even then, the members noted that existing knowledge of healthy foods and diets should be passed from one generation to the other, and from older women to the younger ones in the community. However, older women were concerned that the younger ones no longer appreciate the nutritional value of traditional foods and instead prefer modern foods that are ultra-processed, tastier and easier to cook.

#### 5.4.8. *Maternal and childcare practices*

Participants noted that the good growth of a child depends on the mother's or caregiver's childcare recommended practices, including breastfeeding. However, young mothers in informal settlements who look for jobs to earn a living leave their children at daycare centres while only providing a limited food supply for the day. In addition, these mothers may feed their children on sweet foods (biscuits) and fatty foods (*mandazi*, chips), which may not be healthy for the child's growth. Single mothers

are particularly affected and they were pointed out to be struggling to take care of their children.

“Many of them have no jobs [...] They depend on casual jobs of washing clothes for people and she is not guaranteed of getting it [...] So getting a balanced diet for herself and her children is very difficult.” (Viwandani, female participant)

#### 5.4.9. Cultural and religious perceptions

Some members argued that food consumption may be determined by one's cultural and religious perceptions and beliefs. While some religious faiths discourage their members from eating meat and other food types, some communities have a predominantly meat-based diet. In addition, some communities are not exposed traditionally to certain food types and feeding habits.

“I was brought up knowing that traditional vegetables like *managu* [a leafy green vegetable] and *terere* [pigweed] are eaten by goats [...] while thorny melons are food for donkeys.” (Viwandani, female participant)

#### 5.4.10. Excessive use of alcohol and drugs

The excessive use of alcohol and drugs such as *miraa* (khat, a stimulant) in informal settlements is a challenge. Participants reported that *miraa* decreases appetite for food. Alcohol consumption was associated with prioritising expenditure for alcohol at the expense of buying healthy foods. Alcoholism was also related to the inability of young mothers to take care of their children.

“They are constantly drinking, but they prefer to buy cooked street chapati with a mixture of bean soup and doughnuts for their children. This is not healthy [...] Such mothers have no time for their children because of alcohol addiction.” (Viwandani, female participant)

#### 5.4.11. Access to state and non-state interventions

Participants explained that interventions from NGOs in providing supplementary food to malnourished children have reduced the number of underweight children in informal settlements. They nevertheless expressed fears of inconsistent funding and the sustainability of such programmes. NGO medical facilities provide meals to food insecure children under five years of age. Churches are involved in providing cooked and uncooked foods to vulnerable households, while community health volunteers are tasked to regularly visit households within a given area to assess their health, nutrition and wellbeing. Participants who are community health volunteers mentioned that they often identify malnourished children from the informal daycare centres, who are then enrolled in such nutrition programmes.

“There was a time many children in daycare centres were really suffering [...] We normally identify such cases and give the mothers referrals to such programmes [...] Many of such children have improved these days [...] and cases of underweight children are very low.” (Mathare, male community health volunteer)



Community health volunteers play an important role in improving health and nutrition conditions in informal settlements. They, in collaboration with other stakeholders, are involved in advocacy on health and nutrition, outreach programmes by health centres and NGOs, and health and nutrition-related trainings at the community level. In addition, vulnerable groups (such as persons living with diseases such as tuberculosis and HIV/AIDS or malnourished children) are supported with nutrient-rich foods such as peanuts.

“Mathare hospital gives peanuts to the children who are malnourished and the people with tuberculosis and HIV whose immunity has deteriorated.” (Mathare, female participant)

However, as community health volunteers are unpaid, they are limited as to how much time they can devote to their volunteer work in relation to their own sources of livelihoods. More recently, in October 2023, the President of Kenya, in recognition of the important role community health volunteers (now renamed community health promoters) play in achieving universal health coverage, noted that the national government is working closely with the county governments to strengthen the delivery of community health services through payment of stipends for community health promoters on a 50:50 basis.

#### *5.4.12. Access to school feeding programmes*

The eight FGDs held in Mathare and Viwandani with community members identified young children and primary school-going children as some of the most vulnerable to food insecurity and among the ones who suffer malnutrition, including marasmus, kwashiorkor and rickets. According to participants, the situation is made worse by elevated levels of poverty in informal settlements, and high fertility trends leading to higher numbers of children. These children end up suffering the most as their provision is solely dependent on parents who do not have the means of providing healthy diets and spend most of their time searching for casual jobs, leaving their children at daycare centres with barely sufficient food, or, if sent to school, dependent on the school feeding programme. In the absence of school feeding programmes, children mostly stay hungry all day, and only eat in the evening if their caregiver has been able to earn enough money to buy food.

The FGD participants further argued that school feeding programmes lessen caregivers' mental burden, caused by the constant worry that their children are starving. It was mentioned that for some of the most vulnerable children known to the schools, they should be provided with a packed meal to take home for their supper, even if that meal ended up feeding the other children at home or the entire family.

The FGD members also agreed that school feeding and school farming programmes in public schools and a few private schools (mostly owned by religious institutions) have the greatest potential to address challenges of food and nutrition insecurity in informal settlements, and especially among more vulnerable children. They noted that school feeding programmes will be most beneficial to low-income families with school-going

children. The implementation of these interventions will help to address the challenge of food and nutrition insecurity in informal settlements, and partly address poverty and nutrition-related diseases among children. In addition, the FGDs suggested that the many informal daycare centres in Nairobi's informal settlements should be integrated into intervention programmes since they also cater for children. They felt that using the existing school feeding and farming programmes, as well as the existing daycare centres, will strengthen the acceptability and sustainability of the interventions for healthy foods and diets in the community.

The FGD participants confirmed that school feeding programmes are operational in public schools, where parents contribute 20 shillings towards the lunch offered. However, these programmes do not benefit children in formal or informal privately-owned schools. In addition, there are certain church-based organisations that provide cooked food (such as rice with beans) to school children in Mathare. Furthermore, under some of the school feeding programmes, children from very vulnerable households are provided with additional food portions to take home. From the discussions, it was noted that there are varied programmes, each operating differently without any form of coordination among them. The participants explained that the school feeding programmes are not universal, are not well coordinated, do not cater for the children who cannot afford to pay for them, and that they do not provide healthy diets. Moreover, there seemed to be inconsistency in the lifespan and operations of these programmes.

#### *5.4.13. Limits to household food production*

Participants recognised household own food production through urban farming as an ideal contributor to healthy diets, for example, by increasing the availability of vegetables to the households. Youth groups were particularly singled out as being more involved in urban farming, growing a variety of green vegetables. However, barriers to uptake included the lack of space, lack of time and the theft of food from plots, which have deterred many households from practicing urban farming. In addition, some landlords do not allow tenants to engage in urban farming.

“Here, for example, the houses that are built are extremely squeezed to each other so you find that you cannot place the sacks of vegetables at the corridor as this is a path that everybody in the area uses and the neighbours will complain because there is no path to pass through.” (Mathare, male participant)

#### *5.4.14. Groups vulnerable to food insecurity and poor nutrition in Mathare and Viwandani*

Participants identified children, the elderly, the sick, single mothers, orphans, street families, and alcohol and drug addicts as the groups most vulnerable to food insecurity and poor nutrition in the community. Children, the elderly, the sick and orphans depend on other people for their food provisioning. In addition, the elderly can no longer engage in economically meaningful work and therefore have no money for food. Furthermore, those on medication should be on nutritious diets but are not. Children of

breastfeeding mothers may also suffer from the lack of good nutrition when the mother does not have access to healthy food. Mothers are forced to wean infants early when they find that they have insufficient breastmilk due to poor diets. School-going children, whose schools have feeding programmes, were said to be slightly better off in terms of access to food – underlining the importance of such programmes for school-going children. Single mothers are most likely to have low incomes or lack employment. Alcohol and drug addicts were reported to spend a substantial amount of money on their addiction and less on food.

#### *5.4.15. Other factors contributing to poor health in Mathare and Viwandani*

The FGD participants identified several other factors that contribute to poor health in Mathare and Viwandani, besides food insecurity and nutrition:

- Plastic “spaghetti” water pipes are often immersed in drainage and sewerage lines. This is a common practice in both Viwandani and Korogocho and is likely to contaminate water used for domestic purposes, thus spreading waterborne diseases.
- Unhygienic food environments and food handling are likely to compromise food safety. As noted above, food vendors are extremely prevalent but may have unsafe food handling practices, including operating in unhygienic environments.
- Food adulteration (characterised by lacing of food with chemicals during farming, preservation and cooking) exposes the community to health hazards.
- Poverty, unemployment and economic hardships lead to stress, high blood pressure, mental health problems and sexual exploitation.
- Poor housing and living conditions (including congestion, lack of ventilation and poor sanitation) lead to respiratory infections and elevated vulnerabilities to extreme weather (such as flooding) or fire outbreaks.



Informal settlements are characterised by poor housing and living conditions, which can have adverse impacts on residents' health while also elevating vulnerabilities to emergencies, such as flooding or fires. Photo credit: Veronica Mwangi.

#### 5.4.16. Access to healthcare services in Mathare and Viwandani

The FGDs observed that they have access to five types of healthcare facilities. These are public health centres, private hospitals operated by FBOs and NGOs, private health clinics operated by individuals, individually owned chemists, and a wide range of herbalists. Chemists are preferred because people can receive attention and medication more quickly (compared to public and private healthcare facilities). Chemists can also attend to non-serious medical issues, are friendly and show concern, give medicine on credit or in affordable quantities, are located closer to many households, and can also offer advice or health education while they serve customers.

“When my child is unwell, I visit my usual chemist and explain to Alex the condition of the child and that is it.” (Viwandani, female participant)

Even then, the main concern about chemists is that some are operated by unqualified personnel, some provide wrong diagnoses and prescriptions, and some operate without valid licences.

Participants also praised the few public health facilities for offering a wide range of professional services, including proper medical consultation, laboratories, X-rays, family planning and maternity services, medical checkups for hypertension and diabetes, psychosocial services and counselling, and nutrition services, among others. One notable public health facility is Lunga Lunga in Viwandani. However, participants also noted some concerns about public health facilities such as the lack of drugs, lengthy queues and waiting times, and inadequate staff.

“The public hospital in Lunga Lunga has good doctors but no drugs [...] You have to buy the prescribed medicine from the chemist [...] But we also lack money to use the private hospitals.” (Viwandani, female participant)

“The government hospitals have inadequate staff, there are no drugs, there are long queues [...] Poor service, in short.” (Viwandani, male participant)

Participants named a number of private health facilities operated by FBOs, NGOs or individuals to exist in Mathare and Viwandani. These include Shining Hope for Communities (SHOFCO), Baraka, Lions, Médecins Sans Frontières (MSF), Uzima, Radiant and Neema in Mathare; and Cana, Olive, Melihelp, Coptic and the Reuben Centre in Viwandani. Apart from MSF, which is a free private hospital, the rest tend to charge high costs for their services. However, the FBO- and NGO-based private hospitals do offer subsidised rates.

“Our greatest challenge is that we do not have public hospitals [...] We depend on private hospitals and clinics which are expensive, and sometimes cannot attend to critical cases.” (Mathare, female participant)

Barriers to access to quality healthcare in Mathare and Viwandani include the lack of medicines and delays in public health facilities and the lack of money to access quality healthcare services and the lack of adequate medical personnel. Other issues observed by female FGD participants include the lack of privacy and confidentiality in

smaller health facilities and that some private hospitals do not accept the use of National Health Insurance Fund (NHIF) or Linda Mama cards and prefer cash payments because of the time it takes to receive reimbursements from the government.<sup>11</sup>

Lastly, the factors that participants noted influence household choices and preferences for healthcare facilities include:

- Household's decision: There was a general consensus that in most cases, women decide where their family members will go for healthcare services when sick, while men provide the needed hospital fees or charges.
- Household's level of income: Affordability of healthcare services is largely determined by the household's level of income.
- Availability of qualified medical personnel, quality services and medicine in a health facility (although this is a subjective issue).
- Distance to a health facility due to transport logistics and costs.
- Type of health problem: Minor cases are normally resolved by going to the chemists, while major medical cases that may be expensive are resolved by going to a public hospital.

## 6. Summary of key findings

### 6.1. Links between health and diets

Good health is normally associated with high-quality health infrastructure and good nutrition is also associated with food availability and accessibility. However, recent emerging trends in ill health suggest other risk factors to ill health. The rise in communicable and non-communicable diseases (NCDs) are increasingly being associated with poor lifestyles and poor diets. In Kenya, NCDs (some of which are diet related) account for more than half of total hospital admissions and total hospital deaths.

### 6.2. Governance of health, food and nutrition systems

In Nairobi, a number of different government actors, development organisations and donor agencies are committed to supporting nutrition-specific interventions and nutrition-sensitive food production and consumption to achieve their development goals. However, they each have different interests and targets. There is a lack of coordination, cooperation and collaboration between these different actors, which is inhibiting them from taking an integrated approach to improving health and nutrition conditions. The main collaboration challenge is the slow pace of bureaucracy, making it difficult for many national and local governments to form partnerships. In addition, the national government and the Nairobi County government have a poor understanding of local and community-level realities.

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<sup>11</sup> Linda Mama is a public-funded healthcare scheme for pregnant women and infants.



### 6.3. Influence of politics on health and nutrition outcomes in Nairobi

Given the extent of food insecurity, the provision of food – rather than nutrition and healthy diets – is at the centre of political settlements in Nairobi, especially in urban areas where high food prices remain a major challenge to low-income households, and particularly the costs of staple food crops such as maize. Politics – especially around election – are normally framed around the basic needs of low-income households to ensure they vote in favour of whichever party they perceive to be in touch with their local needs. As such, the problem of healthy diets is connected to the political settlement from a broader perspective of food.

### 6.4. Income and costs

At the household level, low and irregular income is perhaps the single most important determinant of diets in urban areas because it dictates people's choices in terms of what foods they can afford to purchase and/or prepare at home, particularly given the rising costs of food and energy. During the FGDs, participants observed that financial stability determines the health of an individual or a family, while lack of money and poverty was associated with poor nutrition, stress and poor health conditions.

Households employ various negative coping strategies, such as reducing the frequency of meals and the quantity of food consumed. Others opt for cheaper but nutritionally poorer diets to cater for their immediate hunger needs, which are not necessarily the best in terms of nutrition. Most urban residents in Nairobi's informal settlements also have minimal opportunities for food production and rely almost entirely on purchasing their food from markets, informal vendors and supermarkets. However, most informal food vendors rely on wholesale food markets to purchase ingredients. These markets are dominated by cartels or middlemen who dictate prices by creating inflated margins. This in turn increases food prices so that food becomes less affordable, especially for low-income earners in informal settlements.

### 6.5. Knowledge and awareness of healthy diets

A lack of awareness and knowledge of nutritionally adequate diets and limited resources to support implementation of nutrition programmes are major constraints to good nutrition. Knowledge or awareness of nutrition and the ability to identify healthy foods is a key enabler of healthy eating. While the FGD participants demonstrated a good understanding of what constitutes a healthy diet and healthy living, they also called for training and awareness-raising initiatives due to their lack of knowledge on the nutritional value of some of the food that they consume. They noted that community health volunteers play an important role in improving health and nutrition conditions in informal settlements. However, as these volunteers are unpaid, they are limited as to how much time they can devote to their volunteer work in relation to their own sources of livelihoods.



## 6.6. Food safety, food hygiene and WASH

Malnutrition is not only caused by insufficient food intake or unhealthy diets, but also by other factors. Poor access to water, sanitation and hygiene (WASH) services in informal settlements impacts on health and nutrition outcomes. In addition, the lack of regulation in the informal food sector and multiple environmental hazards can compromise food safety. FGD participants were concerned that gastrointestinal infections are linked to unhygienic environments and poor food handling, especially for those living in urban informal settlements, who rely to a large extent on food purchased from informal food vendors. Promoting food safety and hygiene measures in community food environments, as well as in household cooking and food preservation environments, would improve health, wellbeing and nutrition outcomes.

## 6.7. Access to cheap fast food and ultra-processed foods

FGD participants noted an increasing tendency to rely on cheap street foods, fast foods and ultra-processed foods because they are easily available and affordable at neighbourhood shops and retail outlets in informal settlements. In particular, children are more likely to consume these foods due to the rising availability. Combined with interrelated factors such as unhygienic food environments, malnutrition-related outcomes may affect children's physical, mental and psychological development and wellbeing. In terms of the impact of informal street food on the uptake of healthy diets, street food vendors can play an important role in the provision of affordable and both healthy and unhealthy food to low-income communities, as an increasing number of households relying on them as a source of food. Given their potential to make healthy diets more widely available to the low-income residents, informal food vendors should be included in relevant policies and programmes.

## 6.8. Access to interventions such as school feeding programmes

In informal settlements, children are especially vulnerable to food insecurity and poor nutrition. Schools are important avenues of enhancing access to and uptake of healthy diets, especially in low-income settlements of Nairobi. School nutrition policies are associated with positive weight-related, dietary and other outcomes among school children. Schools provide an ideal setting for nutrition services, nutrition education and a healthy food environment, and ensuring community involvement and participation to promote nutrition and healthy food choices and eating habits among children, which can help reduce children's vulnerability to hunger, malnutrition and NCDs. In Nairobi, various school meals programmes aim to provide public primary school children and early childhood development centres with daily school meals. However, the FGD participants said that these programmes do not benefit children in formal or informal privately-owned schools.

## 7. Concluding remarks

Current patterns of urban population growth, poverty, food insecurity, and poor health and nutrition are increasingly becoming an urban challenge, with those living in informal settlements being the most affected. Incidences of nutrition-related outcomes of unhealthy diets such as stunting, wasting, underweight and micronutrient deficiencies are prevalent among children in these settlements, and are manifestations of poor health and nutrition. In addition, the lack of access to improved sources of water and human waste-disposal systems, clean energy for cooking and lighting, and habitable housing conditions, all interplay to explain why poor and marginalised populations in Nairobi experience worse health and nutrition outcomes. This calls for city-level interventions and reforms to address these challenges.

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