

# Inside the System, Outside the Law: Informality and Political and Economic Geographies of Exclusion in Nairobi's Food System

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## Abstract

Rapid urbanisation across sub-Saharan Africa is reshaping urban food systems and shifting the geography of food insecurity from rural to urban areas. Using Nairobi, Kenya, as a case study, this paper examines how governance systems reproduce political and economic geographies of exclusion for the informal economy within a rapidly transforming urban food system. Drawing on systems thinking, stakeholder mapping, and empirical data from the Hungry Cities Partnership household and informal food vendor surveys, the paper argues that informal food economies are not transitional sectors destined to disappear through modernisation, but structurally embedded components of Nairobi's food system that sustain food access, employment, and urban survival. Through an analysis of five dominant myths surrounding informality, the paper demonstrates that formalisation agendas and narratives of supermarket modernisation continue to marginalise informal food actors despite their central role in sustaining urban food security. These exclusions arise not simply from policy failures but from interconnected governance structures, institutional assumptions, and development priorities that privilege formalisation while relying on informal labour and distribution systems. The paper concludes that the challenge facing rapidly urbanising African cities is not how to eliminate informality, but how to govern urban food systems without reproducing exclusion as a condition of survival.

## Keywords

urban food system, informal food economy, urban governance, food security, structured exclusion

## Suggested Citation

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## Cover Image

Street vendors selling fruit and vegetables in Nairobi. Photo credit: Maria Salamone

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## Introduction

The urban population in sub-Saharan Africa is growing rapidly, from an estimated 31% of the overall population in 2000 to 44% in 2024 (World Bank, 2024). Much of this growth is concentrated in crowded, low-income informal settlements, where poverty and formal unemployment rates are extremely high (Crush & Frayne, 2011; Fosudo, Bolukale, & Ibrahim, 2026; Hommann & Lall, 2019). This migration of poverty is shifting the historical locus of food insecurity from rural to urban areas, and cities are fast becoming epicentres of the food security challenge in Africa (Crush, Frayne, & Pendleton, 2012; Haysom, 2021). This rapid and often unplanned urban growth is, in part, driving more people to engage in urban informal food economies, which comprise small-scale enterprises that do not fully participate in formal social, political, and economic structures within the food system despite operating across all stages of the food supply chain.

Simultaneously, the complex and multifaceted process of modern food retail expansion across the continent has produced significant economic growth in retail sectors and across the entire food systems in which they are located (Peyton, Moseley, & Battersby, 2015). Various aspects of globalisation, liberalisation, and urbanisation have been key drivers of supermarket expansion across Africa (Peyton, Moseley, & Battersby, 2015; Reardon et al., 2003). Increasing economic interconnectedness between states and regions has enabled supermarket economies to lower food prices, open new import channels, and expand access to a greater variety of food (Neven & Reardon, 2004; Nishiura, 2010; Weatherspoon & Reardon, 2003). As Peyton, Moseley, and Battersby (2015) argue, large supermarket chains have become a central feature of food systems in developing countries through liberalised economic policies that favour multinational retail expansion. Free trade initiatives between countries have created numerous opportunities for transnational retail expansion.

This phenomenon is reshaping local economies, supply chains, and pre-existing retail sectors, as well as broader issues of food security and formalisation, with significant implications for the integration of African economies into the global food system (Crush & Frayne, 2011; Reardon et al., 2003). The presence of supermarkets within a food system is often seen as an indicator of overall food system formalisation and complex supply chain linkages, leading to improved food security and increased competition with the informal economy (Weatherspoon & Reardon, 2003). This modernist perspective discounts the informal food sector's significance for food security and livelihoods. Only when food vendors and traders formalise do they become acceptable and 'legitimate' food system actors in this narrative.

The current and widely accepted model that seeks to explain how urban food system transformations occur in the wake of urbanisation and modern food retail investment falls short of adequately describing how informality operates within this evolving environment (Reardon et al., 2003). At its core, the supermarket revolution model fails to properly understand or account for informality in food systems by

claiming that it is simply absorbed by the formal economy through investment opportunities in the sector. Moreover, when applied to cities such as Nairobi, Kenya, where both formal and informal food economies are growing, the model is discordant and problematic.

Nairobi is no exception to these co-occurring trends in Africa's urban food systems. As the capital of Kenya and the regional political and economic hub of East Africa, Nairobi's dynamic and rapidly evolving food system shapes the food security experiences of more than 5.3 million residents within the city. Despite being at the centre of the region's financial, banking, commerce, and domestic and international governance sectors, Nairobi has never had an orderly or planned urban food system. Even during the colonial period, the state adopted a dual approach to managing the urban system, focusing on concerns over food contamination and the spread of disease, while relying on urban food supplies from rural areas (Duminy, 2019). As Duminy argues, wider aspects of the food system were considered well beyond the remit of government and were therefore left largely to the incentives of private producers and traders (2019). The unplanned design of Nairobi's food system was further exacerbated by rapid rural-to-urban migration throughout the post-colonial period, a trend that continues today. Between 1960 and 2020, the share of the population living in Kenyan urban areas rose from 7.36% to 27.99% (World Bank, 2023). This figure will reach 50% over the next twenty years, and Nairobi's population is doubling each decade (Brown, 2019).

This urbanisation phenomenon results from a confluence of factors, not the least of which is a growing disinterest in full-time farming and migration to cities in search of better economic opportunities (Bruckner, 2012; LaRue et al., 2021). A wider range of job opportunities and greater investment in infrastructure make urban areas attractive hubs for economic activity. With the formal economy employing only a limited number of people, the informal sector has grown significantly. Approximately half of all employed adults in Nairobi work in the informal sector, which accounts for nine out of every ten new jobs, making it critical to the livelihoods of urban residents (Budlender, 2011; Kenya National Bureau of Statistics [KNBS], 2019; UN-Habitat, 2006).

The globalisation of governance, trade, and investment, coupled with rapid urbanisation and poverty, makes Nairobi's food system dynamic and constantly evolving. The interlacing dynamics of urbanisation, poverty, and food supply chain transformation resulting from supermarket diffusion have given rise to complex political and economic geographies of inclusion and exclusion within the city's food system. Given that the current 'supermarket revolution' model inadequately characterises the transformation occurring in Nairobi's food system, this paper employs a systems thinking framework to analyse the system and assess its utility in explaining current phenomena. A growing body of work has developed such frameworks for application to food systems broadly (Foran et al., 2014; Kanter et al., 2015; Leeuwis et al., 2021; Termeer et al., 2018), but the application of this conceptual approach within the context of Nairobi, Kenya, has not yet been undertaken.

This paper applies systems theory and the concept of a 'food system' to investigate the complex interplay between Nairobi's formal and informal urban food systems and the governance environment that firmly entrenches the exclusion of the informal food economy and those who depend on it for their livelihoods and food security. Ultimately, the development of Nairobi's food system is facilitated in part by a series of policy reforms that have created political and economic geographies of exclusion within the city, systematically depriving the informal economy of the technical, economic, and financial support that would otherwise enable enterprises to invest and progress. This process of inclusion in the formalised and regulated economy is available to those who are willing and able to participate, but the informal food economies that stand in the way of the neoliberal 'wave of diffusion' are relegated to the margins and operate outside the legal and regulatory framework. As governance technologies in Nairobi's food system continue to evolve, it is imperative that government institutions be made aware of the extent to which their policies exclude large swaths of economic activity within the food system.

## Conceptual Framework

Systems theory is a multidisciplinary approach that treats a phenomenon as an interconnected and interdependent set of elements that interact to achieve specific goals or outcomes (Baraldi, Corsi, & Esposito, 2021). This theory aligns well with the multifaceted nature of urban food systems, which encompass various stakeholders, processes, and components that interact to shape overall political and economic dynamics. The concept of a food system is often narrowed to a set of activities along the food supply chain, ranging from production to consumption. However, how the food system functions and the extent to which it can achieve desired outcomes (e.g., food security) are complex issues with multiple environmental, social, political, and economic determinants that extend throughout and beyond the food supply chain. As Leeuwis, Boogaard, and Atta-Krah (2021) demonstrate, researchers tend to subscribe to different theoretical ideas regarding the nature of systems, the process through which systems change, and the kinds of interventions that may be appropriate to support transformation. It is difficult to conceptualise a food system without first understanding the common approaches to systems thinking.

Leeuwis, Boogaard, and Atta-Krah (2021) summarise common types of systems thinking relevant to food systems discourse. Hard systems thinking, one of the earliest forms of systems thinking, characterises a system in terms of known, predictable machine interactions (Taylor, 1947). This approach employs an engineering perspective to optimise component parts and achieve predictable outputs. Similarly, functionalist systems thinking focuses on managing relations within a system and adopts a rebalancing strategy to drive change (Parsons, 1951; Roethlisberger & Dickson, 1961). Among approaches applied in the food systems literature, soft systems thinking centres on people with different epistemologies and boundary definitions, and tends to encourage dialogue, learning, and consensus-building

among actors to elicit systems change (Checkland, 1981; Churchman, 1979). Political/critical systems thinking characterises systems by the power structures that constrain system change and create path dependency (Jackson, 1985; Ulrich, 1988). Institutional systems thinking highlights the rules, both formal and informal, that result in a particular order (Giddens, 1984; North, 1990). This approach uses rule amendments and incentive structures to achieve desired outcomes. Lastly, complex systems thinking focuses on emergent order within a system that arises without central steering or governance, as an unintended outcome of multiple intentional actions (Prigogine & Stengers, 1984). Depending on the type of systems thinking applied to a food system, the interventions deemed useful will vary.

Given the many divergent approaches to systems, it is not surprising that Foran et al. (2014) find that the academic literature offers divergent theoretical framings of what constitutes a 'food system'. This underscores both the contestation of the concept in discourse and the complex reality within which these systems operate. In this sense, food systems do not exist as an unequivocal objective reality; rather, they are constructs we apply to the world to make sense of complex phenomena and are grounded in particular epistemological positions (Leeuwis, Boogaard, & Atta-Krah, 2021). That said, there are six core features of food systems that are consistently recognised and referenced in the literature. Table 1 summarises the work of Leeuwis, Boogaard, and Atta-Krah (2021), who initially identified these six core features. Based on these core features, food systems are best conceptualised as complex, multi-dimensional and multi-disciplinary systems. Further, any effort to transform a food system in a particular direction needs to consider the array of 'systems thinking' approaches that lead to different forms of intervention.

Recognising that a food system is a construct that can be designed through multiple 'systems thinking' perspectives and a focus on core features and desired outcomes, this paper adopts a focused conceptual approach to the construction of Nairobi's food system. This research employs political/critical systems thinking, social/institutional systems thinking, and complex systems thinking to understand both intended and unintended higher-order behaviours in Nairobi's food system in Kenya. Informal activity is placed at the centre of the analysis, with the aim of understanding its emergence, resilience, and utility relative to other actors within the food system, and of determining which outcomes should be prioritised when designing interventions. The intention of this approach is to explore why informality has been misunderstood in previous attempts to explain the transformation of urban food systems.

The application of systems theory to explore Nairobi's food system is justified by its ability to provide an integrated perspective. Nairobi's food system is inherently complex, involving intricate relationships among ecological, social, economic, and political components. Further, Nairobi's food system is not isolated; it is embedded within larger regional and global systems. Systems theory facilitates the examination of trans-scalar interactions, highlighting how

| Table 1: Core Features of Food Systems  |  |
|---|--|
| Features  | Examples   |
| <p><i>Emergent properties</i> (Bene et al., 2019; Willett et al., 2019):</p> <ul style="list-style-type: none"> <li>• Fundamental to systems generally, 'emergent properties' refers to the notion that the whole is more than the sum of its component parts</li> <li>• Higher order behaviours become distinct from individual component behaviours</li> <li>• Usually categorised as either intended or unintended consequences</li> </ul>   | <ul style="list-style-type: none"> <li>• Food insecurity</li> <li>• Inequality</li> <li>• Obesity and non-communicable diseases</li> <li>• Consolidation of wealth</li> <li>• Consolidation of influence</li> <li>• Environmental degradation</li> </ul>   |
| <p><i>Interactions between actors are essential components</i> (Van Berkum, Dengerink &amp; Ruben, 2018):</p> <ul style="list-style-type: none"> <li>• Most boundary definitions of a system involving actors include them and their operations at different levels and in different spheres</li> <li>• Not necessary feature of systems generally, but essential to food systems</li> <li>• Interventions in the system to influence a particular benefit for people at one level is likely at the cost of other values at the same or other levels</li> </ul>                 | <ul style="list-style-type: none"> <li>• Private sector actors (along the food supply chain)</li> <li>• Public sector organisations</li> <li>• International organisations</li> <li>• Households/ consumers</li> <li>• Civil society organisations</li> <li>• Research and development institutions</li> <li>• Interactions between all of them</li> </ul>   |
| <p><i>Diverse segments and networks</i> (Gaitán-Cremaschi et al., 2019; Magnus, 2015):</p> <ul style="list-style-type: none"> <li>• Within the same geographical space and/or value chain, there exist different segments and networks of actors</li> <li>• Not just one system that operates according to a set logic, but rather multiple parallel and sometimes converging systems that serve different actors in different ways</li> </ul>  | <ul style="list-style-type: none"> <li>• Different segments and networks of producers, traders, processors, retailers and consumers that work in different ways.</li> <li>• Different levels and forms of formality, quality control, infrastructure</li> </ul>  |
| <p><i>Diversity between actors within segments and networks:</i></p> <ul style="list-style-type: none"> <li>• People within a system are not likely to perceive the system in the same way as those who observe and analyse the system from a distance</li> <li>• People located in different areas of the same system are less likely to share the same perspective</li> </ul>   | <ul style="list-style-type: none"> <li>• Some may see an informal retailer as a capitalist actor at the end of the supply chain while others see it as a livelihood resort</li> <li>• Some may see capital as the most important outcome of a food system whereas others may see it as being food security and proper nutrition</li> <li>• Some perceive informal trade as a sub-optimal and illegal process that jeopardises food quality and safety, while others see it as a reliable network that serves the food security needs of the community</li> </ul> |
| <p><i>Self-organisation</i> (Castells, 2004; Van Woerkum, Aarts, &amp; Van Herzele, 2011):</p> <ul style="list-style-type: none"> <li>• The evolution and emergence of new patterns and orders without central steering and control</li> </ul>  | <p>Obesity, as an emergent property in a food system, is a result of relatively autonomous trends:</p> <ul style="list-style-type: none"> <li>• Increased capacity to produce cheap processed foods</li> <li>• Proliferation of retail outlets selling processed foods</li> <li>• Changes in lifestyle</li> <li>• Urban design</li> </ul> <p>While some of these trends emerge intentionally, none of them are deliberate attempts to foster an obesogenic society. This is a self-organising emergent property.</p>   |
| <p><i>Dynamic stability</i> (Arkesteijn, van Mierlo, &amp; Leeuwis, 2015):</p> <ul style="list-style-type: none"> <li>• While characterised by continuous dynamism, interaction and flux, systems tend towards relatively stable patterns of interactions and outcomes and are often resilient to efforts to change them.</li> <li>• Prevailing legal, market and cultural rules and resource distributions tend to have a degree of stability, and attempts to change the status quo are often resisted by those who benefit from the existing system configuration</li> </ul> | <ul style="list-style-type: none"> <li>• Because stakeholders are interdependent, meaningful change is likely to happen only if key players succeed in achieving a sufficient degree of agreement, coordination, and alignment towards a particular transformation</li> <li>• Despite obesity being unhealthy and some actors rallying to address the issue, others deliberately continue selling cheap unhealthy foods in vulnerable neighbourhoods to pursue their priority goal of making a profit.</li> </ul>  |

Source: Adapted from Leeuwis, Boogaard, and Atta-Krah (2021)

different parts of the system interact and influence one another, and aids in identifying unintended consequences and non-linear dynamics that may not be evident through traditional monodisciplinary approaches.

## Methodology

Drawing on systems theory, a series of system maps was developed to visually represent the interconnected elements and relationships within Nairobi's food system. Specifically, this study uses an iceberg model, causal loop diagrams, and connected circles mapping exercises to identify and understand entities within the system, as well as the interactions and connections that determine system outcomes. These mapping exercises are prescribed by Map the System Canada as methods to analyse, understand, and ultimately visualise complexity within a given system (Map the System [MTS] Canada, 2024). Kumu, an online system mapping programme, was used to organise complex data into relational maps. The purpose of these mapping exercises is to identify feedback loops, leverage points, and potential areas of intervention within the system. A stakeholder analysis is also conducted to identify key actors and their roles within Nairobi's food system. By applying systems thinking to stakeholder analysis, the research reveals geographies of exclusion and identifies potential collaborations or conflicts. This analysis uses document research, including academic, policy, news, and private-sector sources, to identify and substantiate the connections made in the mapping exercises.

Along with documentation research and systems mapping exercises, the study uses two city-wide surveys in Nairobi City County, collected by the Hungry Cities Partnership, that examine (1) household food security and purchasing behaviour and (2) informal food vending. The Nairobi household food security survey was conducted by the Hungry Cities Partnership in 2016 and covered 1,434 households. To generate as representative a city-wide sample as possible, the survey was conducted in randomly selected administrative sub-locations across all administrative districts (sub-counties) and divisions of Nairobi City County. The sampled households were randomly selected from these sub-locations across 23 administrative locations and sub-locations, covering all the administrative divisions and districts of Nairobi City County. The Nairobi informal food vendor survey included a total of 1,267 vendors. To achieve city-wide coverage, the survey was conducted in all eight of Nairobi's administrative divisions. The number of sampled food vendors was determined using a multi-stage proportional-to-geographical-size random sampling procedure.

## Understanding Informality in Nairobi's Food System

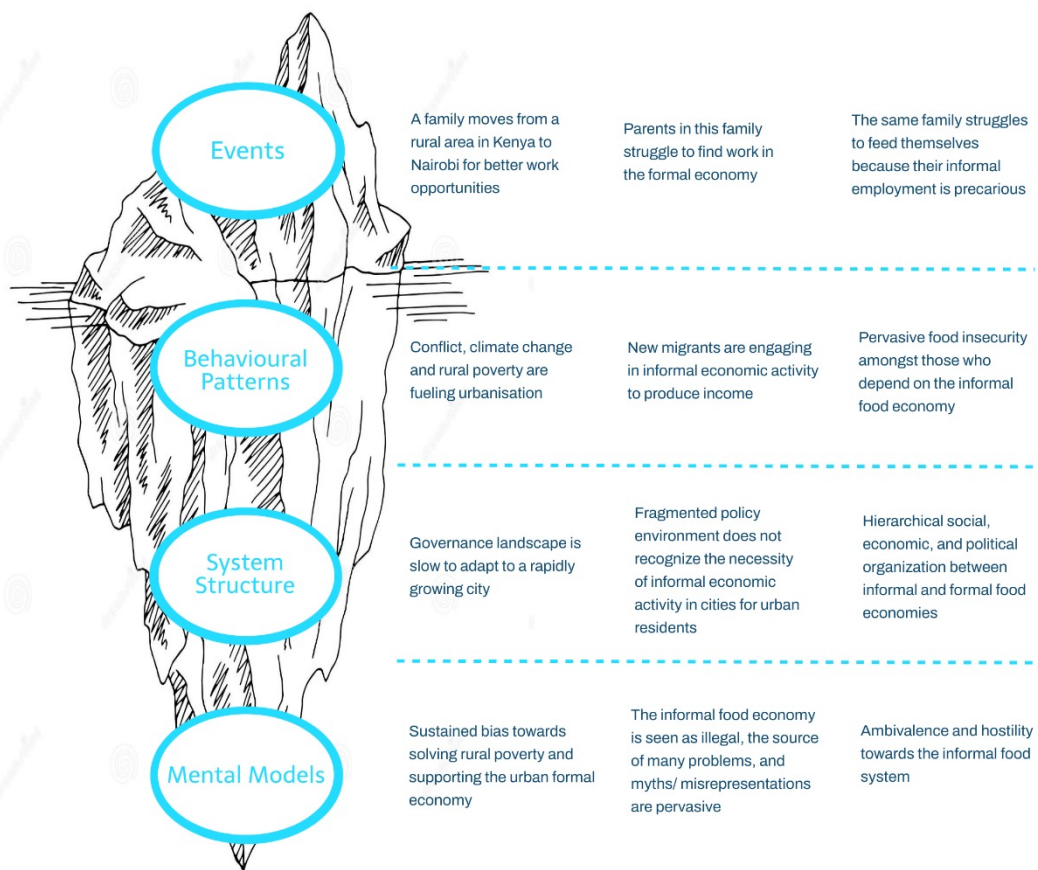
The majority of Kenya's urban population is engaged in the informal economy (Federation of Kenya Employers, 2021). The informal food sector employs men and women at nearly equal rates and a significant number of youths under 35. Many informal food vendors are relatively well-educated, with 42% having completed high school and 20% having advanced to tertiary education (Owuor, 2020). Seventy-two percent of this young and relatively well-educated demographic are migrants to Nairobi from rural areas in Kenya (Owuor, 2020).

The informal food sector is an essential component of Nairobi's food system, making food more accessible and affordable for low-income areas and food-insecure households (Brown, 2019). Over 80% of Nairobi's population relies on income from the informal sector; without it, their access to affordable food would be severely constrained, pushing them into critical levels of poverty and food insecurity. It is therefore essential that food system governance pay particular attention to the role of the informal food economy in urban food systems and urban food security. Currently, the policy landscape surrounding informal food system entrepreneurship in Nairobi is ambivalent at best and hostile at worst. Governance approaches to informality have created an environment that systematically marginalises those who depend on it for their livelihoods. This section details how Nairobi's informal food sector is excluded.

### Iceberg Model

Iceberg models are often used in systems thinking to uncover the systemic structures that generate patterns and events (Kim, 1999). Because we only see events, or 'the tip of the iceberg', this model advances understanding of the deeper patterns, systemic structures, and mental models at play within a given system. This iceberg model (Figure 1) depicts the events, patterns of behaviour, system structure, and mental models that underlie the formal economic and political exclusion of the informal food economy in Nairobi's urban food system. Many of the factors contributing to this problem stem from a subset of mental models that perpetuate myths and misrepresentations of informality throughout the food system, including: (1) sustained bias towards solving rural poverty and supporting the urban formal economy (Andae, 2020; IMF, 2012), (2) the informal economy being seen as illegal and the source of social, economic, and health problems (Brown, 2019; Lagerkvist et al., 2013a, 2013b), and (3) general ambivalence and hostility towards the informal food system (IMF, 2012).

Figure 1: Iceberg Model



### Myths About Nairobi's Informal Food Economy

**Myth 1: Because of certain qualities, such as backwardness, disorderliness, and inefficiency, informality will or should disappear.**

Across much of sub-Saharan Africa, the perspective that the informal economy is disorderly and inefficient has been normalised. Many authorities and bureaucrats associate informality with backwardness and cling to the prospect of its eventual modernisation (Kamete, 2013, 2017). It is widely believed that the informal sector needs to be modernised because it is seen as both undesirable and illegal (UN-Habitat, 2006). This dominant view of informality is prevalent in Nairobi as well. Kenya's Vision 2030 largely frames the informal sector as a challenge to urban development, associating it with tax evasion, market inefficiencies, and social and environmental risks (Brown, 2019; IMF, 2012).

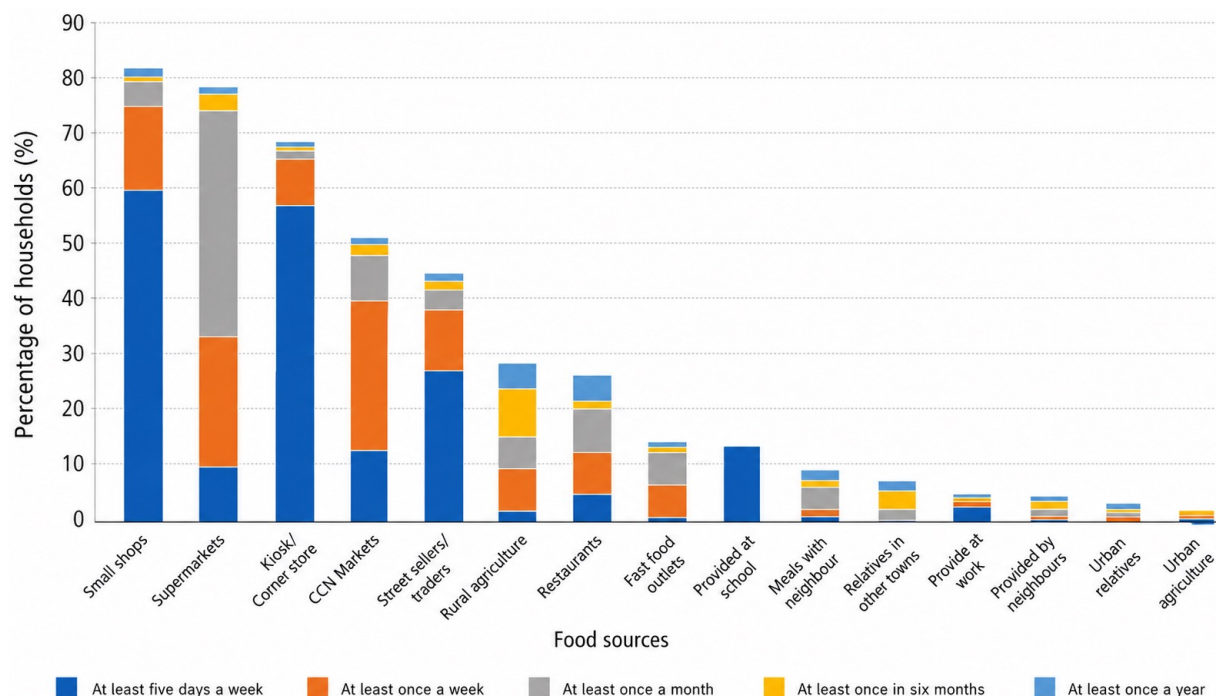
The myth of the eventual disappearance of the informal food sector is an unrealistic view that contradicts abundant evidence (Brown, 2019; Budlender, 2011; Owuor, 2020). Yet it has also encouraged governance approaches that seek to assimilate informal economic activities into formal regulatory systems (Kamete, 2017). Rather than recognising informality as a durable feature of urban economies, these approaches often attempt to transform, regulate, and absorb informal activities into forms considered more legible and acceptable to state institutions. The result is the continued political exclusion of informal food systems and a widening gap between government understandings and practices and the realities of informal food enterprises and the livelihoods of those who depend on them.

Despite repeated attempts at eradication and integration, informal employment remains the dominant source of livelihood for most workers in Nairobi, accounting for approximately 90% of new jobs created in the city. Small shops, kiosks, street traders, and local markets remain among the most frequently patronised food retail outlets for Nairobi households, as illustrated in Figure 2. All these food retail formats are highly informal. During the same period that supermarket retail systems expanded across Nairobi, the number of informal food vendors continued to grow. More than 70% of informal food vendors intend to remain in the sector and expand their businesses (Owuor, 2020).

**Myth 2: Governments must take urgent and appropriate measures to transition workers and economic units from the informal to the formal economy.**

The ILO, World Bank, and a growing number of state and non-state actors continue to promote formalisation as a solution to urban informality (ILO, 2015; World Bank, 2022). Formalisation is framed as a pathway toward legitimacy, regulation, taxation, and economic inclusion. It is also presented as beneficial for urban governance by reducing disorder and integrating informal actors into regulated economic systems (UN DESA, 2022). In Kenya, the government similarly promotes formalisation through policies focused on business registration, regulatory harmonisation, and incentives for small and medium enterprises to formalise (Ministry of Industrialisation, Trade and Enterprise Development, State Department for Industrialisation, 2020).

**Figure 2: Household Food Sources by Frequency of Patronage**



In practice, however, formalisation frequently imposes regulatory burdens that many informal food actors cannot realistically meet. Informal enterprises are expected to comply with licensing, taxation, land use, registration, and social security requirements to be recognised as formal businesses, as illustrated in Figure 3. Yet compliance pathways are often fragmented, costly, and inconsistent. Many informal vendors comply with some regulations while remaining excluded from others, leaving them vulnerable to selective enforcement and displacement (Brown, 2019; Young & Crush, 2019). Informal governance and self-organisation, therefore, emerge in response to governance vacuums created when state institutions fail to accommodate the realities of informal urban economies.

**Myth 3: The informal economy results from firms and workers who choose to operate informally after weighing the costs and benefits.**

Literature on why people participate in the informal economy tends to frame participation as driven by either survivalist or opportunistic motivations. On the one hand, survivalist motivations are conflated with a lack of choice. On the other hand, opportunistic motivations are conflated with having

choice. Rather than viewing the informal food economy as arising solely from economic opportunism, from people choosing to comply with regulations, or from survivalists relying on livelihood opportunities, it should be seen as comprising all of these. In Nairobi, economic survival is the most significant motivating factor for entering the informal food economy (Table 2). The desire to create greater financial security, as well as unemployment or an inability to find a job, are also important motivations. Given the importance of these motivations to informal food vendors, this data suggests that survivalist motivations are widespread.

Of course, opportunism also exists in the sector, and evidence from Namibia suggests that, when using a particular methodological approach with a similar set of survey questions to distinguish between opportunistic and survivalist motivations, “there is clearly a minority of vendors who are more opportunistic in their orientation” (Crush, Kazembe, & Nickanor, 2023). However, it is unclear how the study reaches this conclusion, given that the list of entrepreneurial motivations was not designed to distinguish between survivalist and opportunistic behaviours. For this reason, similar conclusions will not be drawn for Nairobi.

**Figure 3: Steps towards formalising a food business**



| Motivation   | Mean score out of 5         |
|--|-----------------------------|
| I needed money just to survive                               | 4.19 (Very Important)       |
| I wanted more control over my own time/to become my own boss | 3.96 (Very Important)       |
| I wanted to give my family greater financial security        | 3.87 (Very Important)       |
| I have always wanted to run my own business                  | 3.87 (Very Important)       |
| I was unemployed and unable to find a job                    | 3.27 (Moderately Important) |
| I have the right personality to run my own business          | 3.05 (Moderately Important) |
| I wanted to do something new and challenging                 | 2.58 (Moderately Important) |
| Support starting my business was available from other people | 1.68 (Little Importance)    |
| I wanted to provide employment for other people              | 1.30 (Not Important)        |

Source: *Hungry Cities Partnership survey, 2016*

**Myth 4: The informal economy is not linked to the formal economy**

While perhaps a dated myth that is now more commonly questioned, dualists have historically argued that informal enterprises have few, if any, linkages to the formal economy and instead operate as a distinct sector (Sethuraman, 1976; Tokman, 1978). This was the original framing of informality’s relationship to formality when the term was first employed. That said, discussions about informality still tend to frame the economies as dichotomous, without adequate analysis of how deeply connected they are.

Many informal enterprises or own-account operators produce and exchange goods and services with formal firms, which operate as networks of independent units engaged in the production and distribution of goods and services (Chen, 2007). In such networks, individual units engage in transactions with suppliers and customers. The terms and conditions of these transactions are largely governed by the more competitive firm in each transaction. In systems literature, this illustrates the diverse segments within the food system, the diversity of actors within those segments, and how they interact with one another (Table 1). In this sense, the informal food economy is embedded in the overall food system.

In Nairobi, informal food vendors tend to source most of the food they sell from other retailers in the city, especially wholesale and formal markets (Table 3). Wholesalers are a significant source of dry cereals, eggs, meat, and ingredients for cooking snacks and meals. Wholesalers are the primary source of all processed foods as well, including flour, bread, and milk. The city’s formal markets, which are designated by Nairobi City County, are the preferred source of stock for fresh fruits, leafy vegetables, other vegetables, roots and tubers, dry cereals, fish, meat, and chips. This evidence demonstrates that informal businesses in Nairobi’s food system operate as intermediaries in the movement of food along both formal and informal supply chains. Interactions between informal and formal food economies in Nairobi are, therefore, dynamic and complicate any dichotomous understanding of economic activity.

**Myth 5: The informal economy does not contribute to the broader economy.**

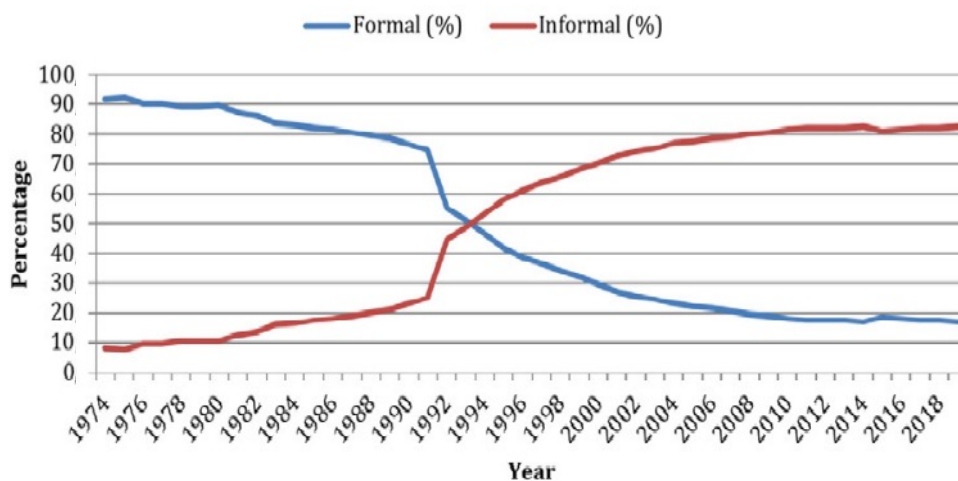
As a share of total employment, formal employment in Kenya has been declining while informal employment has been rising (Figure 4) (ILO, 2021). The growing share of employment in the informal economy indicates the formal economy’s limited capacity to create livelihood opportunities for a growing labour force (Obare, 2015). Although most informal food vending businesses in Nairobi are operated by a single person, the sector still creates jobs. Sixteen percent of vendors also employ staff (Owuor, 2020). Figure 4 clearly depicts a balancing feedback loop between formal and informal economic activity, with informality serving as an economic safety net for those unable to find employment in the formal sector.

Given widespread myths and misrepresentations of informality, there is a clear need to define informal economic activity in Nairobi’s food system with precision. As Young and Crush (2019) argue, “issues of governance are at the core of understanding the emergence, evolution, and dynamics of informal economic activity” (p. 10). Governance is at the core because informality in an economy is defined by policy failing to meet the survival needs of those it intends to govern. By enforcing a policy that is unreasonably difficult for many economic actors to follow, the government creates ‘informality’ as a category of economic activity through its failure to govern. This creates political and economic geographies of activity that outline the scope and scale of the governance failure. Where the formal economy is not accessible, informal economies emerge. Where governance fails to meet the needs of the common people, the common people govern informally within their capacity. At their first emergence, informal practices are unorganised and individually centred, serving as a survival strategy. Thereafter, self-organisation develops.

| Table 3: Informal Vendor Sources of Food Stock |         |             |              |             |                |       |                 |       |
|--|---------|-------------|--------------|-------------|----------------|-------|-----------------|-------|
| Food Item                                      | Factory | Wholesalers | Supermarkets | Small shops | Formal markets | Farms | Informal sector | Other |
| <b>% of vendors for each food item</b>         |         |             |              |             |                |       |                 |       |
| <b>Fruits and vegetables</b>                   |         |             |              |             |                |       |                 |       |
| Fresh fruits                                   | 0.0     | 9.9         | 0.6          | 1.3         | 79.6           | 8.6   | 4.5             | 1.0   |
| Fresh leafy vegetables                         | 0.0     | 10.9        | 0.5          | 0.5         | 75.6           | 9.0   | 7.5             | 1.0   |
| Other fresh vegetables                         | 0.0     | 12.8        | 0.5          | 0.5         | 78.4           | 4.1   | 6.4             | 0.5   |
| <b>Cereals, roots and tubers</b>               |         |             |              |             |                |       |                 |       |
| Roots and tubers                               | 0.0     | 14.3        | 1.6          | 0.8         | 73.0           | 12.7  | 4.0             | 0.0   |
| Dry cereals                                    | 0.0     | 43.5        | 0.0          | 5.8         | 46.4           | 7.2   | 1.4             | 0.0   |
| <b>Meat, fish, chicken and eggs</b>            |         |             |              |             |                |       |                 |       |
| Eggs   | 0.0     | 54.7        | 1.2          | 18.6        | 8.1            | 15.5  | 7.5             | 1.9   |
| Fish   | 5.7     | 26.4        | 0.0          | 1.9         | 47.2           | 7.5   | 15.1            | 0.0   |
| Meat   | 2.7     | 40.5        | 0.0          | 0.0         | 35.1           | 13.5  | 2.7             | 5.4   |
| Chicken  | 0.0     | 13.9        | 0.0          | 2.8         | 22.2           | 47.2  | 19.4            | 0.0   |
| Meat organs                                    | 14.8    | 29.6        | 0.0          | 3.7         | 29.6           | 3.7   | 14.8            | 3.7   |
| <b>Processed food</b>                          |         |             |              |             |                |       |                 |       |
| Other processed food                           | 3.0     | 75.4        | 3.6          | 9.0         | 7.2            | 0.6   | 7.8             | 1.8   |
| Fresh milk                                     | 6.5     | 54.5        | 0.8          | 5.7         | 6.5            | 11.4  | 9.8             | 4.9   |
| Bread  | 8.1     | 59.3        | 0.8          | 9.8         | 5.7            | 0.0   | 9.8             | 5.7   |
| Maize, wheat flour                             | 5.2     | 69.1        | 2.1          | 9.31        | 4.4            | 2.1   | 3.1             | 0.0   |
| Beverages                                      | 2.1     | 47.9        | 10.6         | 16.0        | 16.0           | 0.0   | 8.5             | 2.1   |
| Sour milk                                      | 5.3     | 42.1        | 5.3          | 5.3         | 2.6            | 0.0   | 13.2            | 10.5  |

Source: Hungry Cities Partnership survey data, 2016

Figure 4: Proportion of Formal and Informal Employment in Kenya, 1974-2019



Source: ILO (2021)

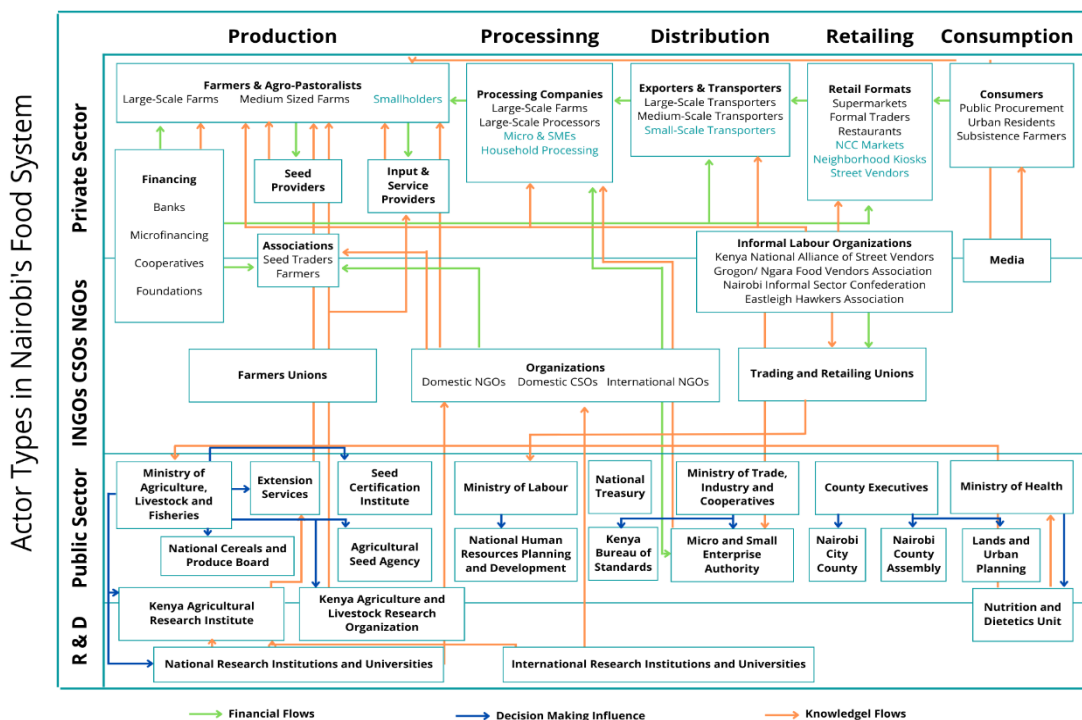
## Stakeholder Map

Stakeholder mapping exercises help identify key entry points to catalyse change within a system, including strengthening weak linkages or addressing governance gaps (MTS Canada, 2024). Accordingly, Figure 5 visualises the landscape of key actors, organisations, and initiatives related to the overarching activities and interlinkages in Nairobi’s complex food system. Figure 5 identifies three dynamics among stakeholders that affect the governance of the informal food economy:

1. Informal economic actors operate throughout the entire food supply chain and are integral to supplying food to Nairobi’s residents.
2. Financial and knowledge flows are heavily directed towards the first stage of the supply chain – i.e., agricultural production.
3. Decision-making influence is consolidated among public-sector actors, but without clear information-feedback linkages to informal economic actors along the supply

Figure 5: Stakeholder Map of Nairobi's Food System

Stages of Nairobi's Food Supply Chain



chain or to the self-organised professional associations representing them.

System Map

System mapping exercises aid in defining the system's boundaries and scope, identifying its components, mapping relationships among them, and identifying feedback loops critical to understanding how changes in one part of the system can have cascading effects elsewhere (MTS Canada, 2024). This system map (Figure 6) represents Nairobi's complex food system and helps identify three feedback loops that affect the functioning of Nairobi's informal food economy, and it visually depicts the root causes of its exclusion from formal political and economic structures.

The root cause analysis map (Figure 7) shows that three distinct feedback loops lead to the systemic exclusion of the informal food economy from fully participating in legal and regulatory measures: the relationship between food system informality and (1) governance, (2) civil society, and (3) the formal food economy. This occurs within the system despite the informal food economy's reinforcing feedback relationship with improving food security.

Governance

The legitimacy of Nairobi's political system depends largely on its ability to integrate and represent millions of citizens excluded from formal political and economic structures. Despite informality being a necessity for so many in Nairobi, governance approaches treat it as a problem, associating it with tax evasion, market distortion, and social and environ-

mental risks (Brown, 2019). A lagging development agenda that has not fully accounted for urbanisation and is almost solely focused on rural agricultural production is also to blame (Battersby, 2016).

The failure of policymakers to recognise a continuum from fully legal to fully informal also means legal barriers prevent informal food vendors from meeting their potential. Duplicate licensing systems at national and local levels of government, corruption, and long wait times are all ways in which policy and regulatory frameworks marginalise informal food system workers (UN-Habitat, 2006). A patchwork of legislation, including the Physical Planning Act, the Land Act, the Local Government Act, the Trade Licensing Act, the Public Health Act, and the Employment Act, regulates informal economic activities within the system (Owuor et al., 2017). These regulatory requirements are financially unrealistic for most actors (Brown, 2019). City by-laws are also used to remove informal vendors from streets, while at other times, forced removals are carried out illegally by authorities (Kigame, 2022).

Our key finding from this negative-reinforcing feedback loop is that for Nairobi's food system to be democratically inclusive, governance institutions need to respond to the legitimate demands of informal workers. Because the relationship is bidirectional, it also depends on how informal food system workers can enter political spaces to claim these rights. These are both gaps in how the systemic issue is being addressed and potential levers of change that could be a step towards the realisation of informal workers' rights.

Figure 6: System Map of the Exclusion of Nairobi's Informal Food Economy

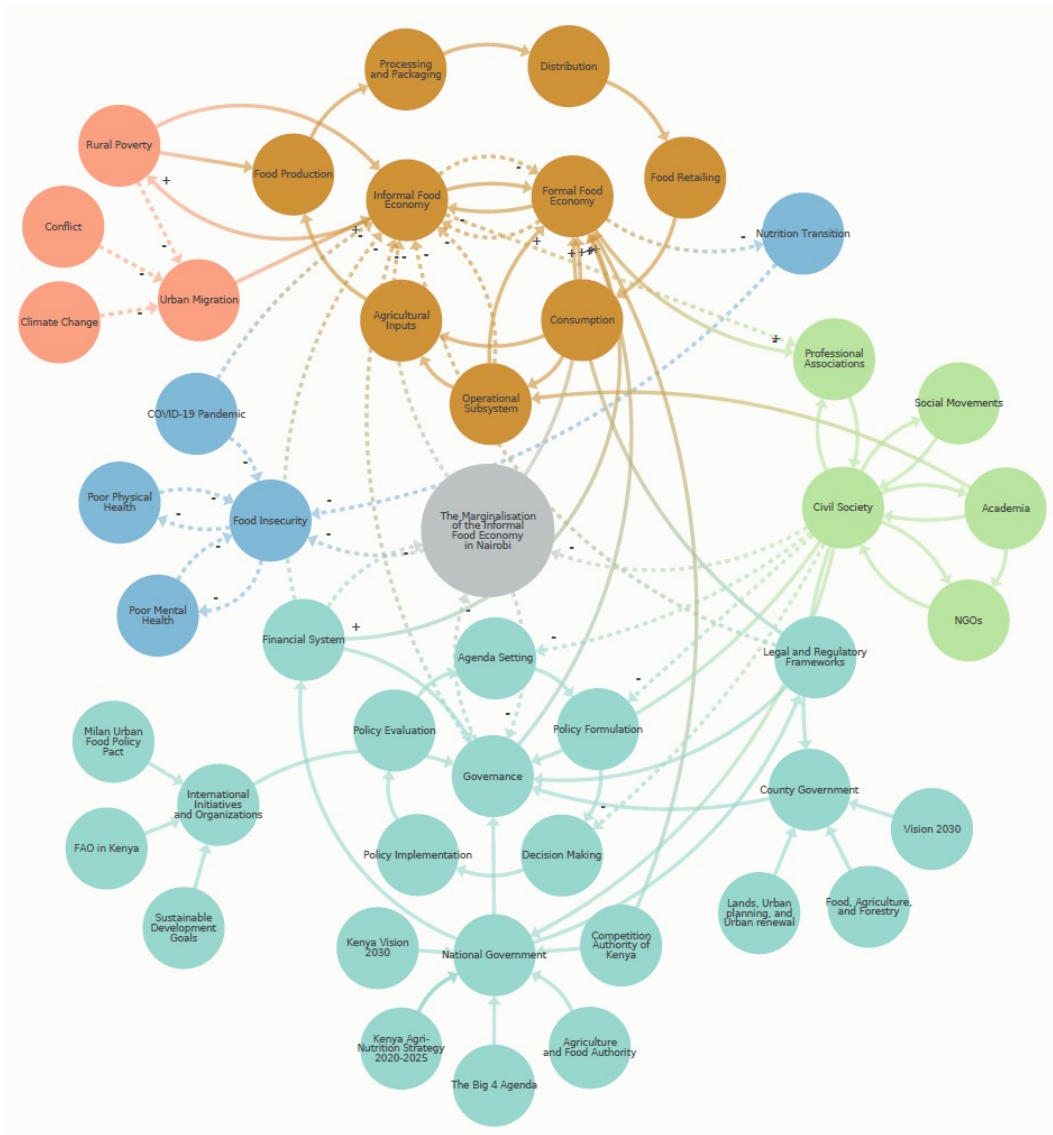
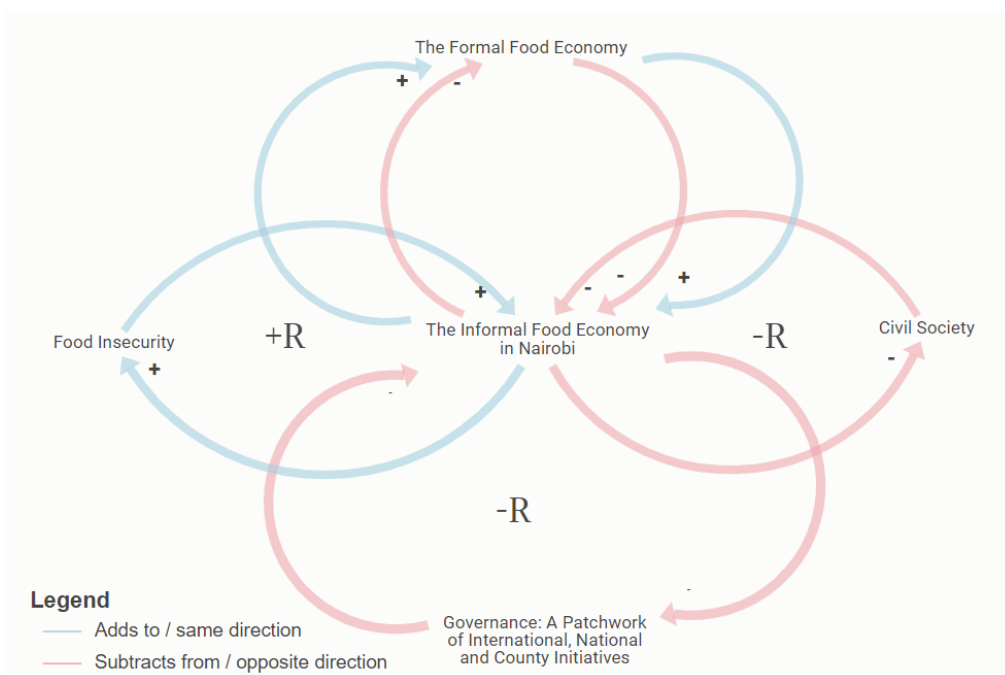


Figure 7: Root Causes of the Marginalisation of Nairobi's Informal Food Economy



## Civil Society

Civil society organisations are placed in different parts of the same food system and represent an array of perspectives. Those that receive funding from governments and other international organisations often perpetuate the same development biases as their funders. This is, in part, a reflection of the deeply entrenched mental models that shape how we value one development pathway over another (Figure 1). Equally important, however, is the policy cycle and the ways in which government institutions dictate policy-making processes (Figure 8) (Howlett, Ramesh & Perl, 2009). Many civil society actors receive funding from governance institutions and therefore advance similar agendas.

With that said, civil society has the potential to play a critical role in addressing how policy marginalises the informal food economy. These roles include communicating the needs of the most disadvantaged groups, facilitating and participating in civil actions to improve working environments, generating political will, and improving policy-making processes to support informal economic activity in the food system. Despite many academic institutions, professional associations, non-governmental organisations, and social protests actively advocating for informal actors' rights within the food system, those concerns are not adequately reflected in government documentation or action.

Our key finding is that, while civil society struggles to facilitate system-level change, it has the potential to play a critical role in addressing how policy marginalises the informal food economy. Potential levers include communicating the needs of informal economic actors within the food system, facilitating and participating in civic actions to improve working conditions, building political will, and improving inclusive policymaking processes. Some progress has been made in this regard. In 2019, an agreement was signed between five informal workers' associations and three trade unions representing formal workers, bringing some informal actors within the food system under the protection of labour laws in the country for the first time (Federation of Kenya Employers, 2021; Peoples Dispatch, 2019).

## The Formal Food Economy

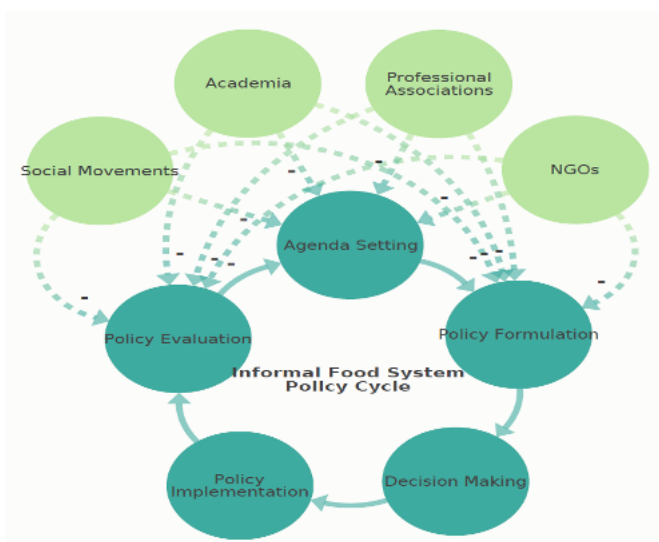
The informal sector operates within a balancing loop that expands and contracts in response to fluctuations in the formal sector (Arvin-Rad, Basu, & Willumsen, 2010). At the same time, it mitigates the effects of formal economic shocks by absorbing displaced labour and serving as a source of both the supply and the demand for food (Fiess, Fugazza & Maloney, 2010; Loayza & Rigolini, 2011). However, structuralist approaches to informality view its relationship with the formal sector as one of subordination and exploitation (Chen, 2012), and governance discourses tend to stratify this relationship. The informal food sector provides low-cost goods and services to formal firms, thereby allowing them to reduce expenditures on labour, production, and distribution to maximise profits (Juma, 2021).

Our key finding from examining this relationship is that interactions between informal and formal actors within Nairobi's food system are diverse. In some instances, there is a mutually beneficial relationship between informal vendors and supermarkets, in which vendors buy processed foods in bulk from a neighbouring supermarket and sell them in smaller quantities (Owuor, 2020). In other instances, there are no interactions at all; only 19.1% of vendors report competing with other supermarkets and large retailers in the food system (Owuor, 2020). Lastly, exploitation occurs between large formal firms and informal actors along the supply chain, a dynamic the government struggles to address (Mbabazi, 2020).

## Considering Food System Transformation

The dominant food system generates undesirable and unintended outcomes, including economic exploitation, environmental degradation, malnutrition, food insecurity, increased inequalities, and poverty (McMichael, 2013). In Nairobi, the food system, including the governance and policy cycles surrounding it, creates economic and political chasms, or geographies of exclusion, for those participating in informal

**Figure 8: Interactions between Civil Society and the Policy Cycle**



activity. Transformation of food systems can be seen as a governance effort to alter the system's undesired emergent properties. Efforts to build an inclusive and equitable food system in Nairobi have not been very successful in fundamentally advancing these outcomes. This should be no surprise, however, as planned interventions in a food system often have limited effect, as they tend to ignore key political, competitive, and institutional dynamics and processes (Leeuwis, Boogaard, & Atta-Krah, 2021).

### Current Interventions

Various international organisations and initiatives currently support informal workers in the food system in Kenya. Within the United Nations alone, numerous specialised agencies work in this area (such as FAO, IFAD, ILO, etc.). Other countries, including Canada, provide international aid to Kenya's food economy. However, most of these initiatives focus on supporting rural agricultural production, thereby neglecting urban food systems.

The Milan Urban Food Policy Pact (MUFPP) is an innovative international solution focused on urban food security, and Nairobi is a signatory (Nairobi City County, 2019). A monitoring indicator within the pact is public investment in food markets and retail outlets. The total share of county investment in markets is consistently 0.024%, with the budget allocated to formal retailers (Nairobi City County, 2019). While MUFPP remains a promising initiative, county authorities have yet to implement the recommended interventions with any significant effect. Nairobi county officials could learn from other African municipalities, such as Tamale (Ghana), Quelimane (Mozambique), and Douala (Cameroon), that have won the MUFPP Governance Award for their food policy reforms.

The Government of Kenya has several food system-related initiatives, including Vision 2030, the Kenya Agri-Nutrition Strategy 2020-2025, and the Big 4 Agenda. Like many international initiatives, these focus on rural agriculture. For instance, Kenya Vision 2030 is a development blueprint aimed at "providing a high quality of life for all its citizens" (IMF, 2012). One of Vision 2030's pillars is heavy investment in agriculture, centred on the Galana Kulalu project. This initiative is a USD 52 million investment by the Government of Kenya, delivered through public-private partnerships, aimed at addressing Kenya's perennial maize shortage (Andae, 2020). The Kenyan government also strengthened its mandate under section 24A of the Competition Act in 2021 and published the new Retail Trade Code of Practice to better govern the relationship between food retailers and suppliers (Kigwiru, 2022). At the national level, there was official support for creating an 'enabling environment' for informal trade beginning in the 1980s under the Moi government (Hope, 2012; Njeru & Njoka, 1998). Despite supportive policy language at the national level, it never translated into legislation or implementation at the urban neighbourhood scale (Fraser, Moonga, & Wilkes, 2014). More recent language in Kenya's Vision 2030 frames the urban informal sector exclusively as a problem, related to tax evasion, market distortions, and social and environmental risks (Brown, 2019; IMF, 2012).

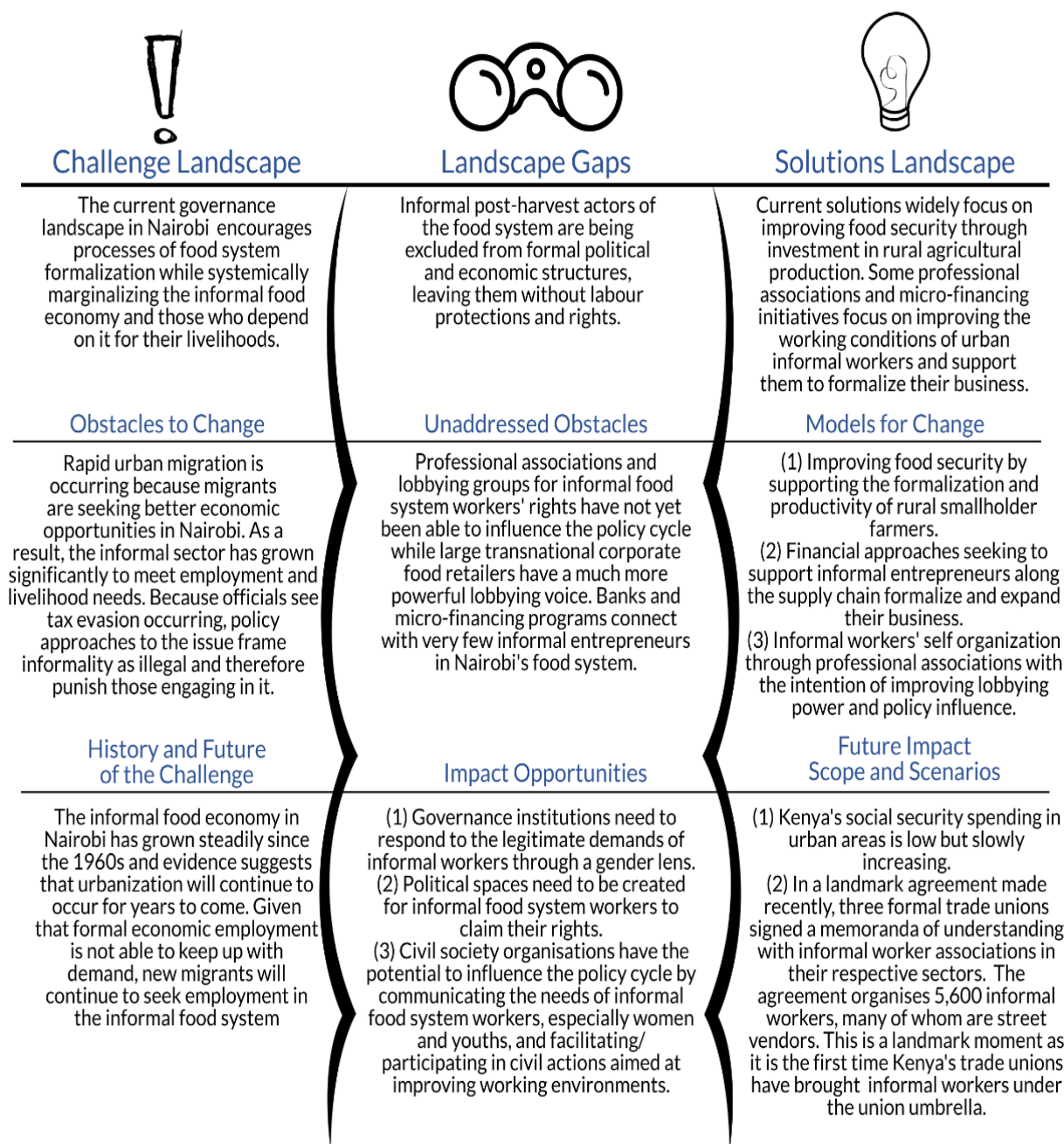
The Nairobi City County government has a food system strategy that aims to provide affordable, accessible, nutritious, and safe food for all Nairobi City County residents, within the existing policy and legal framework (Nairobi City County, 2020). While the strategy document itself recognises the significance of informal activity within the food system, County authorities responsible for implementing this plan work within a patchwork of county legislation that limits any legitimate recognition of informal food system actors within the city and therefore significantly favours formal partnerships. Among the approaches emphasised to achieve their vision of 'affordable, accessible, nutritious and safe food for all Nairobi City County residents', one is to align and support initiatives articulated at the national level by promoting urban agriculture. Another focuses on food distribution, noting that "there will be formalisation and integration of the system" but without explaining how or when this formalisation process will occur (Nairobi City County, 2020, p. 5).

At the neighbourhood level, intervention approaches are diverse. Platter of Compassion is a non-profit organisation that attempts to alleviate hunger by empowering poor communities to generate incomes for self-sustainability through collecting, purchasing, growing, and packaging food for distribution (Food Banking Kenya, 2021). Another organisation, Kwanza Tukule, aims to alleviate food insecurity in Nairobi by providing economically empowering, energy-saving, and socially inclusive food supply services through market-based solutions (Kwanza Tukule, 2018). There are also self-organised informal labour organisations, such as the Kenya National Alliance of Street Vendors and Informal Traders and the Nairobi Informal Sector Confederation. They serve as organising bodies that empower street vendors and informal traders through training, access to credit, and dialogue with authorities (KENASVIT, 2022; Peoples Dispatch, 2019).

### Gaps and Levers of Change

When reviewing possible interventions within a system, it is important to think in terms of leverage points, where change is most likely to catalyse subsequent self-organising changes elsewhere in the system (Leeuwis, Boogaard, & Atta-Krah, 2021; Meadows & Wright, 2009; MTS Canada, 2024). The Impact Gaps Canvas, as shown in figure 9, is a tool for understanding the landscape of a problem and for identifying intervention paths to enact change (MTS Canada, 2024). The exercise is intended to highlight what has already been tried, what has worked and what has not, how these efforts connect and build on one another, and what future efforts are planned. In the middle is the impact gap, which captures what is missing from the whole ecosystem of the solutions landscape, what could connect these efforts, what regulation might be needed, or what types of efforts are broadly missing.

Figure 9: Impact Gaps Canvas



*Gap 1: There is a disconnect between the self-organisation of informal food system actors and government agencies, leading to tension over the enforcement of rules and regulations.*

Self-organised associations and unions, including the Kenya National Alliance of Street Vendors and Informal Traders, the Central Organisation of Trade Unions, the Grogon-Ngara Food Vendors Association, and the Muthurwa Food Court Vendors Association, support Nairobi's informal food economy and advocate for informal food system workers. These organisations should be engaged to co-create policy.

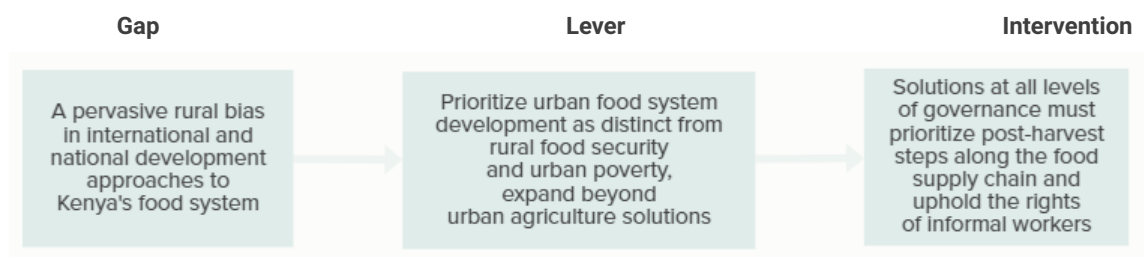
**Lever of Change 1:**



**Gap 2: Informal post-harvest actors within Nairobi's food system are being excluded from the development agenda as well as formal political and economic structures.**

The location and characteristics of food insecurity in Kenya are shifting rapidly. There is an urgent need for development practitioners to be responsive to these new realities by critically engaging with the drivers of food system change.

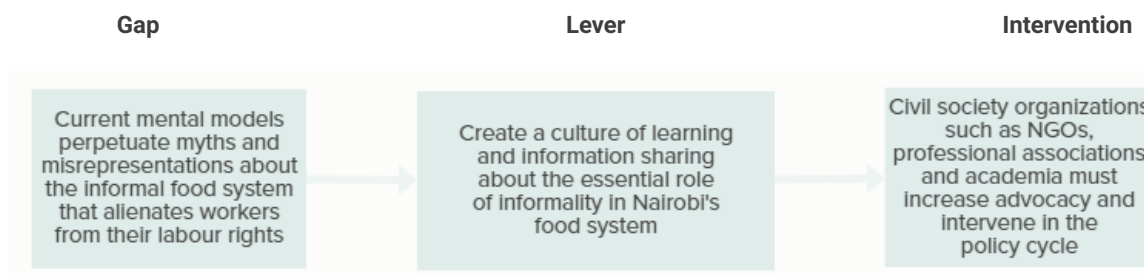
**Lever of Change 2:**



**Gap 3: Myths and misrepresentations about informality hinder the inclusive development of Nairobi's food system.**

Based on our three identified levers of change, we find that acknowledging informal food actors as key stakeholders with a voice at the decision-making table is a starting point for intervention. For this necessary engagement between informal food system actors and authorities to take place, the myths about informality must be debunked, mental models must be reshaped, and the resilience of the people who depend on it for their lives and livelihoods must be respected.

**Lever of Change 3:**



**Conclusion**

This paper demonstrates that the exclusion of Nairobi's informal food economy is embedded in a longstanding, complex governance system that, while hostile to informality, fails to acknowledge its existence. This reflects the dynamic stability of informality within the broader food system. Despite growing concerns about the capacity of the city's food system to accommodate the increasing number of urban migrants, food security discourse at all levels of governance and policy continues to perpetuate an outdated development agenda that largely neglects urban food security and the development of the urban food system. Further, hostility from authorities towards informal economic actors persists due to pervasive biases that frame them as 'illegal', aesthetically displeasing, and as avoiding responsibility.

If viewed positively, processes of informal urbanisation can affirm civil and social rights, reinforce the rule of law, and include citizens in democratic institutions and processes. Above all, Nairobi's food system functions because of the entrepreneurial, innovative, and deeply resilient people who work within it, despite being excluded from adequate rights and labour laws. A common justification for the magnitude of this issue is that governments in the Global South, including Kenya, are simply unprepared to face the challenges of rapid urbanisation. While there is some truth to this asser-

tion, it does not justify hostility towards informal urbanisation. Until the government stops selectively including and excluding people based on the power they wield in political and economic processes, informal food system workers will remain essential to the urban food system and to Nairobi's residents, yet remain outside the law.

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