Frontiers in Sustainable Food Systems

TYPE Policy and Practice Reviews
PUBLISHED 06 January 2025
DOI 10.3389/fsufs.2024.1470801

Check for updates

OPEN ACCESS

EDITED BY
Viviana Maggioni,
George Mason University, United States

REVIEWED BY
Viswanathan Pozhamkandath Karthiayani,
Amrita Vishwa Vidyapeetham (Amritapuri Campus), India
Pablo Torres-Lima,
Metropolitan Autonomous University, Mexico

*CORRESPONDENCE
Nicole Paganini
✉ nicole.paganini@tmg-thinktank.com

RECEIVED 26 July 2024
ACCEPTED 09 December 2024
PUBLISHED 06 January 2025

CITATION
Paganini N, Farr V and Weigelt J (2025) Pathways to transform urban food systems: feminist action research from Cape Town and Nairobi.
Front. Sustain. Food Syst. 8:1470801.
doi: 10.3389/fsufs.2024.1470801

COPYRIGHT
© 2025 Paganini, Farr and Weigelt. This is an open-access article distributed under the terms of the Creative Commons Attribution License (CC BY). The use, distribution or reproduction in other forums is permitted, provided the original author(s) and the copyright owner(s) are credited and that the original publication in this journal is cited, in accordance with accepted academic practice. No use, distribution or reproduction is permitted which does not comply with these terms.

Pathways to transform urban food systems: feminist action research from Cape Town and Nairobi

Nicole Paganini[1]*, Vanessa Farr[2] and Jes Weigelt[1]

[1]TMG Research, Berlin, Germany, [2]Sheffield Hallam University, Sheffield, United Kingdom

This paper offers a feminist reflection on the findings of an ongoing study of health and wellbeing associated with urban food security in Nairobi and Cape Town. It offers five pathways through which a strengthened informal sector can contribute to transforming urban food systems: identifying stronger entry points for institutionalized collaboration between local governments and community-based organizations; enhancing government capacities to collaborate with grassroots actors; the potential, and challenges, of controlled-environment agriculture; rethinking and shifting the regulatory environment surrounding the informal economy; and responding to detailed new data on the state of food security in South African informal settlements. Conducted in partnerships between the Urban Food Futures program and people who were permanently displaced during the colonial era, the study is informed by an emerging body of analysis that responds to the complex trauma of undernutrition, and approaches health as something far beyond an individual's own somatic/bodily state of being. Participation in the study enabled communities living in a near-permanent state of precarity and food insecurity, in the absence of culturally appropriate and readily-available supports to mental health, to move beyond an isolated focus on food to explore feelings of psychic safety and security, and also environmental wellbeing, including access to clean air and water, decent and affordable housing, safe and dignified work, and freedom from violence of all forms.

KEYWORDS

urban food systems, Cape Town (South Africa), Nairobi (Kenya), transformation, pathways, feminism

Introduction

This paper discusses the findings of the Urban Food Futures program, conducted since 2021 with community-based research partners involved in food systems based around the informal vendors, "feeding schemes" and "soup kitchens" that predominate in underserved communities in Cape Town and Nairobi. We begin by laying out the constraints of food systems policies and their inappropriateness for those still living in the permanent immiseration imposed during in the colonial era, now further exacerbated by the mounting effects of climate heating. Then we discuss the conditions in our research sites, how our intersectional feminist research methodology evolved in food dialogs and "living labs," and the pathways proposed by our research findings as mechanisms, in a complex, crisis-ridden and floundering system, to transform informal urban food systems.

From within their own local care economies (IEJ, 2024), partners struggle daily against the systemic violence of patriarchal and racial capitalism in systems that increasingly respond to crises through the organized abandonment of people and

environments that are surplus to the requirement of profit. The degree of this abandonment became clear during and after the Covid-19 pandemic when the enforced lockdowns exposed the precarity of daily strategies to find and prepare food, and increased deficits in the social and physical wellbeing of the poor (Hassim, 2006).

We note similarities in how state abandonment in Kenya and South Africa produces and reinforces the conditions for informality, including because governmental decision-making takes place far from the communities it is meant to support, and lacks accountability. In both research sites, while local service delivery collapses, and while those without means continuously lose their rights and entitlements to healthy, varied and nutritious food, the dominant culture's political and social discourse makes such losses seem natural, necessary and something for which the poor themselves are largely responsible. As a result, a high degree of individual blame and stigma surrounds the experience of hunger and associated ill-health. This abandonment fuels the extreme daily violence and political trauma facing urban citizens, especially women, a problem that goes largely unaddressed as a root cause of physical and psychological ill-health. We take an intersectional feminist perspective to bring this challenge, and its consequences, to light.

While they have been neglected and stigmatized, women in the communities with which we worked daily undertake "essential tasks that maintain, support, and repair our world, which are fundamental to the ongoing creation and recreation of our societies" (IEJ, 2024, p. 2). Always innovating to support collective survival, in the pandemic they developed new responses to food insecurity, including alternative models to charitable feeding schemes. In Cape Town, these took the form of women-led "community kitchens" and "community restaurants." In Nairobi, women-led community centers offered vocational skills training along with school feeding and health services. We refer to these entities as "urban nutrition hubs" – hybrids which, while they are based in delivering food provision services and local produce marketing, also open space for programs prioritized by the community that expand beyond the physical benefits of nutritious food. Reflecting the interests of local women leaders and those they serve, these priorities include education against gender-based violence, the provision of respite care and shelters for women and their children, alternative or "next economy" models which value communities' social capital, and other such "more-than-food" interventions, including responses to complex intergenerational trauma, that support feminist economies of life.

We delve into the context of African urban food systems, emphasizing the importance of avoiding overgeneralization. Instead, we adopt a place-based approach, recognizing the unique character of each city. We understand urban food systems as complex networks encompassing the production, distribution, consumption, and governance of food within urban spaces, influenced by social, economic, and ecological dynamics (HLPE-FSN, 2024). Cities develop rapidly and are sustained by intricate fabrics of connections, solidarity, and human relationships. Particularly in this era of megatrends, the decisions we make and the cities we envision over the next decade will profoundly shape Africa's urbanization trajectory for the next century. Our approach posits that transformation is achievable through targeted pathways, provided these are carefully co-designed, integrated into existing food governance structures, and led collaboratively by communities and decision-makers.

This paper explores pathways as a strategic approach to transform urban food systems. First, we outline the context of two research sites, establishing a foundation for understanding. The extended background section then examines the collaborative process of developing pathways with partners, delving into critical aspects such as the gendered dimensions of hunger and the evolving dynamics of urban environments. The findings section introduces five specific pathways emerging from the Urban Food Futures program, offering a roadmap for transformative action. Finally, the paper concludes with a reflection on knowledge justice, linking these pathways to feminist methodologies in knowledge production.

Navigating polycrises: from global to local action

Both Kenya and South Africa have enshrined the right to food in their constitutions and developed supportive national food security policies (Government of Kenya, 2011; Government of South Africa, 2014). Both countries have initiated policies and programs ensuring the right to food. These span direct food aid, cash transfers for food purchases, interventions to increase nutritional diversity, and technical support for agricultural production. Yet much work remains to decentralize and operationalize such policies within provincial, municipal, and city-level governance structures, to ensure that food system outcomes are harmonized with ostensibly non-food-related planning activities (Haysom et al., 2022). In South Africa, there is still no legal precedent to devolve the Constitutional right to food to the local level (De Visser, 2019). In Kenya, the Food Security Bill was drafted to create a legal framework to enact Article 43(1) (c) on the right to food; however, it has not been passed, and citizens lack a legal framework to implement their constitutionally guaranteed right to food.

Despite decades of high-level policymaking to improve food security within global trade entities and financial systems, and strong governmental efforts to join the globalization game, food security in both countries is worsening (WHO, 2022) The High Level Panel of Experts on Food Security and Nutrition faults urbanization for this global trend: 50 % of urban populations in least-developed countries are food insecure, compared with 43 % in rural areas (HLPE-FSN, 2024). The findings of South Africa's comprehensive new National Food and Nutrition Security Survey Simelane et al. (2024) agree.

The mounting impact of global heating has been undeniable since 2022, when unprecedented heat caused global food prices to spike to their highest levels since 1961, driving a 68% price increase in real terms over a two-year period. This trend continued in 2024. Unpredictable rains, drought, and an increase in pests halved the harvest in some parts of Kenya (FAO, 2022), while the unprecedented El Niño drought massively reduced South Africa's production of staple crops (WFP, 2024).

Behind increasing climate risks lies incoherent policies and lack of political will to manage the global food system equitably: this is a major reason for the polycrisis of hunger (Paganini and Khan, 2023), but others are disunified and incoherent national and local policies that are detached from government departments and agencies, siloes where synergies are essential, and an expansive gap between officials and communities that fuels punitive and disempowering policies at every level of the food system. These contradictions have particularly

10.3389/fsufs.2024.1470801

negative effects in urban "forgotten places" where people, "exhausted by the daily violence of environmental degradation, racism, underemployment, overwork, shrinking social wages, and the disappearance of whole ways of life and those who lived them," are subjected to the "enormous disorder" of "organized abandonment" by the state (Wilson Gilmore, 2023, p. 32). African feminists have written for decades about the intersectional gendered impacts of "globalization of agricultural trade…land grabs…privatization of natural resources,…new technologies" and policies administering land access (Kameri-Mbote, 2013, p. 7), intertwined with "the interests of corporate-driven patterns of economic growth" that "rest upon deepening inequality," by "turning the current priorities of most nation states on their head" (Care Collective, 2020, pp. 59–60).

The failure of policy-makers to connect SDG 2 on ending hunger to SDG 11 on improving life in cities and human settlements – by making them more inclusive, safe, resilient and sustainable – is plentifully evident in global-to-local policy challenges. The Urban Food Futures Program (Paganini and Weigelt, 2023), whose research agenda is the focus of this paper, offers a two-fold strategy of redress.[1] Firstly, it unpacks the legacies of patriarchal-colonial inequality as a structural cause and abiding driver of malnourishment. Secondly, it devises future-oriented food systems for the climate crisis, based on dialogs and citizen-government partnerships informed by global food security frameworks.

Situating urban food security at the intersection between the goals of zero hunger and of improved urban living allows us to consider and plan to overcome current incoherence in high-level food systems thinking. These include a policy framework that, encouraged by global trade entities and financial systems, and efforts by governments to join the globalization game, favor the food security guidelines set in global trade and financing agreements and approaches above local food justice. Urban Food Futures findings, which are informed by the views of a dense collaborative research network of local partner organizations in Cape Town and Nairobi, give many insights into the negative impacts of this global architecture on the ground.

Background: respecting the past, shaping the present, designing the future: action research in Cape Town and Nairobi

Hunger is gendered

Food insecurity correlates with localized and individualized crises, both produced and maintained by the entrenched inequalities that are foundational to racialized, patriarchal, and ecocidal capitalism (Fraser, 2022). Intersectional research exposes the ground-level effects, including that there are critical links between HIV/AIDS, hunger, malnutrition and violence across Africa (NFNSS, 2024); that a devastating two in three "children are not fed the minimum diverse diet they need to grow and develop to their full potential" (WHO, 2022); and that food insecurity increases cognitive decline, depression and ill-health among elderly urban populations in the greater Cape Town area (Dunham and Flores-Yeffal, 2019). Local and global structural inequalities and systems task women with food procurement and preparation but prevent them from investing in healthy food and education (Quisumbing et al., 1996). Hunger and despair are greatest in adult women who are failing to feed themselves or their children and grandchildren (Ellis, 2023; HSRC 2024).

These multi-layered social effects show up "a crisis of social reproduction among the poor and working classes, whose capacities for sustenance and replenishment [are] stretched to the breaking point." Entangled "with the defense of male domination" elaborated in a "new imaginary of separate spheres" for women and men (Fraser, 2022, p. 60), this ideology was exported to the colonies and imposed on Indigenous African communities to advance capitalist extraction (Farr, 2024). One result is that constitutional law in former colonies remains over-determined by a hetero-patriarchal notion of what constitutes family, i.e., a household headed by a male wage-earner whose productive labor is subsidized and enabled by the unwaged domestic labor of his wife and children.

With "callous disregard for the niceties of family, community and kin" (Fraser, 2022, p. 59). African kinship forms were re-imagined "in their modern restricted form" as part of the process of "modernizing male dominance" for the purposes of colonial extraction (Fraser, 2022, p. 60). The lingering effects of colonial patriarchal relations are strongly reflected in contemporary legislative attempts to ensure access to food. For example, in South Africa's Constitution, Section 27 (1) (b) states that "everyone has the right to have access to sufficient food." It includes a further provision for children in Section 28(1) (c) which states that "every child has the right to basic nutrition." As recently, South African Human Rights Commission (2018), p. 1 interpreted this provision as follows:

> The right to food does not mean that individuals and groups have a right to be provided food by the state. The obligation on each individual is to feed themselves and their families. Parents particularly, are obliged to provide food for their children.

Innocuous as this formulation may at first appear, it makes invisible two assumptions: that there is a shared parental obligation to offer childcare and that a child will have at least one parent, presumably their father, who has enough education and status to engage in a capitalist economy that exchanges labor for wages for food. Yet, an astounding 63 % of South African children have no named father on their birth certificate, while more than 40 % of women are lone parents (StatsSA, 2018). To assume, as the SAHRC did, that there is more than one parent contributing to the feeding of children requires a hypothetical dual-income household firmly entrenched in the formal sector, alongside a valorization of "the heteronormative male breadwinner/female housemaker model of the gendered family" resting on "'the family wage,' male authority in the house, and a robust sense of gender difference" (Fraser, 2022, p. 66). However, this assumption of a family dynamics reflects the reality of only about one-third of South African families. If the state and its institutions

1 The Urban Food Futures program is a project devised by the TMG ThinkTank for Sustainability supported by the Miramar Foundation, Muungano Akiba Mashinani Trust, African Population and Health Research Center (APHRC), and ICRAF/ICRISAT in Nairobi; and SUN Development, Food Agency Cape Town (FACT), and the African Center for Cities at the University of Cape Town. It is funded through the German government through the Federal Ministry for Economic Cooperation and Development (BMZ).

remain remorselessly blind to the gendered implications of contemporary family formation in South Africa and fail to imagine new ways to support women who are burdened with the sole care of children, they are guilty of heedlessly perpetuating colonial values, including the practice of "externalizing carework onto families and communities while diminishing their capacity to perform it" (Fraser, 2022, p. 67; Care Collective, 2020).

Kenya faces a similar pattern. The 2019 Kenya Population and Housing Census found that single-parent families, predominantly headed by a mother, rose from 25.1 percent in 2009 to 38.2 percent in 2019 and that 45 percent of children did not live with a father or were living alone. The absence of fathers within the family home corelates with higher degrees of hunger and social adversity, including the commission of crimes for the sake of survival (KNBS, 2019).

In both countries, officials need significant support to understand and respond to realities on the ground. Feeding children, like feeding communities, is not a shared burden. An inability to manage the task is one of the less visible and more invidious forms of violence impoverished urban women face. Addressing and overcoming the degree of structural inequality and discrimination in access to food that results from entrenched sexism is, therefore, a foundational commitment of Urban Food Futures.

To make sense of the complex conditions that produce hunger, it is necessary to consider the "increased precariousness of labor, squeezing out care and changing food habits" that affect women who face food insecurity (Scott-Villiers et al., 2016, p. 8). This task can only be achieved by examining the hidden gendered assumptions behind much food-related legislation, policy, and planning. Understanding these social dynamics is a crucial goal of the research informing this paper and we use an intersectional feminist lens (Crenshaw, 1989) to evaluate the cumulative effects of inequalities based not only on gender, but on race, class, ability, and location, as they collectively contribute to the "precarious life" of participants in this research (Butler, 2004). From this lens, we urge policy-makers who seek to govern spaces of informality to put the needs of women, who bear the greatest burden of feeding and caring for children, at the center of their agendas.

Urban Nutrition Hubs are one mechanism through which to do this. Envisioned as living labs, they serve as transformative spaces for co-creation, dialogue, and feminist epistemologies to address systemic food insecurity. They integrate diverse actors, including communities, policymakers, and civil society, in collaborative experimentation and innovation. As user-centered environments, Urban Nutrition Hubs link food-related activities with social and economic initiatives, fostering learning, adaptation, and systemic change. They play a critical role in strengthening social capital, advancing inclusive food systems, and progressively realizing the right to food through the generation and sharing of knowledge and the institutionalization of scalable social and technical innovations (Figure 1).

Research sites and methodology

Characterized by centuries-old legacies of land dispossession and economic expropriation that have led to sprawling informal settlements without access to nutritious food, clean and safe drinking water, green spaces, fresh air, peace, security, and municipal services, Nairobi and Cape Town are structurally impoverished and unequal societies. The communities who participate in this research are descendants of people permanently displaced to low-lying wetlands that were marginalized as "wastelands" during the colonial era. They perpetually struggle with immiseration by navigating crisis, building networks, circulating scarce resources, and creating supportive environments and spaces to shelter from the risks associated with informality. Taking "the subjective and the visceral" impacts of their precarity into account (Paganini et al., 2021, p. 3), the research approaches the restoration of health and wellness as something that reaches far beyond an individual's own somatic/bodily state of being and crosses generational lines wounded by colonization, contributing to healing generations of political trauma (Abrahams, 2021; Haines, 2019; Raffo, 2022).

The research sites were chosen for their potential to illuminate and provide teachings on the complex array of causes of urban food insecurity: livelihood challenges, elitism and exclusionary development patterns, global trade dynamics, insecurity and conflict, poor service delivery, and lack of inclusive food governance processes (Buthelezi and Metelerkamp, 2022; Haysom et al., 2022). Lacking waste systems or basic infrastructure, including electricity and water, Mukuru's occupants live under precarious conditions. The risk of land expropriation for redevelopment and forced eviction heightens insecurity. Residents were made significantly more vulnerable during government-led removals in October 2021 that violently displaced more than 75,000 people and destroyed their food security practices, with particularly harmful effects on school-going children. On a hopeful note, the Mukuru Planning Area's informal settlement upgrading process, whose aim is to transform the slum into a healthier and more functional neighborhood, has attracted significant government funding and provides opportunities for innovations including controlled environment agriculture (CEA) that, when linked to institutionalized arrangements such as school feeding programs, could provide a cost-effective food support mechanism.

The Cape Flats of Cape Town is a similarly densely populated and immiserated urban sprawl, to which indigenous populations were forcibly during Apartheid. Thirty years after democracy, it remains marked by structural inequalities and poor service delivery, exacerbating all the problems of marginalization including poor health, food insecurity, unequal opportunity, violent crime, and unemployment (Malinga, 2020). Thirty seven percent of Cape Flats' residents rely on a meager monthly state social grant to survive (StatsSA, 2022) and around 58% of adults who live in the Cape Flats, who lack sUrban Food Futuresicient access to raw, whole foods, sUrban Food Futureser from overweight and obesity, and related chronic illnesses Simelane et al. (2024) The area is excluded from the city's advanced and comparatively high-skill economy, which favors a food system dominated by unaffordable, inaccessible supermarket chains and high-class dining, entrenching Cape Town's standing as one of the most unequal cities in the world's most unequal country (Fleck, 2023).

Yet because hunger is a stubbornly pervasive daily reality across the Cape Flats, a well-established coalition of NGOs, faith-based organizations, universities, and community networks cooperate on food-related issues. With their lobbying and support, a range of national, provincial, and municipal responses have emerged to address food insecurity, including a school feeding program that serves breakfast and lunch to 519,000 children daily, or roughly 45% of school children across the Western Cape, and there is a growing

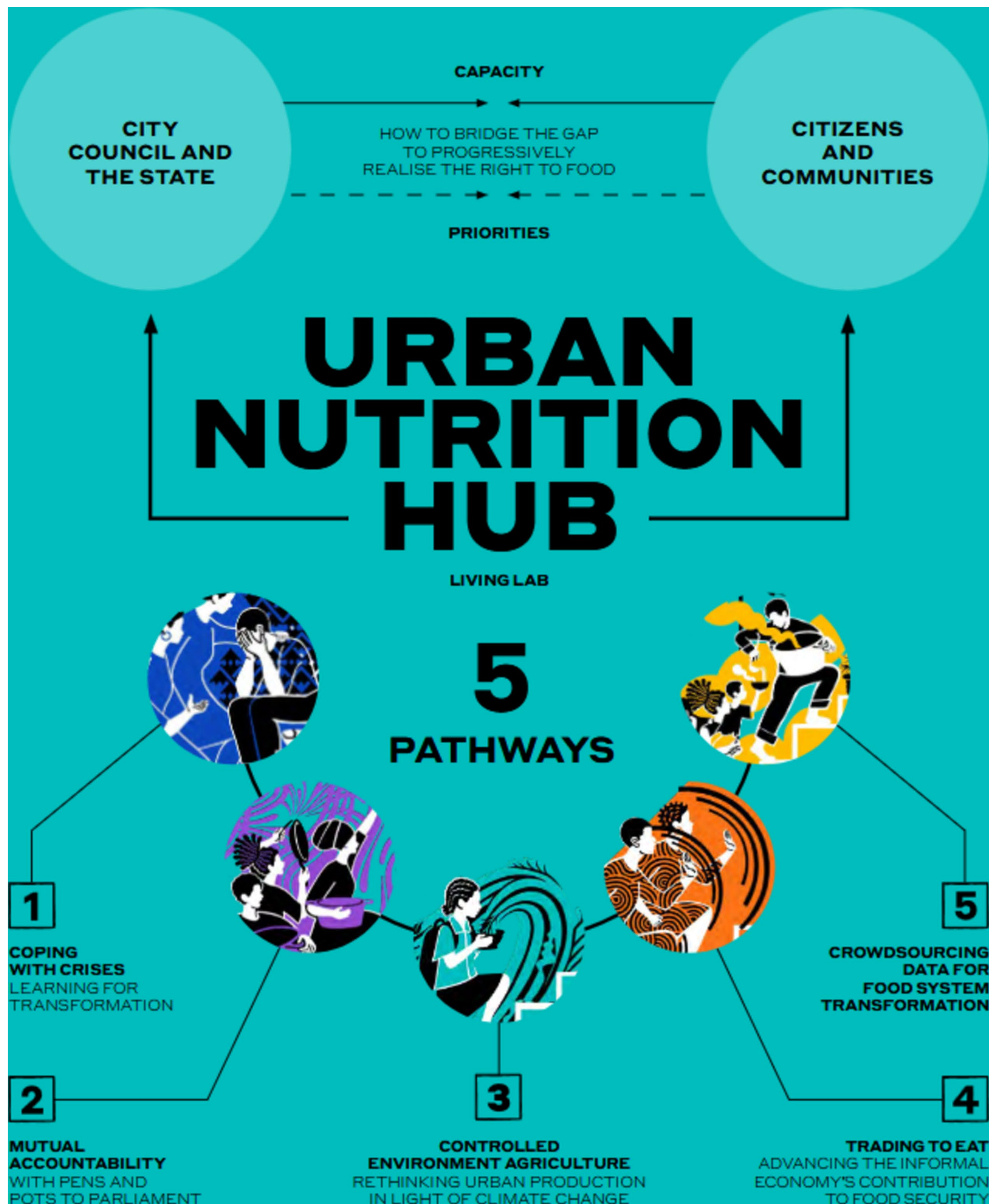

FIGURE 1
We developed a framework to understand and reduce the complexity of our work and steer decisions around what we are doing, why, and how. The framework is open to complexity and uncertainty, and centers the living lab action research approach in urban nutrition hubs (Source: Paganini and Weigelt, 2023).

commitment to multi-sectoral coordination of food-related issues (PSFA, 2022; Western Cape Education Department, 2019).

To gain an empathetic insight into their experiences and perspectives, communities in Mukuru and the Cape Flats were engaged, through a "living labs" approach (*see* Almirall et al., 2012; ENoLL, 2015), to unearth the systemic causes of their food insecurity. The selection of participants in each city was shaped by the community-led nature of the research. Both organizations played a pivotal role in ensuring that participant selection was both inclusive and contextually relevant. For household surveys, photovoice sessions,

and focus group discussions, scientifically rigorous random sampling methods were employed to mitigate bias. A core team of long-term researchers in the community developed pathways, and triangulated and analyzed data. These co-researchers represented the geographical, socio-economic, and demographic diversity within each city, encompassing different spatial areas, social strata, age groups, genders and gender identities. In the Cape Flats, diverse racial backgrounds, and in Nairobi, different ethnic groups, were represented. The same core team of community co-researchers was maintained over the four-year period, fostering continuity, trust, and deeper contextual understanding through the course of the study. During initial engagement with these communities, we co-devised and discussed our research questions while simultaneously building trust and solidarity, igniting imaginations, and re-centering Indigenous knowledge about food systems in our work. Conversations that took place in the labs were positioned within a reparative methodological context that follows the "four principles of respect, responsibility, reverence, and reciprocity [that] act as an ethical guide for the researcher to work with Indigenous people, their Indigenous knowledge, and stories" (Xiiem et al., 2019, p. 1; also see Maathai, 2006; Hassim, 2006; Lewis and Baderoon, 2021). As such, they allowed the research team to bear in mind, and strive to overcome, the anonymity and non-representativity of numbers (Paganini et al., 2021) that are over-valued in "Western 'scientific' research, codified within ideas of imperialism and colonialism" (Xiiem et al., 2019, pp. 5–6) and to reflect the realities of "precarious life" (Butler, 2004) within the framing of an ongoing study of health and wellbeing associated with urban food security.

URBAN FOOD FUTURES is an action research program designed to make sense of connections between interlocking forms of oppressions and the trauma of undernutrition, issues that are understudied in an African context. Our analysis is informed by field-based observations and community discussions with people living in a near-permanent state of precarity and food insecurity, ongoing job losses and economic contraction, which we situate in an emerging continental and international body of research responsive to the intersectional oppressions that result from and exacerbate the increase in world hunger. The program invited partners in Nairobi and Cape Town to rethink their food systems, develop pathways for system transformation, and test new approaches to foster change (Paganini and Weigelt, 2023). The following table outlines the different methods and the rationale applied per pathway (Table 1).

In a scoping phase from June 2021 to December 2022, the interdisciplinary research team used a feminist mixed-methods approach to explore how communities in Nairobi and Cape Town cope with food insecurity, drawing on a diverse range of knowledge systems to identify research questions and conducting scoping research to explore hypotheses and jointly develop theories of change. Pairing academic research and conceptual thinking with poetry, community dialogue and theater, the team created a common understanding of their joint endeavor to develop pathways for food systems transformation and, more importantly, curate a safer space to ask uncomfortable questions about the root causes of food injustices (Nyaba and Paganini, 2023).

Recognizing the distinct socio-economic and logistical contexts of each city, tailored approaches were adopted, involving scoping surveys and qualitative engagements to capture diverse coping strategies. In Mukuru, a consumer household survey was conducted with 278 respondents. In the absence of household lists, random sampling was not feasible, so quota sampling was employed to include single male-headed, single female-headed, male-headed, and female-headed households. Community perspectives were integral to this process, with findings validated through a participatory meeting with local residents. While diagnostic and site-specific, this methodology prioritized understanding local dynamics and invited further stakeholder deliberations.

In the Cape Flats, the study utilized the Livelihood Coping Strategies Indicator for Food Security (LCS-FS) developed by the World Food Program (WFP). The LCS-FS categorizes coping strategies into stress, crisis, and emergency levels based on their severity and impact on long-term productivity. Community dialogs took place in six low-income communities facing the realities of polycrises, especially multi-vectored and chronic food insecurity that became acute during and after the Covid-19 lockdowns. Two rounds of household surveys were conducted, complemented by the reduced Coping Strategies Index (rCSI), which measured the frequency and severity of coping mechanisms. Gender-disaggregated data were analyzed to assess differential impacts on male-, female-, and jointly-headed households (Figure 2).

Coping strategies

In Nairobi, we found that food insecurity was managed predominantly through consumption-based strategies. Households reduced meal frequency or downsized portions, often prioritizing children's nutritional needs over adults. Substitution of preferred foods with cheaper alternatives was common, as was accessing leftover or discounted items in informal markets. Economic adaptations included borrowing food without repayment, begging, or sharing housing with relatives to reduce rent burdens and increase cash availability. However, these strategies had significant long-term consequences. Selling productive assets and depleting savings addressed immediate consumption gaps but eroded households' resilience and investment potential. Despite challenges, Mukuru's widespread distribution of food vendors ensured physical accessibility to food, although affordability remained a critical barrier. External factors, such as rising energy costs and geopolitical conflicts, were identified as compounding risks, likely to reduce protein intake by discouraging the cooking of energy-intensive foods (Figure 3).

In Cape Town, households were found to exhibit varying degrees of coping strategies, categorized as stress, crisis, or emergency. Stress coping, such as borrowing money, was prevalent, particularly in gangster-ridden Hanover Park, where over 50% of households used such strategies in the first survey round. Crisis coping, including the sale of productive assets, was most frequent in the Cape Winelands area, affecting 38% of households. Emergency coping strategies, characterized by severe and often irreversible measures, were increasingly adopted in Hanover Park during the second round, reflecting a growing erosion of household resilience. The most common coping strategy across both rounds was the purchase of cheaper, less-preferred foods, employed by up to 90% of households in the Cape Winelands during the first round. Gender disparities were notable, with female-headed households more likely to have to employ a

TABLE 1 Overview mixed-methods.

Pathway	Methodology	Justification
1. Coping with crises	In Cape Town: Action research with partner organization to test social innovation by testing different community kitchen models and implement a kitchen network. To support this, focus group discussions were held three times a year, with monthly learning sessions in preparation for these in-depth discussions.	Time-intensive approach to ensure ample time for internal learning throughout the process.
2. Mutual account-ability	In Cape Town: Learning journey – a participatory action research method that unites decision-makers with grassroots communities to collectively tackle complex issues such as food security. This approach challenges the conventional wisdom that one-size-fits-all solutions are optimal, instead prioritizing the identification of locally specific challenges and potential remedies and, thereby facilitating bottom-up system changes tailored to local needs and experiences. Food dialogue – underpin the facilitation of a principled and collaborative dialogue process between community members (inclusive of FACT) that are aimed at identifying key challenges, opportunities, priorities as well as action plans for more democratic and localized food systems. Food dialogs were initiated with the vision to destigmatize hunger, realize community challenges and working toward creating solutions which were developed by communities.	Various engagement strategies facilitated the expansion of discussions to the policy level while also enabling a deeper integration within the communities.
3. Controlled env. agriculture	In Nairobi: Action research with partner organization to test one hydroponic unit as technical innovation. Results discussed in focus group discussions.	Field experiments and documentation of production units were conducted over two seasons to enhance the credibility of the findings.
4. Trading to eat	In Nairobi: Action research with partner organization to test social innovation by implementing food vendors association. Results discussed in focus group discussions.	Time-intensive approach to ensure ample time for internal learning throughout the process.
5. Crowd-sourcing data	In Cape Town: Through crowdsourcing data, a household survey was conducted in six low-income areas of Cape Town and the Cape Winelands, with in-person interviews completed for 2,165 households in Round 1 (August–September 2023) and 2,135 in Round 2 (January–February 2024). Both rounds achieved statistically significant sample sizes at a 95% confidence level. The questionnaire included both close- and open-ended questions on food insecurity and coping strategies. Enumerators, all local residents, were trained with local partners. Data analysis combined statistical methods (STATA), contextual data digests, and focus group discussions to triangulate results and enrich findings with lived experiences. Data digest – a method of analysis that contextualizes research findings. This method can also highlight intersectionality in research findings.	Quantitative data collection to close place-based data gap.

broader range of coping strategies compared to male- or two adult-headed households.

Together, these findings highlight the complexity of urban food insecurity and the varying coping mechanisms employed across contexts. While physical access to food was less of a constraint in both cities, affordability and economic vulnerabilities remained critical challenges, exacerbated by global and local stressors. The degree of difference in each research site underscores the need for context-specific, participatory interventions to better understand and further enhance household resilience, and address the structural drivers of food insecurity.

One place of "stuckness" affecting the urban poor in our focus cities is that official discussions on urban development in African countries often remain disconnected from those on rural development. Moreover, a vital analytical response to polycrises tends to be missing, meaning that the cumulative impacts of complex and interconnected critical challenges remain under-recognized and unaddressed, especially in urban areas (Paganini, 2024; Farr, 2024). Behind polycrises lie two main drivers: "the speed of reaction to climate change" and "geoeconomic confrontation," which markedly impact "our global ability to match the supply and demand of natural resources"; and their effects are particularly, and disproportionately, borne by women already made vulnerable by "marginalized housing, lack of safe community spaces, and high rates of violence" (Paganini and Khan, 2023, pp. 4–5).

Superficial responses to the polycrises that drive food insecurity both lead to and reinforce inadequate policy efforts, including the excessive focus on increased production in rural agricultural areas recommended in the 2023 COP28 Declaration. These policy directions bear little relationship to the food security threats facing low-income urban dwellers in Nairobi and Cape Town, which result not as much from a physical lack of food, as its unaffordability and unsuitability. In the intricate tapestry of global challenges, it is the convergence of environmental, economic, and social crises that creates polycrises, an overall intensification of fragility and instability. Again, women in urban and low-income areas bear a disproportionate burden of these overlapping crises, grappling with violence, inadequate housing, lack of access to finance, and scarce safe spaces. In polycrises, adding to their already overwhelming burdens of care, women are, once again, expected to take on additional roles, facing heightened caregiving responsibilities amid diminishing access to resources (Care Collective, 2020; Fraser, 2022; Paganini and Khan, 2023; IEJ, 2024).

The research showed that women who face immense burdens build resilience through acquiring social capital; and the more social capital they can wield, the more resilient they are to crises. Social networks are a subset of coping strategies that involve drawing support from other households (Devereux, 1999). Such networks become vital

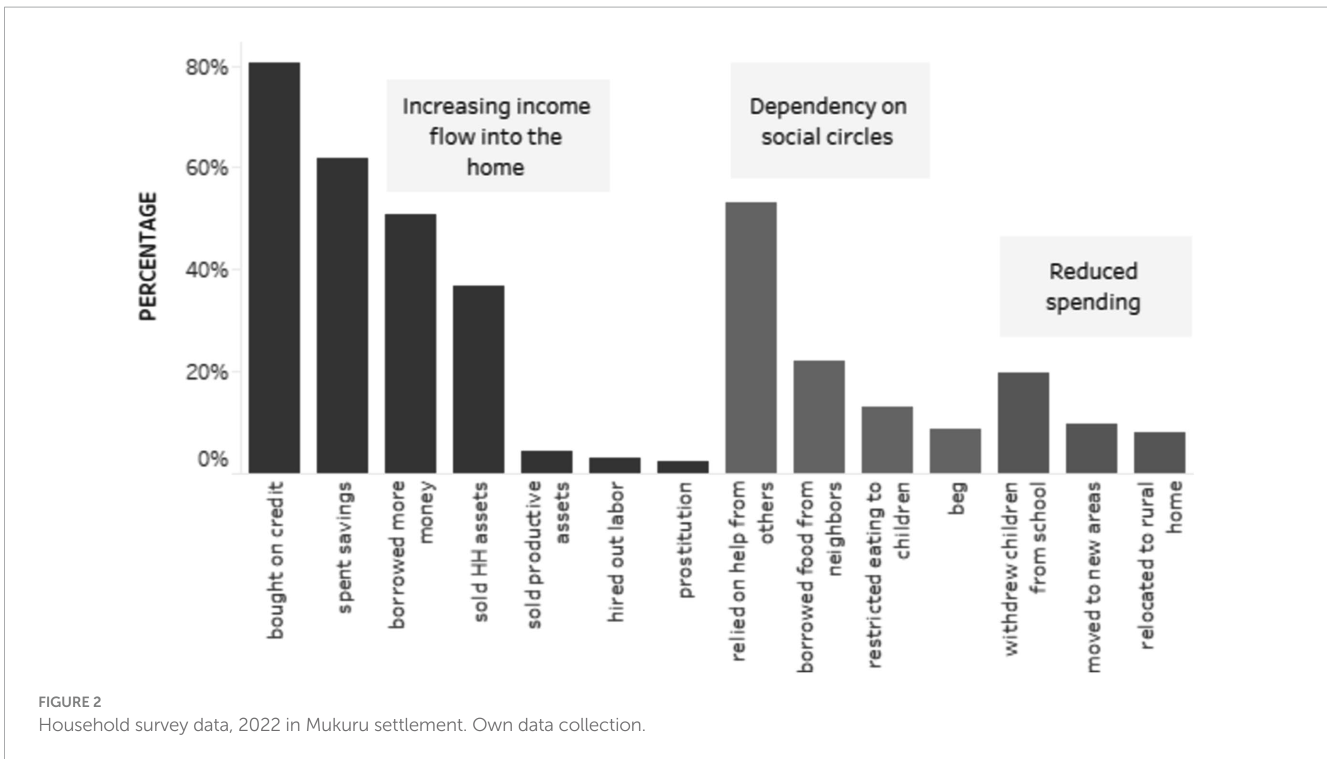

FIGURE 2
Household survey data, 2022 in Mukuru settlement. Own data collection.

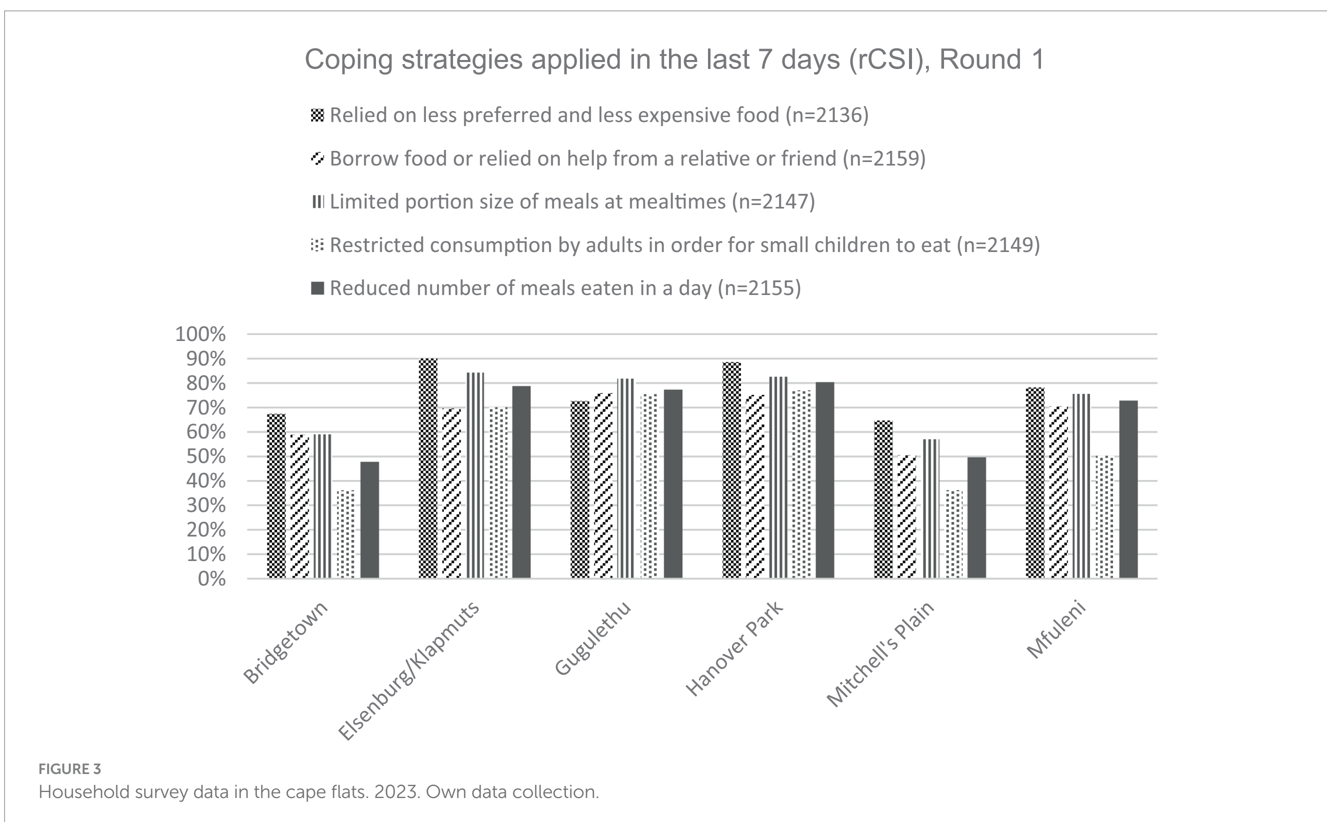

FIGURE 3
Household survey data in the cape flats. 2023. Own data collection.

informal safety nets during times of precarity and women, in particular, seek membership in groups like local saving schemes (known in South Africa as *stokvels* and, in Kenya, as *chamas*) to capitalize on the groups' ability to foster collective action by providing both finances and enabling collaboration. Members of savings groups come together on a regular basis to discuss common concerns, raise support and commitment from individual households for communal action, and form a common front to negotiate with state authorities (Shand and Colenbrander, 2018). In Kenya, members of savings schemes pool their financial resources through regular contributions,

then rotationally provide funds to one member as a lump sum, or sometimes the resource is used collectively for community projects such as land acquisition for housing upgrades in informal settlements (Weru et al., 2018). In community discussions in Cape Town in 2020, *stokvels* were highlighted as a promising coping strategy, and people waited for the year to end to receive their payouts to buy food (Paganini et al., 2021). Since savings schemes usually bring together people with shared backgrounds, such as families, neighbors, or people with similar professions, their capacity to build social capital is an important component of their success (Shand and Colenbrander, 2018). Members have to trust that other members will continue to participate until everyone has received the lump sum once and that they will repay their debt if the sum is provided as credit. In situations of food insecurity, some savings groups will work with food items instead of money. For example, networked community kitchens in Cape Town used their savings for bulk food purchases, particularly of cooking oil, during the early months of the shortages resulting from the Russian war against Ukraine.

Findings from the scoping phase indicate that well-organized coalitions of women are often at the core of community-developed coping mechanisms (Battersby et al., 2022) and without women's creativity and ability to adapt, neither households nor communities could survive. Yet deconstructing social stereotypes of women as victims in need of social assistance remains an ongoing struggle (Duncan and Claeys, 2020; Haines, 2019; Raffo, 2022) and the erosion of their social capital has been identified as a severe global risk by the World Economic Forum for the threat it poses to community stability and wellbeing (WEF, 2023). In light of this, preserving and reinforcing women's social capital through support to female networks and their innovations is emerging as a crucial mechanism to cope with polycrises.

As our earlier gender analysis shows, in both cities, elites appear indifferent to the conditions governing informal economies and frequently interpret vague or outdated policy guidance in ways that create the conditions for food precarity (Kameri-Mbote, 2013. Especially destructive is a combination of punitive and unrealistic official responses to informal traders and a regulatory environment that, lacking interest in or sUrban Food Futuresicient data about people's daily struggles to find and prepare food, affords exaggerated protection to formal, capitalist entities that are inaccessible and unaffordable to the poorest. Indeed, the dominance of capitalist food distribution models has caused repeated municipal failures to amplify and concretely support the solutions poor people arrive at to alleviate hunger. This undermines urban social entrepreneurship in both cities, especially among young people who find themselves excluded from the formal sector, which leads to further alienation and despair (FKE, 2021). Nor do municipal responses adequately address the problem that marginal communities now spend most of their income on food and are decreasing the variety and quality of food products they consume, with many people giving up fresh foods, proteins, and dietary variety as prices of staple foods such as seed oil, maize flour, and wheat flour rise.

Progressive-sounding national policies in both South Africa and Kenya, which aim to prevent the increasing impacts of under- and malnourishment, including obesity and its associated disease burden, are thus frustrated. The vibrant and ingenious efforts of informal cooks, predominantly women, who prepare culturally recognizable, nourishing, comforting, and affordable dishes using whatever community assets are at hand to create kitchens, are often thwarted. Effectively, conventional binary hierarchical discourse that portrays the informal economy as a residual and marginal form of economic activity whose yields are negative for economic and social development, is outmoded and quite simply wrong. And, because they remain largely invisible to elite politicians and government functionaries, the informal economy's actual contributions and its agility, capacity for immediate response including in emergencies, and innovation in achieving the right to food for all, remain misunderstood and marginal (Paganini and Weigelt, 2023).

While this basket of challenges and contradictions have now reached a life-threatening degree of severity, the achievement of the right to food is not a new problem. When they were founded, both Nairobi and Cape Town were planned around the singular political and economic goals of advancing racial supremacy and extraction for profit that have led to their current state of "eco-wreckage," a condition produced in the "free ride on a nature that cannot really self-replenish without limit" on which racial capitalism depends (Fraser, 2022, p. 83). In the settler land grab, citizens who were forcibly displaced for colonial land-use projects were dumped on peripheral, drained wetlands that are prone to flooding. They were permanently separated from lands with which they had ancestral and spiritual relationships and from whose shared cultivation they derived not only basic resources but community care and support (Jamail, 2023). By these means, Indigenous populations were unevenly drawn into capitalist "cheap" food economies whose systems of financialized food security are dominated by supermarkets inside malls, built like fortresses that the poor cannot reach. An inescapable contradiction, however, is that the for-profit ethos of supermarket chains is antithetical to stated national and municipal commitments to eradicate – or at least alleviate – hunger and undernutrition.

These legacies of the spatial logic of segregation live on in sprawling townships. While they continue to inflect food production, distribution, and availability, today, as weather patterns change, the contamination and misuse of urban wetlands is finally being recognized as harmful, and a root cause of drought/flood cycles, food shortages, and other symptoms of climate crisis and their overburdening of the poorest (Farr, 2022).

Informality and urban poverty

It is also clear that state abandonment itself is producing and reinforcing varying situations of informality in African urban life, with 72% of all non-agricultural African livelihoods coming from jobs that voluntarily or involuntarily take place outside of the protection or regulation of governments (Kameri-Mbote, 2013). The urban informal food economy, comprised of traders, street vendors, transporters, and food producers, is a crucial part of the food sector in Cape Town, where food- and drink-related enterprises account for 54% of all township economic activities, and in Nairobi, where they make up 46%, with informal vegetable and fruit selling as the leading income-generating activity for women (Amenya, 2007; Owuor et al., 2017).

However, because the informal trade is forced to take place outside the capitalist food production and distribution network, the unnecessary vulnerability that results from informality in both cities today is symptomatic of the ill-guided logic of inclusion–exclusion

 10.3389/fsufs.2024.1470801

that informs the construction and maintenance of inefficient dominant global food systems. Its manufactured precarity is particularly frustrating because participation in the informal food economy significantly contributes to the livelihoods of those made most marginal by dominant economic and governance actions and policies, who can, because of its "relative ease of entry and low requirements for education, skills, technology and capital (ILO, 2002, p. 5), participate in this sector.

The net result is that an informal sphere of economic activities that is, or should be, a central pillar in efforts to achieve the right to food in both Kenya and South Africa, is nowhere near being potentialised. Because its contributions are overwhelmingly invisible and underestimated, informality is not being supported to offer better social security, make a cultural contribution, overcome inherent labor vulnerabilities, and, especially, absorb and build the skills of un- and underemployed youth, including women. It is also failing to gain greater visibility and weight in legal and regulatory systems, where elitist policy decisions neglect, misunderstand, and even dismiss food production and distribution as a significant economic space capable of fulfilling a definitive interdependent urban obligation of the state — the pursuit of full and productive employment or the right to gain a living (UN General Assembly, 1966).

Observers of African urban food systems argue that there is a tremendous amount of work to do to transform this reality, noting that it requires, firstly, building dietary resilience through support for an expanded informal food economy and, secondly, ensuring that workers, especially women- and child-headed households are granted a means of access to a predictable, stable, and sUrban Food Futuresicient cash income, as this is the key determinant of urban household food security (Battersby and Haysom, 2018; Blekking et al., 2022; Brown, 2019; Crush et al., 2012).

Pathways for transformation

Melissa Leach's overarching concern (2002), which is central to this research process, is how communities can be supported to gain understanding of the potential and possible pitfalls of different pathways, including technological elements they might encompass or rely on. She proposes that transforming urban food systems requires a targeted approach through identifying clear pathways, addressing their potential deficits, and imagining the transformation of stuck systems. To ensure that pathways emerge which are situated within a community's vision, it is necessary to understand how the existing distribution of power and resources overvalues certain perspectives and knowledge, in turn affecting "the material political economy and the politics of knowledge" (Leach, 2002). In her view, plurality must emerge as a foundational principle because this opens possibilities, exposes multiple paths to progress, and generates ever more expansive definitions of what progress is and how it can be most effectively measured. When faced with stuck ideas, policies, and systems, a generative and unrestricted approach is needed that can offer "a countervailing force to locked-in powerful pathways that lead in problematic directions, or seek forms of control that, amidst the disruptions and uncertainties that pervade current and future worlds, are illusory and dangerous" (Leach, 2002).

The pathways approach offered a transformative framework uniquely suited to addressing the complexities of the two African urban food systems in which we worked. It helped break down intricate social, ecological, and political challenges without reducing them to oversimplified solutions, enabling a deeper engagement with the root causes of food injustices. By prioritizing diverse voices and epistemologies, the pathways approach values lived experiences and integrates multiple knowledge systems, ensuring that solutions are co-created and grounded in the realities of those most affected by food insecurity. Rather than imposing a one-size-fits-all model, this approach fosters inclusive, context-specific change processes that embrace plurality, and challenge entrenched power dynamics. To summarize the approach:

- Which *directions*, Leach asks, could pathways head? What are the goals, values, interests, and power relations that drive pathways in particular directions? Is it possible to re-orient them to benefit the greatest number and diversity of peoples?
- Leach invites consideration of whether there is sUrban Food Futuresicient pathway *diversity* to resist, or better, overcome powerful processes that keep responses locked in inertia. Do these pathways have the capacity to respond to sometimes unpredictable variables, contexts, and values, so they build resilience in the face of uncertainty?
- Leach suggests consideration of the implications for changes in *distribution*, which also requires anticipating potential impacts of change on those with vested interests in the maintenance of current patterns, and who might thwart alternative pathways from emerging. Crucially for a feminist and anti-racist research process, she recognizes that choices made between different pathways will both be driven by and affect existing inequities of wealth, power, resource use, and opportunity across gender, ethnicity, class, and place.
- Leach's paradigm considers the implications of the pathways chosen for *democracy* in its broadest sense, as an inclusive political vision capable of enabling the equal and effective participation of citizens wherever they are located, in formal or informal spheres.

Community dialogs revealed themselves as a foundational tool and a worthwhile methodology that avoids the trap of "solutionism" (Leach, 2002) – a belief "that environmental and social ills are problems to solve, rather than manifestations of deeply rooted socio-natural and political-economic structures and processes." In adopting Leach's "pathways approach" through which she "envisages complex, dynamic social-technological-ecological systems unfolding along trajectories of intervention and change, shaped by politics and power," the research process excavates and creates space to examine the less-visible or "slow violence" (Nixon, 2011) effects of hunger, applying her "4Ds" heuristic at the community level to identify possibilities to address and begin to resolve stubborn challenges (Leach, 2002).

Broadly speaking, we identified five pathways. These offer opportunities for change because of their ability to achieve two things: firstly, to show that a different way of food governance is possible and, secondly, to urge the necessity of unpacking the root causes of urban hunger and food insecurity before any actions are taken. The five pathways are: enhancing capacities to cope with complex crises and polycrisis; creating mutual accountability; introducing appropriate technologies for controlled environment agriculture (CEA); valorizing informal traders as allies in the struggle to end urban hunger; and

crowdsourcing data so that critical knowledge gaps can be closed (Paganini and Khan, 2023). Although they apply equally in each city, the work completed to date has tended to cluster around coping with crises, increasing accountability, improving data in Cape Town's food insecurities; and the introduction of appropriate CEA while changing the regulatory environment surrounding the informal economy in Nairobi.

Cape Town – enhancing crises responses

In addition to providing a venue for the discussion of successful coping mechanisms, community dialogs identified key entry points for institutionalizing collaboration between local government and informal communities. The pathway to this goal entails supporting communities so their research inputs feed vertically into policy-making efforts and horizontally back into community hands, where they reinforce existing successful coping strategies. The existence of strong relationships that were built between communities and researchers since 2016 meant a high degree of trust and goodwill had already been established when the pandemic struck, providing a basis from which work could continue despite the emergency measures and isolation imposed nationally and enforced by the municipal government of Cape Town.

Food dialogs initially focused on the question of how people had managed food insecurity during Covid-19 but expanded to much bigger discussions about the polycrises facing the poor, exacerbated (but by no means initiated) by the lockdowns. Beginning in November, 2021, in the months after the shock of the lockdown began to subside, the food dialogue discussions offered an unprecedented opportunity to break through social stigma about hunger, "to sit and talk about food, talk about being hungry, in a language that we all understand" (Buthelezi and Metelerkamp, 2022). Crucially, the dialogs exposed long-held myths about the causes of food insecurity, revealing that it is not a lack of readily-available food — food from supermarkets or other retail sources, which are, indeed, scarce in impoverished and informal settings — but a lack of resources to buy food, in other words, economic exclusion, which underpins hunger in Cape Town's informal system. A powerful result of the dialogs, as recorded by Nomonde Buthelezi for FACT, is that they helped build solidarity and awareness, because they exposed the lockdowns as mere multipliers of the existing difficulties facing ordinary Capetonians living with acute food scarcity. They "highlighted that we have been hungry for a long time before this" (Buthelezi and Metelerkamp, 2022, p. 3) and supported communities to recognize that widespread hunger is symptomatic of a society built on gross and systematic inequality, not a result of individual failure to access or produce food.

Communities also learned that urban food growing itself may not be a solution: many community-level food growers remain among the most vulnerable to hunger, despite their self-help efforts (Buthelezi and Metelerkamp, 2022). In the course of discussing this paradox, communities autonomously arrived at the argument posited by Salvatore Engel-Di Mauro and George Martin in *Urban Food Production for Ecosocialism* (2022), who argue that food production in cities may be made unfeasible by the inappropriate "physical and ecological processes" found in such settings, and that its value, therefore, lies more in "how it can be made to fit broader political objectives" including the advancement of "subsistence and eco-sUrban Food Futuresiciency perspectives" which could support the development of "a society in which the satisfaction of people's basic needs prevails without undermining ecological and social conditions" (Engel-di Mauro and Martin, 2022, pp. 5–6).

Communities were enabled to recognize the intersectional facets of crises, and to better appreciate how government and municipal policies continue to produce and reinforce siloes that result in unjust and incoherent food systems. This opened space for dialogue members to recognize and celebrate the local community's coping strategies as sites of resistance and learning, and as capable of generating a solidarity built on caretaking and what the feminist Care Collective calls a "radically different vision of belonging…[and] relating to other people and the world" as a potential "organizing principle" for an economic vision based on care (Care Collective, 2020, p. 69; IEJ, 2024). Exactly as this perspective envisions, the co-research process reveals community feeding strategies not only as practical solutions but as sites of "committed involvement" (Freire, 1998, p. 66) of the oppressed in their struggle for liberation. As a result, the three potential pathways for Cape Town's food transformation that emerged in the "common reflection and action" dialogue space (Freire, 1998, p. 66) cluster around community kitchens that emerged as a coping strategy during the Covid-19 pandemic. They include making visible the rich potential of this existing community crisis-response mechanism on the ground; showing how community kitchens, as sites of mutual aid and evolving coping strategies, are capable of overcoming top – down food governance decision-making that assumes and reinforces passivity; and finally, devising methods to crowdsource data at the community level on the state of food insecurity with which to more effectively lobby decision-makers.

Because so many community kitchens are based out of private homes at present, they face major obstacles including lack of space. The kitchens' financial vulnerability is a sign of the poverty of those who work in them voluntarily, who live off state social grants shared with others in the kitchens: an act of solidarity that does not replace the need for volunteers (the majority of whom are women), donations, and raw materials or cook, serve, and clean up. Faced with mounting staff exhaustion and dwindling charitable donations, those who operate the kitchens need to access whatever government and private financial and in-kind support is available. This is not an easy task; it requires a sophisticated degree of knowledge of how national funding streams are dispersed at municipal level. Given that food scarcity is always a symptom of greater social challenges, a broader strategy that emerged revolves around turning community kitchens into "Urban Nutrition Hubs" – highly adaptive and responsive one-stop centers that link the availability of resources to the provision of food, to broader social and economic activities including school feeding, vocational training and learning accessible to women; and, as hunger is finally gaining official recognition as a key factor in family and intimate partner violence (HSRC, 2022), is of crucial value to partner communities, solidarity and other recourse for victims of violence.

That women focused so much on responses to aggression is unsurprising in a patriarchal society that became inured to violence during the long decades of Apartheid, but the problem that hunger is often accompanied by rage that all too easily turns inward and intimate is still mostly hidden from view. Discussing this point, communities reported that "there has been a lot of violence, especially gender-based violence" (Buthelezi and Metelerkamp,

2022) that is associated with and results from chronic hunger, anxiety, and multiple other vulnerabilities associated with inadequate access to food (Battersby et al., 2022). A pathway that can include overcoming daily gendered violence as a manifestation of polycrises is one that initiates conversation about bodily harm, hunger, and violence in such a way that partner communities are better able to process the shame and stigma they experience, individually and invisibly. As such, the food dialogs address a question about silencing that Staci K. Haines poses in *The Politics of Trauma*: "[violence] is so prevalent, yet there is so much silence," she writes, "It's so hidden. How do we do that? What social norms and practices allow for both the abuse and the silencing of it?" (2019, 85). Haines herself makes a path-breaking contribution to answering this question. Her book, focused as it is on how personal and social sUrban Food Futuresering are intertwined and produced by "the shaping power of institutions, social norms, economic systems, oppression and privilege alongside the profound influences of family and community" (2019, 11), reveals not only the systemic nature of trauma, but the "vast cultural narratives, including media, religious beliefs, and government propaganda" (Haines, 2019, pp. 55–56) that confront individuals and communities daily, uplifting inequality, violence, and exploitation, glorifying the worthiness of the few to create "in" groups and "out" groups, and reducing the possibility of solidarity to oppose the exploitative, harmful, and traumatic systems that operate from the intimate sphere outwards to keep modes of domination in place. June Bam's "herstoriography" of how Cape Town's Khoi and San women have learned to keep "their origins a secret," including in their struggles for justice in the apartheid and post-transitions years, offers a similarly detailed discussion of the complex politics of trauma (Bam, 2021, p. 6).

In Cape Town, addressing the stigma associated with hunger creates mutual accountability between those whose task it is to work with communities to end hunger: participants who had internalized this stigma reported they lack the confidence to access available resources and do not have the capacity to challenge officials when they fail in their duties. Until they overcome their internalized oppression (Fanon, 1961), this situation will not change. Stigma is a powerful tool for silencing people, as Goffman (1963) notes, because it discredits and labels people as deviant, defective, or different, which causes lack of acceptance, loss of status and opportunities, and fuels inequalities and isolation, making people less likely to speak out about their sUrban Food Futuresering. Participation in the TMG-led study enabled communities, in the absence of culturally appropriate and readily-available mental health supports, to resist stigmatization by exploring rarely-aired feelings about insecurity. This equips them to better understand their struggles as communal, rather than isolated instances of personal failure to negotiate poverty (Paganini et al., 2021). Building on the Latin American model of the "*cocina populares*," Cape Town partners will look at new funding models and approaches to sustainability that are attuned not only to promoting physical, but also mental health. A key ambition is to create, in this process, what Native American/Diné psychologist Eduardo Duran describes as healing from the "colonization of the native life world" (Duran cited in Haines, 2019, p. 82), which Yvette Abrahams, an Indigenous feminist academic and farmer in Cape Town, recognizes as "a tremendous spiritual experience" (Abrahams, 2021, p. 278). The meaning- and relationship-rich world of Urban Nutrition Hubs, as living labs, can help overcome the "impact of epistemicide on food sovereignty" and "allow the space to engage the inclusive past in meaningful ways" by "actually listening to the counter-narratives of the not-often-recognized and -acknowledged dispossessed" (Bam, 2021, pp. 230, 237).

Nairobi – revalorising informality

There is a high prevalence of child- and single-parent households without access to the formal economy among partners in the Nairobi research site. Following the October 2021 forced removals, the vulnerability of school children without a working parent suggested that a central pathway for this study site should form around improving school feeding schemes. Among the solutions explored was the potential of emerging appropriate technologies, specifically hydroponic controlled environment agriculture (CEA), to introduce a cost-effective approach to urban food growing. Three CEA systems were tested to produce fresh vegetables for school feeding programs facing limited space and uncertain land tenure in a project that feeds 3,000 learners, and hosts an early childhood center, maternity and health care facilities in the heart of the informal settlement. Although it faced initial challenges including theft of equipment and unreliable water and energy supplies, a demonstration unit formed of an 8×15 meter greenhouse and an outdoor hydroponics vertical wall to produce cow peas and collard greens is successfully proving that vegetables can be continuously supplied to schools using less water than conventional growing methods, while also producing food in the informal agricultural sector. The full costs of its maintenance are being calculated and the social infrastructure, including effective management structures needed to protect and maintain the system, are being put in place. A financial system is yet to be developed to make this CEA experiment robust and sustainable, but the new technology has, so far, stood up well to the increasing challenges of heat waves and scarce water. It is anticipated that some cost recovery will be possible with the launch of the upcoming National School Lunch Bill.

The second significant challenge for Mukuru is to overcome the negative impacts of current regulatory frameworks on informal economy efforts to relieve hunger. Food vendors, other informal traders, and municipal systems are being supported to rethink and shift the currently punitive regulatory environment surrounding Mukuru's informal food economy, as well as the knock-on effects of lack of trust and collaboration between informal vendors and resulting lack of capacity to negotiate with planners and policy makers. In this pathway, effective sectoral organizations are being supported to challenge the policies that hold vendors back and to create a more enabling policy environment informed by vendors themselves. It is anticipated that food vendor associations will connect consumers, distributors, and producers, providing a stronger basis from which informal food workers can lobby for upgrades to their existing informal market, while ensuring that government interventions are appropriate and responsive to the sector's advice (Sonntag, 2023).

Synergistically, TMG's research partner in Mukuru, Muungano, has already piloted a spin-off of the Cape Town community kitchen to provide food aid in a part of the settlement that was evicted and

destroyed in 2022. In this action research, we documented both the effects of rising food prices and what women associated with the kitchen had learned about forming a collective to feed hundreds of people daily. In a joint workshop co-facilitated by TMG and Muungano, South African colleagues from FACT facilitated a dreaming exercise for the women in Mukuru to imagine their kitchen beyond its current emergency state. Inspired by the example of South Africa, a plan for the kitchen's future was structured around two themes: first, as a place for networking and relationship building and, second, as an opportunity to build a business and generate jobs (Battersby et al., 2022). The action research resulted in the provision of 300 meals per day and a six-month process of collective learning and collaboration (Muungano wa Wanavijiji, 2022). It also revealed the kitchen's pivotal role as a convergence center — an Urban Nutrition Hub along the same lines as the model envisaged for Cape Town — for strategising coping mechanisms to respond to the evictions and pressure the government to recognize residents as beneficiaries of the land (Muungano wa Wanavijiji, 2022). The success of this initiative began to bear fruit in late 2022, when people were allowed to resettle and rebuild their homes around the kitchen.

A roadmap to scaling

A comprehensive roadmap for interventions in Cape Town and Nairobi must embed gender-transformative politics into its core design and implementation. In Cape Town, Urban Nutrition Hubs should prioritize empowering women as key stakeholders in the food system by addressing their economic exclusion and fostering their leadership in community-driven initiatives. Gender-specific indicators could include the proportion of women actively participating in food governance dialogs, the percentage of women accessing training and vocational opportunities through the hubs, and reductions in gender-based violence linked to food insecurity, tracked via community-reported incidents. Additionally, efforts to alleviate the disproportionate burden of unpaid care work—through initiatives like childcare services or stipends for community kitchen workers—should also be measured, alongside shifts in perceptions of women's roles in decision-making processes.

In Nairobi, the roadmap should ensure that interventions like hydroponic farming and food vendor association building explicitly integrate gender equity. Key gender-transformative indicators would include the number of women-led microenterprises established through hydroponic farming, women's representation in leadership roles within food vendor associations, and the adoption of policies that support women's access to urban agriculture resources, such as secure land tenure or credit facilities. A critical measure would also be the extent to which informal market regulatory reforms reduce barriers for women vendors, allowing them to thrive in safer, more equitable environments. Furthermore, indicators could track increases in women's household income and improvements in food security for women-headed households, particularly those with children, who are disproportionately affected by poverty and hunger.

At the systemic level, gender-transformative indicators should measure progress in integrating gender into city-wide food governance networks and policy processes. In both cities, this includes tracking the number of multi-actor food governance platforms with formalized quotas or mechanisms ensuring diverse women's voices are represented. Additionally, policies addressing intersectional marginalization—such as measures targeting women who face compounded vulnerabilities due to race, class, or displacement—should be evaluated for their impact. Success can also be reflected in qualitative measures, such as shifts in attitudes toward gender equity among policymakers and community members, and the extent to which interventions foster solidarity among women as agents of change. By embedding these gender-transformative indicators, the roadmap ensures that interventions not only tackle immediate food insecurity but also dismantle structural barriers to achieve equitable and sustainable change.

Conclusion

Urban Food Futures goal is to enable the systematic analysis of research for policy, science, and practice. This requires a reflexive and egalitarian partnership process in which monitoring and co-learning is necessarily positioned and constructed in relation to the social–economic–political subjectivities of the cities we are working in. The proposed pathways create the parameters for our approach to urban food system transformation and are designed to enable appropriate planning for change in a complex system that is floundering in the face of constant and evolving crises. While we recognize the appeal of simple, linear, quantifiable solutions to time- and resource-strapped decision-makers, the "wicked problem" of food insecurity makes simple cause-and-effect planning untenable, partly because of the sheer number of relationships and feedback loops in this complex system. The current practice of funneling external support into only one facet of complex problems is likely to disrupt whatever equilibrium informal systems can create and may unleash unintended, worse, consequences. Our proposed approach minimizes risks while maximizing continuous learning, debate, and change, especially through supporting women's full participation in both decision-making and the delivery of interventions to create better food security.

Our approach shows that when communities are capacitated to respond to food insecurity challenges via their self-selected participation in a series of pathways, a multi-faceted support system that is responsive to local needs and lived realities is woven together. Like braided fibers, we view these pathways as tools to mutually strengthen transformation potential. In time, the pathways will provide local, disaggregated data to inform dialogue across research sites, countries, and the global sustainability community. Active engagement in the pathways will help bridge informal communities with their local municipalities and national governments, and contribute to legitimizing and legalizing informal coping strategies which uphold the right to food. As a feminist endeavor, the choice to embed the pathways in an enabling environment resists apolitical activism and is a driving force for transformation. The food system it will lead to aligns with the vision of the 2014 FAO High Level of Experts Panel and the COP 28 Declaration on food systems in climate change, gathering diverse elements — not only the environment, but the people, inputs, processes, infrastructures, institutions, etc. that they need to produce, process, distribute, and consume food equitably — to change socio-economic and environmental outcomes for the better.

Author contributions

NP: Conceptualization, Data curation, Formal analysis, Methodology, Project administration, Supervision, Writing – review & editing. VF: Conceptualization, Methodology, Writing – original draft. JW: Conceptualization, Funding acquisition, Supervision, Writing – review & editing.

Funding

The author(s) declare that financial support was received for the research, authorship, and/or publication of this article. The research is funded by Federal Ministry for Economic Cooperation and Development (BMZ) grant number GS22 E1070-0054/038. The Urban Food Futures program is led by TMG Research, Berlin.

Conflict of interest

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

Publisher's note

All claims expressed in this article are solely those of the authors and do not necessarily represent those of their affiliated organizations, or those of the publisher, the editors and the reviewers. Any product that may be evaluated in this article, or claim that may be made by its manufacturer, is not guaranteed or endorsed by the publisher.

References

Abrahams, Y. (2021). "Bringing water to Krotoa's gardens: decolonisation as direct action" in *Surfacing: On being black and feminist in South Africa*. eds. D. Lewis and G. Baderoon (Johannesburg: Wits UP), 274–283.

Almirall, E., Lee, M., and Wareham, J. (2012). Mapping living labs in the landscape of innovation methodologies. *Technol. Innov. Manag. Rev.* 2, 12–18. doi: 10.22215/timreview/603

Amenya, G. N. (2007). *The informal sector in Kenya*. Youth Micro Finance Forum: Nairobi. Available at: http://www.nayd.org/PDF/The%20informal%20sector%20in%20Kenya.pdf (Accessed December, 5, 2024).

Bam, J. (2021). *Ausi told me: Why cape Herstoriographies matter*. Johannesburg: Fanele/Jacana Media.

Battersby, J., Ben-Zeev, K., Buthelezi, N., Fakazi, M., Fabricci, I., Kiragu-Wissler, S., et al. (2022). What is cooking? Adding critical feminist research to the pot—community kitchens, school feeding programmes, and saving schemes in Cape Town, Nairobi, and Ouagadougou. *TMG Res.* doi: 10.13140/RG.2.2.17302.63040

Battersby, J., and Haysom, G. (2018). "Linking urban food security, urban food systems, poverty, and urbanisation" in *Urban food systems governance and poverty in African cities*. eds. J. Battersby and V. Watson (London: Routledge), 56–67.

Blekking, J., Giroux, S., Waldman, K., Battersby, J., Tuholske, C., Robeson, S. M., et al. (2022). The impacts of climate change and urbanization on food retailers in urban sub-Saharan Africa. *Curr. Opin. Environ. Sustain.* 55:101169. doi: 10.1016/j.cosust.2022.101169

Brown, A. M. (2019). "Planning for less planning: supporting informal food systems in Nairobi" in *Routledge handbook of urban planning in Africa*. ed. C. N. Silva (London: Routledge), 354–365.

Buthelezi, N., and Metelerkamp, L. (2022). *FACT dialogues digest*. TMG Research. Available at: https://assets.ctfassets.net/rrirl83ijfda/15A0nO20sI1xU9JVQJK2YU/09ceb08d0b3afc1569f6faea92cea088/FACT_DialoguesDigest_Final_web.pdf (Accessed December, 5, 2024).

Butler, J. (2004). *Precarious life: The powers of mourning and violence*. London: Verso.

Care Collective (2020). *The care manifesto: The politics of interdependence*. London: Verso.

Crenshaw, K. (1989). *Demarginalizing the intersection of race and sex: A black feminist critique of antidiscrimination doctrine, feminist theory and antiracist politics*. University of Chicago Legal Forum, 1989, p. 8. Available at: https://chicagounbound.uchicago.edu/cgi/viewcontent.cgi?article=1052&context=uclf (Accessed December, 5, 2024).

Crush, J., Frayne, B., and Pendleton, W. (2012). The crisis of food insecurity in African cities. *Hunger Environ. Nutr.* 7, 271–292. doi: 10.1080/19320248.2012.702448

Devereux, S. (1999). Targeting transfers: innovative solutions to familiar problems. *IDS Bull.* 30, 61–74. doi: 10.1111/j.1759-5436.1999.mp30002007.x

De Visser, J. (2019). *Multilevel government, municipalities and food security*. Food security SA working paper series no. 005. South Africa: DST-NRF Centre of excellence in food security.

Duncan, J., and Claeys, P. (2020). *Gender, COVID-19 and food systems: Impacts, community responses and feminist policy demands*. CSM.

Dunham, C., and Flores-Yeffal, N. (2019). The effect of stress proliferation on depression in south African grandparent caregivers. *Int. Soc. Work.* 64, 371–385. doi: 10.1177/0020872819842926

Ellis, E. (2023). *Children are dying of hunger in the eastern cape – declare a disaster, urges human rights commission*. Daily maverick, 9 November. Available at: https://www.dailymaverick.co.za/article/2023-11-09-children-are-dying-of-hunger-in-the-eastern-cape-declare-a-disaster-urges-human-rights-commission/ (Accessed December, 5 2024).

Engel-di Mauro, S., and Martin, G. (2022). *Urban food production for ecosocialism: Cultivating the city*. London: Routledge.

ENoLL. (2015). *European network of living labs (ENoLL)*. Available at: http://www.openlivinglabs.eu/ (Accessed December 5, 2024).

Fanon, F. (1961). *The wretched of the earth*. Translated by R. Philcox. New York: Grove Press.

FAO (2022). *The state of food security and nutrition in the world 2022. Repurposing food and agricultural policies to make healthy diets more affordable*. Rome: FAO.

Farr, V. (2022). '*From Day Zero to Ramsar City*!' Water Stories. Available at: http://waterstories.co.za/2023/01/20/from-day-zero-to-ramsar-city/ (Accessed December 5, 2024).

Farr, V. (2024). ""Wild wayward free gifts": a gendered view on agroecology and agricultural transitions" in *African perspectives on agroecology: Why farmer-led seed and knowledge systems matter*. ed. R. Wynberg (Warwickshire, UK: Practical Action).

FKE. (2021). The informal economy in Kenya. Nairobi: Federation of Kenyan Employers. Available at: https://www.ilo.org/wcmsp5/groups/public/---ed_emp/-emp_ent/documents/publication/wcms_820312.pdf (Accessed December 5, 2024).

Fleck, A. (2023). Where inequality is more & less rife. Statista. Retrieved from https://www.statista.com/chart/6908/the-worlds-most-unequal-countries/

Fraser, N. (2022). *Cannibal capitalism: How our system is devouring democracy, care, and the planet – And what we can do about it*. London: Verso.

Freire, P. (1998). *The Paulo Freire reader*. Continuum.

Goffman, E. (1963). *Stigma: Notes on the management of a spoiled identity*. Hoboken, NJ: Prentice-Hall.

Government of Kenya. (2011). *National Food and nutrition security policy*. Nairobi: Government of Kenya. Available at: https://repository.kippra.or.ke/bitstream/handle/123456789/1620/2011%20National%20Food%20and%20Nutrition%20Security%20Policy.pdf?sequence=1&isAllowed=y (Accessed December 5, 2024).

Government of South Africa. (2014). *The National Policy on food and nutrition security for the Republic of South Africa*. Johannesburg: Government of South Africa. Available at: https://www.gov.za/sites/default/files/gcis_document/201409/37915gon637.pdf (Accessed December 5, 2024).

Haines, S. K. (2019). *The politics of trauma: Somatics, healing, and social justice*. Berkeley, CA: North Atlantic Books.

Hassim, S. (2006). *Women's organizations and democracy in South Africa: Contesting authority*. Madison, Wisconsin: University of Wisconsin Press.

Haysom, G., Battersby, J., Metelerkamp, L., Buthelezi, N., and Weru, J. (2022). *Urban food systems governance—Engaging urban food governance in inclusive and transparent ways, enhancing and valorizing agency and developing methods for co-produced food sensitive planning*. Germany: TMG Research.

HLPE-FSN. (2024). *Strengthening urban and peri-urban food systems to achieve food security and nutrition in the context of urbanization and rural transformation (HLPE-FSN report #19)*. Committee on World Food Security.

IEJ (2024). Poverty targeting pitfalls: The drivers and impacts of widespread exclusion from the SRD grant. Factsheet No.12. https://iej.org.za/ubig-factsheet-12-drivers-and-impacts-of-widespread-exclusion-from-the-srd-grant/

ILO (2002). *Resolution concerning decent work and the informal economy. The general conference of the International Labor Organization, meeting in its 90th session*. Geneva: International Labor Organization.

Jamail, D. (2023). *'Deep relationship to the land with Sam Olando' (episode 6) [audio podcast episode]*. Holding the Fire. Resilience. Available at: https://www.resilience.org/stories/2023-11-07/holding-the-fire-episode-6-sam-olando/ (Accessed December 5, 2024).

Kameri-Mbote, P. (2013). PREFACE: SECURING THE LAND AND RESOURCE RIGHTS OF PASTORAL PEOPLES IN EAST AFRICA. *Nomadic Peoples*, 17:4. http://www.jstor.org/stable/43123918

KNBS (2019). *2019 Kenya population-and-housing-census-results*. Nairobi: Kenya National Bureau of Statistics.

Leach, M. (2002). *Pathways to sustainability', contribution to GTI forum "technology and the future*. Great Transition Initiative (February 2022). Available at: https://greattransition.org/gti-forum/tech-future-leach?highlight=WyJsZWFjaCIsImxlYWNoaW5nIiwicGF0aHdheXMiXQ== (Accessed December 5, 2024).

Lewis, D., and Baderoon, G. (eds.) (2021). Surfacing: On Being Black and Feminist in South Africa. *Surfacing. Agenda: on Being Black and Feminist in South Africa*. Wits University Press, 36, 109–120. doi: 10.1080/10130950.2021.2018178

Malinga, T. D. (2020). Blame me on apartheid: Colonialism, apartheid and the legacy of townships as peripheral spaces for "non-beings". House of Masefako.

Muungano wa Wanavijiji. (2022). *Nairobi community kitchen workshop [Internal document]*. Muungano wa Wanavijiji.

Nixon, R. (2011). *Slow violence and the environmentalism of the poor*. Durham: Duke University Press.

Nyaba, S., and Paganini, N. (2023). "Getting the story right and telling it well: Decolonising research and academic writing through storytelling and collaborative writing" in *Writing Together: Kollaboratives Schreiben mit Personen aus dem Feld*. eds. M. Blank and S. Nimführ (Bielefeld: Transcript Verlag), 125–142. doi: 10.1515/9783839463994-006

Owuor, S., Brown, A. M., Crush, J., Frayne, B., and Wagner, J. (2017). *The urban food system of Nairobi, Kenya. Hungry cities report no. 6. Waterloo: hungry cities partnership African Centre for Cities, University of Cape Town, South Africa, and Wilfrid Laurier university/Balsillie School of International Affairs*.

Paganini, N. (2024). Researching crises in urban environments: feminist insights from violent spaces. *Stud. Soc. Justice* 18, 648–657. doi: 10.26522/ssj.v18i3.4701

Paganini, N., Ben-Zeev, K., Bokolo, K., Buthelezi, N., Nyaba, S., and Swanby, H. (2021). Dialing up critical feminist research as lockdown dialed us down: how a pandemic sparked community food dialogs in Cape Town, South Africa. *Front. Sustain. Food Res.* 5, 5:331. doi: 10.3389/fsufs.2021.750331

Paganini, N., and Khan, Z. (2023). *Culinary canvas: exploring intersectionality and crisis through Cape Town's feminist flavors*. doi: 10.13140/RG.2.2.20768.97287

Paganini, N., and Weigelt, J. (2023). *Pathways to transform urban food systems: Progressively realising the right to food in Cape Town and Nairobi (TMG working paper)*. TMG Research. doi: 10.13140/RG.2.2.23410.17602/1

PSFA. (2022). *The need. PSFA*. Peninsula School Feeding Association. Available at: https://www.psfa.org.za/the-need/ (Accessed December 5, 2024).

Quisumbing, A. R., Brown, L. R., Feldstein, H. S., Haddad, L., and Peña, C. (1996). Women: the key to food security. *Food Nutr. Bull.* 17, 1–2. doi: 10.1177/156482659601700116

Raffo, S. (2022). *Liberated to the bone: histories*. Bodies. Futures. Emergent strategy series #7. AK Press.

Scott-Villiers, P. H., Naomi, C., and Colenbrander, S. (2016). *Precarious Lives: work, food and care after the global food crisis*.

Shand, W., and Colenbrander, S. (2018). Financing the inclusive city: the catalytic role of community savings. *Environ. Urban.* 30, 175–190. doi: 10.1177/0956247817751340

Simelane, T., Mutanga, S. S., Hongoro, C., Parker, W., Mjimba, V., Zuma, K, et al. (2024). *National Food and Nutrition Security Survey: National Report*. Retrieved from: https://foodsecurity.ac.za/publications/national-food-and-nutrition-security-survey-national-report/

Sonntag, C. (2023). *'Rethinking the informal food sector of Nairobi', opinion brief series, 4/23*. TMG Research.

South African Human Rights Commission (2018). *The right to food Fact sheet*. Available at: https://www.sahrc.org.za/home/21/files/brochure_A3_English.pdf (Accessed December 5, 2024).

StatsSA. (2018). *General household survey*. Johannesburg: Statistics South Africa. Available at: https://www.statssa.gov.za/?p=12180 (Accessed December 5, 2024).

StatsSA. (2022). *Quarterly labour force survey*. Johannesburg: Statistics South Africa. Available at: https://www.statssa.gov.za/publications/P0211/P02111stQuarter2022.pdf (Accessed December 5, 2024).

UN General Assembly. (1966). *International covenant on civil and political rights*. Available at: https://www.ohchr.org/en/instruments-mechanisms/instruments/international-covenant-civil-and-political-rights (Accessed December 5, 2024).

WEF. (2023). *The global risks report 2023*. 18th Edn. World Economic Forum. Available at: https://www3.weforum.org/docs/WEF_Global_Risks_Report_2023.pdf (Accessed December 5, 2024).

Weru, J., Okoyo, O., Wambui, M., Njoroge, P., Mwelu, J., Otibine, E., et al. (2018). The Akiba Mashinani trust, Kenya: a local fund's role in urban development. *Environ. Urban.* 30, 53–66. doi: 10.1177/0956247817750963

Western Cape Education Department (2019). '*Western cape schools are full', Statement by Minister Debbie Schäfer, Minister of Education Western Cape*, 9 December. Available at: https://wcedonline.westerncape.gov.za/news/western-cape-schools-are-full (Accessed December 5, 2024).

WHO. (2022). *UN report: Global hunger numbers rose to as many as 828 million in 2021*. World Health Organization. Available at: https://www.who.int/news/item/06-07-2022-un-report--global-hunger-numbers-rose-to-as-many-as-828-million-in-2021 (Accessed December 5, 2024).

Wilson Gilmore, R. (2023). *Abolition geography: Essays towards liberation*. London: Verso.

Xiiem, J. A. Q. Q., Lee-Morgan, J. B. J., and De Santolo, J. (2019). *Decolonizing Research: Indigenous Storywork as Methodology*. Zed Books Ltd.