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PATHWAYS TO TRANSFORM URBAN FOOD SYSTEMS

PROGRESSIVELY REALISING THE RIGHT TO FOOD THROUGH A STRENGTHENED INFORMAL SECTOR IN CAPE TOWN AND NAIROBI

FACT
Food Agency Cape Town

MIRAMAR INTERNATIONAL FOUNDATION

MUUNGANO
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Supported by:
Federal Ministry for Economic Cooperation and Development
based on a decision of the German Bundestag

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ACKNOWLEDGE-MENTS

We were fortunate to be supported by passionate partners and collaborators during the scoping phase. We are tremendously thankful to GRAF, ICRAF and ICRISAT, MyCelium Colab, SUN Development and Welthungerhilfe for their rich contributions. We are grateful for critical comments on a first draft of this report by Dr Jane Battersby from the University of Cape Town and Alexander Müller from TMG Research. We are fortunate to continue our journey with the African Centre for Cities and FACT in Cape Town and Miramar College, Muungano wa Wanavijiji, and APHRC in Nairobi. The author team would like to thank Victoria Redmond for the financial and administrative guidance. We wish to express our gratitude to Carmen Aspinall for copy editing the scoping report and bringing clarity to the interwovenness of pathways. We would like to thank Blossom for designing and laying out the report. Thank you to the four translators and to Design for Development who coordinated the translation into four languages. The scoping report is part of the project 'Climate resilient, urban and peri-urban agriculture: Combating the effects of COVID 19 and building resilient, inclusive food systems' and the 'Urban Nutrition Hubs workstream under the SEWOH Lab' as part of TMG's Urban Food Futures programme funded by Bundesministerium für Wirtschaftliche Zusammenarbeit und Entwicklung (BMZ).

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TMG

African societies are rapidly urbanising, thereby spurring food system transformation and necessitating invigoration of the policies that aim to shape these food systems. Deeply entrenched inequalities, poverty, and poor governance are among the structural reasons for food insecurity in African low-income urban areas. Exacerbating this, crises including the aftermath of COVID-19, the continuation of Russia's war on Ukraine, and the current devastating drought in the Horn of Africa threaten the survival of the poorest of the poor in Africa's urban environs. Extreme climatic events like the current drought will only become more frequent in the future, further aggravating an already dire food security situation. Addressing urban food insecurity in this context requires systematic rethinking of food policy from consumers' point of view such that their various needs and capacities are upheld.

TMG's work on urban food security emerged in response to the impact of COVID-19 in urban areas. At this time, lockdowns forced citizens living in informal settlements to cope as they struggled to feed their families. Their coping strategies highlight both their ingenuity and perseverance as well as the limits on their coping in absence of active intervention in dismantling the structural inequities that uphold their poverty. We therefore embedded this work in the broader context of urban food systems. Our analysis draws on the expertise of our partners and other actors, including policymakers, researchers, and practitioners.

This report provides a comprehensive analysis of the challenges facing urban food systems in Cape Town, Nairobi, and Ouagadougou and outlines five innovative pathways shepherd our work going forward. We present our scoping report as a guiding compass for our next three years of local action research to influence global processes and to understand and realise the potential of the pathways.

At TMG, we are convinced that adapted innovations can emerge when the policy space opened by global processes is deliberately used to secure a space for local actors to develop solutions. The scoping phase which led to this report brought together diverse actors and sources of knowledge to jointly design pathways toward resilient urban food systems. The results presented here build on joint research processes co-created by local actors as well as validation workshops and stakeholder meetings. In this dialogue, TMG's role was to steer the critical analysis of early findings from the scoping phase toward a focused strategy for further in-depth research and a targeted policy dialogue to foster an enabling environment for identified innovations.

The informal sector is an often-unacknowledged architect of the modern African city, making it key in creating the enabling environment for

the progressive realisation of the right to food. The informal sector contributes significantly to GDP. It is a significant source of employment in Africa, including for low-skilled workers who do not have access to jobs in the formal sector. It is renowned for creativity and innovation, allowing it to respond to unique community needs. COVID-19 has shown that marginalised groups such as women, youth, and migrating rural communities who typically face barriers in accessing formal employment developed coping strategies within the informal sector. The findings of this scoping report underscore that the informal sector is a potential solution space for addressing current global trends arising amidst a multitude of crises impacting food security in urban Africa. However, currently, the informal sector is predominantly a coping mechanism that could fulfil a stronger role in the progressive realisation of the right to food if a conducive environment for its optimal operation is created.

This report presents five pathways toward the progressive realisation of the right to food in low-income urban areas in Africa. Pathways are powerful tools for driving transformative change, engaging stakeholders in collaborative processes of co-creation and experimentation, and generating empirical data and insights that can inform food system policy and practice. Pathways recognise that food systems are complex and multifaceted and cannot be improved through conventional development approaches based on simplistic, linear impact logics that fail to negotiate trade-offs within intertwined and overlapping crises. Our pathways will scrutinise how to strengthen community kitchens to support locally driven coping mechanisms. We will explore mutual accountability by facilitating dialogues between duty bearers and right holders. In view of climate change, we will continue to pilot innovations in controlled-environment agriculture and informal food markets. A cross-cutting pathway will provide qualitative and quantitative data to better understand the food environments of our research sites.

The importance of creating an enabling environment for the informal sector demands engagement with global policy processes. Global processes open much-needed spaces for change at the national and local level. This scoping report also raises the opportunity for the inclusion of local voices in the very development processes that shape their ability to improve their livelihoods. TMG and partners already presented the findings of this report at the Ninth Session of the Africa Regional Forum on Sustainable Development to contribute to the dialogues that inform the implementation of the 2030 Agenda and Agenda 2063 and that serve as steppingstones to this year's High Level Political Forum on the review of the Sustainable Development Goal 11 on Sustainable Cities.

Our work also speaks to the BMZ's Africa Strategy and exemplifies feminist development approaches that enhance gender equality. By first recognising the systemic oppression of women and other marginalised groups in all aspects of society, including economic, social, and political systems, we can start to address inequalities through policies and programmes grounded in feminist principles and lessons learnt from the ground. BMZ's strategy on feminist development policy aims to strengthen women's economic empowerment by promoting equal access to resources, finance, and markets. The findings of this scoping report speak to this aim. The social and technical innovation presented in this report seek to improve women's participation in decision-making processes and leadership by supporting gender-sensitive governance.

To conclude, we would like to extend our sincere gratitude to all those who contributed to this report and to the German Ministry for Economic Cooperation and Development for financially supporting this work.

Alexander Müller

FOREWORD FROM THE RESEARCH AREA



Source: Victoria Redmond, Sanelisiwe Nyaba, 2022

By Nomonde Buthelezi, Sanelisiwe Nyaba, and Patrick Njoroge

The world is faced with a myriad of problems and humanity keeps trying to solve them using both "top-down" and "bottom-up" approaches. What is the ideal approach to solving these challenges? In partnership with Muungano wa Wanavijiji in Nairobi, FACT in Cape Town, and the urban poor communities they work with, Urban Food Futures challenged these approaches in recognising the informal sector's contributions to food system transformation and resilience building in African cities.

The growth of African cities is characterised by high inequality between formal and informal areas. While the formal sector shoves aside the urban poor, the informal sector creates the space for them to devise a diverse array of livelihood strategies. Within the informal sector, the urban poor meet their survival needs. For example, residents' food supply is locally ensured through informal food transport, storage, production, and sales systems. Players within the informal sector respond to challenges with resilience and innovation; for example, capitalising on purchasing power in shared bulk purchases and shipping,

establishing informal savings and loans groups, and undertaking urban farming within limited spaces.

Yet, the informal sector is often viewed as chaotic and unhygienic and goes unrecognised by government and policy makers. For example, government-imposed lockdowns during COVID-19 crystallised governments' lack of understanding of informal sector operations and collapsed the majority of the urban poor's livelihood mechanisms. Those living in informal settlements are often left wondering if the formal sector recognises how the urban poor are disproportionately affected by, for example, climate change, gender-based violence, and stigmatisation around poverty in affluent cities. As the formal and informal systems expand with very limited coordination between them, the efforts and successes of the informal sector in responding to challenges go unrecognised. Where platforms for mutual understanding and problem solving are lacking, the gap continues to grow and opportunities for scaling innovations across systems is lost. Yet, this research is about to change that.

Urban Food Futures' scoping phase brought communities, researchers, grassroots organisations, and academia together to address food system challenges affecting the marginalised communities living in informal settlements. In conventional research and development projects, communities are seen as beneficiaries and often left behind or unheard when developing tools to address their challenges. The Urban Food Futures collective challenged how stakeholders work together to harness the strengths of communities living in informal settlements and low-income neighbourhoods. We asked them questions about hunger, food justice, and urban food system transformation to revalorise informality. By partnering with Muungano wa Wanavijiji in Nairobi and FACT in Cape Town (both of whom work with marginalised peoples living in high-density informal settlements), Urban Food Futures challenged conventional research approaches in the South by involving communities in all research steps: identifying a problem, unpacking the root causes of systemic challenges, learning from each other, and co-developing solutions. This successful collaboration allows research to reflect the views of "the researched" living within marginalised communities and encourages community agency and ownership over the research process and results. The collaborative scoping phase taught us that the journey is less turbulent if you join hands from project inception to developing pathways for action research. Our partnership led to the co-creation of the pathways presented in this report and laid the groundwork for successful onward collaboration.

Food is a strong driver of local township and slum economies. We see this joint work as an opportunity to transform the sector to address challenges and shortcomings. And, we see this joint work as a chance to learn from each of the pathways we developed and understand how we can enhance each pathway's potential for much-needed urban food system transformation.

EXECUTIVE SUMMARY

PATHWAYS TO TRANSFORM URBAN FOOD SYSTEMS

PROGRESSIVELY REALISING THE RIGHT TO FOOD THROUGH A STRENGTHENED INFORMAL SECTOR IN CAPE TOWN AND NAIROBI

A multitude of crises seriously threatens food security in low-income urban areas in Nairobi, Cape Town and Ouagadougou

The impact of the COVID-19 pandemic and of the global food price spike that followed Russia's attack on Ukraine have one common denominator: they have increased food insecurity. Lockdowns to curb the spread of COVID-19 disrupted local markets and value chains, livelihoods were lost, and food insecurity rose. According to FAO (2022, p. 13), the number of people who are hungry globally grew by 150 million people since the beginning of the pandemic. The war in Ukraine triggered very high energy prices interrupted trade with commodities and resulted in a steep increase of food prices. One year after the beginning of Russia's attack on Ukraine, the FAO Food Price Index has dropped from the unprecedented levels observed at the beginning of 2022 but still stands at significantly higher levels than 2021. Previous global food price crises show that the urban poor are amongst those population groups that are particularly affected by these price increases (Cohen and Garrett, 2010).

These global crises are compounded by local and often individual crises. Gender-based violence in Cape Town is closely linked to the level of food insecurity of a household, people seeking shelter in Ouagadougou to escape terror in rural areas put further stress on a fragile urban food system, and evictions in informal settlement destroyed livelihoods in Nairobi undermining people's capacities to take care of their most basic needs. The compounded effect of these crises underscore findings from other contexts: people in vulnerable situations are most strongly affected by food insecurity (Welthungerhilfe, 2017).

The effects of these crises materialise in the context of regional trends that strongly influence future prospects of achieving food security. Population growth in Africa stands at 2.7% per year. By 2030, Africa will be inhabited by 1.7 billion people and by 2050, it will be inhabited by 2.5 billion people (UNICEF DATA, 2017). It is projected that 910 million young people will join the labour market in Africa by 2030 (UNECA, 2017). Further, Africa is urbanising fast. 44% of the African population lived in cities in 2022 (OECD et al., 2022). Between now and 2050, African cities will gain an additional 900 million inhabitants , making up to two thirds of the continents' population urban (OECD et al., 2022). The projected climate change impacts on agriculture on the African continent include yield losses for major staple crops, such as maize (IPCC, 2022). Food security programmes and policies need to be designed taking into account the growing population, the expected dietary transitions, the impacts of the climate crises on natural resources and agricultural production and the need to develop a carbon-neutral energy system for all. A specific focus on rapidly growing urban areas needs to be considered.

Before arriving at this report, TMG spearheaded research to discover coping mechanisms and other responses to the food-security impacts of the COVID-19 crisis that addressed immediate needs and that could serve to inform transformation of urban food systems.

According to the FAO (2021, p. 4), the structural reasons of hunger, food insecurity, and malnutrition are inequalities and poverty. To achieve food security, it is essential to address those structural reasons. TMG's Urban Food Futures research programme therefore strives to develop innovations that offer immediate relief for those suffering from hunger and malnutrition and that address the structural reasons for food insecurity.

Food system transformation requires a compass. Ours is the progressive realisation of the right to food

In view of the structural reasons for food and nutrition insecurity, this research programme seeks to develop innovations to realise the right to food. Article 11 of the International Covenant on Economic, Social and Cultural Rights recognises everyone's right to an adequate standard of living, including adequate food. "The right to adequate food is realized when every man, woman and child, alone or in community with others, have physical and economic access at all times to adequate food or means for its procurement. The right to adequate food shall therefore not be interpreted in a narrow or restrictive sense

which equates it with a minimum package of calories, proteins and other specific nutrients“ (CESCR, 1999). Approaching innovations from the point of view of the right to food therefore emphasises the search for solutions that also go beyond immediate needs and address questions of, for example, accountability of governments or representation of people in vulnerable positions in policy processes.

Women tend to be more often in vulnerable positions than men. The progressive realisation of the right to food therefore necessarily demands a gender sensitive approach. Women's vulnerable position in society is the result of the intersection of different forms of inequalities. The Urban Food Futures Programme works to understand how various forms of oppression and privilege are experienced and reproduced on a daily basis and supported by broader structural inequalities and systems. This feminist approach responds to BMZ's intention to eliminate all forms of structural inequality and discrimination, including racist structures and discrimination based on sexual and gender identity and disabilities.

Innovations through a dialogue between local knowledge and global normative frameworks and policy processes

In TMG's experience, the dialogue between global normative frameworks and local knowledge facilitates innovations for food system transformation. Global normative frameworks, even if they are very far from being systematically applied at national and local levels, open up spaces for innovation at the local level. To develop innovations that meet the needs of those who are food insecure, they need to be involved or drive the innovation process. In TMG's experiences, proposed solutions that are developed without taking both perspectives into account run the risk of not matching local needs or failing the test of scalability. For our methodology, this implies on the one hand working with people who have lived-experience in urban low-income areas and their representative organisations, governments. On the other hand, this methodology implies embedding this work in the relevant global processes.

The Urban Food Futures Programme relies on a dense network of partner organisations at the local level. In Cape Town, we work in different communities in the Cape Flats: a densely populated stretch of the False Bay coast where People of Colour were forcibly removed to during apartheid years. In Cape Town, almost 30 years after the end of apartheid, structural inequalities in these township areas still manifest in marginalisation, food insecurity, and inequality of opportunity. In the Cape Flats we work together with Food Agency

Cape Town (FACT), a civil society organisation that conducts qualitative research to investigate power structures and inequalities in the food system. The scientific project partner is the African Center for Cities at the University of Cape Town. In Nairobi, we work in the informal settlement of Mukuru, which has formed alongside an industrial belt in Nairobi. The informal settlement lacks basic infrastructure such as stable electricity, household water supply, and waste systems and its occupants live with the constant risk of forced evictions. Our partner organisation there, Muungano, has engaged in participatory processes for upgrading of parts of the settlement. The Miramar Foundation complements the core team of partners with technical expertise in vegetable production in controlled environment systems.

Globally, food security continues to be thought of primarily in rural terms and sustainable urban development processes are largely food free. Speaking in terms of the 2030 agenda, the global community will fail to achieve SDG 2 on Zero Hunger, if it does not address SDG 11 on Cities. These two policy processes must be brought together. Therefore, the Urban Food Futures Programme is situated at this intersection.

We situate our work in an understanding of the past and learning from the present to inform the necessary transformation towards a different future. The Urban Food Futures Programme adopts an approach that is conscious of past injustices that created the very structural reasons for food insecurity and it learns from the different coping mechanisms adopted by and developed by the inhabitants of informal settlements. Further, the programme aims at developing innovations that take the projected futures into account. The innovations developed today must also meet the fundamentally changing demands of the future.

Food security in African cities can only be achieved within the contexts of informal sectors

The informal sector shapes cities and provides livelihoods for urban dwellers. Indeed, 60% of African women work informally (UN Habitat, 2020). A study by the Friedrich-Ebert-Stiftung indicates that in Africa, 86% of the employed population are in informal employment. Additionally, 93% of new jobs in Africa are in the informal sector (FES, 2021, p.37). From Cape Town and Nairobi, we learnt about informal traders' contributions to food availability for the urban poor. Often, the informal sector is illegal or criminalised. However, we consider the informal sector as a solution space where we can learn from and with communities in low-income areas about bouncing back during crises, building networks, and jointly creating enabling environments that reduce the risks associated with informality and reward the sector as a space to innovate and strengthen social capital.

The informal sector also has a key role to play in bridging the gap that exists between City Governments and their citizens living in informal settlements. More often than not, citizens in informal settlements perceive the state to be absent. Services do not reach informal settlements, voices and demands from informal settlements continue not be acknowledged. To close this gap, it requires more targeted efforts by City, County and Province. Given capacity constraints, improved service delivery also requires citizens and their representative organisations to act in concert with investments by the state. The scale of the food security challenge in low-income urban neighbourhoods makes investments that do not build on the matching investments by both sides likely to fail.

To achieve food and nutrition security in urban areas, food and nutrition policies must be fundamentally rethought from the point of view of the needs of those who are experiencing food and nutrition insecurity. Food security policies tend to have a rural and productionist bias (Battersby 2013). They tend to neglect cities as a distinct entity requiring distinct policies, and they tend to focus on increasing food production. This negates the recommendations arising from a range of findings that show that food insecurity is often tied to income, gender, and social status. By shifting policy orientation to the consumer, we can address the rural and productionist bias of many food security policies.

Urban Nutrition Hubs as living labs for urban food system transformation

To develop these innovations, the Urban Food Futures Programme will establish Urban Nutrition Hubs (UNH) in Mukuru and the Cape Flats. As living labs, the Urban Nutrition Hubs will pilot and test food system innovations such as controlled-environment agricultural production, they will rethink community kitchens, and explore how social capital amongst informal traders can be used to develop an enabling environment for them. We see UNHs as a living lab to explore pathways for achieving urban food system transformation to progressively realise the right to food. Urban Nutrition hubs play a crucial role in the implementation of action research along our programmatic pathways as we continue to pilot and link multiple innovations.

Source: Victoria Redmond, 2022

Five pathways for urban food system transformation

The following five pathways are the programme's theories of change for urban food system transformation. They are the result of the programme's extensive and inclusive Scoping Phase for our future action research. Together, they address key levers to transform urban food systems through a strengthened informal sector.

1

COPING WITH CRISES

Communities in urban low-income areas cope with a multitude of crises. We explored coping strategies that emerged during the COVID-19 pandemic when governments faced massive challenges in addressing food security in times of economic collapse and curfews. This pathway supports transformation processes by learning from bottom-up coping strategies, such as community kitchens. As part of this pathway, we will explore how successful coping mechanisms can become scalable by identifying entry points for institutionalised collaboration between local governments and the informal sector.

2

MUTUAL ACCOUNTABILITY

Poverty and social and economic inequality are the structural reasons for the prevalence of hunger and malnutrition. Exclusive decision-making processes contribute to the persistence of inequalities. To progressively realise the right to food, urban food system transformation must enhance accountability and transparency of governments and decision-making processes. Increasing accountability cannot be achieved by working at the grassroots level or with government authorities in isolation of each other. We aim to enhance accountability by empowering grassroot actors to become participants in food governance decision-making processes rather than remaining passive recipients. As a precondition, governments' capacity to collaborate with grassroots actors needs to be enhanced.

3

CONTROLLED ENVIRONMENT AGRICULTURE

To overcome the hurdles posed by climate change, scarcity of safe urban water, and the thorny issue of land access in urban agriculture, we argue that hydroponic farming in Controlled Environments is an option to boost production of vegetables in urban centres. When hydroponic controlled-environment agriculture (CEA) is linked to institutionalised arrangements such as school feeding programmes, it can be a cost-effective prospect for many African cities.

4

TRADING TO EAT

Punitive policies toward informal trade and weak protective mechanisms against economic displacement by formal entities inhibits access to food by food-insecure population groups. However, it does not need to be this way. A food-sensitive approach to urban planning valorises informal traders as allies in cities' efforts to eradicate hunger and malnutrition. This food-sensitive perspective highlights the need for more careful consideration of how wider spatial and urban planning processes interact with informal trade and the implications of this on urban diets and food security. Within this pathway, we will work with food vendors, other informal traders, and municipalities to rethink and shift the regulatory environment surrounding the informal economy.

5

CROWDSOURCING DATA FOR FOOD SYSTEM TRANSFORMATION

The lack of detailed data on the state of food security in informal settlements hinders the design of crises responses and we need to gain deeper understanding of the day-to-day challenges people face in their food environments. We will pilot a digital system to crowdsource data on the state of food insecurity and household food baskets in selected urban informal settlements. Crowdsourcing data by and for communities addresses critical knowledge gaps for decision makers while producing learning around "who and what is visible" when designing crises response programmes and policies.

1

INTRO-DUCTION

1.1 Crises

In 2022, the world entered a food crisis, the full impact of which is yet to be understood. March 2022 saw world food prices hit their highest recorded levels since FAO started tracking food prices in 1961 (FAO, 2022a). This peak was driven by the largest food price spike in FAO's history: a 68% increase in real terms over a two-year period (FAO, 2022a). This is considerably higher than the 43% price spike that triggered food riots, particularly in urban areas, across the world in 2009–2011 and the 38% increase that triggered widespread famine in several African and Asian countries in 1973–1975 (FAO, 2022a). Russia's war on Ukraine has exacerbated this increase, given that dozens of countries are heavily dependent on Russian and Ukrainian exports of wheat, fuel, and agricultural inputs. As the world's economies battle to recover from COVID-19, Russia's war has had cruel implications for the people in Ukraine and a catastrophic global impact on food costs (Müller & Prakash, 2022; Tidey, 2022). The world is moving backward in its efforts to end hunger and the consensus is that the situation will worsen over the course of 2022 (FAO et al., 2022; Global Network Against Food Crises, 2022).

Job losses and economic contraction in the wake of the COVID-19 pandemic further exacerbated the impacts of rising food prices, particularly for those in

urban low-income areas still trying to recover from the pandemic's impact on their livelihoods. What does this mean for consumers and households in the three cities — Nairobi, Ouagadougou, and Cape Town — in which the Urban Food Futures programme worked in 2021 and 2022? The price of food staples spiked in Kenya, Burkina Faso, and South Africa. From June 2021 to June 2022, South African consumers witnessed increases in the cost of seed oil (69%), maize flour (11%), and wheat flour (24%) (PMBEJD, 2022). Kenyan consumers also witnessed increases in the cost of cooking oil (52%), maize flour (82%), and wheat flour (44%) (KNBS, 2022). Over the past year, Burkina Faso consumers witnessed 30% increases in the cost of foodstuffs (INSD, 2022a). Unaffordable food means people purchase fewer and less-diverse food products, as examples from Southern Africa show (Paganini et al., 2020). In Kenya, people under financial pressure usually give up on purchasing fresh foods and proteins (Kimani-Murage et al., 2014), while in Cape Town, people cut down on meat and reduce the number of meals consumed per day (Paganini et al., 2021a).

Urban dwellers are greatly affected by the global food price crises. The urban poor were amongst those who bore the brunt of the 2009–2011 food price crisis (Scott-Villiers et al., 2016). People living in informal and low-income areas in African cities already experience the world's highest levels of food insecurity (Beyer et al., 2016; Termeer et al., 2022). Cohen and Garrett (2010) stated that although the world saw that the urban poor struggle the most, as they spend the bulk of their income on food, the question of how to address food insecurity is mainly addressed through policy interventions to increase production in rural areas. Yet, the food security threat to urban dwellers caused by crises is not a result of a physical lack of food. Particularly in towns and cities, food is physically available through food vendors, informal food systems, or supermarkets; however, for the urban poor, it is often simply unaffordable (Cohen & Garrett, 2010).

FROM JUNE 2021 TO JUNE 2022, SOUTH AFRICAN CONSUMERS WITNESSED INCREASES IN THE COST OF SEED OIL (69%), MAIZE FLOUR (11%), AND WHEAT FLOUR (24%). KENYAN CONSUMERS ALSO WITNESSED INCREASES IN THE COST OF COOKING OIL (52%), MAIZE FLOUR (82%), AND WHEAT FLOUR (44%).

1.2 Past, present, future

Despite the onslaught of multiple crises on urban food systems, hunger remains framed as a rural challenge and discussions on sustainable urban development in African countries tend to be disconnected from those on food security. In terms of the globally agreed Sustainable Development Goals, we will not be able to achieve SDG 2 (Zero Hunger) without linking policies and programmes to reduce food insecurity with the work of designing sustainable cities (SDG 11, Sustainable Cities and Settlements) (Battersby, 2017a). Battersby and Watson (2018) argued that decision makers should consider both the role of food in urban development and the role of the urban context in food security programmes, rather than regarding one in isolation of the other. This lack of attention risks compounding already-present challenges. The intersections between the multitude of crises today, the root causes of structural inequalities that lie in the past, and a perspective into the future guide our research.

Understanding the past

Structural inequality is reflected in the tension between whom the urban food system was originally designed for and how that design has evolved over time. Food insecurity and poverty are often rooted in structural injustices that are grounded in cities' past. We have worked in three cities that have experienced the impact of colonial subjugation, either as colonial settlements, as was the case for Cape Town and Nairobi, or as appropriated capitals for newly established colonial territories, as was the case for Ouagadougou. The planning of these cities during the colonial period transposed the exploitative and oppressive features of the colonial system into cities' physical infrastructure, land use, and food systems. Colonial spatial policies continue to influence urban development in African cities, making understanding the past paramount in the effort to shape just cities (Njoh, 2009).

The history of Cape Town has been one of land dispossession and physical racial segregation. At its inception in the late 17th century, Dutch traders evicted the population of the San and Khoi from the sheltered bay of the Cape to establish a provisioning station. Forced displacement continued when slaves from Indonesia, India, and Malaysia were brought to the colony to be exploited for physical and sex labour, alongside the local Black population, resulting in the Cape Coloured population. History changed with the beginning of the 18th century when the British seized the colony. Segregation was set in motion at the beginning of the 20th century, when the Black population was resettled into the periphery of the city centre in so-called townships,

anticipating and forming the basis for apartheid. In 1948, segregation became an official policy and the National Party transformed the nation into an apartheid state. The legacy of the apartheid state is still apparent and a large share of the city's Black, Coloured, and minority populations continue to live outside the city centre and, despite land restitution, large shares of agricultural land is still owned by a white minority.

Land dispossession and radical changes to the natural environment also characterise the dawn of the city of Nairobi. In pre-colonial times, swampy plains around the Nairobi River were used by the pastoral Maasai people as grazing lands. In fact, the name of Kenya's capital is derived from the phrase *Enkare Nyorobi*, which means "the place of cool waters" in the Maasai language. With the creation of the Kenya Colony as part of British East Africa in 1899, the British colonial authorities appropriated land and founded Nairobi as a headquarter for the Uganda Railway (Akala, 2019). As part of their urban development plans, the British made the swampiest parts of Nairobi more habitable by draining the swamps through engineering projects like the Nairobi Dam next to Kibra as well as introducing foreign trees with high water requirements such as eucalyptus. Subsequently, the British developed the city along racial lines: colonists occupied extensive tracts of prime land to the west of the city, including Runda, Karen, and Muthaiga while South Asians (who had been forcibly displaced to Kenya for the purpose of constructing the Uganda railway) occupied mid-lying locations such as Ngara and Parklands, and Africans were restricted to low-lying flood-prone areas to the east of the emerging city, including Pumwani, Ziwani, and the present-day Mukuru Informal Settlements Belt (K'Akumu & Olima, 2007). Segregationist urban plans that were set up by the British defined the distribution of resources and access to services across the city. Still, after sixty years of independence, these plans continue to shape wealth inequalities in Nairobi.

Where colonial powers did not establish a brand-new city, they took over long-standing urban settlements and disrupted local power structures, with repercussions on security that remain today. Ouagadougou, a name that in Ninsi language means "settlement of the war leader", was named in honour of Wubri, the founding king of the city. According to oral traditions, Wubri established Ouagadougou in the 15th century and, in 1681, it became the capital of the most powerful kingdom in the largely decentralised Mossi Empire. In 1919, French colonial expansion established the territory of Upper Volta, which gained independence in 1960 (Williamson, 2013). Twenty-four years after independence, the country is facing political instability due to coups and armed conflicts in the northern part of the country that have led to an influx of internally displaced people in Ouagadougou escaping war.

Knowing about the present

Understanding the history of a city's urban development lays the basis for a mindful analysis of its present predicaments. Poorer urban dwellers in Africa face a series of constraints, including insecure land tenure, lack of quality public services, unemployment, and threats to personal safety. Food systems often mirror these structural challenges and shape citizens' access to sufficient and nutritious food. Pathways to urban food system transformation are not simple solutions. Understanding the levers for change, their limitations, and the politics of such processes is an essential prerequisite for effective, lasting change.

IN CURRENT URBAN FOOD SYSTEMS, EMPLOYMENT IS A PARAMOUNT REQUIREMENT FOR FOOD SECURITY, AS URBAN DWELLERS' FOOD ACCESS DEPENDS ON CASH AVAILABILITY.

In current urban food systems, employment is a paramount requirement for food security, as urban dwellers' food access depends on cash availability. Employment is, therefore, a key factor to consider when strategising for food security. The Western Cape unemployment rate currently lies at 25% (Stats SA, 2022). In Nairobi County, the unemployment rate is 43% (KNBS, 2021). In Ouagadougou, it stood at 9.6% in 2019 (INSD, 2022b). Notwithstanding positive African economic growth in terms of GDP, informal employment has remained prevalent and is widespread across all age categories. Scholars predict that informal employment will remain the major income source for people in Africa in the future (Falling Walls, 2022). On the continent, the proportion of informal employment in all its components in relation to total employment stands at 85.5% (ILO, 2020), which amounts to about 387 million of 453 million employed people. Among young people, 70% hold 'vulnerable employment', a category used by ILO to characterise self-employment and family members' contributions to livelihoods (Fields, 2021). Some even estimate the proportion of youth in informal employment is as high as 90% (Cieslik et al., 2021). Globally, women in urban areas don't benefit equally from the economic growth that cities provide: more than 60% of women living in cities live in precarious conditions and earn their livelihoods in the informal sector. Women are the majority of urban dwellers in informal settlements as, on average, 120 women for every 100 men live in informal settlements in Africa (ESPAS, 2018; UN Habitat & UN Women, 2020). This poses the question of whether the informal sector should be re-evaluated and considered a viable possibility for urban food futures in Africa.

Informality produces employment, but also breeds insecurity. There is a strong connection between people's need for work and informal settlements. More than 50% of

Nairobi's population lives in informal settlements, the largest of which is Kibera. Kibera is located next to relatively wealthier estates including Lang'ata and Ngumo, where Kibera residents find employment mainly in domestic service. Mukuru rapidly expanded after industries were built in the area and people in search of employment settled around the industrial belt. In most of these settlements, tenants do not hold legal status in relation to their houses or other physical infrastructure. This, coupled with Nairobi's history of forced evacuations, puts them at risk of losing their homes and belongings overnight. The most recent example of this is the October 2021 evictions in Mukuru when more than 75,000 people lost their homes and businesses as the government of Kenya bulldozed their community to make space for a road (Muungano wa Wanavijiji, 2021).

Waves of crises in Cape Town, Nairobi, and Ouagadougou stemming from a range of economic, climatic, socio-cultural, and political forces exert further pressure on urban low-income communities in African cities. Poorer urban dwellers are disproportionally affected by global, national, and local crises. These shocks have a direct impact on household food security and social justice and highlight the need to build resilience as Africa's urban population grows rapidly into an unstable future.

For instance, in Cape Town, strict lockdown regulations in response to the global COVID-19 pandemic greatly impacted food security in the Cape Flats (Paganini et al., 2021a). Not only did people lose their employment, but their children lost a daily meal with the closure of schools and their feeding programmes (Spaull et al., 2020). While initially, social and volunteer initiatives sprung up to address the issue through food preparation and distribution, the cost of running these initiatives spiked with the increases in food prices and decreases in donor funding (Battersby et al., 2022). One issue that clearly emerged as a local crisis during the scoping phase is the impact of hunger on gender-based violence. Many community kitchens in Cape Town offer food, shelter, and targeted awareness programmes (Peters et al., 2022).

A similar situation took place in Nairobi, where COVID-19 containment measures prevented food system actors, many of whom work informally, from carrying out their income-generating activities. For example, informal food vendors, who have a paramount role in bringing and distributing food in informal settlements and low-income areas, could not travel to wholesale markets because of curfew regulations interfering with their business activities (Hauser et al., 2022). The recent evictions have also exacerbated the food security situation, especially in Mukuru. In addition to houses, numerous small shops were destroyed and, with them, the livelihoods of the residents (Owade & Wairimu, 2022).

Since 2015, frequent terrorist attacks mainly in the northern parts of Burkina Faso have forced the country into a security crisis that continues

Source: Sanelisiwe Nyaba, 2022

to affect the inhabitants of its capital, Ouagadougou. The relative safety of Ouagadougou has prompted many to migrate from affected rural areas to the city, which now hosts the majority of the country's 1.8 million internally displaced people (IDP) (OCHA, 2022). The sheer number of incoming people and the lack of support from the Burkinabé government is plunging IDP and their host communities into food insecurity (OCHA, 2022).

Global megatrends increase fragility of food systems

Looking beyond conflict and COVID-19, food prices and the broader food system are impacted by a range of chronic long-term megatrends that play out at a global level (Vastapuu et al., 2019). These megatrends intersect and manifest in different ways in different cities and will play a defining role in shaping Africa's urban food futures: urbanisation, migration, climate change, population growth, and biodiversity loss (Hatfield-Dodds et al., 2021; PwC, 2022; Vastapuu et al., 2019). In addition, COVID-19 must be viewed as a megatrend in several ways or, at the very least, accounted for when discussing the implications of and possible responses to these megatrends. These trends play out most prominently in urban areas.

Africa is in the midst of a profound demographic transformation with Africa's population set to grow from 1.4 billion in 2022 to 3.4 billion by 2072. During these 50 years, more people will join African cities than are currently alive in all of Africa today (UNDESA, 2019). However, contrary to the picture many have of booming megacities, most of Africa's urban growth will take place in what are currently villages, small towns, and minor cities. This rapid growth in the size and distribution of African cities will have profound impacts on urban infrastructure and informality. It will also shape the food system, influencing how, where, and by whom food is produced, traded, and consumed.

The continent will also be home to the world's youngest population. By 2060, 280 million children under the age of five will live in Africa — more than anywhere else on the world (UNDESA, 2019). This has profound implications for hunger and food security programming, as well as how we think about livelihoods, education, social security, and the right to food.

As Africa urbanises, it is also rapidly digitising. Mobile phones and digital financial services are transforming the way Africans work, trade, and

LOOKING BEYOND CONFLICT AND COVID-19, FOOD PRICES AND THE BROADER FOOD SYSTEM ARE IMPACTED BY A RANGE OF CHRONIC LONG-TERM MEGATRENDS THAT PLAY OUT AT A GLOBAL LEVEL.

connect. There are early signs that the nature of the digital divide is changing. Driven by a young and increasing tech-savvy population on the one hand and high-tech multinational food corporations on the other, this trend in digitisation is and will continue to play out as a disruptor and an enabler across all levels of the food system.

Compounded by population growth, a growing middle class, and rising exports, the ecological and planetary systems on which the continent's food systems depend are collapsing. This, in turn, feeds internal conflict and migration.

Climate change is the most obvious of these, despite Africa's very minor role in generating the emissions that so negatively impact it. Rising temperatures, changing precipitation patterns, and the increased frequency and/or intensity of extreme weather events such as floods, droughts, and heat waves already have and increasingly will destabilise food supply (Mbow et al., 2019). The most-reported impacts are decreased crop yields and death of livestock. Other impacts include the loss of critical biodiversity and pollinators and an increase in pests and diseases such as was experienced in the 2019 desert locust upsurge (Mirzabaev et al., 2021; Müller et al., 2022). Freshwater and marine ecosystems which play a wide range of vital roles including making significant contributions to dietary protein intake are also under severe pressure with many fisheries on the brink of collapse.

In addition to climate change, Africa's soils are being degraded. Many of the most fertile soils closest to its cities are being lost to sprawling development while, in deeper rural areas, soil degradation is advancing at an alarming rate (Griebel et al., 2022). Driven predominantly by overgrazing and poor agricultural practices, soil degradation poses a grave and silent threat to Africa's ability to sustain its booming population. Beyond the sites of production, other nodes of the food system are affected. Therefore, challenges with food availability, stability, and access, particularly in contested spaces such as low-income areas or informal settlements, cannot be addressed by increasing production alone. Disruptions in supply chains can cause price volatility, which limit people's ability to purchase food, thus impacting their consumption patterns and health (Mbow et al., 2019). For instance, food storage, transport, and retail are impacted by the damage to infrastructure caused by extreme weather events (Blekking et al., 2022; Mbow et al., 2019). The pressure on limited resources exerted by climate change increases the risk of conflicts, both within and between communities, impacting, among other things, migration and the governance of food systems (Global Network Against Food Crises, 2022).

However, there are a number of positive trends too. Today, Africa is home to stronger democracies, a greater number of progressive constitutions, higher educational outcomes, and fewer conflicts than at any point in modern history. Africa,

Source: Victoria Redmond, 2022

and particularly cities like Cape Town and Nairobi, have a growing middle class and a boom in academic and research institutions, start-ups, and young entrepreneurships. The continent also hosts a growing movement of strong non-governmental organisations.

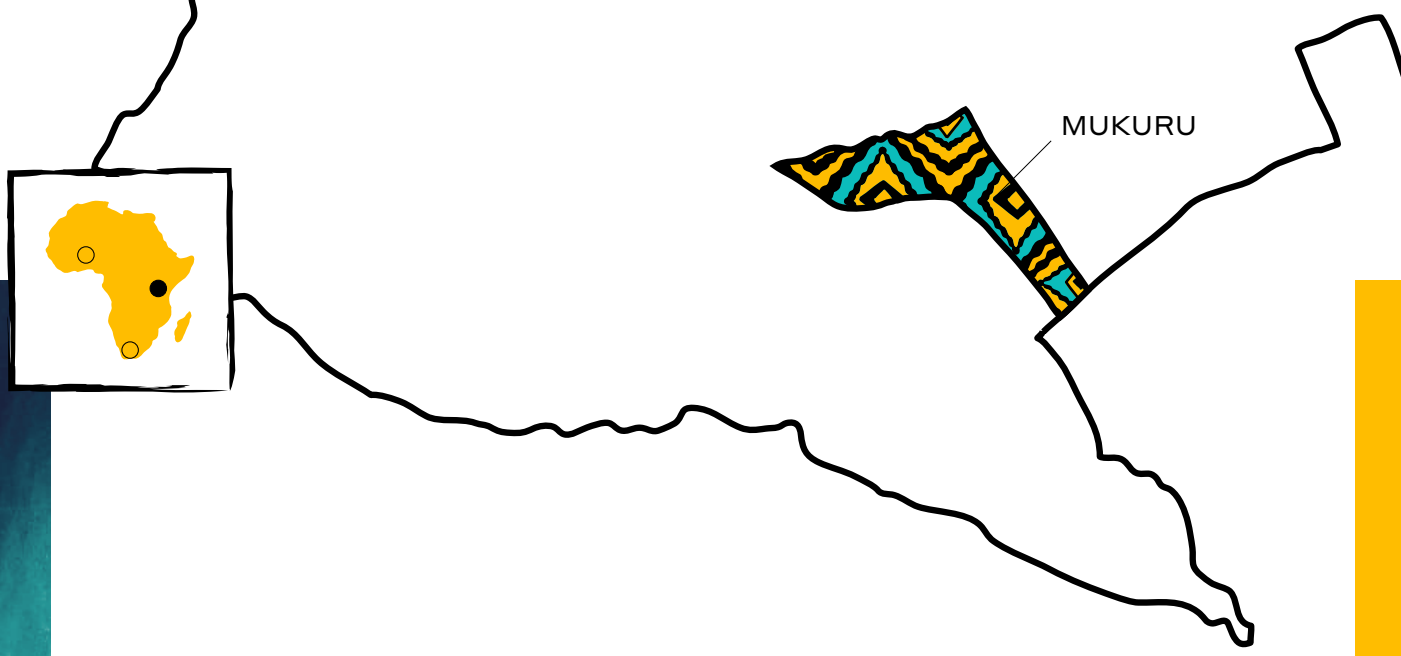
Viewing cities and the food system as key sites in the climate mitigation struggle is not yet part of the global discourse; in fact, these two domains are seldom linked. However, the greatest climate mitigation opportunity lies in the complete reconsideration and redesign of cities, coupled with that of the food system.

1.3 Urban food systems

For residents of Africa's rapidly growing informal settlements and low-income areas, life is precarious. Alongside the constant risk of external shocks, citizens face chronic social and livelihood challenges. Similarly, faced with severe fiscal, institutional, and capacity constraints, African states are battling to stay abreast of the unprecedented wave of urbanisation sweeping the continent. Yet, almost without exception, more than enough food is being supplied to support Africa's growing cities. To quote Haysom et al. (2022, p. 9), *"Most cities are awash with food; the key issue is not how to grow more food but how to improve access to the food that is grown and available."* Food insecurity in urban spaces is, therefore, less about lack of food and more about livelihood challenges, exclusive development patterns, global trade dynamics, internal military conflicts, poor service delivery, and lack of inclusive food governance processes (Buthelezi & Metelerkamp, 2022; Haysom et al., 2022). Efforts to improve food security in informal settlements and low-income neighbourhoods need to be embedded within these realities, as well as a host of unique contextual dynamics. Regardless of their fragility, these responses are entry points to develop more comprehensive strategies to achieve inclusive and climate-resilient urban food systems. The FAO's High Level Panel of Experts (HLPE, 2014, p. 14) relates that *"A food system gathers all the elements (environment, people, inputs, processes, infrastructures, institutions, etc.) and activities that relate to the production, processing, distribution, preparation and consumption of food, and the outputs of these activities, including socio-economic and environmental outcomes."*

The following three sections describe the three research sites of the Urban Food Futures programme.

Source: Patrick Njorogee



MUKURU
NAIROBI
KENYA

A place-based perspective of Mukuru, Nairobi

Situated at the center of Nairobi's industrial zone, the Mukuru informal settlement sits on 280 ha and is comprised of six villages: Mukuru Kwa Njenga, Mukuru Kwa Reuben, Viwandani, Mukuru Kayaba, Fuata Nyayo, and Mariguini. Since the 1980s, Mukuru, like many of Nairobi's informal settlements, has grown rapidly and informally as a consequence of poverty, rapid urbanisation, poor city planning, and corrupt land resource management (Mutinda et al., 2020).

Today, Mukuru is home to more than 100,000 households (Lines et al., 2020) and a vibrant informal economy. Although they occupy less than 5% of the city's residential landmass, informal settlements like Mukuru are home to more than 60% of Nairobi's population (Mallory et al., 2020). In 2016, the population of Mukuru was estimated at 300,000 in an area of 2.6 square kilometers, bringing its population density to a staggering 115,151 people per square kilometer (UC Berkeley et al., 2017). This crowding leads to extensive sanitation challenges, with the majority of the 300,000 residents sharing just 3,863 pit latrines (Njoroge & Musya, 2021). Public services such as electricity, water, and solid waste management are limited. In the absence of state intervention, these gaps have been quickly filled by informal service providers and cartels who profiteer

in the absence of government services. While these services create employment for many, they are a tax on Mukuru residents and have been described by Muungano as a poverty penalty that hampers residents' wellbeing including through irregular and risky electricity supply and unsafe and inadequate distribution of water (Mutinda et al., 2020).

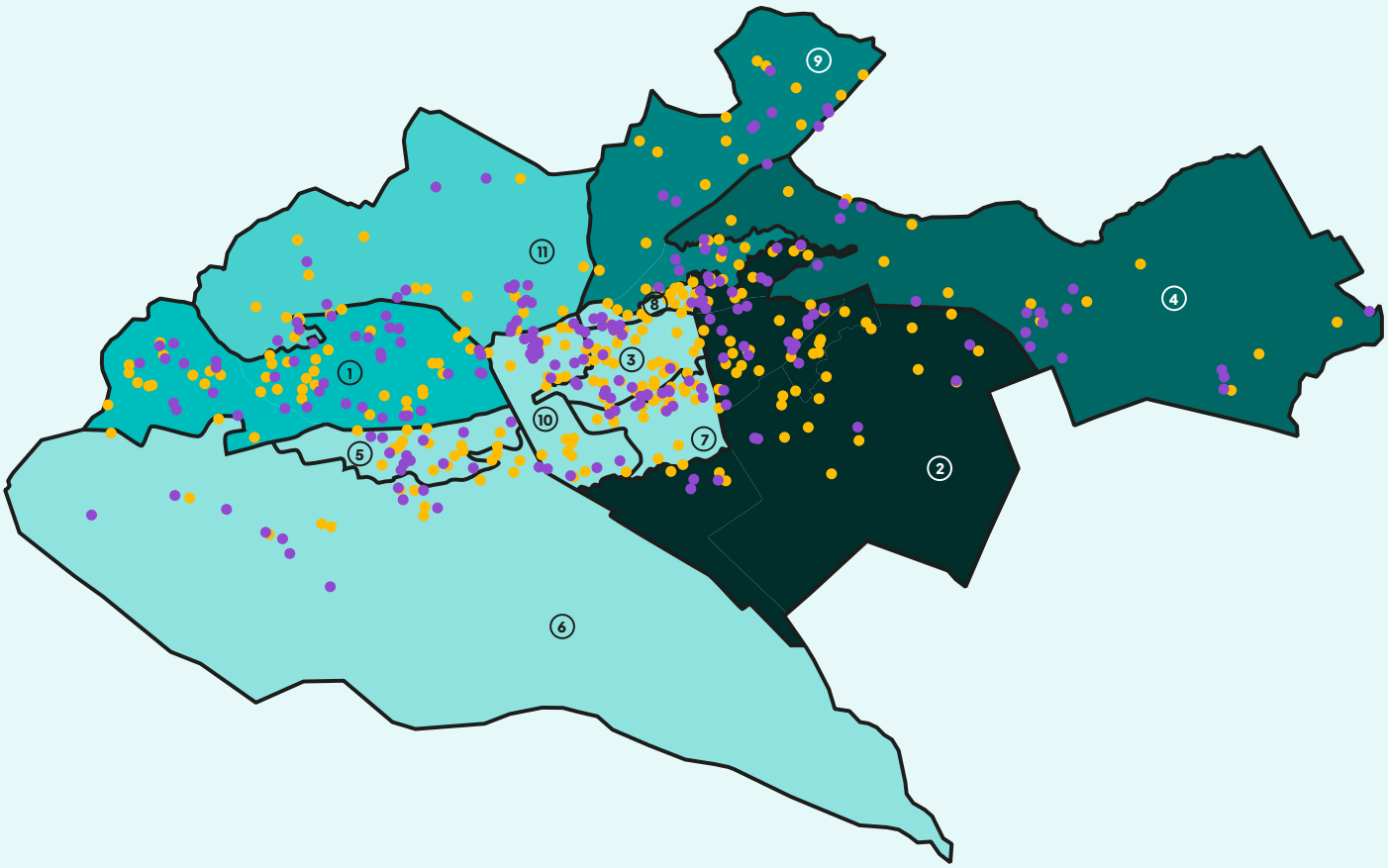
In September 2020, 80% of Mukuru residents were food insecure; this was more than the Nairobi average of 71% (IPC, 2020; IPC Global Partners, 2021). This situation was driven by lockdown-related job losses and spikes in the cost of basic food items such as oil and wheat flour which went up by 51% and 44%, as well as an inflation rate of 7.9% (Herbling, 2022). In the absence of social protection mechanisms from the state, this forced individuals' food security into the hands of community networks and well-wishers. In October 2021, government evictions led to the violent displacement of more than 75,000 people in Mukuru (Muungano wa Wanavijiji, 2021). With the loss of their homes and business premises, many displaced families lost the ability to feed themselves and came to depend on food relief.

However, there have been some positive signs. Undernutrition in Mukuru has declined over the last 20 years and, despite transition toward consumption of more processed food, most food is currently purchased as raw, whole foods (Hauser et al., 2022). There has also been positive change in Mukuru as a result of the Mukuru Special Planning Area's (SPA) informal settlement upgrading processes which aim to transform this slum into a healthy and functioning neighbourhood. From 2018, the participatory process has involved more than 5,000 Mukuru residents, the Nairobi County government, and over 40 organisations from civil society and academia (Muungano wa Wanavijiji, 2020). As a result, the government made 15 billion shillings[1] available in 2020 to implement proposals identified in the SPA process in Mukuru. The identified project areas include, among others, land and housing, transport infrastructure, and health services (Muungano wa Wanavijiji, 2020). The county government of Nairobi also made significant investments including provision of water and sanitation services (Njoroge & Musya, 2021).

1 15 billion KES = €130 million (oanda in 2022)

Map 1.

SCHOOL DISTRIBUTION IN NAIROBI IN RELATION TO POPULATION DENSITY



Total population (age 3 and above) for each sub-county

100k 200k 300k 400k 500k 600k 700k 800k +

Primary schools Secondary schools

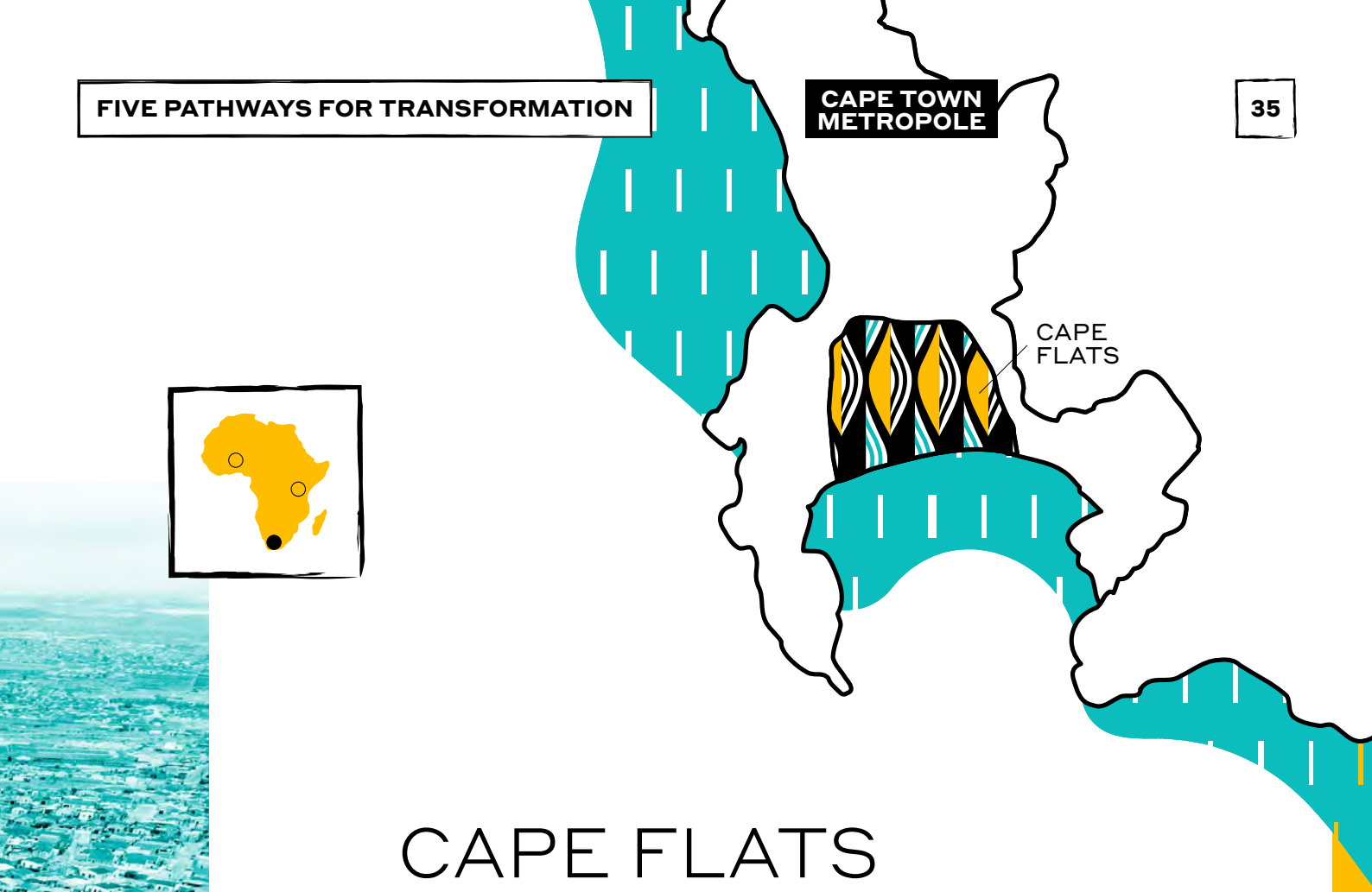
SUB-COUNTY

Male population - Female population

① **DAGORETTI** *M. 190 921 F. 189 505*	③ **KAMUKUNJI** *M. 103 126 F. 94 839*	⑤ **KIBRA** *M. 81 878 F. 79 322*	⑦ **MAKADARA** *M. 85 882 F. 83 446*	⑨ **NJIRU** *M. 268 531 F. 281 127*	⑪ **WESTLANDS** *M. 134 999 F. 136 292*
② **EMBAKASSI** *M. 431 278 F. 433 744*	④ **KASARANI** *M. 329 885 F. 349 899*	⑥ **LANG'ATA** *M. 83 232 F. 87 363*	⑧ **MATHARE** *M. 90 081 F. 84 467*	⑩ **STAREHE** *M. 84 432 F. 82 934*	

Source: Kenya National Bureau of Statistics. (2019). Kenya Population and and Housing Census. Volume IV. & Google maps. (2021).

Source: Nicole Paganini, 2018



CAPE FLATS
CAPE TOWN
SOUTH AFRICA

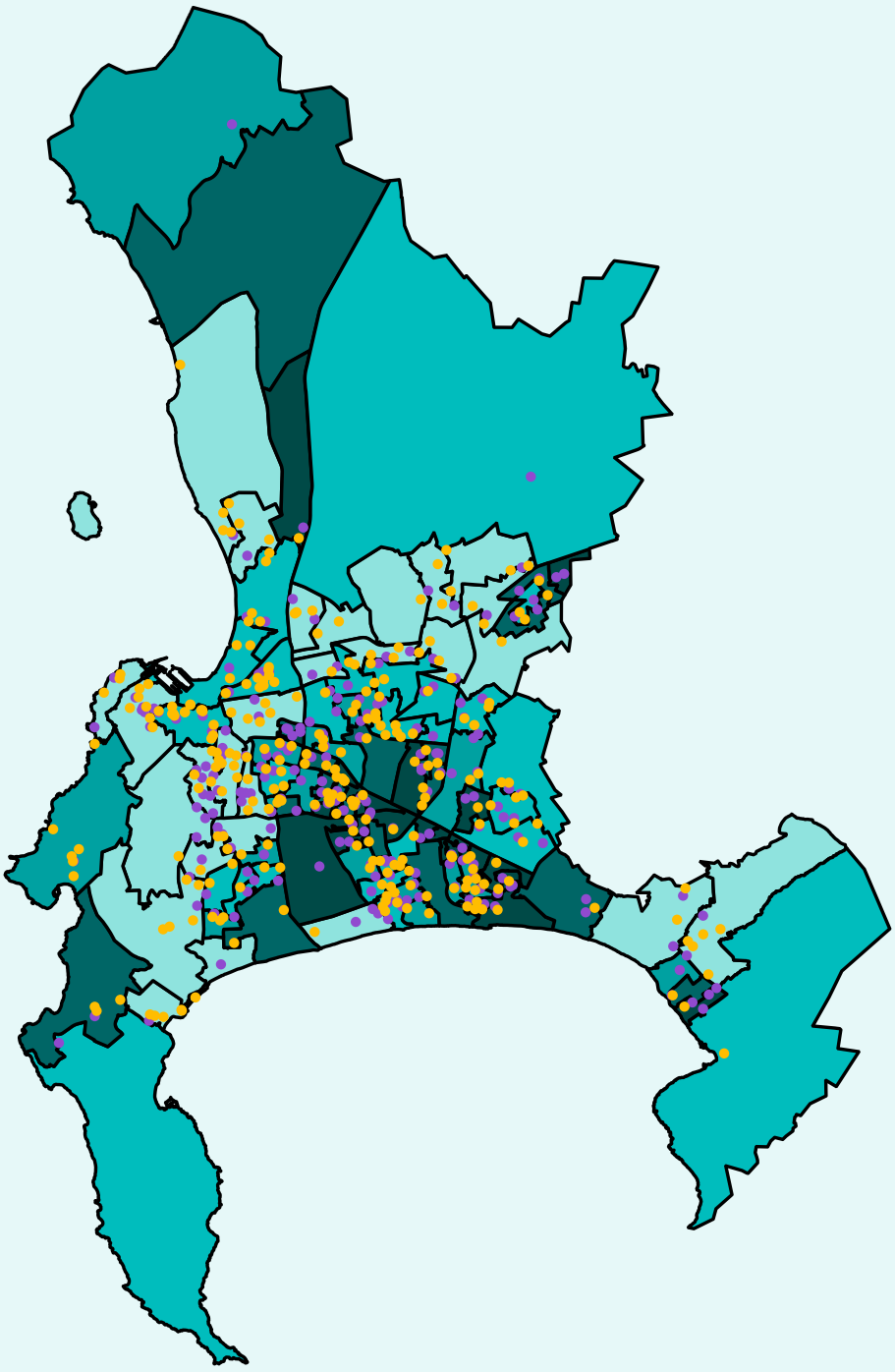
A place-based perspective of the Cape Flats, Cape Town

Drawing its name from the sandy, windswept, and flood-prone flatlands between the exclusive suburbs on the slopes of Table Mountain and the luxurious wine estates of Stellenbosch, the Cape Flats are a testimony to South Africa's history of racial and spatial segregation. Today, the Cape Flats is used as a collective term for the lower income suburbs and informal settlements on the outskirts of Cape Town where Black and Coloured people were forcibly removed to during Apartheid. Since democracy in 1994, the Cape Flats has continued to grow rapidly, driven by consistent in-migration from other parts of South Africa and abroad (Bekker, 2002).

As with many low-income areas across the continent, the Cape Flats is characterised by high levels of violent crime, unemployment, and poor service delivery. However, unlike many other African cities, Cape Town's economic activity is dominated by an advanced and comparatively high-skill, formal economy and has a relatively small informal sector. This high-skill economy tends to exclude the majority of Cape Flats residents and serves to further entrench Cape Town's standing as one of the most economically unequal cities in the world.

Map 2.

SCHOOL DISTRIBUTION IN CAPE TOWN IN RELATION TO HOUSEHOLD INCOME



Income * > R 3200 (%)

13-25 25-40 40-51 51-68 68-84

Primary schools Secondary schools

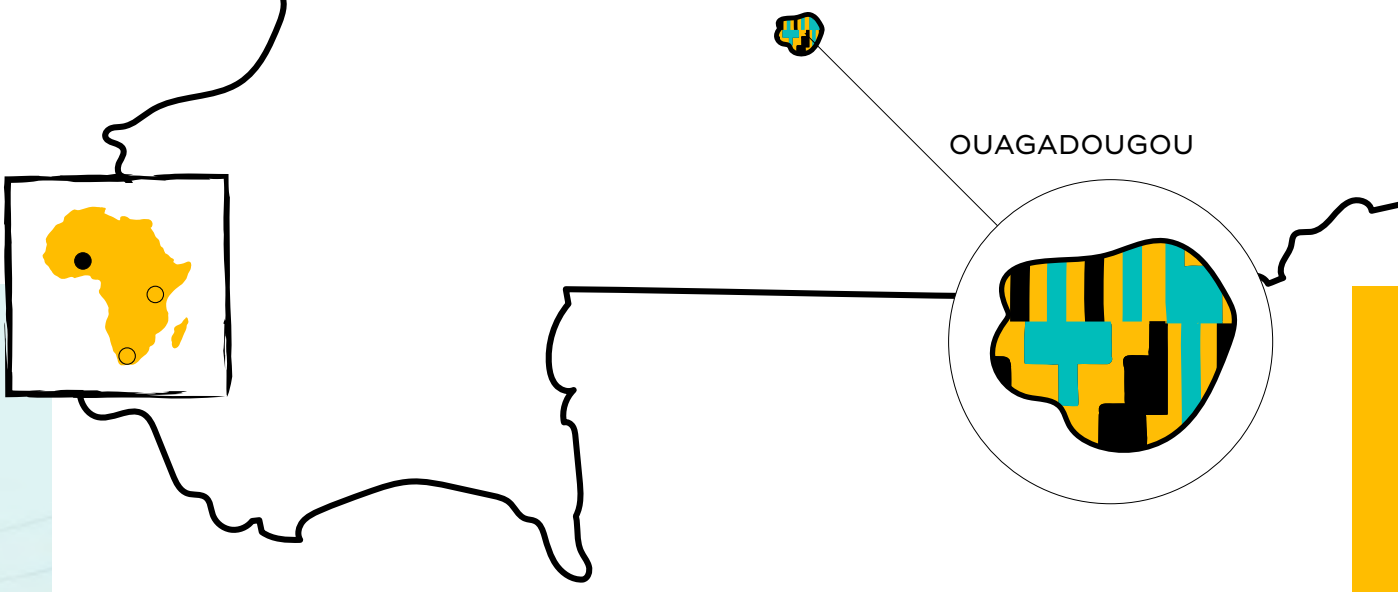
* Monthly Household Income per Ward (data classification: Natural Breaks)

The prominence of this high-skill, formal economy is mirrored within the food system, in which 75% of all grocery trade takes place through large supermarket chains (Battersby, 2017b). These supermarkets, alongside a growing number of fast-food chains, are increasingly establishing themselves in low-income neighborhoods (Battersby & Peyton, 2014).

Household food insecurity in Cape Town is around 55%, but suburb-specific studies have suggested this could be as high as 80% in parts of the Cape Flats (Crush et al., 2012 Paganini et al., 2021a). Most households in low-income areas rely on social grants for their food security (Paganini et al., 2021a). Paradoxically, as low-income and food-insecure residents turn to cheap, nutritionally poor foods to stave off hunger, the city increasingly faces the compounding impact of rising overweight and obesity, currently at around 58% for adults (NDoH et al., 2019).

A range of national, provincial, and municipal responses have emerged to address food insecurity in the Cape Flats. These include an extensive social grant system which benefits 37% of Cape Town households (Stats SA, 2022) and joint provincial school feeding programmes serving breakfast and lunch to 450,000 children daily, or about roughly 45% of school children across the province, and a growing commitment to multi-sectoral coordination of food-related issues (DBE, 2015; PSFA, 2022; Western Cape Education Department, 2019). The Cape Flats also benefits from a well-established coalition of NGOs, faith-based organisations, universities, and community networks working on food-related issues. However, in spite of these efforts, hunger remains a stubbornly pervasive daily reality across the Cape Flats.

Source: Edouard Sango



OUAGADOUGOU

BURKINA FASO

A place-based perspective of Ouagadougou, Burkina Faso

Ouagadougou is surrounded by the remnants of a green belt that was established in the 1970s to regulate temperatures in the city and break dusty winds from the nearby drylands (Zouré, 2021). The green belt, consisting of protected vegetation areas, originally stretched for 21 kilometres with 2,000 hectares of plants (Ouédraogo et al., 2019). Today, peri-urban production plays an important role for income generation and food supply to the city, however, the dry climate conditions only allow farmers to produce in the colder months of the year.

Ouagadougou is shaped by conflicts beyond its boundaries. The International Federation of Red Cross and Red Crescent Societies (IFRC), describes this as a "multi-faceted crisis characterised by armed conflict and inter-communal violence, leading to the desertion of arable land and a large flow of people who in turn, put pressure on the production and consumption structure of the host communities, thus creating a snowball effect of the food crisis from the northern part of the country" (2022, p. 1). Seven years of armed conflict and terrorism in Burkina Faso's rural areas has expedited internal migration to safer areas such as the capital (OCHA, 2022) and propelled Ouagadougou to 14th position in a

ranking of fastest growing cities in the world (Hoff, 2020). Newly arrived migrants flock to unplanned informal settlements where the stress of this sudden population explosion is exacerbated by climate change and a weak government. The city's limited and irregular rainfall makes it increasingly vulnerable to droughts (Semde et al., 2020); however, climate change has brought extreme rainfalls and recurrent flooding to Ougadougou in recent years (Engel et al., 2017; FCFA, 2019). Since 2012, the city has been ravaged by at least five floods annually, destroying no less than 24,000 homes and 150,000 properties (EIB, 2022) and degrading 65% of cultivatable land in the Central Sahel (Morello & Rizk, 2022). Climatic projections indicate that in the coming decades, these climate change effects might worsen (Tomalka et al., 2021).

Currently, more than 40% of Ouagadougou's population lives below the poverty line (World Bank, 2022b). The urban poor, particularly those living in informal settlements and low-income areas that are not served by basic public services are the most vulnerable to natural hazards such as floods (Dos Santos et al., 2019).

Collectively, these challenges exacerbate the already critical food insecurity situation and the city serves as a regional base for a number of international food relief programmes such as the International Red Cross and World Food Programme. Similar statistics were seen for an increase in food insecurity in Africa in general between 2014 and 2021 from 16.7% to 23.4%, with the highest increase in West Africa from 10.2% to 20.7%; East Africa from 21.5% to 28.7, and Southern Africa from 8.9% to 11% (FAO et al., 2022). These steep rises were recorded prior to COVID-19, the global food price spike, and the military coup of 2022. Many Burkinabes are unequipped to cope with the multiple crises affecting their livelihoods and the current food and political situations invoke memories of the 2008 food price crisis when their lack of coping mechanisms led to food riots (Engels, 2018).

Source: Edouard Sango, 2022

DASHBOARD WITH INFOGRAPHICS FOR CITY COMPARISON.[2]

Table 1.

INDICATOR	
FOOD SECURITY RATES HFIAP	Food secure
	Mildly food secure
	Moderately food insecure
	Severely food insecure
	Dietary diversity (HDDS/12)
OVERWEIGHT AND OBESITY RATES	
UNEMPLOYMENT RATE	
EXTENT TO WHICH HOUSEHOLDS SOURCE SOME OF THEIR FOOD FROM OWN PRODUCTION/URBAN AG.	
FOOD COSTS RELATED TO INCOME	
NUMBER OF SCHOOL MEALS SERVED (combined government and civil society)	

2 Africapay. 2022; KNBS. 2022; PMBEJD. 2022; PSFA. 2022; Sango 2022; Stats SA. 2022; Stats SA. 2021; KNBS. 2021; Kaboré S, et al. 2020; Pieterse, Haysom & Crush 2020; Western Cape Education Department. 2019; African Centre of Disease Control and Prevention. 2018; Ministry of Health. 2018; DBE. 2015; Rossier, *et. al.*. 2014; and Loada & Ouredraogo-Nikiema. 2009.

	CAPE TOWN 2009	NAIROBI 2015	OUAGADOUGU 2008
	45%	**29%**	**21%**
	6%	**13%**	**48%**
	13%	**33%**	**26%**
	36%	**25%**	**6%**
	6.8	**6.1**	**3.9**
	Overweight and obesity: **58.5%** **73%** women **44%** men	Overweight and obesity: **47.8%** **39%** women **17%** men	Overweight and obesity in urban areas of BF: **36.7%** **24.5%** overweight **12.5%** obese
	Western Cape **25%**	Nairobi County **43%** **16.3%** 20-24 age group **9.1%** 25-29 age group	**9.6%** **14.4%** women **6.3%** men
	LOW	**LOW-MODERATE**	**HIGH**
	Price of 1kg maize flour: **0.57 USD** Minimum hourly wage: **1.31 USD/hr** Hours worked for 1kg maize: **0.4 hours**	Price of 1kg maize flour: **0.65 USD** Minimum hourly wage: **0.35 USD/hr** Hours worked for 1kg maize: **1.9 hours**	Price of 1kg maize flour: **5.27 USD** Minimum hourly wage: **0.13 USD/hr** Hours worked for 1kg maize: **40 hours. 1 whole week!**
	Joint provincial school feeding programmes: 450,000 children daily (breakfast and lunch) 45% of school children across the province (DBE, 2015; PSFA, 2022; Western Cape Education Department, 2019)	Limited data, but **state and donor supported school feeding does play an "increasingly important role" - Food Envs Report**	No data available.

2

CONCEPTUAL THINKING BEHIND URBAN FOOD FUTURES

The research that is presented in this report was lead by TMG Research and co-created during TMG's scoping phase with project partners Welthungerhilfe in Nairobi and Ouagadougou; 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 Centre for Cities (ACC) at the University of Cape Town (UCT). Miramar, Muungano, and FACT supported the interpretation of the research findings and ACC commented on the early drafts. During an in-person workshop in November 2022, pathways and an action plan were created together. TMG's role was to analyse partners' research findings, develop concepts and pathways, and discuss those with partners and their wider communities. Therefore, we shared drafts of this report during workshops in Nairobi and Cape Town. The final text was written by TMG's research team based on the feedback received during partner meetings in February 2022 and November 2022.

2.1 From global to local and from local to global

OUR UNDERSTANDING OF THE CHANGE NECESSARY FOR TRANSFORMATION OF URBAN FOOD SYSTEMS IS OUTLINED IN FIVE PATHWAYS. WITHIN THESE PATHWAYS, WE THINK FROM GLOBAL TO LOCAL AND FROM LOCAL TO GLOBAL.

Transforming urban food systems to progressively realise the right to food requires a two-fold strategy. First, we need to address the structural reasons for hunger and malnutrition and unpack structural inequalities caused by colonial food systems (Moseley, 2022). Second, cities need to prepare food systems for the climate crisis and build community resilience to rising food and energy prices. This requires joint efforts by policy officials and citizens through a continuous dialogue between local and global.

Global to local: By adopting the 2030 Agenda, the Sustainable Development Goals and the Paris Climate Agreement, governments have set themselves ambitious goals pertaining to transforming their countries' development pathways. Countries' commitments to achieve the global goals offer avenues for policy reform and programmatic change. Together with partners, TMG builds on these commitments to identify and open spaces for innovation and change at the local level.

Local to global: Achieving the global goals necessitates a myriad of locally adapted solutions based on social and technological innovations. In partnership with community-based organisations, TMG develops innovations and works toward their recognition in public policies and programmes.

In line with recent conferences in the Federal Ministry for Economic Cooperation and Development (BMZ) and German Federal Foreign Office (AA), this work assumes a feminist development policy that takes everyone into account,

promotes sustainable development, enforces human rights, and tackles the roots of injustice. A feminist research approach also responds to BMZ's intention to eliminate all forms of structural inequality and discrimination, including racist structures and discrimination based on sexual and gender identity and disabilities. Our research is informed by intersectional feminism that brings to the fore questions of power, not only in terms of gender, but also class, race, sexuality, ethnicity, geographical location, and disability (Andrews & Lewis, 2017). This includes understanding how various, interlocking forms of oppression and privilege are experienced and reproduced on a daily basis and supported by broader structural inequalities and systems (Andrews & Lewis, 2017; Davis & Hattery, 2018; Kiguwa, 2019).

Our role as a multi-partner research programme is the systematic facilitation and the analysis of interdisciplinary action research findings, reducing their complexity, and situating them within a larger picture of pathways for transformation to advise policy, science, and practice. Gillespie et al. (2013) argue that three domains, a) knowledge and evidence, b) politics and governance, and c) capacity and resources, are pivotal in creating and sustaining political momentum and translating that momentum into results. The Urban Food Futures programme recognises these conditions, but rather than wait for political will to emerge by chance, we harness active engagement of the policy and community sphere as a propellant for deliberate action. We also accept and employ Nisbett et al.'s (2022) position that a new generation of food and nutrition research requires an understanding of relative power (or disempowerment) of different population groups: their power to set policy agendas and their power to participate or have voice in social and political decisions related to food system transition.

Strong partnerships are at the heart of this programme. Beyond our immediate partner network, we establish a network of cooperative relationships with decision makers to support our pathways for transformation. We consider municipal partnerships as crucial for success. In the scoping phase, this research blurred the boundaries between research, policy, practice, and art and we remain explicit in our intent to view them as mutually reinforcing ways of knowing which, when aligned, make powerful combined offerings to transformative processes. When intervening in complex systems, it is important to take an incremental approach that minimises risks while maximising continuous improvement through adaptive management that emphasises iterative processes and applied learning (Preiser et al., 2018; Swilling et al., 2016).

Using scientifically sound methodologies, we gained unique insights in lived experience, African oral traditions, and other ways of knowing during the conceptualisation

of the five pathways through co-research activities. Co-research, short for community research, is a more radical form of action research which starts with joint framing of the problem, identification of research entry points, and co-design of methodology and analysis. Emphasis is put on mutual contextualisation of findings with communities. This often includes storytelling to place analysis and results dissemination into oral, non-academic language to empower local actors for advocacy and change. Given the visceral lived experience of hunger which many partners within the wider Urban Food Futures programme have dealt with over the course of their lifetimes, integrative methodologies capable of moving beyond the purely analytical and into the embodied experiences of the research collaborators are essential.

2.2 The right to food

The right to food is an international human right enshrined within the International Covenant on Economic, Social and Cultural Rights (ICESCR; UN General Assembly, 1966). The right to food is widely understood as the right to feed oneself in dignity and requires that food be available, accessible, and adequate for everyone at all times (UN CESCR, 1999). The state's role in this has generally been interpreted as needing to ensure that a stable supply of food is available in sufficient quantities at an affordable price and to provide food directly to individuals or groups who, for reasons beyond their control, cannot feed themselves (FAO, 2014).

In November 2004, the FAO adopted the Voluntary Guidelines to support the progressive realisation of the right to adequate food in the context of national security, which were unanimously adopted by all FAO member states (Global network for the right to food and nutrition, 2021). According to this source, these guidelines focused on the national level and prompted many national governments to introduce the right to adequate food in their national legal and policy frameworks. They have also been used as a monitoring and advocacy tool by civil society.

In addition to enshrining the right to food in their constitutions, South Africa and Kenya developed supporting national policies on food security in 2014 and 2011 (GoK, 2011; Government of the Republic of South Africa, 2014). However, despite these broader and encompassing obligations, much work lies ahead in decentralising and operationalising the current food policies within

THE RIGHT TO FOOD IS WIDELY UNDERSTOOD AS THE RIGHT TO FEED ONESELF IN DIGNITY AND REQUIRES THAT FOOD BE AVAILABLE, ACCESSIBLE, AND ADEQUATE FOR EVERYONE AT ALL TIMES.

municipal and county governments. This includes supporting city-level governments to ensure that food system outcomes are considered within ostensibly non-food-related planning activities (Haysom et al., 2022). However, beyond Kenya and South Africa's respective food security policies, both governments have launched a number of programmes and initiatives as steps toward ensuring the right to food. These span direct food aid, cash support to purchase food, efforts to enable dietary wellbeing, and support for agricultural production.

There are growing efforts underway in South Africa and Kenya to ensure the right to food is met, the prevailing high levels of food insecurity suggest that a number of critical programmatic and legislative gaps remain (Kimani et al., 2023). In South Africa, for example, there is no legal precedent on the right to food to contest local state responsibility to the constitution (De Visser, 2019). This underscores the need for states to legislate the right to food and provide a clear legal framework to guide policy efforts and budgetary allocations (Joala & Gumebe, 2018).

In the following sections, we discuss the right to food in South Africa and Kenya. Burkina Faso has not adopted the right to food in its constitution nor in any other legislative or regulatory text (FAO, 2022b; FIAN Burkina Faso, 2015). However, Burkina Faso is one of the few countries in the sub-region where initiatives directly related to the implementation of the right to food are underway. The right to food was included in a draft constitution submitted in 2017 (Paktogo, 2021); however, at the time of writing, this has been waylaid by socio-political unrest.

The right to food in South Africa

The right to food is enshrined in South Africa's 1996 constitution, under Sections 27 and 28. Section 27 (1) (b) states that "everyone has the right to have access to sufficient food." It also includes a provision for children in Section 28(1) (c) which states that "every child has the right to basic nutrition".

The South African Human Rights Commission (2018, p. 1) interprets this 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. Unlike with adults, however, when children are unable to access food, the state is obliged to step in and provide food for them.

This means that government must provide an enabling environment in which people can produce or procure adequate food for themselves and their families.

RESPECT: *of existing access to adequate food. Government can not to take any measures that result in preventing such access;*

PROTECT: *requires measures by government to ensure that companies or individuals do not deprive other individuals of their access to adequate food;*

FULFIL: *means that government must pro-actively engage in activities intended to strengthen people's access to resources that can be used in food production. If an individual or group is unable, for reasons beyond their control, to enjoy the right to adequate food, government must provide access to that right, directly.*

Often national-level food security policies are based on a right to food approach to food security; however, the programmes implemented in response to the policies aim to increase food availability, rather than food access. This oversight is often maligned with human needs as many countries produce and import enough food to feed their populations, but have not yet created the necessary conditions for people to be able to feed themselves. Food adequacy does not receive enough attention in policy frameworks that inform food security programming as evidenced by increasing levels of malnutrition and undernutrition among children and adults (Joala & Gumede, 2018).

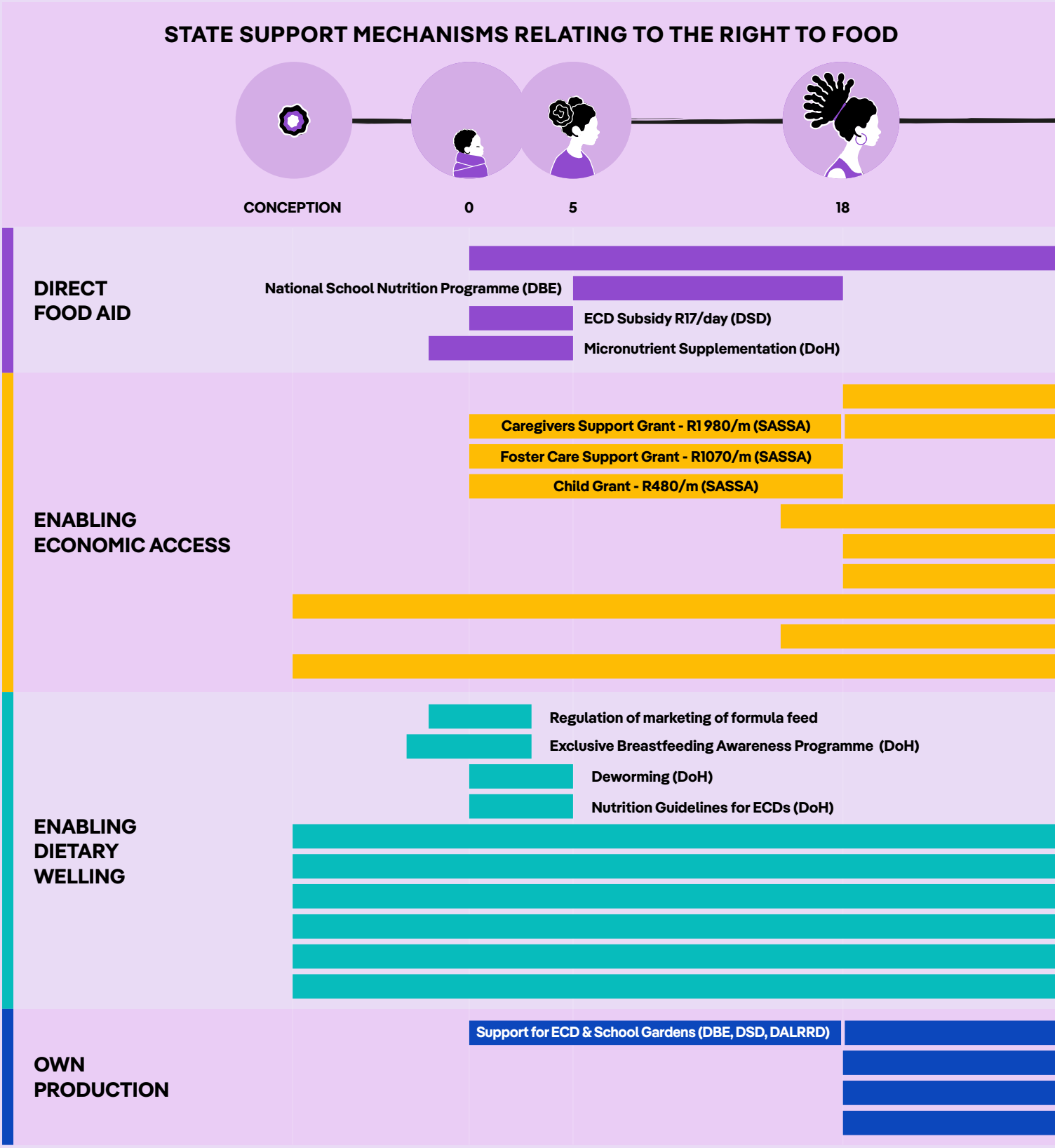
In South Africa, for example, analysis of food-security-related programmatic expenditure across various national and provincial departments indicates a melange of trends in the implementation of the right to food (SAHRC, 2018). Most notable is the increase in budget allocation to nationwide feeding programmes at no-fee-paying schools which has led to geographical expansion of programming and the progressive realisation of the right to food and reduction in stunting and other nutrition-related conditions among learners.

Despite repeated calls from civil society, South Africa has yet to enact a framework law for the implementation of the right to food as recognised in their constitution (Joala & Gumede, 2018). Because of this, the right to food and the responsibilities of state and private sector actors in upholding the right to food is not legally defined, thereby limiting the ability to hold these actors accountable. Recently, the UN Committee on Economic, Social and Cultural Rights (CESCR) made specific recommendations to South Africa on how to strengthen and fulfil the right to food for all South Africans, including the need for a framework law to implement and protect the right to food. The CESCR recommended that South Africa adopt framework legislation protecting the right to adequate food and nutrition, taking into account the Voluntary Guidelines to Support the Progressive Realization of the Right to Adequate Food in the Context of National Food Security and the Committee's general comment No. 12 (1999) on the right to adequate food. The National Food and Nutrition Security Plan for South Africa, in particular, addresses school feeding programmes as an entry point to achieve the right to food (DPME, 2018).

Figure 1 provides detailed breakdown of state initiatives related to the right to food across the course of a citizen's life in South Africa.

FROM CONCEPTION TO DEATH: STATE SUPPORT MECHANISMS FOR THE RIGHT TO FOOD IN SOUTH AFRICA

Figure 1.



STATE SUPPORT MECHANISMS RELATING TO THE RIGHT TO FOOD

Household Food & Nutrition Support Programme (DSD) - Food hampers/vouchers

Social Relief of Distress Grant - R350 (SASSA)

Disability Grant R1980/m (SASSA)

Pension Grant R1980/m (SASSA)

Student Living Allowance - R1500 (NSFAS)

Community Works Programme

Extended Public Works Programme

Zero VAT rating on Basic Foods

Unemployment Insurance Fund

Competition Commission

Basic foods fortification programme

Various WASH related initiatives (DoH, DWS, Local Govs)

Free household basic water 6000L/m

Free household basic electricity 50 kwh/m

Health Promotion Levy (HPL) on sugary beverages (SARS)

Food & Beverage Standards - South African Bureau of Standards

Small-scale fisheries allocations (DFFE)

Comprehensive Agricultural Support Programme, Ilima/Letsema and (DALRRD)

Land & Water Reform Policies (DALRRD, DWS)

Fetsa Tlala (DALRRD)

The right to food in Kenya

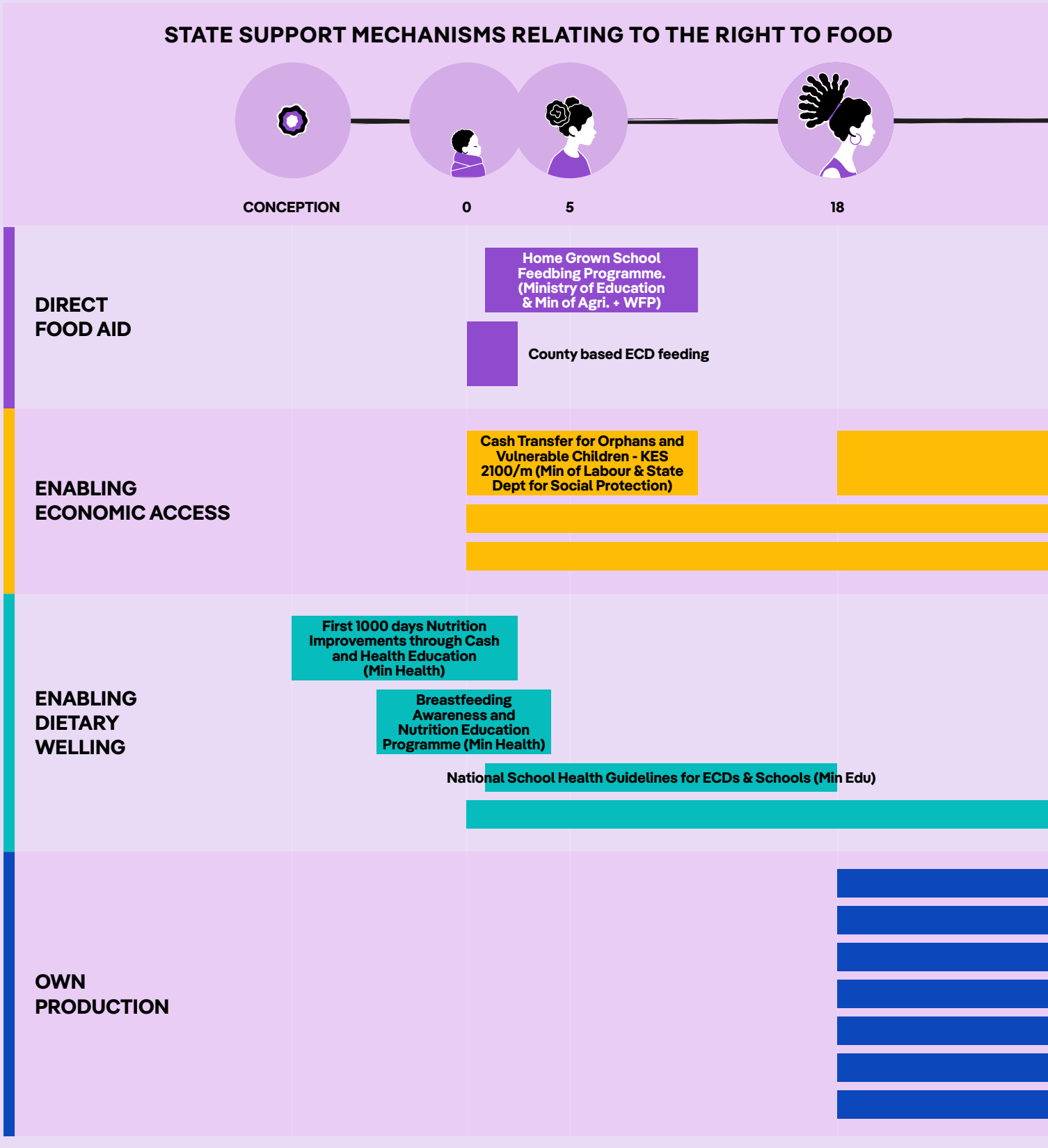
The right to food is enforceable in Kenya, based on the ICESCR, which was ratified and incorporated into domestic law. Article 43 (1c) of the Kenyan constitution of 2010 stipulates that "every person has the right to be free from hunger and to have adequate food of acceptable quality." Article 53 further provides for child nutrition as a right.

Kenya has enacted the 2011 National Food and Nutrition Security Policy. The policy's preamble aligns with the constitutional provision on the right to food and states that subject to the availability of necessary resources, the government will ensure that every Kenyan is free from hunger and has an adequate supply of food of acceptable quality. This policy is important in realising the right to food, but cannot be implemented in the absence of a parliamentary act on the subject. The Food Security Bill was tabled in parliament in 2014 and in 2017 and has not yet been enacted. The Bill's purpose was to create a legal framework to enact Article 43 (1) (C) of the Kenyan constitution by establishing a legal framework for the right to food. The Bill encourages food production, establishes a mechanism for the National Food Policy and other food security programmes, and promotes the eradication and prevention of discrimination in food access and distribution. However, because the bill has not yet been passed into law, Kenya lacks a legal framework to implement the constitutionally guaranteed right to food.

Source: Kenyan artist contribution to Urban Food Futures partner meeting. February 2022

BREAKDOWN OF STATE INITIATIVES RELATED TO THE RIGHT TO FOOD ACROSS THE COURSE OF A CITIZEN'S LIFE IN KENYA

Figures 2.



STATE SUPPORT MECHANISMS RELATING TO THE RIGHT TO FOOD

Cash Transfer for people with disabilities - KES 2100/m (Min of Labour & State Dept for Social Protection)

Cash Transfers to Elderly Persons - KES 2100/m (Min of Labour & State Dept for Social Protection)

Hunger Safety Net Programme 5400/household/m

National Drought Emergency Fund

Food Quality standards - Kenyan Bureau of Standards checks food safety

National Agricultural and Rural Inclusivity (Min of Agri)

Small Scale Irrigation and Value Addition (Min of Agri)

Food Security and Crop Diversification Programme (Min of Agri)

Farm input subsidy e-voucher(Min of Agri)

Kenya Cereal Enhancement Programme (Min of Agri)

Agricultural Extension Services (Min of Agri)

Emergency Locust Response Programme (Min of Agri)

The right to food in Burkina Faso

Burkina Faso is still lagging behind in the adoption and implementation of the right to food, despite the fact that this right is recognised as fundamental by international law and despite the fact that the country became a state party to the International Covenant on Economic, Social and Cultural Rights by accession in 1999. Indeed, the right to food has not been expressly enshrined in the constitution or in any other legislative or regulatory text (FIAN Burkina Faso, 2015; Paktogo, 2021). Furthermore, Burkina Faso does not have a law on food security or an agricultural orientation law as it does for land and water (FIAN Burkina Faso, 2015; Paktogo, 2021).

Regarding redress mechanisms, there are no administrative or judicial remedies specifically provided for cases of violation of the right to food. However, any recourse for violations of the right to food is quite possible if the subject of the violation has a link with existing administrative and judicial procedures (FIAN Burkina Faso, 2015).

As in most countries in West Africa, the right to food is often ignored by rights holders, policy makers, and/or implicitly or explicitly violated in Burkina Faso, with the major consequence of recurrent food and nutrition insecurity despite technological progress (Paktogo, 2021). However, Burkina Faso is one of the few countries in the sub-region where initiatives directly related to the implementation of the right to food are underway. The government has undertaken several actions, very often cross-cutting, in the direction of combating hunger and malnutrition (FIAN Burkina Faso, 2015), the main ones being:

- the adoption of a national food security and nutrition policy with the overall objective of achieving sustainable food and nutrition security by 2025;

- the adoption of a series of land reforms (latest in 2012) with the objective of liberalising land, which should boost agricultural production to achieve food self-sufficiency;

- the implementation of agricultural and water policies aimed at improving food security and sovereignty, increasing the income of rural populations, developing and sustainably managing natural resources, improving access to drinking water and the living environment, etc.; and

- joining NAFSAN, a G7 initiative for Africa whose objective is to improve food security and nutritional status by helping some 50 million people in sub-Saharan Africa to break out of poverty by 2022, including 1.6 million people in Burkina Faso.

In addition, the State of Burkina Faso has included the right to food in Articles 26, 29 and 135 of the preliminary draft of the Constitution of the Fifth Republic.

This preliminary draft submitted to President Roch Marc Christian Kaboré in November 2017 did not pass into law as the military junta seized power from President Kaboré in January 2022. Since then, the Fourth Constitution of the Republic has been suspended and the country is operating under a transitional regime.

BURKINA FASO IS STILL LAGGING BEHIND IN THE ADOPTION AND IMPLEMENTATION OF THE RIGHT TO FOOD, DESPITE THE FACT THAT THIS RIGHT IS RECOGNISED AS FUNDAMENTAL BY INTERNATIONAL LAW.

2.3 Rethinking the informal sector

A vital component of today's global food system is the still largely unacknowledged informal food economy. Comprised of traders, street vendors, transporters, and food producers, the urban informal economy is characterised by economic activities that voluntarily or involuntarily take place outside of the protection or regulation of governments.

Informality is on the rise in Africa. Across the continent, informal jobs account for 72% of all non-agricultural livelihoods (ILO, 2018). In Burkina Faso, the informal economy accounts for 95% of all jobs (the highest in Africa), while in comparatively industrialised African countries like South Africa, these rates are substantially lower at around 31% (the lowest in Africa) (ILOSTAT, 2021). In African cities, it is not just people's working lives that are informal. Urban life for the vast majority of African urbanites is characterised by varying degrees of informality, with the urban poor experiencing the highest rates of informality across all aspects of their lives from housing to education and employment. Cape Town, for example, projects an 80% increase in the demand for informal housing between 2020 and 2040 (CoCT, 2022), while in Kenya the balance between formal and informal employment continues to shift toward informality as a growing youth population fails to find jobs in the formal sector (FKE, 2021).

The International Covenant on Economic, Social and Cultural Rights recognises the right to food as a fundamental human right, but acknowledges that the realisation of this right is interdependent on other rights. In the urban context, the right to work is a definitive interdependent right, which includes the right to the opportunity to gain a living through work and places obligation on the state to take appropriate steps to protect this right in pursuit of full and productive employment (UN General Assembly, 1966). However, the formal economy is structurally incapable of delivering on the promise of regulated employment within the formal economy. Work in the informal economy has filled this gap and significantly contributed to livelihoods and, as such, needs to be considered as a central pillar in efforts to achieve the right to food in African cities.

Despite the informal economy's contribution to fulfilling the right to food in many nations, the informal sector is often reputed for its lack of social security and its inherent labor vulnerabilities, and its coexistence alongside the existing legal system (Goyal & Heine, 2021). However, while these concerns are valid, this generalised, narrow,

and isolated characterisation of the informal sector creates a false binary between formal and informal economies (Ram et al., 2017; Rigon et al., 2020). Even beyond the African continent, the informal sector exists globally and constitutes almost 60% of global employment (ILO, 2021). Whereas conventional binary hierarchical discourse portrays the informal economy as a residual and marginal form of economic activity that yields largely negative consequences for economic and social development, the informal economy's actual contributions illustrate the contrary. Evidence of agility, immediate response, and innovation by the same informal economy in achieving the right to food across global food systems, particularly in times of crisis, offer a neglected contribution of economic activities titled "informal" (Battersby, 2020). Informal for many urban areas particularly across African cities is where the limits of resources meet the struggle for survival particularly for the urban poor (Battersby, 2020).

Rather than being marginal or negative, informality can be seen as a symptom of the ill-guided logic of inclusion–exclusion that informed the construction of these food systems.

Transformation requires building dietary resilience through the informal economy. It has been widely noted by African urban food system researchers (*e.g.,* Battersby & Haysom, 2018; Blekking et al., 2020; Brown, 2019; Crush et al., 2012) that access to a stable and sufficient cash income is the key determinant of urban household food security. In this sense, the urban informal economy, which accounts for the 76% of Africa's urban livelihoods (ILO, 2018), assumes a key role in achieving urban food insecurity. This is particularly true for women and the urban poor who are not only the most vulnerable to food insecurity, but also face a compounding array of intersecting setbacks which structurally exclude them from meaningful participation in the formal economy (Brown, 2019). As the ILO (2002) notes:

The informal economy absorbs workers who would otherwise be without work or income, especially in developing countries that have a large and rapidly growing labour force... Most people enter the informal economy not by choice but out of a need to survive. Especially in circumstances of high unemployment, underemployment and poverty, the informal economy has significant job and income generation potential because of the relative ease of entry and low requirements for education, skills, technology and capital (p. 5).

While the informal economy has been critiqued for failing to provide 'decent' work (Kucera & Roncolato, 2008; Trebilcock, 2005), from the perspective of the African city, informality offers a critical lifeline to most families. This lifeline puts food on the table by opening small opportunities in an otherwise exclusionary employment landscape. Indeed, given the inability of the formal economy to absorb the rapidly growing number of urban youth into dignified employment, the informal economy is likely to become increasingly socially and economically significant to Africa's urban development trajectory as Africa's youth bulge advances into working age. These informal economies are as diverse as the cities they support, spanning fashion, beauty, property rental, transport, IT, construction, security services, education, healthcare, sex work, religion, the arts, and just about any other service imaginable. However, of all of these, urban food-based enterprises account for the lion's share.

The Sustainable Livelihoods Foundation conducted a large-scale study which categorised 10,842 township enterprises across South Africa. This study found that food- and drink-related enterprises (including liquor sales) accounted for 54% of all township enterprises in South Africa (SLF, 2016). Looking at South Africa as a whole, Greenberg (2015) estimated that small grocery stores (called spaza shops in South Africa) and food hawkers accounted for 735,000 jobs in South Africa. To put this figure of 735,000 into perspective, South Africa's biggest four retailers account for 97% of all supermarket retail (Battersby & Peyton, 2014), yet employ just 273,000 people, less than half of those Greenberg estimates to be employed by the informal economy.

The formal food retail sector accounted for 75% of food retail (Agyenim-Boateng et al., 2015) suggesting that, dollar for dollar, the informal food economy is far better at creating the jobs that South Africa's youth so desperately need. Not only this, but the informal sector seems better at distributing the profits of the urban economy to the pockets of the poor as the highly fragmented structure of the informal sector and the low-skilled local labour it tends to employ mean that a greater percentage of profits from this

FOOD-INSECURE URBANITES SOURCE FOOD MORE FREQUENTLY FROM INFORMAL MARKETS AND STREET VENDORS THAN ANY OTHER SOURCE.

sector accrue to inhabitants living within lower-income, food-insecure communities instead of to external professionals and corporate shareholders.

These data emphasise the scale and breadth of the informal sector with informal food traders making food available to city dwellers. The informal sector plays a particularly important role in food-sourcing strategies. Food-insecure urbanites source food more frequently from informal markets and street vendors than any other source (Crush et al., 2012). Reasons for and patterns of procurement from informal vendors vary greatly by city depending largely on the rate of supermarket penetration (Skinner & Haysom, 2016). In cities with relatively well-established formal food retail systems, informal traders tend to fill

Source: Patrick Njorogee, 2022

a gap in the dietary strategies of the urban poor, offering access to credit and smaller units, reducing the need to travel, and enabling the purchase of fresh foods daily in the absence of refrigeration (Skinner & Haysom, 2016).

There is a gender bias to work within the African informal economy which accounts for 79% and 69% of all non-agricultural employment for women and men (ILO, 2018). The central role that women assume in raising, feeding, and caring for children and the elderly further compounds the importance of their livelihoods and, as such, the critical role that the informal sector plays in early childhood nutrition. In Nairobi, selling fruit and vegetables is the leading income-generating activity for low-income women (Amenya, 2007). Considering interhousehold food security dimensions, gaining access to their own income shifts household power dynamics around spending decisions. Statistically, when given the choice, women invest more in healthy food and education than men do (Quisumbing et al., 1996). These provisioning pressures on women are compounded during food price crises when women experience an *"increased precariousness of labour, squeezing out care and changing food habits"* (Scott-Villiers et al., 2016, p. 8).

Unpaid care work and gendered expectations around the procurement and preparation of food are burdens on women, in addition to expectations that women should acts as household breadwinners too. However, many women already occupy this role and many who are without a source of income desperately aspire toward one. From a food security perspective, policies that seek to govern spaces of informality need to put the needs of women who bear the greatest burden of feeding and caring for children at the centre of the agenda.

Stories of individual life journeys in contexts of informality often read as tales of marginalised people facing poverty, discrimination, and barriers to secure labour markets, housing, and welfare (Thieme et al., 2021). And yet, in South Africa, many traders see informality along with the known challenges, as also being an opportunity, stating that they prefer running their own

THERE IS A CLEAR GENDER BIAS TO WORK WITHIN THE AFRICAN INFORMAL ECONOMY WHICH ACCOUNTS FOR 79% AND 69% OF ALL NON-AGRICULTURAL EMPLOYMENT FOR WOMEN AND MEN.

businesses to the alternative of low-paid formal employment (SLF, 2016). In Nairobi, the opportunity that the informal sector brings is also recognised in the accelerated popularity of "hustling". Youth, in particular, are increasingly engaged in hustling as it offers a complementary rendering of the realities of this persistent struggle, where one can craft a positive identity and assert their agency to cope with and work through a constellation of economic, political, and social barriers. To this end, Thieme et al. (2021, p.19) argue that hustling in Kenya evokes an agentive struggle in the face of harsh circumstances, "These identities are tied to social capital, which is often a key resource for those living in highly informal contexts. The notion of social capital serves to foreground the relational nature of informal economies, through which community members (particularly women) provide resources for the wider community which often transcend financial transactions. Bruegel (2005, p. 4) asserts that this can be regarded as *"an extension of an ethic of care beyond the family"* based on a *"solidaristic social network"*. Moreover, she stresses that the term 'social capital' highlights the value group members put in their sense of belonging, as well as the need for investments – both private and public – in sustaining such networks, as they are needed for any other form of capital (Bruegel, 2005).

Unfortunately, the prevailing developmental visions for cities tend to problematise informality instead of re-valorising the informal sector as a solution space for food security (Brown, 2019). Planners, politicians, influential residents, and investors pursue sterile, utopian visions of grand and orderly cities from which the chaos of informality has been erased (Bonner & Spooner, 2012; Pieterse et al., 2020), yet in the absence of viable formal work opportunities, punitive regulation of informality is a violation of state commitments to uphold the right to work and needs to be considered a violation of their duties with respect to the right to food.

If the informal sector were valorised, the traders, street vendors, transporters, and producers within the sector could be seen as positive co-creators of just and resilient cities. This means embracing the informal economy and working with traders to create enabling environments that reduce the risks associated with the informal sector while increasing the rewards (Bonner & Spooner, 2012). Here, the challenge is not simply the creation of a more enabling policy environment (Brown, 2019), but also piloting new approaches to upgrading the physical working conditions and trading opportunities for informal traders within the spatial fabric of the city.

3

PLACES OF TRANS-FORMATION: URBAN NUTRITION HUBS

3.1 Urban Nutrition Hubs

Our scoping study yields one unequivocal result: in all three cities, despite the challenges that characterise informal settlements, communities have created spaces that provide access to food and link the provision of food to further social and economic activities. Community centres like Reuben Centre and Mukuru Skills in Nairobi offer services such as school feeding programmes, health services, and vocational training. In Cape Town, community kitchen network organisations including the Callas Foundation, Ubuntu Rural, Gugulethu CAN, and uPhakanini Kitchen provide food to thousands and serve as safer spaces, solidarity forums for victims of violence, and learning centres, particularly for women. Similarly, Foyer Fama provides shelter for domestic migrants in Ouagadougou and their kitchen project offers food and employment opportunities for women. These spaces crystallise communities' social capital and are a loci of urban food system transformation.

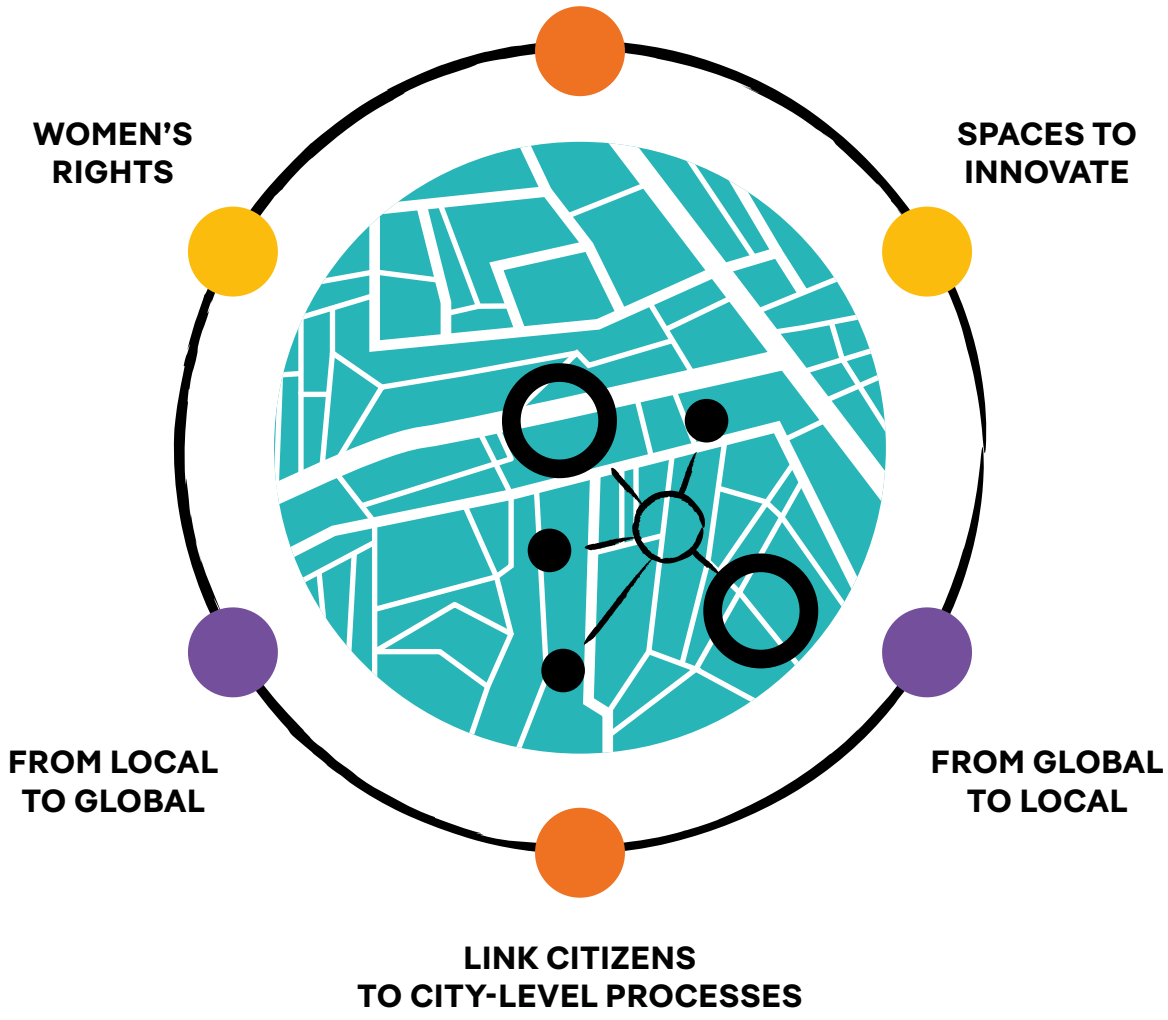
In our experience, these hubs contribute to the availability of and access to food for women, girls, and other vulnerable groups and provide access to social services ranging from education to the creation of safe spaces for women in often very volatile and dangerous environments. Some of these hubs offer employment and economic

opportunities around the distribution and processing of food; for example, in Mukuru, greenhouse production produces leafy vegetables for school feeding programmes. They also capitalise upon and amplify communities' social capital for the progressive realisation of the right to food through awareness raising and networking among vulnerable populations. For example, Cape Town's Callas and uPhakanini community kitchen provided shelter and legal services for women who face gender-based violence at home. In Ouagadougou, Foyer Fama trains women to cook food and sell it on bicycle restaurants in the city.

The results of a mapping exercises during the scoping phase show that the three cities host dozens of communal spaces offering more than just the provision of food and are often linked to schools and other public places. Therefore, we centre our research around existing hubs and build on a joint exercise conducted with partners to envision those spaces as Urban

nutrition hubs. Urban Nutrition Hubs are living labs in real-life settings where solutions to food system challenges emerge. Urban Nutrition Hubs are characterised by multifunctionality. Food is symbolic of identity and collective culture and is often manifested in unpaid care work provided by women on farms, in kitchens, as vendors, or in other communal roles. Urban Nutrition Hubs will serve as places to advocate for women's rights and support the empowerment of women through networking and advocacy programmes.

Figure 3. Our vision for Urban Nutrition Hubs



Urban Nutrition Hubs as living labs

The implementation of the pathways is at the heart of our work in Urban Nutrition Hubs. We see them as spaces for learning, dialogue, and piloting of innovation and will use a living lab approach to enhance transformation and co-creation of knowledge.

The living lab research approach has recently attracted attention as an action research methodology (Almirall et al., 2012; ENoLL, 2015; Kareborn & Stahlbrost, 2009). It represents new models of organising collaborative innovation processes by involving diverse actors, including users, communities, and the business, public, and civil society sectors in tackling current societal challenges (Edwards-Schachter et al., 2012). Living labs can be physical spaces such as the communal hubs in Reuben Centre or virtual spaces such as the kitchen network's digital platforms in Cape Town. ENoLL (2015) defines living labs as user-centred,

THE IMPLEMENTATION OF THE PATHWAYS IS AT THE HEART OF OUR WORK IN URBAN NUTRITION HUBS.

open innovation ecosystems based on a systematic user co-creation approach integrating research and innovation processes in real-life communities and settings. They aim to actively involve citizens and other stakeholders over the long term to co-create innovations (Edwards-Schachter, 2019; Ogonowski, 2013). The main objective of the approach is to co-create and prototype innovations and test them in real-life communities (Yasuoka et al., 2018). Living labs offer a unique action research context to study social and technological innovations since they assign a distinct role to citizens as users and co-producers of knowledge in innovation processes. They are built to respond to and solve societal problems and take advantage of opportunities for transformative action in order to modify social practices and social structures (Edwards-Schachter, 2019).

Analysis of similar places in other contexts offers theoretical underpinning for the development of Urban Nutrition Hubs as spaces where learning, adaption, and change happen. These are environments where collaborative experimentation in real-life settings happens (Bosch et al., 2013; Pereira et al., 2020) and where space is available for linking food-related activities with communal social and economic activities, for example, linking citizens to city-level food policy processes, innovating and piloting local actions for the right to food, and linking local action to international agreements. Urban nutrition hubs are physical spaces where knowledge generation happens and change emerges. They are cohesive spaces where social capital is strengthened and information and knowledge is generated and shared (particularly in hubs offering internet access).

As Pereira et al. (2020) describe, transformation requires a strategic combination of methods and frameworks beyond traditional thinking and quick fixes. The urban nutrition hubs will serve as learning labs for partners and communities and as starting points for the institutionalisation required to scale social and technical innovation beyond these hubs. These spaces could be transformed into Urban Nutrition Hubs for inclusive and climate-resilient food systems. The urban nutrition hub is, therefore, a programmatic vision.

4

FIVE PATHWAYS TO URBAN FOOD SYSTEM TRANSFOR-MATION

TMG's scoping work in the cities of Cape Town, Nairobi, and Ouagadougou explored the question of

How can the immediate food security threats posed by the COVID-19 crisis be addressed and how do the lessons learned from the crisis inform long-term urban food system transformation?

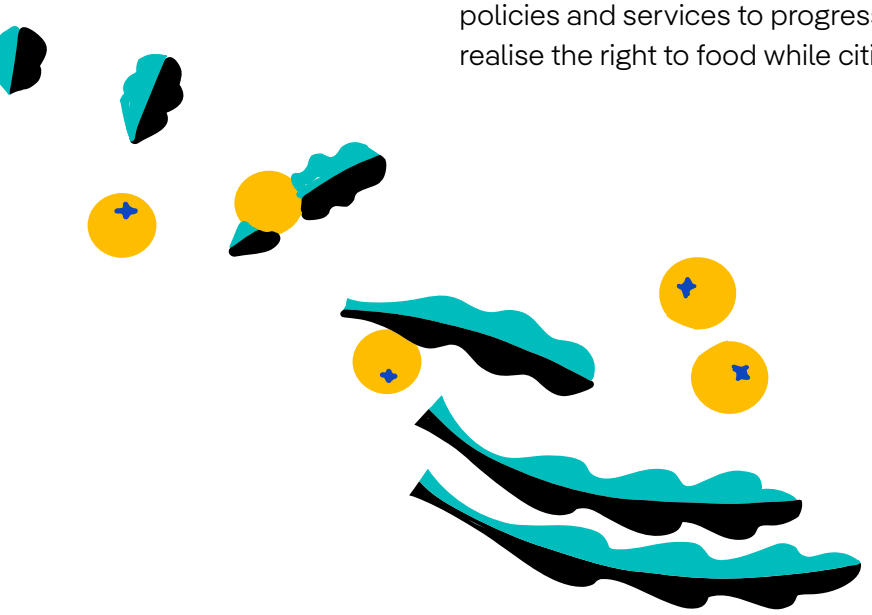
In the scoping phase between 2021 and 2022 we identified five pathways for urban food system transformation which will guide our action research into the next phase of the project. Our systemic analysis of this research requires understanding and awareness of the past, today's structural challenges, and future trends and scenarios. Our approach involves continuous reflection and recognition of different forms of knowledge within our findings.

Simple solutions are attractive and receive political buy-in. In complex and uncertain environments, such as low-income areas and informal settlements, simple solutions are programmed to fail. Instead, we work within interlocking pathways to force a shift in thinking about the multitude of ways food security is achieved within a right to food framework.

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 centres the living lab action research approach in urban nutrition hubs.

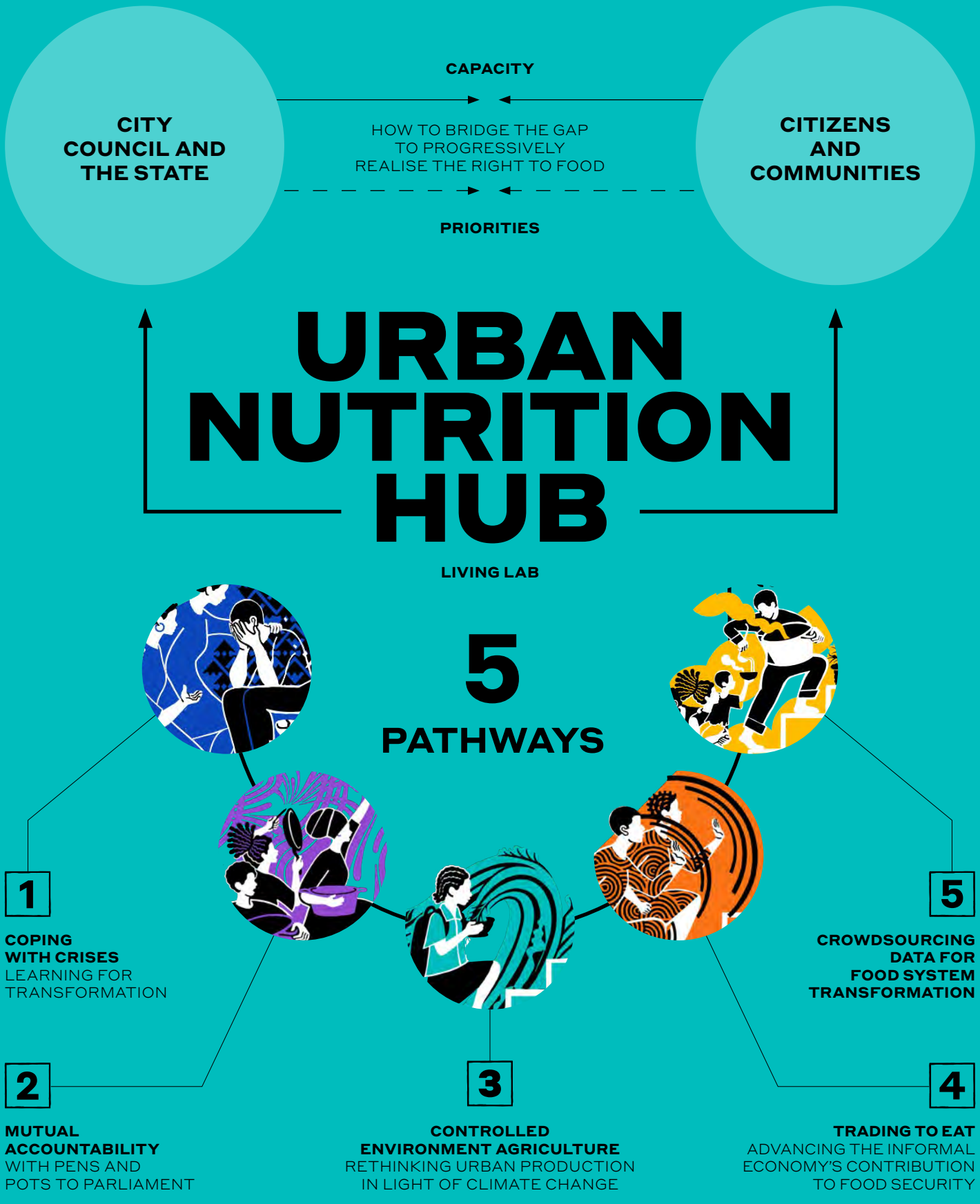
The Urban Food Futures Programme seeks to understand and address the gap between rights holders and duty bearers by unpacking the capacity and willingness of both to engage in dialogue, bridge the gap, and build a shared vision. Through policy events in the research areas, city councils and the state develop policies and services to progressively realise the right to food while citizens self-organise and mobilise action to make food accessible in low-income areas and informal settlements. In the scoping phase, we facilitated co-learning and dialogue between these groups to learn from research and action that facilitates the creation of local models which can inform global debates by providing unique perspectives into lived experiences. The learning process from global to local entails gaining a deeper understanding of today's crises and applying it locally.

These five pathways explicitly address contestation and trade-offs made in the scoping phase. They are the findings of the first project phase and our compass to guide ongoing learning in Cape Town and Nairobi.



THE URBAN FOOD FUTURES PROGRAMME SEEKS TO UNDERSTAND AND ADDRESS THE GAP BETWEEN RIGHTS HOLDERS AND DUTY BEARERS BY UNPACKING THE CAPACITY AND WILLINGNESS OF BOTH TO ENGAGE IN DIALOGUE, BRIDGE THE GAP, AND BUILD A SHARED VISION.

Figure 4. Conceptual framework Urban Food Futures programme



PATHWAY 1

COPING WITH CRISES

LEARNING FOR TRANSFORMATION

Communities in urban low-income areas cope with a multitude of crises. We explored coping strategies that emerged during the COVID-19 pandemic when governments faced massive challenges in addressing food security in times of economic collapse and curfews. This pathway supports transformation processes by learning from bottom-up coping strategies. As part of this pathway, we explore how community kitchens can become scalable by identifying entry points for institutionalised collaboration between local governments and community-based organisations.

Rationale

Building long-term resilience in food systems requires more than the ability to cope and survive during times of crises. Long-term resilience necessitates building capacity to anticipate shocks, to act pre-emptively to minimise their impact, and to adapt. Beyond capacity building and adaptation, long-term resilience also requires us to take into account the knowledge and experiences of communities in crisis. This requires participatory, inclusive, and respectful dialogue that is receptive to historical and cultural issues. Analyses of community-based adaptation initiatives emphasise the importance of local ownership for adaptation success (McNamara et al., 2020). The results of our scoping work show that communities use social capital to develop and apply coping mechanisms. This has inspired us to learn from coping mechanisms to inform long-term resilience programmes and policies.

Two coping mechanisms were at the core of the scoping phase: community kitchens in Cape Town and desk-based research on community-based saving schemes in all three cities.

Community kitchens in Cape Town offered an immediate response to the economic impact of lockdowns by providing food to those in need. Around 90% of community kitchens in Cape Town were set up during the COVID-19 pandemic and its associated lockdowns and loss of income (Paganini et al., 2021a). These kitchens, mostly situated within the Cape Flats, are as diverse as the neighbourhoods they serve. They are often connected to mosques or churches, schools, early childhood development centres, or community centres. They became spaces that offer a rich and often unacknowledged menu of services alongside the plates of food they provide. These include domestic violence support, nutrition advice, childcare or after-school care support, and engagement with gang members. The research conducted to date shows that the work of feeding their communities collectively speaks to the power of women's relationships and their potential to build political voice while increasing agency at both individual and communal levels (Nyaba et al., in press).

The kitchens face major obstacles. Space is one of the obstacles. Of the 21 kitchens operating in Gugulethu in 2021, only one was not situated in a private home. Access to financial resources to maintain the kitchen is another. At the time of our interviews, 76% of the 19 interviewed men and 70 interviewed women volunteers from those kitchens live off social grants (disability grants, pensions, child grants, social grants) and partly contribute those funds to the running costs of the kitchen (Battersby et al., 2022). Hence, the way kitchens currently operate rests upon female volunteers' ability to solicit donations, organise food, cook, and serve (Nyaba et al., in press). During the scoping phase, women reported that most of the kitchens could not sustain their programmes due to staff exhaustion and decreasing donations and governmental financial support and had to close down.

In the scoping phase in Nairobi, Muungano piloted a spin-off of the Cape Town community kitchen to provide food aid in one part of Mukuru's evicted and destroyed settlements. In this action research, we documented the rise of food prices along with the women's learnings 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, the kitchen's future was structured around two themes: first, a place for networking and relationship building and, second, 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 seeking ways to collaborate (Muungano, 2022). The action research and its documentation highlighted the kitchen's pivotal role as a convergence centre for strategising coping mechanisms responding to the evictions and pressuring the government to recognise residents as beneficiaries of the land (Muungano, 2022). In late 2022, people were allowed to resettle and rebuild their homes around the kitchen.

Another coping strategy people increasingly relied on during the COVID-19 pandemic were local saving schemes. In South Africa, saving schemes are known as *stokvels*, in Kenya as *chamas*, and in Burkina Faso as *tontines*. Across the globe, many people save money through informal savings schemes rather than or alongside formal financial services. Savings groups, like other informal safety nets, can foster collective action by providing both finances and enabling collaboration. They are a subset of coping strategies that describe only those strategies that involve drawing support from other households (Devereux, 1999). Members of savings groups come together on a regular basis to discuss common issues they are facing, obtain the support and commitment of individual households for communal action, and form a common front to negotiate with state authorities (Shand & Colenbrander, 2018). In Kenya, members of savings schemes pool their financial resources through regular contributions. Funds are then provided to one member as a lump sum in a merry-go-round or sometimes used collectively for community projects, such as land acquisition of housing upgrades in informal settlements (Weru et al., 2018). In Cape Town, stokvels were highlighted as a sign of hope in 2020, when people waited for the year to end to receive their pay outs to buy

food (Paganini et al., 2021). Savings schemes usually bring people with shared backgrounds together, such as families, neighbours, or people with similar professions. Social capital, therefore, is an important component of savings schemes, as they both build on and reinforce social capital (Ibrahim, 2019; Shand & Colenbrander, 2018). Members trust that other members will continue to participate until everyone has received the lump sum once and will repay their debt if the sum is provided as credit. In situations of food insecurity, some savings groups work with food items instead of money; for example, community kitchens in Cape Town who were networked through the research used their savings to purchase food in bulk, particularly cooking oil, during the early months of the war against Ukraine.

Women play a crucial rule in coping, on both household and community levels. Generally, there is a need to deconstruct the narrative on women who are very often portrayed as victims in need of social assistance (Duncan & Claeys, 2020). According to FAO's 'The state of food security and nutrition in the world' report, women have poorer food security than men, particularly since the war in Ukraine (FAO et al., 2022). However, while gender inequality is increasing, it is often women networks that devise solutions in times of crises. Findings from the scoping phase indicate that well-organised coalitions of women are often at the core of community-developed coping mechanisms (Battersby et al., 2022).

Theory of change

Neither local governments nor local communities can transform food systems alone. Crises have shown that social capital is the capital of the urban poor, particularly of women. However, successful and promising coping mechanisms such as community kitchens in our research sites continue to rely heavily on women's unpaid work and the consumption of their overstretched personal resources such as time, money, cooking spaces, and utensils. While their bottom-up approaches and community-driven solutions proved powerful in the beginning of the pandemic, lack of sustainability of their approach demands change. Further, an enabling environment in which governments and funders shift their focus from occasional support of individual projects to systematic support can scaffold sustainability.

Urban Food Futures creates a co-learning environment to identify how kitchens need to change to become sustainable and how surrounding communities can build

NEITHER LOCAL GOVERNMENTS NOR LOCAL COMMUNITIES CAN TRANSFORM FOOD SYSTEMS ALONE.

a supporting environment for the kitchens. What can government offer to support those initiatives? How might a cooperative model between kitchens, the kitchen network, government, the private sector, and funders look?

This pathway is interlinked with other pathways in the following manner. Our work on accountability (Pathway 2) builds on the social movement grounded in community kitchen work called "With pens and pots to parliament" and links the network to a platform with City of Cape Town officials, the Province of the Western Cape, and the Western Cape Economic Development Programme (WCEDP). Kitchens serve as a social hub in the communities. They are therefore perfect starting points for our work on Pathway 5 to crowdsource data.

What is next?

We will focus on the implementation of this pathway in Cape Town and the work on community kitchens.

1

In Cape Town, the first step is to elaborate what has to change to make the community kitchens successful and sustainable. Therefore, we will develop an action plan and identify four kitchens in which we change and explore collaboration with the private sector and funders to develop sustainable long-term funding mechanisms (third-party or institutional programmes, saving schemes, or private partnerships as inspired by the Latin American model of the cocina populares).

2

Based on those findings, with municipal authorities and communities, we will develop concepts and a cooperative model that could serve as entry points for institutional support. To this end, we will identify kitchens with the potential to be transformed into urban nutrition hubs and pilot different new models.

3

TMG and partners in Cape Town and Nairobi will document crises in numbers and stories from the gendered perspectives of the kitchens. This entails a continuation of research into the notion between gender-based violence and food security. Qualitative research will be shared in a research paper that sheds light on women's roles and struggles in achieving the right to food.

PATHWAY 2

MUTUAL ACCOUNT-ABILITY

WITH PENS AND POTS TO PARLIAMENT

Poverty and social and economic inequality are the structural reasons for the prevalence of hunger and malnutrition. Exclusive decision-making processes contribute to the persistence of inequalities. To progressively realise the right to food, urban food system transformation must enhance accountability and transparency of governments and decision-making processes. Increasing accountability cannot be achieved by working at the grassroots level or with government authorities in isolation of each other. We aim to enhance accountability by empowering grassroot actors to be participants in food governance decision-making processes rather than being passive recipients. As a precondition, governments' capacity to collaborate with grassroots actors needs to be enhanced.

Rationale

Building on their 'State of Food Security and Nutrition' reports, FAO et al. (2021) conclude that *"poverty and inequality are the underlying structural causes of food insecurity and malnutrition in all its forms"* (p. 4). Among the inequalities that perpetuate hunger and malnutrition, FAO et al. (2021) identify inequalities in access to information and the social status of certain groups (socially excluded or marginalised). The report also proves a growing gender gap in food security. This finding mirrors earlier work on conceptualising chronic poverty that highlights *"the forms of social relations that produce poverty, and which are often embedded within political institutions and economic structures"* (Green & Hulme, 2005, p. 867). The persistence of inequalities is the raison d'être of rights-based approaches. The increase in global hunger in 2021 reflects exacerbated inequalities across and within countries due to an unequal pattern of economic recovery among countries and unrecovered income losses among those most affected by the COVID-19 pandemic (FAO et al., 2021).

General comment 12 (§15) on "The right to adequate food" stipulates three levels of State obligations vis-à-vis its citizens to progressively realise this right: the obligations to respect, to protect, and to fulfil.

The obligation to respect existing access to adequate food requires States parties not to take any measures that result in preventing such access. The obligation to protect requires measures by the State to ensure that enterprises or individuals do not deprive individuals of their access to adequate food. The obligation to fulfil (facilitate) means the State must pro-actively engage in activities intended to strengthen people's access to and utilization of resources and means to ensure their livelihood, including food security. Finally, whenever an individual or group is unable, for reasons beyond their control, to enjoy the right to adequate food by the means at their disposal, States have the obligation to fulfil (provide) that right directly. This obligation also applies for persons who are victims of natural or other disasters.

Committee on Economic, Social and Cultural Rights, General Comment 12, 1999.

The Voluntary Guidelines to support the Progressive Realization of the Right to Food (FAO, 2005) aim to support the progressive realisation of the right to food in the context of national food security. While they are not legally binding as such, they provide policy recommendations to states and other stakeholders. In this sense, they recommend that *"states should provide information to individuals to strengthen their ability to participate in food-related policy decisions that may affect them, and to challenge decisions that threaten their right"* (p. 23). Among other things, this also includes that states ensure transparency and accountability in the use of public resources in the area of food security. Furthermore, food should not be used as a tool for political and economic pressure.

Both South Africa and Kenya developed supporting national policies on food security in 2014 and 2011 (GoK, 2011; Government of the Republic of South Africa, 2014). However, despite these broader and encompassing obligations, this has been hard to operationalise and much work lies ahead to find ways to decentralise the current food policies to municipal governments. This includes supporting city-level governments to ensure that food system outcomes are considered within a non-food-sensitive planning approach (Haysom et al., 2022). Burkina Faso has not adopted the right to food in its constitution nor in any other legislative or regulatory text (FAO, 2022b; FIAN Burkina Faso, 2015). However, Burkina Faso is one of the few countries in the sub-region where initiatives directly related to the realisation of the right to food and the implementation of the right to food policies are underway. The right to food was also included in a draft constitution submitted in 2017 (Paktogo, 2021); however, at the time of writing, this has been waylaid by socio-political unrest.

The progressive realisation of the right to food through decision-making on the city and county levels is often perceived as an exclusionary process by communities. Food aid coordination during COVID-19-induced lockdowns is a case in point: community kitchens received expired foods and fisherfolk barred from fishing under lockdown received canned fish. The slogan "nothing about us without us" was used to reflect recipients' desire for a collective voice in food aid consultations. Generally, the reason for government action not meeting communities' needs is a mismatch between the agenda and language used at coordination meetings and what is considered essential from the grassroots perspective (Buthelezi, 2022). According to the People of Mukuru's 2020 Manifesto, in Nairobi, informal food system actors do not have political recognition. To design programmes and policies for food security, decision-making processes need to acknowledge knowledge and insights gathered through participatory processes within communities, such as FACT's food dialogue process (Buthelezi & Metelerkamp, 2022) or Muungano's SPA process (Owade et al., 2022).

During the scoping phase, we analysed two civil society-driven processes that can contribute to citizens being able to hold the state accountable, namely the Muungano's SPA process in Nairobi and FACT's food dialogue process in Cape Town.

1. In the South African context, hunger is related to shame. Hence, a struggle against hunger cannot emerge until hunger is destigmatised for those who experience food insecurity (Paganini et al., 2021b). This means empowering local communities to participate in decision making and enhancing their ability to hold their local government accountable to its obligations. FACT's food dialogues are designed with this aim in mind. Their food dialogues concluded that a deeper understanding of food systems and food insecurity enables citizens to assert and claim their rights (Buthelezi, 2022). This represents a critical shift from government programmes that treat people as recipients of food aid as charitable gifts to a consideration of people as actors in the food system and recognising their legal rights. Further, dialogues led to building community agency to actively contribute to realising that right, rather than silently waiting for state relief. Further, building people's agency through communal action, such as community kitchen work, also encourages people to take direct responsibility for their livelihoods so that they rely on state assistance only when absolutely necessary (Paganini et al., 2021a). In the scoping research, FACT argued that communities remain in the bubble of their own being and doing when undertaking

Source: Nicole Paganini, 2022

small actions, without addressing systemic challenges, their linkages, and their drivers for change.

2. In Nairobi, we analysed the planning process that led to the Special Planning Area (SPA) in Mukuru. The SPA is an integrated development plan which addresses the challenges faced by residents of Mukuru, such as securing land tenure, providing access to basic services, and enhancing access to justice. By developing a plan that addresses these issues and presenting it to the County Government of Nairobi for execution, Muungano Alliance and the more than 40 other stakeholders provided the basis for an inclusive upgrading project for the informal settlement (Owade et al., 2021).

In both cities, there is no single department responsible for urban food security. Several government departments have mandates to govern distinct elements of urban food systems (Haysom et al., 2022). This dispersed public authority further complicates government accountability as the distribution of responsibilities amongst government agencies is often unclear to communities (Kimani et al., 2023; Paganini et al., 2021a). Increasing accountability, therefore, also means creating transparency on various departments' responsibilities and mandates. At the same time, building the capacity of public officials on the actors and inner workings of their own internal responsibilities and mandates is a necessary further element of increasing accountability.

Regarding the progressive realisation of the right to food, there are duty bearers and rights holders. This distinction of roles must be preserved in the realisation of the right to food. This is often challenging in multistakeholder forums such as food councils that bring all food system stakeholders to the same table. Therefore, multistakeholder platforms are often criticised by researchers for "multi-stakeholderism" (Haysom et al., 2022) and for their talkshop character not leading to action by governments (Buthelezi, 2022). Food governance processes must be designed in a way that rights holders and duty bearers are addressed as such. Rights and obligations should not be obliterated by making everyone a stakeholder. Otherwise, there is a risk that these processes exacerbate already substantial power asymmetries among diverse actors.

Theory of change

The theory of change of this pathway includes four elements:

1. **Rights literacy:** To increase accountability, communities must be aware of their rights and possible redress mechanisms. Transparency is equally key. Understanding rights and access to information are preconditions for holding the state accountable.

2. **Supporting spaces for communities to articulate their voice:** The Urban Food Futures Programme will support and work

through the Mukuru SPA process and the food dialogue processes so that communities can articulate their voice.

3. **Mapping responsibilities:** The state is often perceived by community members as incoherent. Between the different spheres of government, there are conflicting policies, ideologies, and agendas that hamper short-term solutions and long-term commitments. In addition to targeted community empowerment and process design, enhancing accountability necessitates a detailed understanding of the different departmental responsibilities, at city, provincial (county), and national levels.

4. A **dialogue process** that links communities' voices with the relevant government bodies: Accountability requires a process to enable communication between communities and the state. Through this process, governments will benefit from a structured exchange with communities to whom they often lack access (Mathekga & Buttus, 2007). This was particularly expressed during the pandemic, when government officials expressed challenges coordinating food relief in informal settlements (van Wyk & Reddy, 2022). Connecting communities with government is a process that requires careful facilitation and well-designed approaches that take the following considerations into account:

- Representation: Our approach encourages people's meaningful participation in food governance processes and addresses accountability of both citizens and governments in a targeted and carefully facilitated actor engagement process. Here, we move away from stand-alone multistakeholder workshops and build a three-year process that is grounded in an engagement strategy on the city level in Nairobi and Cape Town.

- Language: The use of "policy speak" in governance processes often inhibits the active involvement of the very people that such processes intend to serve. If food governance processes intend to address the root causes of vulnerability and hunger, they must make efforts "to speak the local language", both literally and conceptually.

The state is often perceived by community members as incoherent. Between the different spheres of government, communities expressed that they need a detailed understanding of different departmental responsibilities, at the city, provincial (county), and national levels to properly engage the state and identify entry points for accountability. Understanding the state, its mandates and roles is one of the key objectives of our accountability work and the two policy events in Cape Town (November, 2022) and Nairobi (March, 2023)

What is next?

1

Building on the African Centre for Cities' analysis of political mandates, key actors in government will be identified and invited to play a meaningful role in an advisory capacity to the research programme. The mapping of policy mandates in Cape Town will be expanded for programmes and mandates related to the rights to food, food security, and nutrition.

2

FACT and Muungano, who work with communities, will mobilise participatory processes for a greater understanding of the right to food and build on the complete mandate and actor mapping. To do so, both organisations will take part in an external training on the right to food to develop knowledge and capacities to facilitate this process within their communities.

3

Building on TMG's policy events in Nairobi (March 2023) and Cape Town (November 2022), we will develop working groups for the two cities with partner organisations and the city and provincial/county governments on how to progressively realise the right to food through the implementation pathways and urban nutrition hub pilots. Those work groups will meet regularly to accompany and advise the implementation of all pathways.

4

In Cape Town, FACT's food dialogue will run into the third year and results will be systematically shared into governance processes such as the EDP Food Forum, the Center for Excellence Food Imbizo, and a newly established work group with the City of Cape Town. This is part of a threefold process that addresses the ongoing need to destigmatise hunger on the community level through local food dialogues; to identify priorities for change in facilitated processes with municipal authorities and communities; and to test governance participation tools such as collaborative commenting processes on draft bills and programmes such as TMG, ACC, and FACT's contribution to the Municipal Social Development Framework.

5

In Nairobi, Muungano's experience with the demonstration kitchen has resulted in a political process. This allows us to learn from the kitchen as a political space for the programme's next steps in designing a new Special Planning Area process that includes the question of urban nutrition hubs as spaces for transformation. Together with Muungano, we resume the participatory SPA process by adding a food security component.

PATHWAY 3

CONTROLLED ENVIRON-MENT AGRICULTURE

RETHINKING URBAN PRODUCTION IN LIGHT OF CLIMATE CHANGE

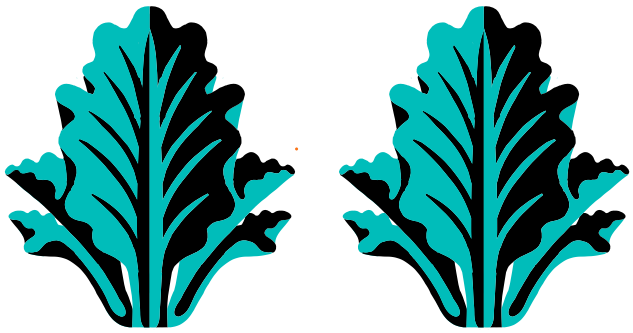
To overcome the hurdles posed by climate change, scarcity of safe urban water, and the thorny issue of land access in urban agriculture, we argue that hydroponic farming in Controlled Environments is an option to boost production of vegetables in urban centres. When hydroponic controlled environment agriculture (CEA) is linked to institutionalised arrangements such as school feeding programmes, it can be a cost-effective prospect for many African cities. In a community centre in an informal settlement in Mukuru, we tested three CEA systems to produce fresh vegetables for school feeding programmes.

Rationale

Urban food systems mainly depend on food produced in peri-urban and rural areas. These areas face numerous climate change impacts such as extreme weather patterns and soil degradation (Bationo & Waswa, 2011; de Bruin et al., 2021, Zimmer et al., 2022). Ofori et al. (2021) report that by 2050, cereal yields in Southern and Western Africa may be reduced by up to 40% due to climate change. Extreme weather events in the three case cities in recent years are indicative of this. In 2018, a severe drought in Cape Town pushed the city to the brink of its water reserves and forced reduction in agriculture water use by up to 60%, severely affecting agricultural production (Mokone, 2018). While in Kenya, unusual rainfall patterns in 2021 cut maize yields across the country (Njeru, 2022). Under open-field production systems, these climatic issues threaten urban and rural farmers alike and highlight the need to find ways of increasing the volume of food grown within cities.

During the scoping phase, we described the state of urban agriculture in three research sites, drawing descriptions from secondary data, interviews with key actors, and public statistics (*see* Sango, 2021; Swanby, 2021; Wairimu, 2021). Within current production systems, small-scale urban farmers in all three cities face significant challenges. Land tenure and lack of space is one critical aspect. In Nairobi, competition for urban space from other land uses such as housing, pushes farmers toward areas that are often inadequate for agriculture, mainly riparian land, road and railway sides, and power line reserves. Many urban farmers lack title deeds for the land they cultivate (Nairobi City County, 2018). In Ouagadougou, agriculture is a tolerated, but illegal, activity. This puts farmers long-term security at risk (Robert et al., 2018). In Cape Town, access to land is difficult, with many farmers annexing whatever small, abandoned pieces of land are available and growing in containers and backyards. Others lease land from public institutions, such as schools or clinics, or directly from municipalities, following a lengthy and unclear process (Paganini, 2021). Although urban agriculture in Cape Town is often conducted on school properties, small-scale urban farmers do not supply school feeding programmes. The corporate structure of school feeding programmes masks the obvious link between urban farms and schools in Cape Town. School feeding in Cape Town is under the provincial government of Western Cape and is slightly different from the rest of the country. The Peninsula School Feeding Association (PSFA), which has been active in the Western Cape for over 60 years, is the National School and Nutrition Programme service provider under a contract that is renewable biannually (Devereux et al., 2018). While the PSFA has succeeded in delivering meals to schools ineligible for the NSNP, school feeding has been criticised for corporatisation through domination by private companies and large-scale agriculture.

URBAN FOOD SYSTEMS MAINLY DEPEND ON FOOD PRODUCED IN PERI-URBAN AND RURAL AREAS.



While urban agriculture is not a panacea to food insecurity as it can only provide a limited amount and selection of crops to meet a city's demand for food (Crush et al., 2012), it can contribute to the supply of some crops such as leafy vegetables. Expanding CEA to urban and peri-urban areas can contribute to cities' supply of fresh produce. There is significant potential for this in Ouagadougou where, in the 1970s, the city's authorities decided to create a peri-urban green belt which the City Council has recently started to rehabilitate, using a peri-urban farming and agroforestry approach. These efforts in Ouagadougou face serious climate challenges which CEA systems could assist in mitigating. In Cape Town, the protection of peri-urban land for agricultural production is gaining traction (Paganini, 2021). The main zone for commercial urban agricultural production is the Philippi Horticultural Area (PHA), a core horticultural zone measuring 1,100 ha and marked by rural features and an aquifer in an urban setting. Approximately half of the vegetables consumed in Cape Town are produced here by no more than 36 commercial farms (Harrison, 2018), but little use of CEA has been applied. In Nairobi, vegetables are the major crops that are grown in peri-urban areas such as Dagoretti, Ruai, and Kasarani. However, many landowners have invested in real estate projects, leading to the disappearance of many farms.

To demonstrate how CEA in urban agriculture could make a contribution to food production for school feeding, we established a greenhouse at Reuben Centre to assess three production systems and document production costs. Our partner, Miramar Foundation, has experience in peri-urban CEA production units and in building greenhouses in arid areas. We introduced their system into the heart of an informal settlement and linked the production unit to the Centre's school feeding programme that hosts more than 3,000 learners, an early childhood centre, and maternity and health care facilities. The demo unit is an 8x15 meter greenhouse and an outdoor hydroponics vertical wall to produce cow peas and collard greens. During the scoping phase, we piloted three hydroponic CEA systems.

- Nutrient Film Technique system (NFT) involves growing crops

by maintaining a film of nutrient solution around the root zone. The nutrient solution is supplied from feeding tanks through nutrient injectors targeting growth areas. Excess nutrient solution is collected in bleeding tanks and pumped back to the feeding tank. Using this system, we produced collard greens, amaranth, spider plant, giant nightshade, Swiss chard, and cow peas.

- Deep Water Culture system (DWC) is a passive system where the plants are encased in a net grow cup and suspended on a floating raft lid. The plant roots are submerged in a nutrient solution that is aerated. This system minimizes labour, inputs, and water loss. Using this system, we produced collard greens, giant nightshade, spider plant, Swiss chard, and cow peas.

- Drip trough system is a system where vital nutrients are added to a tank of water to create a nutrient reservoir which is kept separate from the plants. The water is then pumped up through a network of tubes and is released to the plants individually. Using this system, we produced cabbages, cow peas, and tomatoes.

According to the school feeding coordinator at Reuben Centre, the school feeding programme requires approximately 2,150kg of fresh leafy vegetables per week to feed 3,000 children. Currently, in Reuben Centre, parents pay a lunch fee of KES750[3] per student three times a year, but most parents struggle to raise this amount or to keep up with the payments (Muungano, 2021). In governmental schools, the monthly fee for the school feeding programme is KES250.[4] Since many Mukuru residents earn less than KES150 per day, many families are unable to meet this cost. However, according to the Centre's school feeding coordinator, a combined model with parents contributing, for example, through a saving scheme and an institutionalised system could be an entry point to institutionalise CEA in communal centres under the upcoming National School Lunch Bill.

While establishing the production site, Miramar documented several challenges. Access to water was critical. In the informal settlement, public water supply channels were cut off by cartels who re-sell water at higher prices. Additionally, water must be treated before being used in hydroponic CEA farming to remove sodium (borehole) or chlorine (Nairobi County water). In the first weeks of production, water pumps from the greenhouse were stolen leading to reduction of productivity. While the pumps were replaced by the Centre, a security guard was hired to patrol the greenhouse. Seedlings have been financed by the research

3 KES750 = €6.30 (oanda in September 2022)
4 KES250 = €2.10 (oanda in September 2022)

School feeding programmes

School meals seem to be on everyone's mind, from policy makers to right-to-food advocates, NGO workers to academics. The G20 leaders, in their declaration following their annual meeting in November 2022, highlighted school feeding as a potential solution to address food and nutrition security. The realisation of its importance during the pandemic is what prompted one of the largest current initiatives for promoting school feeding: the School Meals Coalition. The School Meals Coalition is an initiative of national governments, development partners, universities, and non-profit organisations that was created in the lead-up to the 2021 United Nations Food Systems Summit.

In Kenya, school feeding was introduced in 1987 by a government-supported institution called the National School Feeding Council. Government school feeding in Kenya reaches only children in primary school and geographically targets schools in arid and semi-arid lands and in Nairobi's unplanned settlements (WFP & EPRI, 2018). Currently, the government is not providing school meals in informal settlements. Our partner, Muungano, explored school feeding programmes in Mukuru. The six government-operated schools with feeding programmes in Mukuru accommodate only 9,000 of the roughly 120,000 school-aged children in the settlement. Exploring the 147 schools in the informal system could provide access to those children who do not benefit from government fee and meal subsidies.

project while labour for construction and harvesting was partly provided by trainee volunteers. The Centre covered water and electricity costs. Based on the trial, the scale-out programmes would have to take into account lessons learned from the pilot, particularly around water sources, theft, and cost sharing.

The analysis of the production systems presumes that a temperature-controlled system allows crops to grow year-round regardless of the weather. Since the start of production in April 2022, the system provided continuous supply of fresh vegetables with less water than at Miramar's control unit, which is a soil-based production unit in the peri-urban area. For example, spinach grown in CEA require 4,886 L/m²/year (NFT) and 2,443 L/m²/year (DWC) compared to 8,523 L/m²/year under soil-based production (Griebel et al., 2022). While this is one example, the tendency for all crops is that the use of water is less than in soil-based systems (Griebel et al., 2022). The documentation for

the first three months of production shows that the growing periods are shorter than in soil-based farming. Spinach takes 4.5 weeks to mature in NFT, 5 weeks in DWC, and 5.5 weeks in conventional open-field production. Yield estimates in CEA systems are higher because of shorter vegetation periods, but more importantly, the system can produce more plants per square meter than conventional systems. Based on current production numbers, Miramar estimates 1,232kg/m^2/year of spinach can be grown in the NFT system, 770 kg/m^2/year in DWC, and 304 kg/m^2/year in soil-based productions (Griebel et al., 2022).

Source: Victoria Redmond, 2022

Reuben Centre needs 2,150kg of leafy vegetables per week (111,800kg per year). To date, the best CEA system is only providing 1% of the projected need. And, if each student pays 750KES three times a year into the programme, then over 10% of the school-feeding programme's budget will be consumed by a CEA project that produces less than 1% of their food needs. Therefore, the programme does not only need to address the technical aspects of production, but also develop a financial system that makes CEA an economically viable option to produce for the school feeding programme.

Theory of change

The projected climate change impacts are at the centre of this pathway's theory of change. Annual mean temperature and extreme heat events continue to increase and strongly affect water availability. Controlled Environment Agriculture is a new technology in most rural areas, let alone urban centres. Yet, the global trends outlined earlier force us to innovate with new technologies to prepare for the projected future. The Urban Food Futures Programme will develop a suitable hydroponic production system. Once established, we will explore long-term financing options to cover maintenance costs. Promising entry points to that end are fees for school feeding paid by parents and school feeding programmes, such as the "National School Lunch Bill" in Kenya.

What is next?

Given that the technology to be used is still under development and that this is done by a Kenyan organisation, the implementation of this pathway will focus on Nairobi.

1

We will adapt a CEA system for production for school feeding programmes in terms of yield, running costs, and environmental benefits in informal settlements in Nairobi. Building on those lessons, we will explore the construction of a further production unit in Mukuru.

2

One research output will be year-long documentation of maintenance costs including agricultural inputs. Miramar started to document these costs in April 2022.

3

We will conclude our research on the necessary "social infrastructure" needed to maintain CEA systems, including the management structures needed to protect and maintain the physical infrastructure and potential training opportunities.

4

In Nairobi, we will engage the Nairobi Governor in a dialogue to explore how Controlled Environment Agriculture could be considered within school feeding programmes, as, for example, supported by the National School Meal Bill.

PATHWAY 4

TRADING TO EAT

ADVANCING THE INFORMAL ECONOMY'S CONTRIBUTION TO FOOD SECURITY

Punitive policies toward informal trade and weak protective mechanisms against economic displacement by formal entities inhibits access to food by food-insecure population groups. However, it does not need to be this way. A food-sensitive approach to urban planning valorises informal traders as allies in cities' efforts to eradicate hunger and malnutrition. This food-sensitive perspective highlights the need for more careful consideration of how wider spatial and urban planning processes interact with informal trade and the implications of this on urban diets and food security. Within this pathway, we will work with food vendors, other informal traders, and municipalities to rethink and shift the regulatory environment surrounding the informal economy.

Rationale

In cities, access to livelihoods and income, not farmland, is what puts food on the table (Haysom et al., 2022). Unemployment combined with extractive and exclusionary economic growth and development exacerbate food insecurity in African cities (Battersby, 2013, 2017b; Crush et al., 2012). In juxtaposition to this, informal trade offers opportunities for the urban poor to access incomes and contribute to the circulation of wealth in food-insecure communities. Scarcity of formal jobs and the systemic exclusion many poor people face based on factors such as education, language, or gender, puts poor urbanites at high risk of food insecurity. Informal-economy livelihoods are an important safety net for food-insecure communities across most African cities. This is particularly true for women and youth. Yet, there is a paucity of empirical data detailing the extent to which informal livelihoods contribute to ensuring food security at a household and city level, and how the effects of differing approaches to the regulation or promotion of informal livelihoods in different cities have affected the overall rates of food security in these cities.

While the overall attitude of urban governance arrangements toward informality can be described as negligent and, at times, hostile, approaches to dealing with informality differ significantly in the cities where we are working, including aspects such as permitting, social protection mechanisms, investments into public infrastructure, law-enforcement, and support for micro-enterprises. These differences relate not only to the way in which the state attempts to govern informality, but also the increasingly powerful role the private sector plays in shaping the lives of those who rely on informal trade for their next meal (Hauser et al., 2022; Pieterse et al., 2020). As Hauser et al. (2022) note in their study of food flows in Nairobi and Cape Town, informal traders in Cape Town tend to augment bulk purchasing from supermarkets, while in Mukuru, informal vendors still form the backbone of food procurement in informal settlements. However, irrespective of contextual differences, laws and policies in the case study cities still tend to discourage and legally hamper the informal economy, rather than support its flourishing (Hauser et al., 2022; Haysom et al., 2022; Pieterse et al., 2020). This is reflected across a range of by-laws, clean-ups, and law enforcement attitudes which actively penalise and persecute informal traders (Haysom et al., 2022).

In contrast, our work in the scoping phase drew attention to the important contributions informal food vendors make to the urban food system. In Mukuru, for example, informal food traders are vital in facilitating a diversity of food flows across the rural-urban divide for lower-income consumers. As our scoping work on food environments notes: *“Most urban poor living in*

settlements are informal workers. [Of these] food vendors represent the last mile delivery mechanism in urban settlements. If they fail, much of the food delivery fails, let alone the employment effects at risk" (Hauser et al., 2022, p. 33). This research also highlighted the need to invest in improving hygiene standards and basic facilities for vendors, while also working to establish representative associations through which food vendors could proactively advocate for their rights and mobilise to deal with the challenges they encounter (Hauser et al., 2022).

Partner insights from both Mukuru and the Cape Flats also indicate that informal traders lack a degree of organisation. In Mukuru, traders lack trust to form associations or collaborate in terms of transport and space, while in Cape Town, there is a stark contrast between South African traders and foreign nationals in the informal economy, with the latter exhibiting a much higher level of organisation and linked into much wider networks of procurement and distribution. However, the lack of a collective voice means traders are missing from the table when it comes to policy debates and wider discussions around food governance. Once again, this is true not just for food traders, but for most actors in the wider informal economy whose livelihoods serve as a critical safety net for so many food-insecure households. Similarly, planners, policy makers, activists, and researchers struggle to connect with this sector, tending to have limited interactions with informal traders and their representative associations. Given the highly fragmented and often survivalist nature of the informal economy, it is not hard to understand why these two systems struggle to sustain a meaningful connection. Unfortunately, this disconnect tends to ostracize informality from mainstream governance processes and undervalues the informal economy's contribution to dealing with hunger in African cities.

However, re-valorising the informal economy is about more than just survival, it's about working to create an enabling environment within which small business owners and everyday citizens can thrive. In a study of over 10,000 South African township micro-enterprises, 75% of all respondents stated that they preferred owning their own business to a minimum wage retail job in the formal sector (SLF, 2016). As a Cape Town trader in a later study (Metelerkamp & Van Breda, 2020) noted, *"I have been generating my own profit and I'm also my own boss. I enjoy being an entrepreneur"* or in the words of a small township tailor, *"I loved making dresses from an early age. I love what I am doing. I love to see people smile when they get their dresses"* (p. 11). Furthermore, as Alcock (2018) points out, many in the informal economy are making equal if not better money than they would in the formal economy. Add to this the fact that informal jobs tend to be closer to where people live, along with the sense of identity and purpose many

informal economy operators get from offering meaningful services such as childcare or catering to their own communities (Metelerkamp & Van Breda, 2020), and it's not hard to understand why the informal economy is far more than just an option of last resort.

Many other emerging economy cities in the South such as Bogotá or Mexico City have successfully managed to integrate informal traders into the fabric of their city's economies and food systems in positive ways (Abramo, 2021; Calderon Díaz, 2018). These are experiences in other world regions that can inform policy reforms on informality in Cape Town and Nairobi.

Theory of change

Our scoping work sheds light on the scarcity of effective sectoral organisations in Nairobi and raised the need to invest in organisational structures for informal traders. We learnt from Cape Town that traders cooperatives and other forms of association provide the structures that allow informal traders to challenge the policies that hold them back, adapt in response to crises, and improve the conditions of their work environment. This requires partnership with government actors to foster their role in transformation processes by developing a targeted research pathway. For TMG, this means working to improve the physical market spaces and trading zones in which the informal economy operates. Amplifying traders' voices, creating more enabling trading environments, and providing traders a mechanism to inform policy through their own research will further enhance the vital role the informal economy already plays in creating vibrant, safe, and hunger-free cities.

What is next?

1

In Nairobi, we will work to establish food vendor associations in Mukuru. Given that informal food vendors in Mukuru sit at the intersection between consumers, distributors, and producers, the proposed association will strengthen Mukuru vendors' voices as they call for government interventions to promote food security within the slum. This undertaking is grounded in scoping research carried out by TMG and partners on the needs of the informal sector. This process will be facilitated by Muungano. We anticipate the vendors associations will call for physical upgrades of their existing informal market.

2

A desktop study will review examples from other cities' experiences in working with the informal sector. The study will catalyse a wider conversation around informal traders, their contribution to food security in their communities, and their role as vital knowledge partners.

PATHWAY 5

CROWD-SOURCING DATA FOR FOOD SYSTEM TRANSFOR-MATION

There is a lack of data on the state of food security in informal settlements that is sufficiently detailed to help design crises responses and get a deeper understanding of the day-to-day challenges people face in their food environments. We will pilot a digital system to crowdsource data on the informal sector in Cape Town and Nairobi. Crowdsourcing data by and for communities addresses critical knowledge gaps for decision makers. Further, when communities generate data, it produces learning around "who and what is visible" when designing crises response programmes and policies.

Rationale

The World Bank's 2021 report "Data for Better Lives" advocates for data that is created and used by civil society and science to harness the value of data from and for the poor. Community-generated data offers much-needed insights into the level and drivers of food insecurity by and of those who suffer from hunger. It provides a way to monitor governmental programmes and their impacts. It is also an evidence-based method for citizens to advocate for themselves and their right to food within their communities. The High Level Panel of Experts (HLPE) advocates for the need to involve vulnerable groups in data generation processes that substantiate evidence-informed decision making (HLPE, 2022). According to their report on data governance, data gaps restrict action and policymaking, in terms of timely and site-specific data on people's ability to access food and on their actual food and nutritional status.

Experiences with crowdsourcing data show that it empowers local actors with information and new vocabularies they require to assume their rightful positions as experts and agents of change within larger processes (Enqvist et al., 2022). Our research has shown a similar impact. Co-analysing data such as FACT's food security study (Paganini et al., 2021a) or Muungano's SPA process (Owade et al., 2022) has led to ownership of research processes and community empowerment by those who played an active part as community researchers. Crowdsourcing data provides new perspectives on structural reasons for food insecurity by zooming in on a specific location.

Governments and civil society often lack information to respond to crises, especially when time is scarce and crises are multifaceted (Haysom et al., 2022). The World Bank has been generating community monitoring data to serve as a basis for decision-making around pandemic recovery supports (World Bank, 2022a), however, a lack of disaggregated data at the city level meant informal settlements were overlooked by the World Bank's analysis. Similarly, the FAO's food security monitoring data (FIES) provides country-level statistics but fails to provide insights into specific

GOVERNMENTS AND CIVIL SOCIETY OFTEN LACK INFORMATION TO RESPOND TO CRISES, ESPECIALLY WHEN TIME IS SCARCE AND CRISES ARE MULTIFACETED.

sites in Mukuru, the Cape Flats, and Grand Ouagadougou. In our scoping phase, partner organisations from civil society and academia argue that there is a need for spatially decentralised disaggregated data to inform the design of crisis responses in programmes and policies for food system transformation (Cape Town Policy Event, November 2022).

The results of our scoping phase show that while city-aggregated data on food security status is publicly available, the lack of place-specific information from informal and low-income areas hampered targeted decision-making processes for both short-term crises responses such as food relief and long-term interventions such as programmatic support for transformative innovations (Haysom et al., 2022).

TMG Research (2022) shows that digital technologies are an increasingly pervasive force across all spheres of contemporary life, with cities leading this transition as catalytic spaces for digital innovations. Nairobi and Cape Town are two of Africa's major tech-hubs and home to very active digital ecosystems and start-up cultures that are shaping the digital future of the surrounding region. Our experiences from the COVID-19 pandemic have shown that digital tools as means to collect data (for example, FACT's food security study using KoBoToolbox), to communicate (for example, Muungano's video diaries), and to co-analyse (for example, TMG's digital workshops) can allow us to gain a place-based perspective on food systems and their challenges.

However, as of now, the digital boom appears to have made little difference to combating food insecurity over the past decade. There is a risk that digital inequality will further exacerbate these issues (Atiase et al., 2020). To address the digital divide, TMG invested in digital equipment on behalf of partners (smartphones, tablets) and has supported communication by providing access to data bundles. The trend toward increasing digitalisation is a reality that is here to stay. However, it requires a shift in infrastructure to increase connectivity. Therefore, crowdsourcing data contributes to closing critical knowledge gaps and to community empowerment, while as contributing to developing low-cost digital tools to facilitate their long-term application.

Theory of change

Strategies to address food and nutrition insecurity in informal settlements and low-income areas require solutions beyond traditional strategies that are often focussed on production-oriented solutions. If those had worked in the past, lives in informal settlements would look different today. Transformative changes to improve urban food security and nutrition must employ different strategies informed by local realities and must centre the consumer perspective. This requires a commitment to understanding the complex realities of urban low-income areas and informal settlements and acknowledge the

drivers of food insecurity, particularly in the light of crises. Crowdsourced data will allow community networks, decision makers, and funders to better understand local realities while addressing the invisibility of communities living in informal settlements and low-income areas and surfacing their contributions to food system transformation. The datasets will allow us to understand how crises impact the informal sector and urban nutrition. Crowdsourcing data closes critical knowledge gaps across the Urban Food Futures programme's research sites and the implementation of the pathways.

What is next?

In conjunction with our partners, TMG will develop a digital monitoring tool grounded in civic engagement with respective municipalities. The data will be generated through digital platforms that allow crowdsourcing from multiple types of sources (in-person interviews, text messages, smart phones). Partners in the study cities will work with communities to facilitate this process. Joint analysis with the consortium partners will be led by TMG.

This requires:

1

Learning from other community-based monitoring systems. One example of a community-led monitoring system is the "Peoples' Monitoring Toolkit for the Right to Food and Nutrition" that sets guiding questions to help communities and civil society organisations self-assess the implementation of the right to food in their region (Global Network for the Right to Food and Nutrition, 2021).

2

Enhancing the digital monitoring and co-learning approach of TMG's Urban Food Futures Programme by providing quantitative and qualitative data to feed into scientific debates, enrich global policy events with grassroot research, and foster South–South learning processes across the three cities. This will allow TMG and its partners to amend action research conducted via the urban nutrition hubs as informed by communities' needs and provide fact-based results to enable decision-making processes while strengthening partners' capacity to collaborate with other actors including city authorities.

3

Extending the community monitoring conducted by FACT in 2020 and Muungano in 2021 in informal settlements and gathering first-hand data in informal settlements and low-income areas. We will develop a questionnaire that includes quantitative and qualitative data on urban nutrition and the informal sector.

Source: Natalie Nolte, 2022

5

FROM HERE, WHERE TO?

TMG's impact, along with a consortium of partners from civil society, academia, and local governments, is the systematic analysis of research for policy, science, and practice. This requires a reflexive process between us, as partners, whereby monitoring and co-learning become necessarily positioned and constructed in relation to the social–economic–political subjectivities of the cities we are working in.

Pathways are our approach to urban food system transformation. When we accept that our world is a complex system, our idea of planning for change needs to change fundamentally. While simple, linear, quantifiable solutions hold great appeal to time- and resource-strapped decisionmakers, they rarely address system complexity. The number of relationships and feedback loops in complex systems turns simple cause-and-effect planning untenable. Rather, funnelling external support into only one facet of complex problems runs the risk of disrupting the equilibrium of informal systems and creating unintended, sometimes worse, consequences. It is therefore important to take an approach that minimises risks while maximising continuous iteration of learning, debates, and change.

By allowing communities to respond to their challenges via their self-selected participation in a series of pathways, our work weaves together a multi-faceted support system that is responsive to local needs and lived realities. Like braided fibres, we view these

pathways as mutually strengthening each pathways' transformation potential. The pathways will provide local, disaggregated data to inform dialogue across research sites, countries, and the global sustainability community; at the same time, active engagement in the pathways will bridge informal communities with their local municipalities and national governments to legitimise and legalise informal coping strategies which uphold the right to food. When the pathways are embedded in an enabling environment (and not apolitical activism), they are the driving forces of transformation.

5.1 Urban Food Futures Partner Consortium

Urban Food Futures is a transdisciplinary action-research programme conducted in cooperation with TMG's partners from local governments, academia, and civil society. Our work is centred in Nairobi and Cape Town, where we focus on informal settlements and low-income areas with a high prevalence of hunger and poverty. Our action research approach involves an ongoing process of joint reflection to arrive at a shared knowledge and understanding of challenges faced, possible solutions, and future perspectives. A key element in this is acknowledging different forms of knowledge, as well as the lived experiences of people in the communities where we work.

TMG Research is a not-for-profit, transdisciplinary research organisation guided by the overall mission of fostering inclusive processes to drive transformative socioeconomic change within planetary boundaries. With funding from the German Federal Ministry of Economic Cooperation and Development (BMZ), TMG leads the action-research within Urban Food Futures and coordinates the co-development of activities and concepts with its wide range of partners.

African Centre for Cities (ACC) is an interdisciplinary hub at the University of Cape Town conducting research on how to understand, recast and address pressing urban crises. Since most urban challenges—for example, food security, climate change adaptation, economic inclusion, cultural vitality, and tolerance—are inherently interdisciplinary and spatially layered, ACC nurtures the co-production of knowledge between academia and other social sectors.

African Population Health Research Center (APHRC) is a progressive African-led research centre and thinktank, generating evidence to drive policy action to improve the health and wellbeing of African people. The centre's research priorities fall within six thematic units: Aging and Development, Education and Youth Empowerment, Health and Systems for Health, Maternal and Child Wellbeing, Population Dynamics and Sexual Reproductive Health, and Urbanization and Wellbeing in Africa.

Food Agency Cape Town (FACT) is a community-led organisation using food to unpack social injustices in Cape Town. FACT are consumers, farmers, fisherfolk, activists, poets, podcasters, mothers and fathers, and researchers (but not academics). Since 2016, FACT has engaged in co-research in projects on food justice, urban agriculture, food agency, food security, power, and politics.

Heinrich Böll Foundation (HBF) is the German Green Political Foundation. Affiliated to the "Alliance '90 / The Greens" political party represented in Germany's federal parliament and based in Berlin, HBF conducts and supports civic educational activities worldwide. The Foundations' office in South Africa is based in Cape Town and works on four programmes: Democracy & Social Justice, Human Rights & Gender Justice, Sustainable Development, and International Politics & Dialogue.

Miramar International Foundation (MIF) is the executive arm of the Miramar International College. The foundation's mandate is youth empowerment and socio-economic transformation through agribusiness development, education, and vocational training focusing on modern crop production practices such as hydroponics and aquaponics.

Muungano wa Wanavijiji is a social movement of 'slum' residents and urban poor people in Kenya. Through the Muugano Alliance, Muungano wa Wanavijiji collaborates with the Akiba Mashinani Trust, the Kenyan urban poor fund, and Slum Dwellers International (SDI) Kenya, an NGO providing professional and technical support. The three entities work together to improve the quality of life of slum dwellers and urban poor people in Kenya through a process of policy advocacy and dialogue with central and local government, civil society, and private sector organisations.

Welthungerhilfe (WHH) is one of the largest private aid organisations in Germany, without political or religious affiliation. WHH works toward a world in which everyone can lead a self-determined life in dignity and justice, free from hunger and poverty.

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