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A study on current and future realities for urban food security in South Africa

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EXECUTIVE SUMMARY

'Suppose I told you that New York City had the opportunity to create thousands of new jobs – but we just weren't doing it. You'd probably be pretty upset. Now suppose I went on to say that we've actually had that opportunity for years, we just weren't paying close enough attention. I bet you'd all have some choice words for me – the kind that shouldn't be repeated in polite company.

Alright, now suppose I told you that by taking steps to create those jobs, we could also improve public health and reduce our energy consumption. We could fight childhood obesity and asthma. We could keep millions of dollars in the local economy, instead of sending those dollars across the country or around the world. But we still weren't doing it.

Well the fact is, we have been ignoring those exact opportunities. For years, we've been missing a chance to create a greener, healthier, and more economically vibrant city. How? By ignoring the enormous potential of our city's food system.' (Quinn 2009)

There are currently high levels of food insecurity in South African cities. The SANHANES survey found national prevalence of households at risk of hunger to be 28% and those experiencing hunger at 26%. The equivalent figures in urban informal areas were 32% and 36% respectively. The figures are reinforced by case studies which consistently show high levels of food insecurity. With regard to trends: nationally food insecurity was in decline, but it appears to have plateaued. Ever increasing food prices and other price shocks suggest that levels of urban food insecurity are unlikely to improve.

Urban food insecurity is characterised by low dietary diversity, high malnutrition and obesity, and distinct hunger seasons. This is caused by both household and extra-household scale factors including: Household income, income stability, household structure, and household asset base. The extra-household scale factors include geographic access to a range of sources of food, access to transport and stability of food prices.

Households themselves engage in strategies to mitigate food insecurity, which may increase household vulnerability to food insecurity in the longer term. These include consumption smoothing and accessing credit.

The brief for the study requested a particular focus on urban agriculture as this is the most common programmatic response by municipalities to food insecurity. However, in reviewing national large-scale surveys and smaller case studies, very little evidence was found to support the assertion that urban agriculture is an effective means of addressing food insecurity for the most vulnerable households. Uptake of urban food production varies widely across the country, but is generally low. There is an extremely weak evidence base on what is being produced, by whom and how production impacts food security. Without such data the dominance of urban agriculture as the programmatic response cannot be justified.

Food system

Food insecurity is fundamentally linked to the structure of the food system. This provides an increased scope for municipalities to develop food security policies and programmes as the food system is clearly impacted by work conducted under existing mandates.

South Africa is food secure at a national scale, meaning that it currently either produces sufficient food or can import sufficient food to meet the food needs of its residents. However, the food system has become increasingly consolidated in the last two decades. South African agriculture has become more export oriented and is increasingly dependent on imports. There are concerns about the increased presence of highly processed foods as a result of this, and about exposure to price fluctuations. A further concern is that the deregulation of the food system has made it harder to track food within the system, thus generating critical data gaps which make governance more difficult.

Much of the focus on food security at the national scale has been on production, despite this being only one aspect of the system that delivers food to the urban poor. Many components of the food system operate in and around urban areas (production, warehousing, logistics, Fresh Produce Markets, processing, retail). There is therefore a major opportunity for local government to influence the food system.

Peri-urban agriculture (commercial and subsistence) potentially plays a role in generating food system conditions that can enhance food security. However, this land is under considerable development pressure. There is a need for local government to pro-actively include food production and the food system in land-use decision making. Local government should view food production along a continuum from household production to commercial agriculture and develop an understanding of the role that agricultural land can play in achieving broader (i.e. not food security alone) municipal objectives.

Households depend on a range of formal and informal retailers to access food at different points in order to maximise their potential food security. It is therefore imperative that both formal and informal retail are viewed as critical nodes in the food system; planned for and supported accordingly.

The food system is a major generator of waste, much of this within urban areas. Addressing food waste is one means by which municipalities can improve local sustainability.

The food system is dependent on several other systems (energy, water, transport, space) and is therefore vulnerable to a number of mega-trends. Strategies to increase food system resilience at the local scale should be supported.

Policy

An overview of key national policies which inform Provincial and Local Government responses to food insecurity is provided. This analysis finds that these national policies and strategies neglect the urban, and focus on production-based or safety net-based solutions, with some focus on addressing food choice. These policies leave little space for municipalities to develop appropriate responses, and leaves food insecurity as an unfunded mandate. However, the NDP and IUDF seem to elevate the role of local government.

A review of the current IDPs of the SACN member cities finds a dependence on national framing approaches of enhancing food production and social safety nets. However, a number of cities attempt innovative approaches such as:

- Recognising the role of the Fresh Produce Market as a means to generate a more inclusive food system (Buffalo City)
- Recognising the municipal role in the characteristics of value chains (Ekurhuleni and Johannesburg)
- Recognising the need for planning to consider the generation of food networks (Ekurhuleni), and the need to understand the spatial determinants of food insecurity (Johannesburg, Mangaung)
- Connecting food security to climate change mitigation strategies (eThekweni, Cape Town)
- Developing a co-ordinated multi-pronged approach to food security (Johannesburg)
- The need to engage stakeholders outside of municipal government (Johannesburg)
- Conducting baseline evaluations to determine different levels of food security in different municipal wards (Johannesburg)

A review of constitutional mandates reveals a far broader set of responsibilities regarding the food system, which enables municipalities to generate novel policy approaches. The SACN has an important role in connecting municipalities to learn from each other, and in advocating to national government for greater consideration of the urban within food security policy and strategy documents.

Because food security and food systems are complex, their challenges cannot be addressed by local government alone. It is therefore essential to engage a range of stakeholders. It is argued that the State has two important roles to play in stakeholder engagement - a Convening role and a Mediating role, to ensure that no single perspective dominates. This is important in the context of systemic inequalities in South African cities and in the South African food system.

The stakeholder engagement process is therefore a) mapping of key stakeholder groups representing all stages of urban food systems, b) development of key stakeholder groups for ongoing engagement, c) identification and engagement with stakeholders specific to planned areas of policy and programme focus. In a second phase, this can be expanded up by d) sustained engagement with stakeholder groups through facilitated social dialogue and scenario planning processes. e) institutionalisation of democratic and representative stakeholder forums and networks.

Recommendations

The report puts forward a number of recommendations which have been condensed into three policy briefs that are packaged as individual products of this project. Furthermore, future South African food system scenarios have been developed that zoom into a trajectory through to 2030.

Municipalities need to develop an overarching approach and strategy to address food insecurity, informed by a systems perspective. This would start with the development of a Food Charter and a stakeholder engagement platform and would ultimately lead to an Urban Food Strategy.

A review of international models of good practice and specific interventions is provided. The most productive interventions are those that are aligned to wider municipal objectives or connected different parts of the food system. It was also noted that successful interventions are based on a strategic approach. An approach that is based on over-coming acknowledged barriers to food system planning is therefore suggested. An overarching Strategy is essential to prevent projects being isolated and ad hoc, as is currently the case. It is suggested that the municipalities identify a few projects that are likely to have quick implementation and easily monitor-able outcomes. These projects should always include more than one department in order to generate shared understanding of the problem and relationships across departments. This approach will enhance integration thus reducing the perception that the Strategy is removed from the core business of many departments.

The following recommendations are made:

- There is a need for greater monitoring of food security and food systems.
- The SACN can play an on-going role through engaging national government to request amendments to data collection and disaggregation approaches, and by serving as a platform for horizontal learning.
- Municipalities should establish a food security oversight structure.

A series of specific interventions are also provided. These are:

1. Improve the evidence base on food insecurity, including household dietary diversity.

- a) Use the SACN as a convening mechanism to request that the General Household Survey include a measure of dietary diversity. Additionally, it could argue for the inclusion of a credible food security question in the upcoming Community Survey.
- b) Partner with local research institutions to conduct food security surveys which would enable better targeting of food security interventions.

2. Develop strategies to respond to the temporal dimensions of food security, including time specific state and NGO safety nets, such as soup kitchens. Municipalities can also partner with NGOs, such as SaveAct, to increase access to less exploitative lending mechanisms.

3. Aspects like refrigeration and storage should be considered in planning of new residential and upgrading of informal settlements. Low energy, safe cooking technologies, such as the WonderBag, should be promoted in order to enhance food utilization. This was trialled in Malmesbury in the Western Cape.

4. Urban agriculture:

- a. There must be better monitoring of urban agriculture in terms of who is benefiting, what is being grown, and where the food goes.
- b. There is a need to understand why projects fail to thrive.
- c. Municipalities should partner with NGOs, where possible, to increase the impact of projects. The City of Cape Town has a contract with an NGO to assist with training, for example.

5. Food price monitoring:

- a. Through the SACN, municipalities should motivate for monitoring of food prices which better represents the purchasing patterns of the urban poor.
- b. Municipalities can advertise prices of a small cluster of basic food items to enable consumers to shop more cost effectively. This has been done in Belo Horizonte in Brazil.

6. Better data for food system monitoring:

- a. Advocate, through the SACN, for more appropriate data to be available to municipalities to help them monitor the food system. This would include better disaggregated data on food production, and a request for the Human Rights Commission to aid the State in accessing data on food flows within the private sector.
- b. Municipalities should better monitor food security projects, including urban agriculture. Furthermore, data on what is being produced by food processors within the cities should be gathered annually.

7. **Food production:**

- a. Work with Provincial government to develop strategies to include food production as a consideration in land use planning, particularly with reference to amendments to the urban edge.
- b. Audit of all land used for urban food production, and available for urban food production (from subsistence to commercial scale), to better facilitate integrated planning for food production.
- c. Include urban food production, in all its forms, in wider urban planning to achieve municipal strategic goals (i.e. remove urban agriculture from its food security ghetto).

8. **Integrate food transport planning, formal and informal, into transport planning:**

- a. Connect food retail space planning, formal and informal, to transport planning

9. Acknowledge the critical role that **Fresh Produce Markets** play in the urban food system, and their role in generating secondary food and logistical business opportunities. Ensure equitable and transparent pricing regimes at FPMs.

10. **Support agro-processing**, particularly SMMEs, as a key point of potential employment generation.

- a. Use agro-processing as a magnet to attract employment into low-income areas.
- b. Monitor what food is produced and provide incentives for companies that produce healthier foods.

11. **Retail:**

- a. Monitor the expansion of the supermarket sector in terms of location and floor space.
- b. Create an internal municipal dialogue on the development of food retail environments that are responsive to the needs of the poor.
- c. Create an enabling environment for informal food retailers, based on analysis of needs.
- d. Provide incentivisation for the promotion and sale of healthier foods, preferably derived from agro-ecological methods.
- e. Where possible, regulate the sale of less healthy foods near schools and clinics.
- f. Monitor and disincentivise the marketing of less healthy foods, such as soft drinks, on municipal billboards.

12. **Waste:** Municipal government can play a number of roles in reducing food waste and creating opportunities for waste to be converted into a useable resource. Food processing tends to be clustered around business parks and industrial areas. It may be possible for municipalities to trial waste transformation systems in these areas. Additionally, it may be possible to generate compost from the food waste generated at the Fresh Produce Markets to feed back into agriculture, as is being trialled at the Cape Town Fresh Produce Market. Municipalities could also incentivise retailers to reduce the amount of packaging, particularly non-biodegradable plastics, used for fruit, vegetables, and processed foods and to switch towards bio-degradable packaging.

13. **Water:** Encourage the improvement of water-use efficiency, particularly in food processing and manufacture. Municipal wastewater treatment standards should be revised to take account of phosphate loads and encourage the development of phosphate reclamation processes.

14. **Energy:** Encourage the de-coupling of food retail and processing from dirty fossil-fuel energy sources by incentivising the transition to renewable energy sources by retailers, processors and food warehousing and distribution infrastructure.

Conclusion

Although municipalities have no direct mandate to address food insecurity, it is argued that they already play an important role in shaping the urban food system. This means that municipalities do actually already have the power to address food insecurity within their existing mandates. This aligns with emergent thinking within the NDP and IUDF.

Acronyms and abbreviations

AFSUN	African Food Security Urban Network
BFAP	Bureau for Food and Agricultural Policy
CBO	Community-Based Organisation
CPI	Consumer Price Index
DAFF	Department of Agriculture Forestry and Fisheries
DALY	Disability Affected Life Year
DC	Distribution Centre
DDS	Dietary Diversity Score
DoA	Department of Agriculture
DTI	Department of Trade and Industry
EPWP	Extended Public Works Programme
FANTA	Food and Nutrition Technical Assistance
FAO	Food and Agricultural Organisation
FSPUD	Food Sensitive Planning and Urban Design
GAIN	Global Agricultural Information Network
GHG	Greenhouse Gas
GHS	General Household Survey
HDDS	Household Dietary Diversity Score
HFIAP	Household Food Insecurity Access Prevalence
HFIAS	Household Food Insecurity Access Scale
IDP	Integrated Development Plan
IFSS	Integrated Food Security Strategy
INP	Integrated Nutrition Programme
IUDF	Integrated Urban Development Framework
IPAP2	Industrial Policy Action Plan 2
LSM	Living Standards Measure
MAHFP	Months of Adequate Household Food Provisioning
NAMC	National Agricultural Marketing Council
NDP	National Development Plan
NFPM	National Fresh Produce Market
NPC	National Planning Commission
NSNP	National Schools Nutrition Programme
PACSA	Pietermaritzburg Agency for Community Social Action
PSO	Provincial Strategic Objective
SACN	South African Cities Network
SANHANES	South African National Health and Nutrition Examination Survey
SAPA	South African Poultry Association
StatsSA	Statistics South Africa
WHO	World Health Organization

Chapter 1: Introduction and Conceptual Framework

Highlights

- There is currently no clear mandate for local government to address food insecurity in South Africa.
- The Right to Food is a constitutional right.
- Food insecurity should be understood as being shaped by the food system, and other systems.
- Local government, working under its existing mandate, plays a fundamental role in shaping the urban food system, its interdependencies with other systems and the food environment that city dwellers encounter, affecting availability, accessibility, utilization and stability.
- There is therefore a considerable role for local government, under its existing mandate, to address food insecurity.

1.1 Introduction

'Suppose I told you that New York City had the opportunity to create thousands of new jobs – but we just weren't doing it. You'd probably be pretty upset. Now suppose I went on to say that we've actually had that opportunity for years, we just weren't paying close enough attention. I bet you'd all have some choice of words for me – the kind that shouldn't be repeated in polite company.

Alright, now suppose I told you that by taking steps to create those jobs, we could also improve public health and reduce our energy consumption. We could fight childhood obesity and asthma. We could keep millions of dollars in the local economy, instead of sending those dollars across the country or around the world. But we still weren't doing it.

Well, the fact is, we have been ignoring those exact opportunities. For years, we've been missing a chance to create a greener, healthier, and more economically vibrant city. How? By ignoring the enormous potential of our city's food system.' (Quinn 2009)

The South African Cities Network (SACN) commissioned a study of current and future realities to urban food security in South Africa in order to assist cities in planning and policy development. This study therefore provides analysis of available data on the extent, characteristics and future trajectories of urban food insecurity and the food system in South Africa, in order to generate policy recommendations that are appropriate to the urban context.

Food insecurity has historically been considered to be a problem experienced mainly in rural areas. However, it is becoming increasingly apparent that there is substantial food insecurity in South Africa's cities and towns. Current national food security strategies and programmes focus primarily on rural areas and local government has no formal mandate to address food insecurity. However, in South Africa, the Right to Food and Nutrition are enshrined within the Constitution in Sections 27.1.b and 28.1c. It is therefore essential that the state and by extension, local government, work towards the realization of these rights.

This study therefore provides analysis of available data on the extent, characteristics and future trajectories of urban food insecurity and the food system in South Africa, in order to generate policy recommendations that are appropriate to the urban context. It further argues that by addressing food security through paying attention to the food system not only can food security be addressed in a more positive manner which will depend less on social safety nets, but also that a series of other urban benefits can accrue.

The study argues that by addressing food security through paying attention to the food system not only can food security be addressed in a more positive manner which will depend less on social safety nets, but also that a series of other urban benefits can accrue.

However, the study identifies a critical challenge to the cities planning and development of appropriate policies as a result of lack of mandate for cities to address food insecurity. By adopting a food system perspective, it is possible to see a much wider role for local government and a wide suite of potential interventions.

The study has five chapters, starting with a conceptual framework. A landscape on the state of urban food insecurity in South Africa and causes of it is provided. It then turns its attention to the characteristics of the South African food system in its third chapter. This chapter pays particular attention to the components of the

food system which fall within municipal boundaries, and addresses vulnerabilities of the food system and therefore food security to a set of megatrends.

The fourth chapter considers the current policy and programmatic frameworks for addressing food security in South Africa and identifies the current urban mandate gaps. Through a review of municipal IDPs the chapter reveals current bias towards urban agriculture as the policy response, but also highlights points of innovation. It argues that there is a significantly broader constitutional mandate for local governments with reference to food system governance than has been previously considered. The chapter further identifies key stakeholders in the urban food system and urban food security and proposes a model to engage them.

The final chapter considers lessons from elsewhere and innovations from within South Africa and develops a proposed approach for local governments.

1.2 Conceptual Framework

To engage effectively with the issue of urban food insecurity, this study weaves together several relevant conceptual strands, proceeding from the WHO definition of food security, we explore how enabling citizens to achieve the four dimensions of food security requires a food systems approach that moves beyond the household and neighbourhood scale to engage with urban, regional and global-scale drivers. The food systems approach is further elaborated by using the food environments and value chains concepts. These conceptual tools are contextualised within the recent urban development and management discourse emerging in documents like the IUDF to identify concrete interventions that are aligned with current urban development thinking.

This study adopts the WHO/FAO definition of food security: 'Food security is ... the situation that exists when all people, at all times, have physical and economic access to sufficient safe and nutritious food that meets their dietary needs and food preferences for an active and healthy life' (WHO/FAO 1996).

Four critical dimensions are recognised as essential to achieving household food security: Availability, Access, Utilization and Stability.

The FAO define these as follows:

'Food availability: The availability of sufficient quantities of food of appropriate quality, supplied through domestic production or imports (including food aid).

Food access: Access by individuals to adequate resources (entitlements) for acquiring appropriate foods for a nutritious diet. Entitlements are defined as the set of all commodity bundles over which a person can establish command given the legal, political, economic and social arrangements of the community in which they live (including traditional rights such as access to common resources).

Utilization: Utilization of food through adequate diet, clean water, sanitation and health care to reach a state of nutritional well-being where all physiological needs are met. This brings out the importance of non-food inputs in food security.

Stability: To be food secure, a population, household or individual must have access to adequate food at all times. They should not risk losing access to food as a consequence of sudden shocks (e.g. an economic or climatic crisis) or cyclical events (e.g. seasonal food insecurity). The concept of stability can therefore refer to both the availability and access dimensions of food security.'

These four dimensions of food security suggest that although food insecurity is primarily experienced at the household scale, its causes extend beyond the household scale. If policies and strategies to alleviate food insecurity are to be effective, it is essential that they also focus beyond the household scale as the only scale of intervention (see Figure 1).

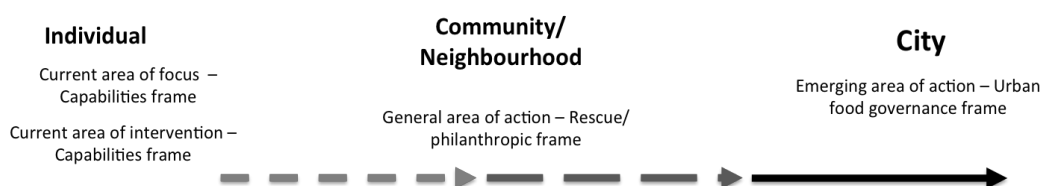


Figure 1.1: Shifts in urban food security strategy focus

Within this study it is argued that the first two of these four dimensions need to be expanded upon in order to highlight particular issues within the food system and other systems that affect food security.

Firstly, the concept of *availability* needs to be extended to raise questions about the relative balance of types of food made available within the food system and why particular kinds of food are more available than others. This raises the question of the fundamental drivers of the food system.

Secondly, the concept of *access* draws on Sen's work on entitlements which focuses on household capability to access food. In the urban context this often focuses on whether households have sufficient income to purchase food. Within this study, however, it is argued that access must consider both economic and physical access. That is to say, it is not sufficient to look at whether a household has enough money to buy food. It is also important to understand where sources of affordable and nutritious food are located relative to where people work, live and commute. Further, it is essential to understand the pricing and business strategies of the different types of retail within the urban food system. Economic access also needs to consider the impact of price shifts in other household costs. For example, increases in the costs of energy or transport may change the sources of food, nutritional quality and frequency of food consumed.

The interaction of the food system and the possible food security outcomes based on availability and access must be understood within the wider context as captured by the concept of *utilization*. In the urban context access to clean water and sanitation, as well as safe storage and refrigeration are essential components of a household's capacity to achieve food security. The food system itself informs and shapes food utilisation, for example by the way in which foods are promoted in the media and are associated with a particular urban lifestyle.

Seen this way, household food security is one intended outcome of the food system, which comprises of '(i) the activities, actors and institutions who grow, process, distribute, acquire, consume and dispose of food and how they interact with other systems and actors, and (ii) the outcomes of these activities contributing to food security' (Adapted from Roberts 2001, Ericksen 2007, and MacRae 2013). It is here that the concept of *stability* has particular importance.

However, food systems also serve several other goals contested by various stakeholder groups with different agendas, vested interests and unequal degrees of capital, power, voice and knowledge. It is therefore possible for some interest groups to shape the food systems to their own benefit while disadvantaging others - be it farmers, who are increasingly marginalised through global processes of consolidation and concentration in input supply and retail procurement, or impoverished urban workers who commute through an environment which promotes unhealthy food choices through media and corporate food retailers' power in shaping public spaces and pricing policies.

Also, the food systems approach reveals the interdependency of this system with several other systems like space, energy and water. These interdependencies entail significant vulnerabilities to several global megatrends, including global climate change, soil and biodiversity loss, peak oil and constraints in the energy and water sectors and increasingly informal urbanisation. Thus, food security at the household level depends to a large extent on how urban governance structures and processes engage with these broader risks to ensure greater food systems resilience and justice.

If food security is understood to depend on the food system and broader systems, it is therefore essential that governance approaches to address food insecurity extend beyond the individual and household scales, and consider food systems at the neighbourhood, city and national scales (See Figure 1.1), as well as the ways in which these systems interface with other systems. The food environments concept provides a useful way to engage with the systemic drivers of food security: this concept suggests that households' ability to achieve food security is mediated by the food environment that they engage with daily - including the physical, social, regulatory, and cultural environments which shape availability, access, utilisation and stability.

This study acknowledges that local government does not at present have a direct mandate to address food insecurity. However, it argues that local government, working under its existing mandate, plays a fundamental role in shaping the local food system, its interdependencies with other systems and the food environment that city dwellers encounter, affecting availability, accessibility, utilization and stability.

The study also proceeds from the recognition that local government is the primary day-to-day interface between government and citizens and that the impacts of food insecurity will most strongly be felt at the local government level: in the long term as a result of public health and economic costs of poor health and human development outcomes, and in the short term as a result of the potential for social unrest. Chronic food insecurity has demonstrated this potential with the recent Arab Spring uprisings.

The study therefore argues that there are many avenues available for cities and towns in South Africa to cultivate conditions that will enhance food security for their residents. For example, the development of the

recent Integrated Urban Development Framework (IUDF) contains several recommendations which will affect the food system and food environments, thus impacting on food security. Key principles include the triad 'livable cities - inclusive cities - resilient cities.'

The study identifies opportunities to improve urban food security which are aligned with these three principles and the core principle of democratic decentralisation. How can urban managers and developers democratise urban food systems governance in a way that is resilient, just, and promotes health? This study will therefore identify opportunities to align with key strategies and principles in policy documents like the IUDF, as well as discussing different roles and institutions.

Effective governance depends also on effective flows of information, the cultivation and management of knowledge and the promotion of innovation. Knowledge does not have to be held within local government alone. Many actors within the food system hold knowledge and expertise that could contribute to the attainment of food security. Food system governance also means facilitating processes that bring these knowledge networks together to enable the attainment of urban food security. This study considers ways in which innovation and knowledge can support democratic decentralisation of food systems governance.

1.3 Intended readership and outcomes

The study is aimed to inform two general categories of readers.

Urban planning and management leadership – the study will provide a high-level overview of the current state of knowledge, introduce the food systems approach, and identify points of leverage to provide political will and support for second group:

Urban planning and management practitioners – the study will enable municipal officials, town planners and urban development practitioners to identify concrete opportunities for food systems governance and guide urban development and management practice

Chapter 2: Food Security in South African Cities

Highlights

- Levels of food insecurity in South African cities are high. The SANHANES survey found national prevalence of households at risk of hunger to be 28% and those experiencing hunger at 26%. The equivalent figures in urban informal areas were 32% and 36% respectively.
- Although food insecurity levels were in decline, they appear to have plateaued.
- Case studies in low-income areas of cities and towns consistently show high levels of food insecurity.
- This food insecurity is characterised by low dietary diversity, high malnutrition and obesity, and distinct hunger seasons.
- Food insecurity is argued to be caused by a number of household scale factors: Household income, income stability, household structure, and household asset base. It is also caused by extra-household factors, including geographic access to a range of sources of food, access to transport and stability of food prices.
- Households themselves engage in strategies to mitigate food insecurity, which may increase household vulnerability to food insecurity in the longer term. These include consumption smoothing and accessing credit.
- Urban agriculture is the most common programmatic response to food insecurity. There is very little evidence to support the assertion that urban agriculture is an effective means of addressing food insecurity for the most vulnerable households.

2.1 Introduction

South Africa is food secure at a national level. It currently either produces enough food to feed its residents, or is able to cover the cost of food imports through a trade surplus from agricultural exports.¹ However, it is not food secure at a household level. This means that many households lack adequate access to affordable, nutritious and culturally appropriate foods. As the NDP notes:

'In South Africa, many infants and one in five young children experience stunted growth. Micronutrient malnutrition – particularly deficiencies of vitamin A, iron and zinc – affects the health, growth and learning abilities of young children and the productivity of the adult population. At the same time, and often in the same communities and households, obesity contributes significantly to the incidence of chronic diseases, including type 2 diabetes, cancer and coronary artery disease.' (NPC 2012, 230)

The most recent large-scale national assessment of food security, the South African National Health and Nutrition Examination Survey (SANHANES) found that only 45.6% of South Africans could be classified as food secure while the other 28.3% were at risk of hunger and 26% actually experienced hunger (Shisana et al, 2013). According to the SANHANES comparison of large-scale data sets, South Africa is generally more food secure than it was in the late 1990s, however it appears that levels of food security have now plateaued (See Table 2.1). This suggests that there is persistent, severe and moderate food insecurity within the country, and there is need for policy attention to address this complex problem.

VARIABLE	NFCS 1999 (N=2 735) (%)	NFCS 2005 (N= 2 413) (%)	SASAS 2008 (N= 1 150) (%)	SANHANES 2012 (N= 6 306) (%)
Food security	25.0	19.8	48.0	45.6
At risk of hunger	23.0	27.9	25.0	28.2
Experiencing hunger	52.3	52.0	25.9	26.0

Table 2.1 Scores for food security, risk of hunger and experience of hunger (food insecurity) using data from four national surveys, South Africa 2012 (redrawn from Shisana et al 2013, 147) (NFCS, National Food Consumption Survey; SASAS, South African Social Attitudes Survey; SANHANES, South African National Health and Nutrition Survey)

The proportion of households experiencing food insecurity shows regional variation. For example, the 2013 General Household Survey indicates that the provinces with the highest proportion of residents with food access problems are in the North West (37.3%), Northern Cape (30.7%), Eastern Cape (29.4%) and Mpumalanga (29.4%) (Figure 2.1). The assertion that areas with the highest proportions of food insecurity households are the worst affected and in greatest need of government attention needs to be interrogated. More populated provinces may have lower proportions of food insecure households, but greater numbers, than less populated provinces.

¹ There are however concerns about practical limitations to food imports. It has been stated that East London's port infrastructure has weakened to the extent that it can no longer import grain. Durban harbour has significant silt problems. The harbours have been developing to access commercial imports of goods at the neglect of food handling capacity for basic needs in case of an emergency. Jannie de Villiers, CEO of Grain SA estimates that it would take 33 days per million metric ton to off load in Durban harbour (Sheryl Hendricks pers. comm). Therefore, in the event of significant grain shortfalls as a result of drought or challenges associated with land or water, the country would be import what is needed timeously.

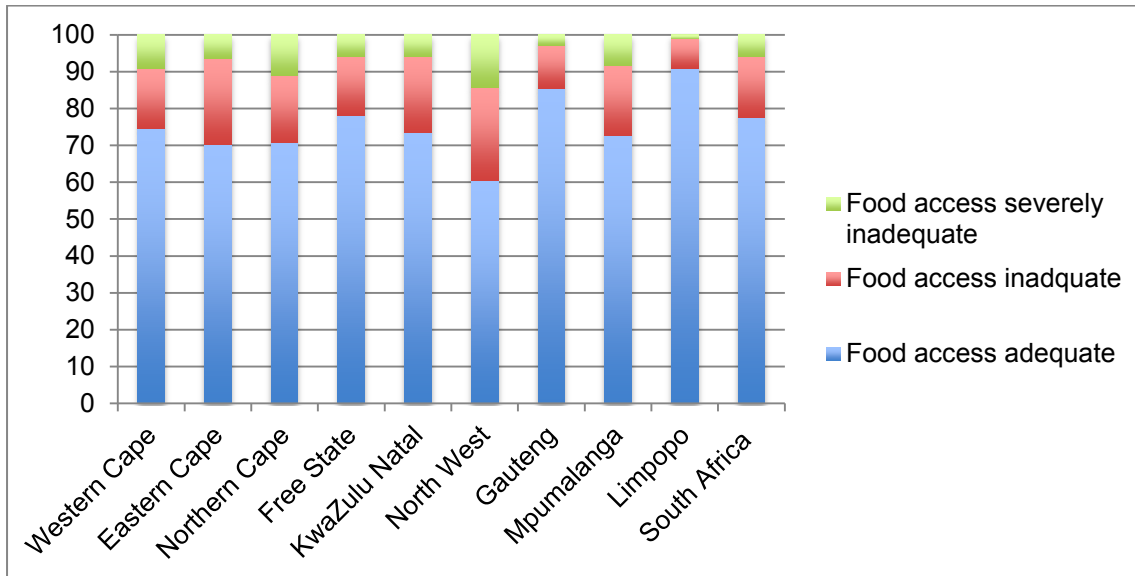


Figure 2.1: Percentage of households experiencing food adequacy/inadequacy by province, 2013 (Source: Redrawn from Statistics South Africa, 2014, p58)

This blurring of percentages and absolute numbers is evident within the Integrated Food Security Strategy (IFSS), a document that was meant to guide all food security strategies and programmes. It states, that compared with others 'Gauteng and the Western Cape are wealthier provinces with the least number of poor households at less than 12% each' (Department of Agriculture 2002, 22). These provinces may have the lowest proportions of people categorised as poor, but the population sizes of these provinces means that they do not necessarily have the 'least number of poor households'. Using Table 4 provided in the IFSS on household expenditure as an indicator of poverty, 6.1% of Gauteng's 1 964 168 households spent R600 or less per month compared to 21.7% of the Northern Cape's 186 984 households. Although the Gauteng proportion is far lower, this equates to 119 814 households, compared to 40 575 households in the Northern Cape. The use of proportions generates a misleading understanding about the location of poverty and food insecurity in South Africa. The more than 20% of Gauteng's population considered food insecure translates into a number of people greater than the total population of several other provinces.

Rural areas are also typically argued to be more food insecure than urban areas on the basis of proportions of residents, again this ignores actual numbers. According to the IUDF, 'In 2011, almost 63% of South Africa's population lived in urban areas (up from 53% in 1994), with just four city-regions (Gauteng, Cape Town, eThekweni and Nelson Mandela Bay) accounting for 42% of this population.' The rural construction of food security has justified the ongoing neglect of urban food security by national government. However, the SANHANES findings contest this perspective. Although 37% of respondents experiencing hunger were in the rural formal sector, 32% were in urban informal areas (Shisana et al., 2013). The highest prevalence of risk of hunger was actually in urban informal areas (36%) (Figure 2.2). While it would be more telling to provide an account of households in each area falling into these categories, the SANHANES data have not been made available to researchers.

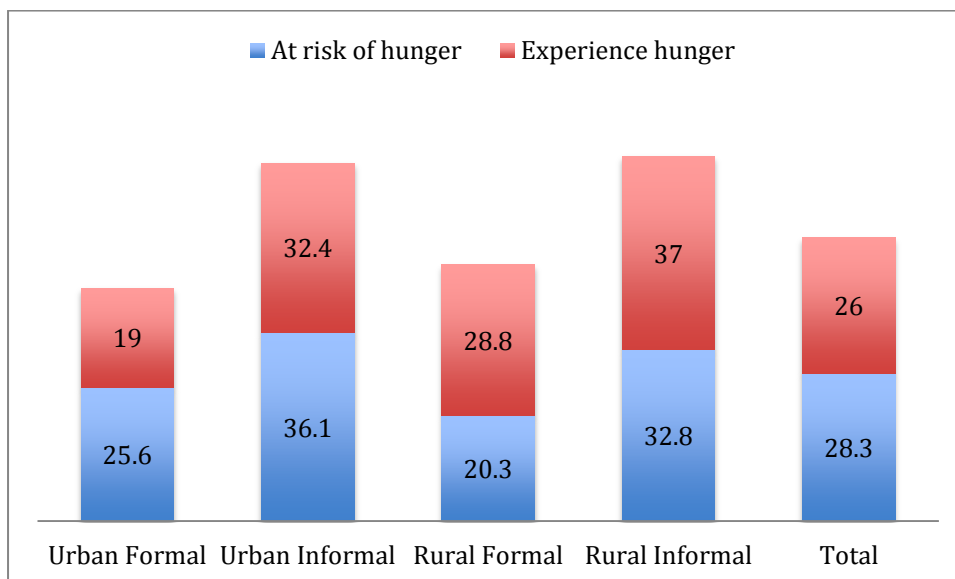


Figure 2.2 Proportion of population experiencing food insecurity by location (Source: redrawn from Shisana et al 2013)

The high prevalence of urban food insecurity is not a new discovery. In their 2009 report, Altman et al (2009) analysed the 2007 General Household Survey and found that, ‘a very large share of seriously hungry households live in a few urban districts ... Counter-intuitively, more than 30% of all seriously hungry households lived in Cape Town, Ekurhuleni and Johannesburg in 2007. Over 50% of the seriously hungry could be reached by focusing intervention in these three densely populated urban areas, plus an additional five district municipalities mostly located in the same vicinities’ (Altman et al 2009, 17). The Western Cape’s Department of Social Development’s current Strategic Plan indicates that because the proportion of rural households experience food security is higher than the proportion of urban households (27% versus 22.7%), food insecurity is more prevalent in rural areas. However, some 90% of the Western Cape’s households are urban dwellers. This means that 294 120 urban households are food insecure, compared to just 44 118 rural households.

Despite these findings, food security programmes and strategies have overwhelmingly remained focused on rural areas. There is a need to redress this imbalance and to consider the nature of urban food insecurity.

This chapter therefore provides an overview of current data on urban food insecurity in South Africa, discussing the characteristics of food insecure households and identifying drivers of food insecurity. Crucially, this chapter argues that the drivers are systemic (linked to the food system and the urban system in particular), as such responses need to extend beyond household scale interventions.

2.2 Food insecurity in South African Cities

2.2.1 Prevalence of food insecurity

Large-scale national household surveys, such as the General Household Survey, Income and Expenditure Survey and SANHANES, have provided evidence that there is significant food insecurity in urban areas. However, the sample sizes are too small to disaggregate meaningfully to individual cities. Additionally, with the exception of the SANHANES survey, the component focusing on food insecurity is limited. They therefore give a snapshot of food insecurity, but cannot be used to provide a clear understanding of the characteristics or drivers of food insecurity. For this reason this section provides an overview of a series of case studies on urban food security conducted within South African towns and cities by a range of academic institutions. Most have employed the FANTA-developed Household Food Insecurity Access Prevalence (HFIAP) measure which uses a series of questions to categorise households as food secure, mildly, moderately and severely food insecure (see Coates et al 2007). These surveys were conducted within specific areas of the cities and towns, usually with a pro-poor sampling strategy. They do not therefore provide a city-wide representation of food insecurity, nor are they comparable to each other. However, they provide indicators of the extent of food insecurity in low-income areas, and will be used within this chapter to provide an in depth analysis of the characteristics of food insecure households. It is hoped that this provides an understanding of food insecurity and its drivers in a manner that can aid appropriate interventions.

Cape Town:² A 1060 pro-poor household survey was conducted in Cape Town in 2008 by the African Food Security Urban Network (AFSUN) using the HFIAP measure.³ It found that 80% of the households in the sample were either moderately or severely food insecure, with 68% falling into the severely food insecurity category (Battersby, 2012). A study carried out to explore the lived experiences of food access in Manenberg, Cape Town, using FANTA tools found that 64% of the households that were interviewed were food insecure (Cooke, 2012). This pattern of high levels of food insecurity among the poor was also found to be true in the city among the immigrant population. In a study carried out in Masimphumelele, Du Noon and Nyanga, 84.4% of the surveyed households were found to be being moderately or severely food insecure (Crush and Tawodzera, 2012). Factors influencing household food security included seasonality of jobs, high rental costs, and increasing cost of food.

Johannesburg: A similar study conducted by AFSUN in Johannesburg, using the same methodology, found out that 56% of the households in Orange Farm, Alexandra Park and the inner city were food insecure, with 27% of these households being severely food insecure (Rudolph et al., 2012). Using a different methodology, Veary et al. (2009) surveyed three inner city settlements and one informal settlement in Johannesburg and significantly high levels of food insecurity among the surveyed households, but with differences between people living in the formal and informal sector. A higher proportion of residents of the informal settlement reported experiencing food shortage in the previous 12 months (68%) than residents of the inner-city (56%). These variations were explained by a range of reasons, part of which was food shortages which were found to be significantly different between the informal settlement and the inner-city.

In Doornkop, Soweto, Patel et al., (2012) assessed the food security levels of 343 households in the area. The study indicated that the majority of the respondents (53.3%) reported having experienced severe food insecurity and a further 25.1% were moderately food insecure. The authors further indicate that female headed households in the area were less food secure than their male counterparts as they had 80.4% and 74.0% levels of moderate or severe food insecurity household levels.

The City of Joburg commissioned a food insecurity survey in 2013. The results are not in the public domain. It focused on affordability, availability, quality and use. The data is not in a format that makes it comparable to other similar surveys, but it does highlight important linkages between food security and factors such as transport.

Msunduzi: The AFSUN survey of 556 households in Msunduzi Municipality, also found pervasive household food insecurity with 87% of the surveyed households were food insecure: 27% of these being severely food insecure (Crush & Caesar 2014). Female-centred households were the most food insecure category of households.

Bloemfontein: In Bloemfontein, Van den Berg and Raubenheimer (2013) carried out a food security study among students at the Free State University. Using a sample of 1416 respondents to recall their food security situation over a 12 month period, the study found that only 16% of the respondents to be food secure; 24.7% experienced low food security ('without hunger'); and 59.3% experienced very low food security ('with hunger'). Although food security levels of students cannot be used to represent the general food security situation of the city, the results serve to illustrate how issues of food insecurity cut across socio-economic classes, even among University students that are considered to be privileged and therefore generally more food secure than the general population.

Durban: Studying household food security and coping strategies in the city of Durban, Bikombo (2015) concluded that food security of informal food traders at the household level is precarious. With a sample of 120 households and using the HFIAS as a measure of food security, the study found that 57.5% of the surveyed households were severely food insecure and that 90% of the households indicated having experienced various levels of food insecurity at different times.

Smaller towns: Even in smaller towns of the country, households are not immune to food insecurity. Ndobu and Sekhampu (2013) conducted a survey in the small town of Kwakwatsi in the North-West province. Using

² Various departments in each city were contacted telephonically to check whether they had conducted their own food security assessments. None were able to identify specific food security studies that had been conducted.

³ It should be noted that in each of the AFSUN surveys (Cape Town, Johannesburg, and Msunduzi) the sample size was much larger than the General Household Survey sample in those cities, and had a specifically pro-poor sample. This may make their findings a better indicator of food insecurity in low-income areas of these cities than the GHS

the HFIAP, they found that 49% of the 225 sampled households in the town were vulnerable to food insecurity. In addition, more female-headed households were found to be severely food insecure (41%) in comparison to those that were male-headed (24%). Inversely, fewer female-headed households (36%) were more food secure in comparison to male-headed (57%), driving home the point that household structure plays a role in determining vulnerability of households to food insecurity.

Grobler (2013) carried out a food security study in the small town of Bophelong, South of Gauteng where he assessed the food security levels of household heads as well as their vulnerability to food insecurity. Using the HFIAS as the food security measure, the study reported that only 7.5% of households were food secure, while 23.7% of these were moderately food insecure, while 57.6% were severely food insecure.

2.2.2 Dietary Diversity

The diversity of a diet that one consumes is a good predictor of food security. Food insecure households tend to be over-reliant on starchy staples while excluding proteins and other nutrients from their diet (Savy et al., 2005). Household members may consume enough food to meet the calorimetric food requirements, while the type of food they consume may not have the requisite nutrients for physical and mental health and development.

Urbanization is associated with a number of unhealthy dietary changes such as increased consumption of saturated fats, sugars, salt and processed foods (Drimie et al, 2013). Dietary quality is therefore an important health issue, particularly in countries such as South Africa which are urbanizing rapidly. South Africa is in the non-communicable diseases phase of the nutrition transition and the urban poor are being disproportionately affected (Drimie et al, 2013).

There are two main measures of dietary diversity that have been used in South Africa. A number of studies used the FANTA-developed Household Dietary Diversity Scale (HDDS) (Swindale et al 2005). This uses a 12-food group basis. This was used in the three AFSUN studies. Under this measure, a score of under 6 is an indicator of malnourishment. The other is Dietary Diversity Score (DDS), used in the South African Social Attitudes Survey, which uses a 9-food group basis. Under this measure, a score of under 4 is an indicator of poor dietary diversity and poor food security (Labadarios et al 2011)

In the Cape Town AFSUN study, the average HDDS was 6 out of 12. When the actual food types were analysed, it revealed a largely non-nutritive diet. After Cereals, the most commonly consumed food types were foods made with oil, fat, or butter, and foods made with sugar or honey, and other foods (usually tea and coffee) (Battersby, 2012). For the migrant survey in Cape Town and Johannesburg, the mean household dietary diversity score was only 5.08 out of a possible score of 12.00, indicating that households were, on average, consuming foods from five different food groups only (Crush and Tawodzera, 2012). In Johannesburg, the situation was slightly better with the results showing a reasonable dietary diversity in all the study areas with the highest score of 8 being recorded in Alexandra Park (Rudolph et al., 2012). In Msunduzi municipality, the average HDDS was 5.5 indicating, like in the other studies above, a narrower consumed diet. Using the DDS, the South African Social Attitudes Survey found that the average national DDS was 4.02 (Labadarios et al 2011), meaning that the mean dietary diversity was only marginally above the DDS score of 4 which is used as an indicator of food insecurity.

Reasons for this limited dietary diversity are addressed in Section 2.3.

2.2.3 Malnutrition and Obesity in South African cities

The nature of food insecurity is changing. Food insecure households continue to be malnourished in terms of essential nutrients for health and development, but they are also now characterised by increasing obesity, diabetes and hypertension. While malnutrition persists, overweight, obesity and diet-related non-communicable diseases, such as diabetes, are on the increase. According to national studies, over 50% of women and 30% of men are overweight or obese (Puoane et al. 2002; Shisana et al. 2013). Anaemia is a public health problem of moderate significance among adult women in South Africa at 22%, and iron deficiency anaemia among women of reproductive age at 9.7% (Shisana et al. 2013). Vitamin A deficiency among this group (13.3%) is also a moderate public health problem. This double burden of disease exists for many reasons, including declining levels of physical activity, but more important is the nutrition transition that South Africa is undergoing.

Diets are shifting towards higher consumption of highly processed foods rich in sugars and fats. These dietary shifts are in part the result of urbanization and the time scarcity of urban life, and the desirability of a 'modern' diet, but they must also be understood as the outcome of the changing food system and the unaffordability of healthy foods. It is essential therefore to consider food insecurity in the context of wider food system changes.

This transition is most evident in children, who will carry its impact through into adulthood. A diet with high prevalence of refined carbohydrates, fat and sugars and a low intake of fiber and micro-nutrients is known to lead to obesity and associated cardiovascular diseases and diabetes (Crush et al 2011). The problem of obesity in South Africa is important and need to be addressed. This is because obesity is linked to non-communicable diseases, such as diabetes mellitus, coronary heart disease and hypertension, which are among the top 10 causes of death in South Africa (Gboyega, 2014). The SANHANES survey found overweight and obesity to be highest in urban formal (11.8% and 5.4% for boys; 19.4% and 8.9% for girls, respectively) and urban informal areas (20.0% and 5.2% for boys; 20.8% and 9.3% for girls, respectively) (Shisana et al 2013, 17). The SANHANES figures were compared to the 2006 Health of the Nation Study, and it was found that levels of both overweight and obesity within children had increased significantly over the seven years in question (Shisana et al 2013, 209). The nutrition transition is happening rapidly and new approaches to combat food insecurity urgently need be adopted.

The SANHANES survey further found geographical differences in terms of under-nutrition. The youngest boys and girls (0–3 years of age) had the highest prevalence of stunting (26.9% and 25.9% respectively), which was significantly different from the other age groups, with the lowest prevalence in the group aged 7–9 years (10.0% and 8.7% for boys and girls, respectively). Among boys, rural informal areas had significantly more stunting (23.2%) than urban formal areas (13.6%). Girls living in urban informal areas had the highest prevalence of stunting (20.9%) and those in urban formal areas, the lowest (10.4%), the difference in prevalence being significant (Shisana et al 2013, 18).

These non-communicable diseases have an enormous cost to society: Cardiovascular diseases were estimated to cost SA between 8 and 10 billion Rand in 2010 (Maredza et al 2011). Interventions that would improve people's ability to eat healthily and engage in physical activity were recommended as valuable measures to prevent or delay the onset of diabetes by Bradshaw et al (2007).

It should be noted that apart from loss of income, the brunt of this impact in South African cities will be felt by the public health system which is already faltering and ill-equipped to deal with the rising tide of non-communicable diseases. The health impacts of food insecurity can thus be recognised as one of the most fundamental economic risks for cities in SA.

2.2.4 Temporal Dimensions of Food Insecurity

Although there is a constant supply of food to cities, there are distinct hungry seasons, as households struggle to access sufficient food. As Figure 2.3 illustrates, in all three of the AFSUN case study cities there were clear temporal dimensions to food insecurity.

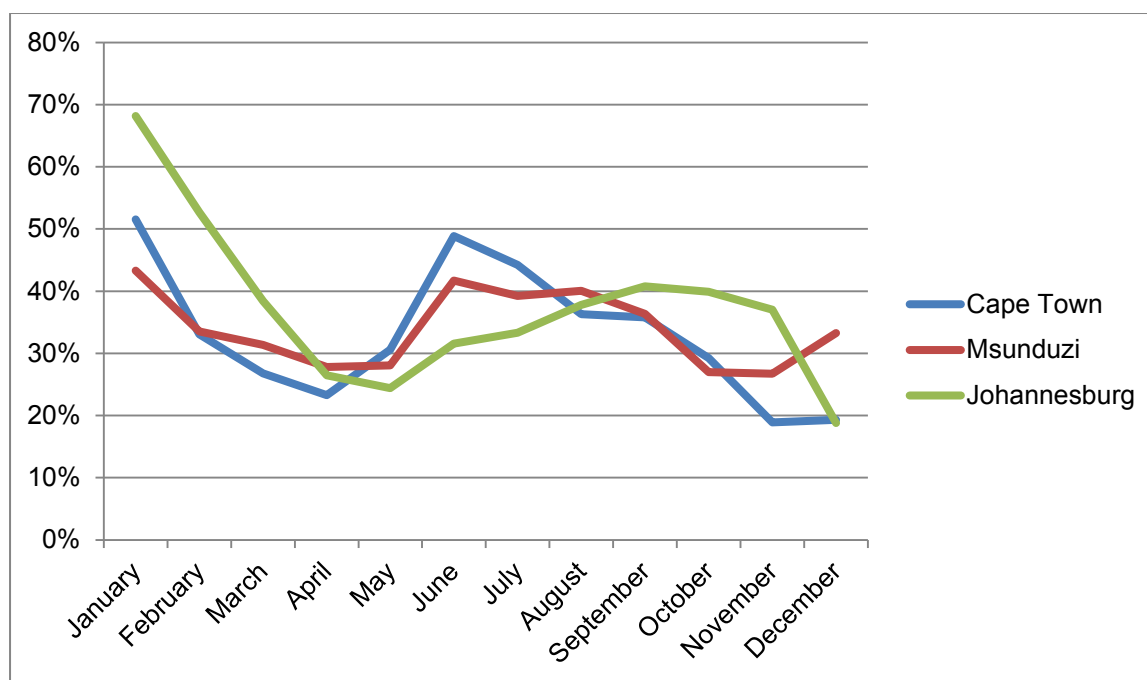


Figure 2.3 Months of inadequate household food provisioning: Cape Town, Msunduzi, Johannesburg (AFSUN, with permission)

January food shortages are related to spending cycles where households overspend on food over the festive season and find themselves facing critical shortages in the following month when there are also other expenses to be covered such as school fees and uniforms (Figure 2.3). In addition, most businesses close down over December and January, reducing income and casual labour opportunities. The peak shortages in June are linked to adverse weather conditions in winter that prevent industries from operating at full capacity and thus employ less manual labour resulting in lower income among poor households (Battersby, 2012).

Within the survey, households were also asked to identify how often they had gone with food items of choice within the last month. This indicated a further temporal dimension of food insecurity, as many households were able to access sufficient quantities of nutritionally-adequate foods early in the month. However, they began to reduce the quality, range and quantity of foods consumed, with many ultimately going without towards the end of the month. This type of food consumption pattern has significant health implications, particularly for individuals on chronic medication that require consistent nutrition. There is therefore a need for social safety nets to be developed which are responsive to these predictable times of food insecurity.

2.3 Determinants of Urban Household Food Insecurity

Food insecurity in urban areas is typically characterised as being a problem of access by poor households, and under this framing access failure is usually understood as being the outcome of insufficient income to buy the required food. While insufficient income is a key determinant of food insecurity it is far from the only one in operation within the urban environment. If urban food insecurity is to be addressed, it is essential to develop strategies, programmes and policies that are responsive to these broader factors.

2.3.1 Household income

Poverty lines are commonly drawn on the basis of how much money is required to meet basic food needs. There is therefore a clear correlation between income and food security. Urban households source the vast majority of their food through the market, formal and informal. A higher income therefore empowers households to make choices about what to buy, how much, where and other food choices that may not be available to those with a lower income. Thus income, more than other factor plays an integral and indispensable role in determining household food security in urban areas. Any decline in household income or increases in food prices can have catastrophic consequences (Tacoli, Bhukari and Fisher, 2013). This has been confirmed in many studies in South African urban areas (see for example: Ndobo & Sekhampu 2013, Battersby 2012, Grobler 2013, Jacobs 2009, van den Berg & Raubenheimer 2013). An entry point for safeguarding households from food insecurity is therefore improving a household's access to a stable and sufficient source of income. It is however, not the only determinant of food security.

2.3.2 Stability of Income

Cooke's work in Manenberg, Cape Town identified the fact that reliability of income is an important driver of food consumption. If a household has a guaranteed income it is better able to plan food purchase and preparation and therefore has higher food security than households of equal or even greater inconsistent income (Cooke 2012).

Given the importance of stability of income in allowing households to plan food and non-food purchases and savings, it is important to acknowledge the important role of social grants, particularly the old age pension (and child support grant, to a lesser extent) as important sources of food security.

Approximately 30.2% of the country's population receives one type of grant or another. This translates to approximately 15.8-million beneficiaries in 2015 (GHS, 2013). These grants form a critical income source for most of the poor and therefore depend on them to feed themselves. Du Toit and Neves (2006) argue that grants benefit the wider household and allow household members to purchase food, purchase property, build or improve homes, help in financing agriculture, and pay for children's education. Additionally, grants allow households to invest in income generating projects and in their own productive capacity. As noted above, the stability of income provided is a crucial benefit of the grants.

2.3.3 Stability of food prices and other sources of expenditure

Much of the focus on alleviating poverty and food insecurity has centred on increasing income, either through job creation or the provision of grants. This fails to acknowledge the second half of the economic access to food equation: food prices.

By virtue of the fact that they purchase most of their food requirements, urban households are at risk of becoming food insecure should the prices of food increase on the market. The poor are most affected by food price increases, as they spend a higher proportion of their incomes on food. This is because significant price increases tend to erode the purchasing power of households due to the fact that wages do not increase at complementary rates. Recent work by the Bureau for Food Agricultural Policy (BFAP) has found that for a household to consume a 'balanced daily food plate' of food, it would have to have an income of around R5 630 (BFAP 2012, 49). This equates to R67 500 per annum. According to Census 2011, within the SACN member cities (and Cape Town) a high proportion of households fall outside this category. Census 2011 draws a income category boundary at R76 400, the closest figure to the R67 500 pa.⁴ The minimum proportion of households earning less than R76 400 per annum was 61.4% in Tshwane, with up to 76% of households in Buffalo City falling to this category (See Figure 2.4). This places a very high proportion of metropolitan households in a position of vulnerability to food insecurity if the BFAP figures are accepted.

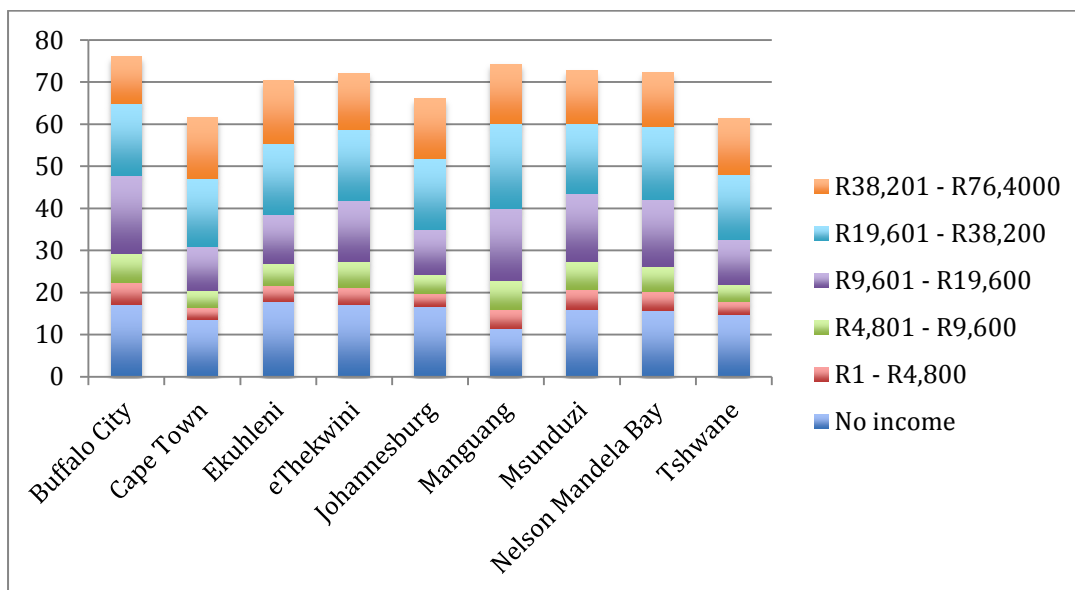


Figure 2.4 Proportion of households in SACN member cities (and Cape Town) with incomes lower than R76 401 per annum

A second figure that may be used is a calculation derived from the NAMC's Basic Food Basket. The closest NAMC calculation of the cost of the Basic Food Basket to the time of the 2011 Census was the August 2011 one, which placed the cost of the basic basket at just under R400 per person per month. NAMC estimated that the poorest 30% of households would need to spend 35% of their income on food to obtain this basic basket (NAMC 2012). The required income for an average household in each city was calculated based on a 35% spend on food and the average household size. These calculations are included in Table 2.2 with corresponding figures of proportion of households living below R38201 and below R76401 (the nearest Census 2011 income categories). As is evident from these figures, in all cities, with the exception of Cape Town and Tshwane, at least 50% of households definitely fall under the minimum required income to meet their food needs using NAMC assumptions (below R38201 p.a.). Between 61.4% (Tshwane) and 76.0% (Buffalo City) potentially fall below this minimum (below R76401 p.a. – see footnote 4)

⁴ The average proportion of households that fall within the R38,201-R76 400 category is 13.5%. Given the distribution of incomes in the cities, it is assumed that the majority of these households fall within the lower band of this bracket.

	BUFFALO CITY	CAPE TOWN	EKURHULENI	ETHEKWINI	JOHANNESBURG	MANGAUNG	MSUNDUZI	NELSON MANDELA MM	TSHWANE
Required HH income (35% spent on food)	43886	46629	39771	46629	38400	49371	42514	46629	41143
% HH <R76400 p.a.	76	61,5	70,4	72,1	66	74,3	72,7	72,3	61,4
% HH <R38201 p.a.	64,9	47	55,4	58,7	51,8	60,2	60,1	59,4	48,1

Table 2.2 Income levels required to buy sufficient food (NAMC measure) and actual household incomes

Food price inflation has long been recognized as a major contributor to general inflation in South Africa. The food price inflation's contribution to general Consumer Price Inflation (CPI) has always been considerable – 25.46% from 1980-1989, 22.49% from 1990-1999 and 30.00% from 2000-2008 (Rangasamy 2011, 187). Food inflation is much more volatile than non-food inflation, and by virtue of its persistent impact on prices after the shocks causing rapid inflation, it has been identified as an important source of underlying inflationary pressure in any economy (Rangasamy 2011, 189). Food price inflation has tended to be higher than general inflation.

The impacts of food price increases are usually particularly worse for low-income urban residents who rely mostly on informal sector activities as both as source of food and as a source employment which provides low and irregular earnings (Heltberg et al., 2012). Food prices are a critical factor and determinant of urban food security. They are probably the most important single factor to which the urban poor are extremely vulnerable. This therefore suggests a need for food security policies to engage the question of food pricing. This report concurs with Kirsten's (2012) work on food price fluctuations which argues that government responses have been too focused on 'second class' interventions that aim to mitigate the impacts of food system problems.

2.3.4 Geographical Access

Access cannot be understood as being characterised by household income, or even wider understandings of income and expenditure balances. There is a need to understand access as geographical as well as economic. This is well acknowledged in Europe and North America through the concept of the Food Desert. Food Deserts have been defined as 'those areas of inner cities where nutritious food is virtually unobtainable. Car-less residents, unable to reach out-of-town supermarkets, depend on the corner shop where prices are high, products are processed and fresh fruit and vegetables are poor or non-existent' (Laurence 1997). This explicitly connects household food security to extra-household urban and food system issues.

This nature of the urban food retail environment is discussed further in Chapter 3. However, at this point it is useful to establish the ways in which the retail environment connects to other components of the urban system to shape food purchasing patterns. Apartheid and post-apartheid spatial inequality coupled with high dependence on poorly integrated public transport leads to lengthy commutes for the working poor. This reduces their ability to access and utilize affordable, nutritious foods (Zager 2011).

Research has shown that groups at high risk of food insecurity often live in residential areas that are not well serviced by shops or have inadequate public transport (Southcombe, 2008, Battersby & Peyton 2014). In most residential areas inhabited by the poor, shops tend to be sparse and public transport generally poor. High-income areas, by contrast, have infrastructure such as roads, retail and marketing systems that is well established and functional (Swift, and Hamilton, 2001). While the uneven location of shops makes economic sense to food retailers (who locate shops according to relative purchasing power in different areas), it also generates social problems related to unequal food access. In poor communities, household members often have to walk long distances to and from shopping outlets. This inhibits them from economizing through purchasing food in bulk, as they would most likely have to carry their groceries over long distances. They also alternatively end up buying food from informal outlets such as spaza shops or home-based retail stores in the

area. These sources have the disadvantage that their foodstuffs are expensive; their prices unstable, the variety of products is poor and they sometimes sell stale products that are detrimental to health and food security (Chebelyon-Dalizu et al., 2010). Fresh produce traders and meat sellers however, are often cheaper than formal retailers.

As discussed in Chapter 3, even when located in lower income areas, supermarkets are not necessarily the preferred source of food because of opening hours, unit size, lack of credit and established cultural practices around food. Distance and transport to shops are therefore key features of food access that may ultimately impact on food security at the household level, along with a series of household scale factors.

The three pro-poor AFSUN surveys in Cape Town, Johannesburg and Msunduzi found that the vast majority of households did source food from supermarkets, but not frequently. The most frequent source of food was the informal food retail sector (Figure 2.5). Figure 2.5 does not provide data on all sources of food for purposes of legibility. It does however include the figures on sourcing of food by own production to demonstrate the relatively low uptake of this practice and the low frequency with which households access the food from this source.

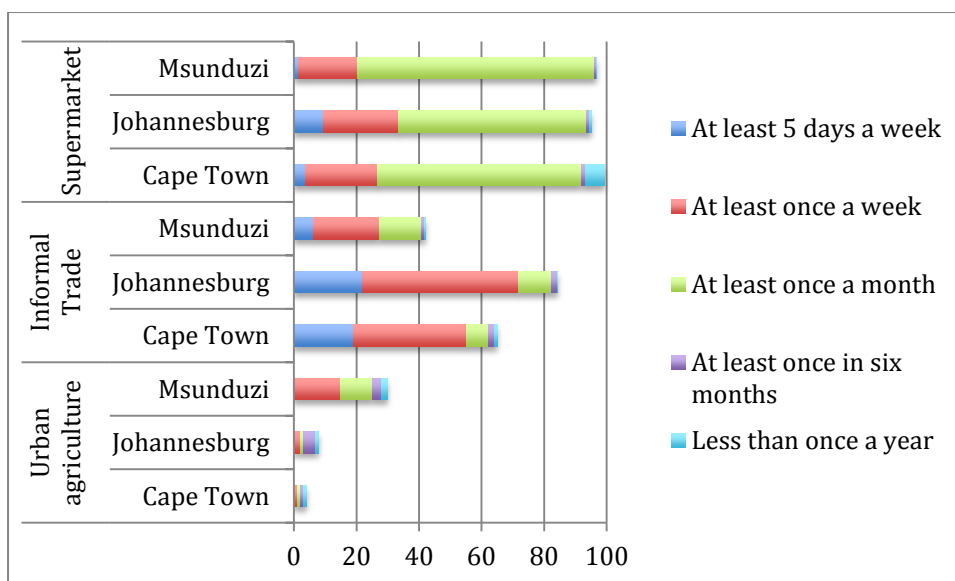


Figure 2.5 Sources of food: Supermarket, informal trade and urban agriculture (Source AFSUN, with permission)

Physical access to a supermarket does not ensure accessibility. Less food secure households source food from different locations and have different sourcing strategies to food secure households living in the same area. As is discussed in Chapter 3, the retail model practiced by the informal food retail sector is more accessible to the most vulnerable to food insecurity (See Table 3.4 for more detail).

2.3.5 Household structure

Not all household types are equally likely to be food insecure. Female-headed households have been found to be generally less food secure than nuclear households (Ndobu & Sekhampu 2013, Battersby 2011, Crush & Tawodzera 2012, Rudolph et al 2013).

The vulnerability of female centered households derived from the fact that many women are employed in low paying jobs such as domestic work or worked in the service industry as waitrons. Furthermore most of them were also surviving from a single income which was not adequate for household food sustenance.

2.3.6 Housing structure and assets

There is a need to consider factors that shape households' utilization of food. The lack of adequate refrigeration or storage shape purchasing habits in terms of volumes and categories of food bought (Reardon et al 2003, Ballantine et al 2008). Within the AFSUN Cape Town survey it was found that shack dwellers were about 20 percentage points more likely to be severely food insecure than house dwellers in the same areas. Similar patterns were evident in all three AFSUN case study cities (Figure 2.6). The increased risk is likely a result of the fact that most of these households were located further from formal markets, and hence had more limited geographical access to cheaper food (Battersby, 2012). In addition, most have limited

storage and refrigeration capacity and are therefore more likely to purchase food in smaller units, which tend to be more expensive per unit volume.

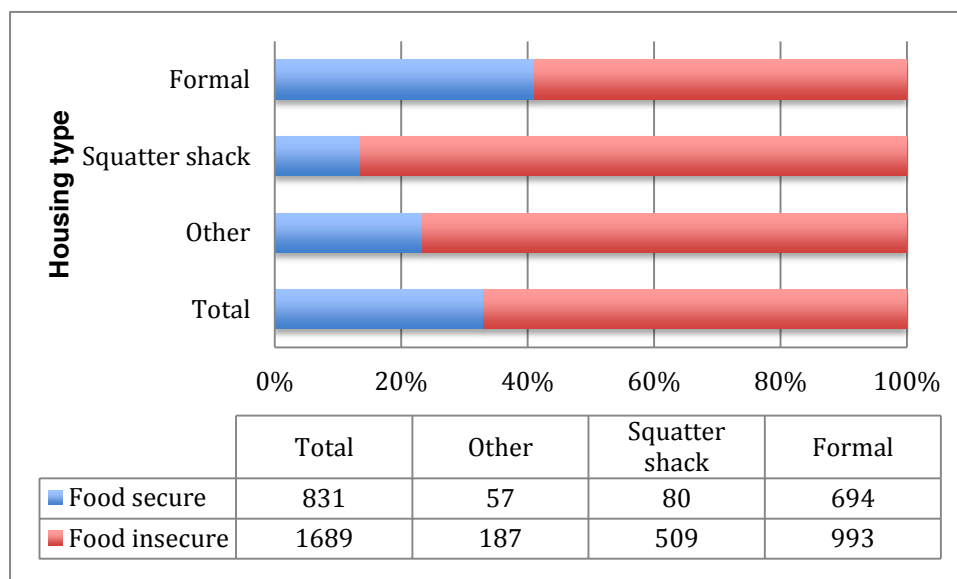


Figure 2.6: Food insecurity and housing, Cape Town, Msunduzi and Johannesburg (Source: AFSUN with permission)

The relationship between housing type, asset base and food security is important, but rarely acknowledged. Local government plays a direct role in the location and quality of housing within its boundaries. Questions of geographical location of housing and access to storage, refrigeration, clean water and appropriate cooking technologies are all important determinants of household food security that fall within municipal government mandates.

2.5 Household Strategies to Overcome Food Insecurity

It needs to be acknowledged that households are active agents in addressing their own food security, within the constraints posed by their respective food environments. Any new policies, strategies and programmes would be advised to acknowledge these strategies and seek to enhance those that are viewed as generally productive and discourage the use of those that are not.

2.5.1 Consumption smoothing

Under conditions of income stress, household adopt a range of strategies to smooth their consumption. They reduce the variety of food, they switch to cheaper alternative, reduce meal sizes and ultimately eat fewer meals. This is not uniform within households, with women often choosing to go without in order to ensure that other household members have sufficient food.

Poor households frequently depend on a diet high in starchy foods with limited protein and other nutrients. Data from the South African National Health and Nutrition Survey (SANHANES) shows that households were limiting the variety of foods that they were eating in order to smooth consumption (Shisana et al 2013). Households experiencing financial hardship concentrate on ensuring sufficient volumes of food. Quality is sacrificed for quantity. These households shift from a recognised brand of food to a generic one, as well as substitute food stuffs.

Further along the food insecurity spectrum, meal skipping is a common practice for food insecure households. The SANHANES Survey found that 19% school children do not eat breakfast at home in the morning (Shisana et al 2013). Although there are a variety of reasons for this, one of the most important is that there is not enough food in the household to feed any or all members. Some households would prefer to keep the little food that is there for either the afternoon or the evening meal. Additionally, if parents know that children are going to get food at school, they prefer to defer income to essential feeding at home. This kind of intra-household food allocation strategy may have long-term impacts on the health and nutrition of children with knock-on effects on educational attainment, employability and productivity later in life.

Related to this is the dependence on social capital to access food. In low income neighbourhoods the practice of sharing food and borrowing food is common, particularly in terms of sending children to eat at other households. However, residents acknowledge that this is not a sustainable practice. Duncan's (2013) work in Khayelitsha, Cape Town, found that residents may choose to go without instead of asking neighbours to prevent themselves from eroding social capital to the extent that they are no longer able to approach neighbours for food.

2.5.2 Accessing credit

Many urban residents are dependent on credit and micro-lenders. In 2012 the Daily Maverick provided a narrative account of the impact of debt on household security:

*'Hlomela Dlamini⁵ has been working for the Makana Municipality in Grahamstown for some 15 years. He gets paid about R4,800** gross a month, but only nets little more than half of that. Each month he has the usual government deductions and there's money that must be paid to his trade union, SAMWU. He also has repayments taken off his salary for Old Mutual, Sanlam and three funeral policies. The deductions off his municipal package total R2,270.00**, which means that after 15 years of working for government, his net pay is R2,530.00**.*

But some two-and-a-half thousand rand is not what Dlamini takes home and uses to live off. When the money goes into his bank account the Mashonis take their cut, and that cut is the cruelest.

The word Mashonisa means 'to sink', because these unscrupulous lenders sink the people who borrow money from them so deeply in debt that for the most part, the borrowers never fully recover. In places like Grahamstown, people know that once the Mashonis have access to your bank account, you belong to them. These lenders are unregistered and illegal and can charge 100 or 200% a month on a debt. It is estimated that there are about 30,000 illegal credit providers in the country.

This is how Mashonis work. If you take home some R2,500, like Dlamini, after all your salary deductions you'll probably be able to get R1,500 in credit from the unregistered loan sharks.' (de Waal 2012)

This excerpt has been included despite its length as it provides an insight into the impact of debt and the challenges of accessing credit. Loan sharks generally charge interest rates of 40% per month (Ntandane, pers comm., 2013). High interest rates usually lead households into a debt trap as they continuously borrow to fund their household expenditure after spending all their income on repaying loans.

The 2012 FinScope survey found that nationally, the greatest proportion of household borrowing was for food (32%). This appeared to be on an upward trajectory, from 18% in 2010 and 26% in 2011. This is likely attributable to increasing food prices, compounded by required increases in expenditure in transport and energy.

The same survey found that informal borrowing sources were more than twice as prevalent as sources of money for food than formal ones (NCR 2012, 42). As is discussed in Chapter 3, fieldwork in Cape Town found that many informal food retailers (spaza owners and street vendors) are willing to sell food on credit, and generally do not charge interest (Battersby forthcoming). In the context of the narrative above, this practice can be seen as an important safety net provided by informal food retailers, which prevents households falling deeper into debt, through depending on mashonis and other micro-lenders.

2.6 Urban Agriculture

Urban agriculture has been the main point of intervention by the State and the NGO sector to address food insecurity. This section provides a brief overview of the role of urban agriculture in food security in South Africa. This is addressed further in Chapter 3.

A concern of this study is whether the current focus on urban agriculture as the main policy response to food insecurity can be justified. This section therefore asks three questions:

How prevalent is urban food production?

⁵ Pseudonym provided by de Waal. In this section ** signifies a rounded up figure to protect the worker's anonymity

What is being produced?

To what extent does urban agriculture contribute to food security?

2.6.1 Prevalence of urban food production

The General Household Survey provides some information on farming. Burger et al (2009) analysed the 2002 and 2007 General Household Surveys to assess the extent of urban farming. In order to do this, they needed to make a series of assumptions on which were urban households. They also selected only households that had indicated that they had land for agricultural production, and households earning less than R10000 per month.

They found significant spatial variation in the prevalence of urban farming (Table 2.3, Figure 2.9), which was suggested to be as the result of soil and water conditions.

PROVINCE	URBAN FARMERS		CONTROL GROUP		TOTAL	
	n	%	n	%	N	%
Western Cape	1767	2.2%	1239558	17.0%	1241325	16.8%
Eastern Cape	52344	63.8%	1172722	16.1%	1225066	16.6%
Northern Cape	1779	2.2%	269399	3.7%	271178	3.7%
Free State	8512	10.4%	806686	11.1%	815198	11.0%
North West	5190	6.3%	806379	11.0%	811569	11.0%
Gauteng	12441	15.2%	3004754	41.2%	3017195	40.9%
Total	82033	100.0%	7299498	100.0%	7381531	100.0%

Table 2.3 Profile of urban farmers per province 2007 (Burger et al 2009, 34)

Census 2011 provides numbers of households engaged in agricultural activities by municipality. Figure 2.7 illustrates the proportion of households involved in agricultural activities in SACN cities and secondary cities. It must be noted that not all residents of these municipalities are urban, particularly within the municipalities of the secondary cities. However, it is a useful snapshot of the range of involvement in food production in and around urban areas.

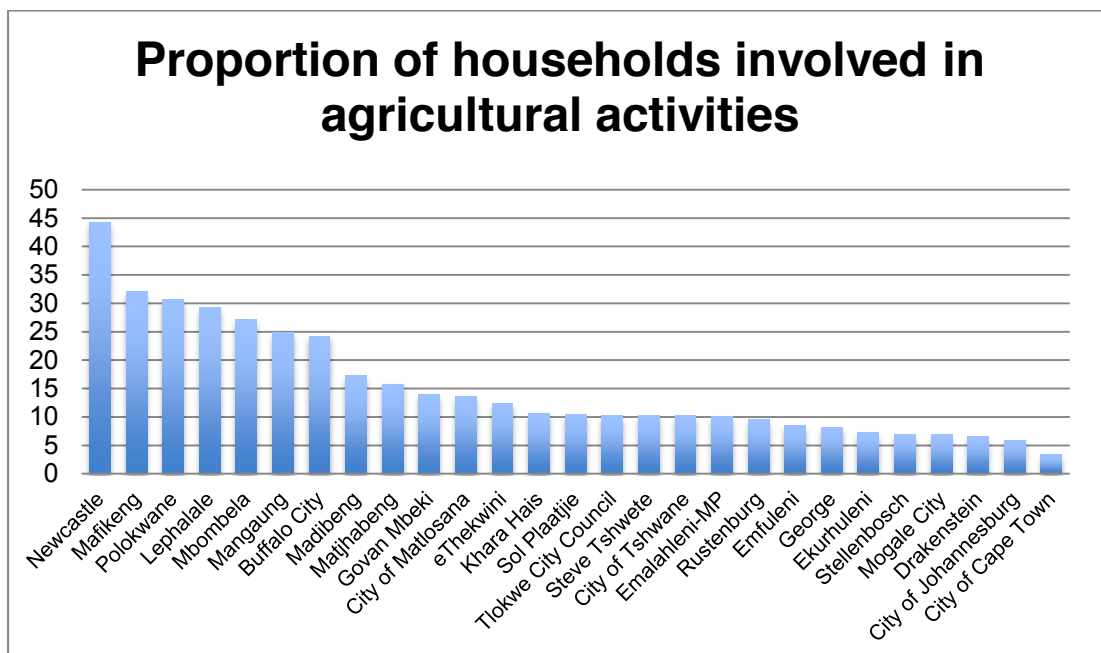


Figure 2.7 Involvement in agricultural activity (Census 2011)

This data shows that there is relatively low uptake of urban agriculture in South Africa, despite the level of policy and programmatic attention.

The AFSUN surveys in Cape Town, Msunduzi and Johannesburg found limited uptake of urban agriculture and a low frequency of sourcing food from own production (See Section 2.3.6). In Msunduzi 30% of sampled households ever sources food from own production, but less than 10% ever did in Cape Town or Johannesburg. In 2013 AFSUN conducted a follow up survey that sampled in high, middle and low income areas across Cape Town. In this survey, just 2.3% of households in low income areas sourced any food from own production, while almost 10% in high income areas did. In low-income areas urban food production may be used to supplement nutrition. In higher-income areas it is related more to environmental ideals and concerns about the food system.

2.6.2 What is being produced?

According to Burger et al's analysis of the General Household Surveys, field crops were the most commonly farmed foods. This is reflected in the findings of the assessment of the Gauteng Provincial food gardening programme (Table 2.4). These findings do not indicate volumes of production. Most support for urban agriculture focuses on support for field crop and horticultural production. However, the relatively high prevalence of livestock and poultry suggest that there should be wider support for other forms of production, and strategies to mitigate any of the negative environmental health impacts of livestock and poultry production.

There are no large scale studies addressing actual food production from urban agriculture. The agricultural census does not capture data on volumes of food produced by urban agriculture practitioners.

In the case of urban agriculture projects supported by Provinces and Local Governments there is extremely limited monitoring and evaluation of projects. The number of projects and beneficiaries are recorded, as are the inputs provided, but there is no consistent monitoring of agricultural outputs. In Ruysenaar's work in Gauteng, he found that in Germiston and Pretoria, more than 50% of projects had no records of what was being produced. Available records were not in a standard format, so there was no chance to compare outputs from available records either (Ruysenaar 2013, 233). There has been some attempt to provide a quantification of levels of production through data on the value of food sold from plots or value of food consumed from own farming. In Randfontein, Gauteng, it was found that 'Six [out of nine gardens producing anything] projects record[ed] income ... varying from between R25 (per month), in the worst case scenario to as much as R1600 per month' (Wits Commercial Enterprises 2007, 31, in Ruysenaar 2013, 233). Thornton (2008), working in the smaller urban settlements, found that participants in Rhini saved on average less than R100 per month on food costs as a result of own production, and in Peddie, the average saving was between R151 and R200. Only 17% of respondents to the Gauteng Siyazondla evaluation reported savings, these were R151 on

average. Only 14% reported earnings and here the average amount was R210. There is some evidence that a small number of farmers are accruing significant economic value from urban agriculture. The norm, however, appears to be for quite small economic benefits.

CROP	% REPORTING GOOD HARVEST
Beetroot	77
Spinach	89
Tomatoes	76
Onions	72
Carrots	78
Beans	75
Cabbage, choumollier, broccoli	46
Pumpkin, squash, butternut	48
Mealies, mabele	24
Potatoes, madumbe, sweet potatoes	36
Fruit (citrus, mango, apple, apricot, peach)	19
Herbs	8
Other	23

Table 2.4 Crops grown under the Gauteng Provincial food gardening programme (Source Kroll et al 2012)

The lack of data on what is actually being produced by urban agriculture is a serious limiting factor on the ability to assess urban agriculture's contribution to food security. There is an immediate need to better monitoring and evaluation processes to be developed.

2.6.3 Contribution to food security

It is difficult to assess the actual contribution of urban agriculture to food security. Burger et al (2009) present data from the General Household Surveys to compare farming and non-farming households (for this a control group of urban residents with similar income profiles were used) (Table 2.5). It appears that households practicing urban agriculture were actually less food secure than non-farming households. However, it is not clear that the characteristics of farming households are directly comparable with non-farming households. There is considerable variation in households earning less than R10 000, which was the cut off for inclusion in this sample. It is highly probable that the farming households were more vulnerable to food insecurity and therefore began farming.

FOOD INSUFFICIENCY		URBAN NON-AGRICULTURALISTS		URBAN AGRICULTURALISTS	
		2002	2007	2002	2007
INSUFFICIENT	ALWAYS	1.71	0.69	2.64	0.50

FOOD CHILDREN FOR	SOMETIMES	24.51	14.38	48.74	22.33
	NEVER	73.77	84.92	48.63	77.16
INSUFFICIENT FOOD FOR ADULTS	ALWAYS	1.75	0.73	3.71	2.85
	SOMETIMES	24.08	12.85	47.08	21.91
	NEVER	73.90	84.62	49.20	74.42

Table 2.5 Insufficiency of food for farming and non-farming households (Source: Burger et al 2009, 55, GHS 2002; GHS 2007 (StatsSA, 2002; 2007))

In their analysis of the three AFSUN food security surveys, Frayne et al found the following: ‘When considering data from the AFSUN survey, surveyed households in Cape Town engaged in UA demonstrated marginally higher HDDS scores, demonstrating that these households had slightly more dietary diversity. Households in Johannesburg engaged in UA also had marginally higher HDDS scores, indicating slightly better dietary diversity. All other comparisons demonstrated no significant difference in food security scores between households engaged in UA as a food source and households which were not. The correlations between frequency of household engagement in UA as a food source and household food security scores reveal that there were no significant correlations observed for the majority of these associations’ (Frayne et al. 2014, 184).

Other smaller case studies that have attempted to assess the impact on food security through comparing the food security of urban agriculture practitioners with a broader population. However, this approach does not provide useful results. Thornton’s (2008) work in Rhini and Peddie attempted to put a cash value of urban agriculture in terms of off-setting food purchasing. The results showed limited importance of urban agriculture for food security. van Averbek’s work in Atteridgeville, Pretoria, found that the urban agriculture projects studied could account for about 28% of the vegetables required for participating households (van Averbek 2007, 340). Webb (1996, 2000) has found that there are no differences between dietary habits and nutritional status of farming and non-farming households. As noted above, the economic benefits from sale of produce are limited. With the exception of the organic box-scheme run by Abalimi Bezekhaya in Cape Town, market channels for urban agricultural producers are limited with little option to sell to municipal markets, supermarkets or the state.

Furthermore, many case studies of urban agriculture suggest that despite the stated intent to reach ‘the poorest of the poor’ many of the participants in urban food production do not fall into this category (May and Rogerson 1995, Battersby 2012, Ruysenaar 2013). This is in part because the most vulnerable cannot afford the time between investment in production to harvest or the risk of crop failure. Additionally, evidence from Cape Town suggests that the majority of farming households are in receipt of old age pension grants, which suggests the need for some form of financial buffering in order to be able to farm. International case studies suggest too that the poorest and recent migrants are unable to access land or lack the required social networks, which excludes them from farming (Ruel et al in Zezza & Tasciotti 2010, 266, Freeman 1991, Egziabher 1994).

There is little strong evidence to support the overwhelming support for urban agriculture as the most appropriate means of addressing food insecurity. While the financial investment by municipalities may not be substantial, there are concerns that the presence of urban agriculture programmes or strategies is deemed to be sufficient response to the challenge of food security. This effectively negates the necessity of their interventions. Chapter 3 will address a few of the systemic barriers to urban agriculture as viable source of food security or livelihood. At this point it is sufficient to note that a substantially better evidence base is required in order to support the continued advocacy of urban agriculture to address urban food insecurity.

2.7 Conclusion

This chapter has provided an overview of the state of urban food insecurity in South Africa. It has argued that food security levels in urban areas are high, with food insecurity in informal urban areas being as high as rural informal areas. This food insecurity is characterised by low dietary diversity and temporal variation in food security. Key drivers of food security, including income, geographical access to food sources, housing type and household structure were identified. The evidence for the role of urban agriculture in food security has been critiqued, suggesting that uptake is limited and that there is no clear evidence base to argue for urban agriculture as the main response to urban food insecurity.

Recommendations from the findings of this chapter are reflected in Chapter 5.

Chapter 3: The Food System

Highlights

- The food system is a key determinant of food security.
- Municipal government plays many roles in shaping the structure of the urban food system.
- South Africa is food secure at a national scale, meaning that it currently either produces sufficient food or can import sufficient food to meet the food needs of its residents.
- However, the food system has become increasingly consolidated in the last two decades. South African agriculture has become more export oriented and is increasingly dependent on imports. There are concerns about the increased presence of highly processed foods as a result of this, and about exposure to price fluctuations.
- The deregulation of the food system has made the system less transparent, creating critical data gaps that make food system governance more difficult.
- Many components of the food system operate in and around urban areas (production, warehousing, logistics, Fresh Produce Markets, processing, retail). There is therefore a major opportunity for local government to influence the food system.
- There is a need for local government to pro-actively include food production and the food system in land-use decision making. Local government should view food production along a continuum from household production to commercial agriculture and develop an understanding of the role that agricultural land can play in achieving broader (i.e. not food security alone) municipal objectives.
- Households depend on a range of formal and informal retailers to access food at different points in order to maximise their potential food security. It is therefore imperative that both formal and informal retail are viewed as critical nodes in the urban food system; planned for and supported accordingly.
- The food system is a major generator of waste, much of this within urban areas. Addressing food waste is one means by which municipalities can improve local sustainability.
- The food system is dependent on several other systems (energy, water, transport, space) and is therefore vulnerable to a number of mega-trends. Strategies to increase food system resilience at the local scale should be supported.

3.1 Introduction

Food insecurity within South Africa's cities is not determined simply by household-scale factors. The structure and dynamics of the food system play a key role in shaping the households' abilities to have at all times 'physical and economic access to sufficient safe and nutritious food that meets their dietary needs and food preferences for an active and healthy life' as per the WHO/FAO's widely accepted definition (WHO/FAO 1996). This definition translates to mean that food security means not just the physical availability of food but also access to food, effective and appropriate utilisation of the acquired food and a consistent of food, a stable food system. This report argues that it is therefore essential to understand food security as an outcome of the food system and other wider systems. The food system comprises of '(i) the activities, actors and institutions who grow, process, distribute, acquire, consume and dispose of food and how they interact with other systems and actors, and (ii) the outcomes of these activities contributing to food security' (Adapted from Roberts 2001, Ericksen 2007, and MacRae 2013). As argued in the introduction, it is therefore essential to shift the scale and loci of interventions to alleviate and prevent food insecurity.

Many previous engagements to address food insecurity have focused exclusively on addressing household poverty and have identified unemployment as a key determinant of food insecurity. However, as noted earlier, BFAP has found that for a household to consume a 'balanced daily food plate' of food, it would have to have an income of around R5 630 (BFAP 2012, 49). Using this as a baseline, it is clear that even employed households would struggle to achieve a balanced diet. According to Census 2011, 61.5% of Cape Town's households earn less than R6 400 per month. This has led to the assertion that the problem of food insecurity needs to be understood as being caused in part by problems in the food system, which make healthy foods unaffordable for the majority of the population. It is essential therefore to understand that processes across the whole food system contribute to prices and the relative accessibility of foods for urban consumers. Figure 3.1 provides an illustration of this through the relative contribution of different phases of the food system to the end price of a loaf of bread.

The food system feeding South African cities intersects with other systems, such as the urban system, the transportation system, and the energy system, to generate conditions that enhance or hinder food insecurity. These systems are driven by similar political, economic and social agendas.

Many of the components of the food system operate outside of the sphere of influence of local government. It is important, however, that these are understood in order to identify policy and programmatic responses at the urban scale that respond to food insecurity in an informed and effective manner. There are critical components of the food system that act predominantly within urban areas and therefore are under the explicit jurisdiction of municipal governments. These include retailing, processing and waste management.

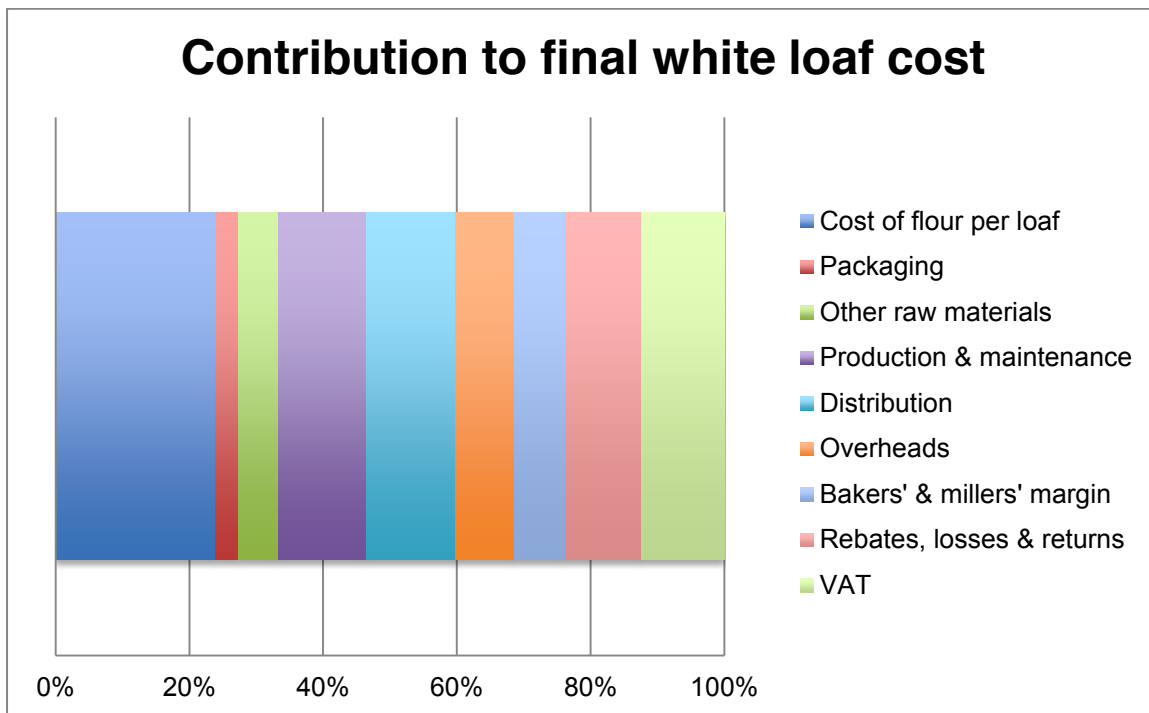


Figure 3.1 Average cost on the Wheat-to-white-bread value chain (Scenario 1 – 508g high) (Source: NAMC 2012: 71)

This chapter provides an overview of the current state, historic trends, and potential trajectories of the South African food system vis a vis production, imports and exports, transportation, value chains, retail and waste. It presents potential implications for urban food security and provides initial recommendations. A key contention of this chapter, in line with food systems thinking, is that food insecurity in cities is an unintended consequence of structural issues: although none of the players in the South African urban food system may intend to cause hunger or malnutrition, collectively, their interactions create conditions which result in close to half of the South African population being food insecure.

The chapter concludes with a description of global mega-trends which are likely to impact urban food systems and compromise food security in SA cities. A recent national food system scenarios planning process is introduced and key questions to inform an urban food systems scenario planning process are identified.

3.2 Food System Features

This section considers some of the key features and trends of food systems in South African cities. These include increasing consolidation, food price volatility and inflation, and knowledge and data gaps hampering food system governance.

3.2.1 An increasingly consolidated system

The South African food system, like that of other countries, has undergone significant consolidation in the past 20 years. By way of example, 73% of the market share of maize is held by four companies. Four wheat millers control 87% of the market. Although there are about 5000 dairy farmers in South Africa, there are just 13 buyers, of which four process around 65% of total commercial milk. The two largest companies produce 50% of all chicken meat in the country and three companies produce 51% of all eggs (Source: Cutts & Kirsten 2006, DAFF 2011, 2012)

Within food retailing, four major companies account for 97% of all food sales in the formal retail sector (GAIN Report 2012). In addition to their dominance of the retail sector, the supermarkets are increasingly influencing production and processing downstream through vertical integration (Beinabe & Vermeulen 2008, Louw et al 2007).

This consolidation was facilitated by 1980s and 1990s deregulation of the agricultural sector (Kirsten & Van Zyl 1996). In 1990, more than 75% of food was sold under controlled marketing schemes. The Marketing of Agricultural Products Act (Act No. 47 of 1996) and the 2001 Strategic Plan for Agriculture paved the way for the development of liberalised and 'open' (competitive) agricultural markets aimed primarily at greater foreign trade in agricultural products.

Increasing trade liberalisation exposed indebted farmers who depended on state subsidies to global market forces which undermined their viability, resulting in the failure of large numbers of farms. This has contributed to a consolidation of land ownership with large agri-businesses which were better able to compete due to better access to capital and economies of scale enabling viability despite narrowing profit margins. This period also saw the privatisation of co-operatives as white agricultural interests co-opted the value of decades of state support and monopoly control. This process shifted the balance of power in favour of corporate retailers and brand owners, increasing concentration throughout the agro-food system. As a result, consumers were exposed to the abolition of food price controls which led to increasing food prices from the 1980s lasting until the end of the 1990s.

This consolidation of the food system, particularly of the agricultural component, has been argued to have important indirect impacts on food security through the generation of new conditions of poverty and vulnerability:

'Agricultural intensification and integration heighten profits and productivity for some, but squeeze many off the land, accelerating the formation of urban and peri-urban slums. Processes of externalisation and casualisation have reconfigured workplaces and workspaces in ways that undermine the bargaining power of employees, which fragment and interrupt employment, and that heighten employment vulnerability' (Hickey & du Toit 2007).

A further challenge associated with the changing nature of the food system and governance approaches to food is that there are now significant knowledge gaps, that make interventions, and predicting potential impacts of interventions difficult.

3.2.2 Inflation and Price Monitoring

Food price inflation and volatility affect SA urban food systems. These are an outworking of the decisions that have been taken within the food system and the interaction of the food system with other systems. Food price inflation has always been a major contributor to general Consumer Price Inflation (30% from 2000-2008 (Rangasamy 2011, 187). Food price inflation is more volatile than non-food inflation.

Food price inflation is officially measured using the food component of the Consumer Price Inflation (CPIF), but this has been argued to not be an appropriate measure of food prices for low-income households (Food Price Monitoring Committee 2003, Vink et al 2004). For this reason the Food Price Monitoring Committee suggested a basic food basket that better captured the actual foods consumed by the poor, and BFAP

developed their Poor Person's Index, which is based on typical portion sizes of the five most commonly consumed foods in South Africa: maize porridge, brown bread, sugar, tea and full cream milk (BFAP 2012). Figure 3.2 indicates food price inflation using these measures. The BFAP poor person's index shows the greatest rate of inflation, confirming that the poorest are most impacted by food price inflation.

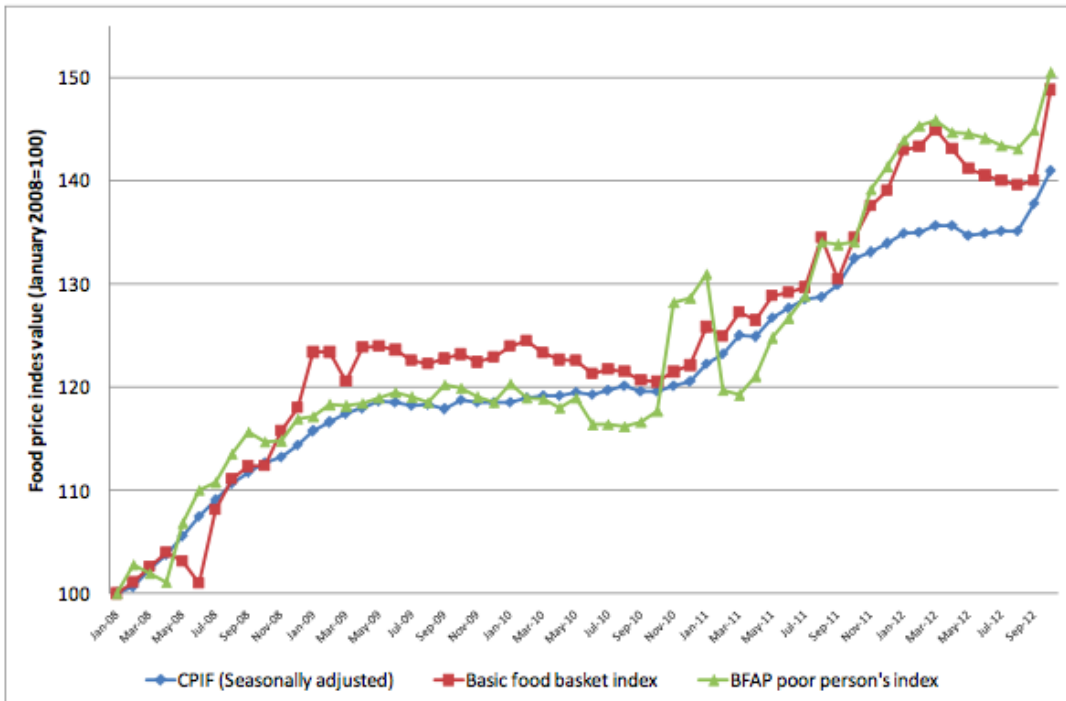


Figure 3.2 Monthly food price inflation, January 2008 to October 2012 (Source: BFAP 2012, 42)

There is no simple answer as to what drives food price, even within the same category of food in the same city. For example, working in Msunduzi, PACSA tracked the spot price of frozen chicken across four retailers and found no trend in prices (See Figure 3.3).

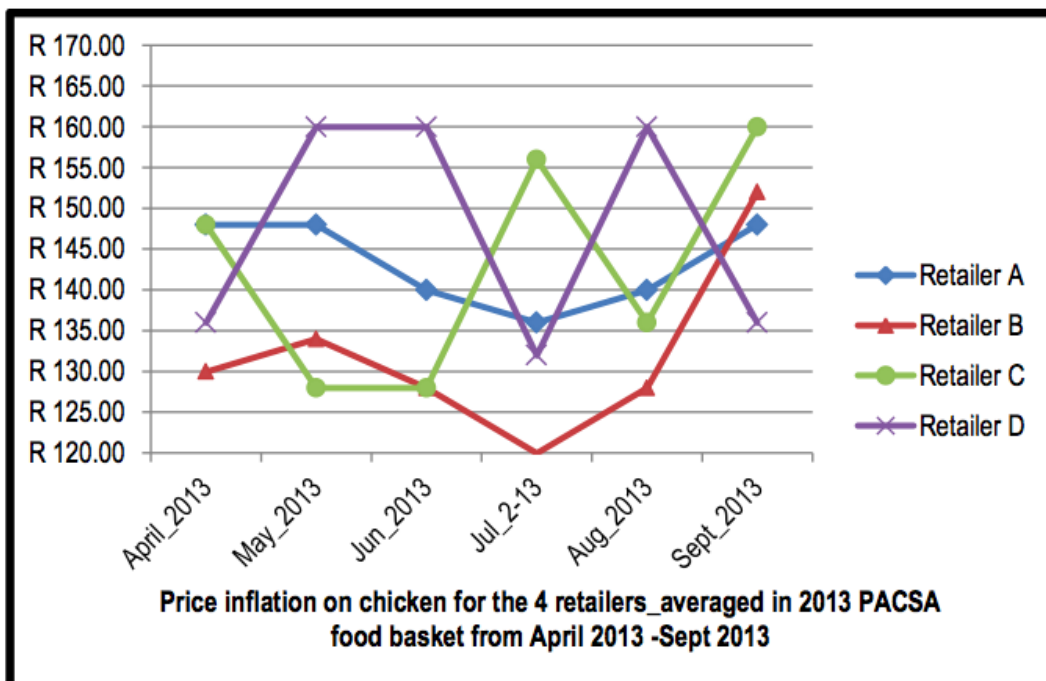


Figure 3.3 Price fluctuations for frozen chicken pieces in 2013 PACSA across 4 retailers, April 2013-Sept 2013 (Source: Smith & Abrahams 2013, 4)

3.2.3 Understanding knowledge gaps

There are profound data gaps in the South African food system. This has been caused by the consolidation of the food system in the wake of market deregulation. This has made the less traceable as large companies are unwilling to share their data.

There is good data available on primary production, but there is very limited tracking of flows of food in South Africa. The fact that there is no single institution monitoring the food system and that the system delivering food to the population is largely within the private sector means that data is neither uniformly recorded nor available. Supermarkets are major stakeholders in the food system and determine food flows, but will not share data.

These gaps in knowledge on the food system present governance challenges, but are also useful in that they illustrate the complexity of the food system and where relative power and knowledge resides.

3.3 Stages in South African Urban Food Systems

The following section considers the key stages of the food systems feeding South African cities, beginning with primary production (agriculture) and proceeding via imports and exports, warehousing and logistics, retail and marketing, to waste. These stages do not follow a one-way, linear progression, but are a network with multiple forward and backward connections.

3.3.1 Primary production

Over the last twenty years there has been a marked decline in the number of commercial farming units in South Africa (Fig 3.2). Between 1990 and 2008, there was a 76% decline in the number of farmers in the country (Vink and van Rooyen 2009). While the number of farming units has declined, agricultural productivity has not. What is taking place is a consolidation of the agricultural sector, with 'mega-farmers' (generally industrial farms) emerging. Agriculture has become more industrialised and consolidated, so much so that one of the leading four food retailers stated in 2011 that they procure 80% of all their fresh produce from just 10 agribusinesses (Pienaar 2011).

Production trends:

Relative stable – Wheat, maize, most horticultural crops

Increase: Poultry, soya (mainly for animal feed), potatoes, fruit – particularly wine and table grapes and apples for export (DAFF 2013, SAPA 2013)

Table 3.1 illustrates the trends in fruit and vegetable production, exports and sales to illustrate the changing markets. This shift in production is indicative of a food system that is increasingly internationalized. It reflects a decoupling of national food production from national food consumption.

Primary production trends have been shaped by changing demands and changing import/export profiles, which are the result of local and global policy environments. They are also being shaped by other system trends. Increasingly farmers are facing very challenging terms of trade as increasing costs of inputs continue to narrow profit margins: Fuel prices increased by 14% and seed prices by 19% in 2012/2013 (DAFF 2013). Large-scale producers, who are able to take advantage of economies of scale, fare better under these conditions. This contributes to continued concentration. Due to the kinds of contracts that many farmers have with large retailers or producers, farmers are price takers and are not in a very powerful position within the food system as a whole. Future trends in production may be driven by climate change and other megatrends, but also by factors such as the changing National Water legislation.

VARIABLE	2001	2007	2011	% Change 2001-2011
FRUIT				
TOTAL PRODUCTION ('000 T)*	4481.228	4510.859	4392.453	-1.98
EXPORTS (USD MILLION)*	515.152	1421.619	2072.608	302.33
EXPORT VOL ('000 T)	1579.461	2482.475	2366.915	49.86
% OF PRODUCTION EXPORTED	35.25	55.03	53.89	52.88
QUANTITY OF FRUITS SOLD IN FRESH PRODUCE MARKETS ('000 T)	871.242	631.31	849.852	-2.46
% OF TOTAL PRODUCE SOLD IN FPM	19.44	14.00	19.35	-0.48
VEGETABLES				
TOTAL PRODUCTION ('000 T)*	3838	4335	4722	23.03
EXPORTS (USD MILLION)*	16.60	40.14	64.93	291.23
EXPORT VOL ('000 T)	66.00	109.16	142.50	142.50
% OF PRODUCTION EXPORTED	1.72	2.52	3.02	75.48
QUANTITY OF FRUITS SOLD IN FRESH PRODUCE MARKETS ('000 T)**	1959.3	2009.8	2122.9	8.35
% OF TOTAL PRODUCE SOLD IN FPM	51.05	46.36	44.96	-6.09

Table 3.1 Fruit and Vegetable production, exports and sales (Barrientos & Visser 2012, 3, calculated from the ITC trade database, 2012: [*http://www.nda.agric.za/docs/statsinfo/Ab2012.pdf](http://www.nda.agric.za/docs/statsinfo/Ab2012.pdf), [**http://www.nda.agric.za/docs/statsinfo/Trends_2002.pdf](http://www.nda.agric.za/docs/statsinfo/Trends_2002.pdf))

Peri-urban agricultural lands

Productive land around cities has historically been an important source of food for South African cities. The current contribution of these farms for urban consumption is not easily quantifiable as a large proportion of the food produced is purchased by supermarkets, which makes it hard to trace once it leaves the farm. However, evidence from Cape Town suggests that a significant proportion (around 30%) of local farm produce goes either to the local Fresh Produce Market or directly to traders (Jackson 2010). This produce, which is mostly high weight, low cost, long lasting produce, is locally consumed in predominantly lower income neighbourhoods, and is therefore making a significant contribution to the local food system. Given the context of steadily increasing transport and energy costs, proximity to urban areas may translate into greater viability of peri-urban agriculture. Locating labour-intensive agriculture on the urban periphery may provide job opportunities for the impoverished residents of spatially marginal townships.

However, as cities and towns face increasing pressure for new housing, for low-income and high-income residents, these peri-urban agricultural lands are threatened. State-owned land should be the primary target for land for state provided housing and the Housing Development Agency is in place to facilitate the release of such land. The fact that the State (National, Provincial and Local) are at times obstructing this process and are unwilling to release land at below market value, is not a valid reason to take the path of least resistance

and develop on privately-owned land outside of the urban edge. This is counter to the principles of Spatial Planning and Land Use Management Act of 2013, which establishes the following Development Principles to apply to spatial planning, land development and land use management: ‘The principle of social justice (Section 7a)... and the Principle of spatial sustainability, whereby spatial planning and land use management systems must ... ensure that special consideration is given to the protection of prime and unique agricultural land (Section 7bii).

The Act then states that a Municipal Spatial Development Framework must, inter alia, ‘include a strategic assessment of the environmental pressures and opportunities within the municipal area, including the spatial location of environmental sensitivities, high potential agricultural land and coastal access strips (Section 21j). And that land use applications should be considered by a Municipal Planning Tribunal, which ‘make a decision which is consistent with norms and standards, measures designed to protect and promote the sustainable use of agricultural land...’ (Section 42b). Provincial government plays an important oversight role in this and must approve applications for changes of land use.

Local governments therefore have a role in ensuring the protection of agricultural land from urban encroachment. The central question is what ‘prime and unique agricultural land’ is. The City of Cape Town’s 2008 Agricultural Land Review assessed the relative value of agricultural land in or adjacent to the city on the basis of: Agricultural potential, economic significance, land use significance, landscape significance, environmental significance. The outcome of this is that the areas identified as ‘High potential and unique agricultural land worthy of statutory protection’ were all areas that produced primarily wine grapes or fruit for export, rather than land producing staple produce for food security.

This report recommends that food security as an outcome be considered when definitions of ‘prime and unique agricultural land’ are determined by municipalities. This is an important area where municipalities can pro-actively plan for food security and is closely aligned with the directives of the draft IUDF which promotes the densification of urban areas and the focus on transit-oriented developments to improve urban efficiency, sustainability and equity.

The role of urban food production

As noted in Chapter 2, there has been considerable focus on urban agriculture as the solution to urban food security. Evidence suggests that uptake of urban agriculture is relatively limited. There is little evidence to support the assertion that urban agriculture addresses urban food insecurity, even for participants themselves, let alone the wider community

There are many reasons why there may be limited uptake of urban agriculture including lack of access to adequate land as a result of the marginalisation of poor communities to areas with poor soils, competition for land use for housing development, poor access to markets due to inadequate quantities and inconsistent quality, poor extension services and lack of access to agricultural inputs such as seed, fertilisers, compost, mulch, and water, as well as restrictive by-laws and attitudes of municipal managers. In fact, it appears that households with greater incomes and access to suitable land are more likely to derive economic benefits from urban agriculture than poorer households (Frayne et al 2014).

However, it is important to note that urban agriculture appears to have important social and individual benefits which may actually precede and outweigh the food security and economic benefits. These other benefits include building community and cultivating social capital, re-claiming a sense of place, enhancing psychological well-being and growing a sense of purpose and self-worth. In promoting urban agriculture within an urban policy context, it is important to consider these other benefits to ensure that projects are more sustainable and not based on unrealistic expectations (Battersby & Marshak 2013). If urban agriculture is to achieve the economic and food security benefits it is claimed to have, it will require significant investment and support.

Expecting the urban poor, who have the least access to the resources (money, land, tools, seed, knowledge, equipment) necessary to establish successful agricultural ventures, to ‘grow their own’ in order to uplift themselves out of poverty, fails to recognise the massive barriers constraining urban agriculture in South African cities. This effectively abdicates responsibility for comprehensive pro-poor urban development policy which tackles the complex systemic and structural drivers of poverty and malnutrition, and places the burden of addressing food security on the most vulnerable sectors of urban society.

If a wider food systems perspective is taken, it becomes clear that urban agriculture is undermined by factors shaping the physical and economic accessibility of foods. It is often cheaper to buy fresh produce from vendors who have bought from the Fresh Produce Market than to grow it. If producers want to sell their produce, they often cannot compete with market prices and there are gluts of the same types of produce. If

urban agriculture promotion is to continue to be an area of policy focus, it needs to consider how to generate viable markets and value-add processes in order to increase the viability of urban agriculture as a livelihood.

Land for urban and peri-urban agriculture

Arguably one of the most significant barriers to more widespread adoption of urban agriculture is the stiff competition for land in urban areas. Generally, agricultural zoning exists primarily on the peripheries of cities. With ongoing urban sprawl, much of this land is re-zoned for development. Urban land is highly contested, and the economic returns generated by urban agriculture generally cannot compete with other uses such as residential and commercial which are able to generate greater short-term economic gains. Due to the far higher capital available and rates incomes generated by property development, municipalities tend to favour the conversion of available open spaces to residential or commercial property rather than preserving land that could be agriculturally productive. As a result, much urban agriculture takes place in marginal spaces and generally remains short-lived.

Urban agriculture as a food security strategy alone has been critiqued in this report. However, it can be argued that urban agricultures in their various forms (from household subsistence to commercial peri-urban) can allow municipalities to generate multifunctional urban landscape systems (O'Farrell & Anderson 2010), and can reinforce some of the key policy levers outlined in the IUDF.

Careful incorporation of land for agriculture within wider urban planning can contribute to the generation of integrated spatial planning, integrated transport and mobility, integrated and sustainable human settlements, integrated urban infrastructure, effective land governance and management, inclusive economic development, empowered active communities and effective urban governance. All of these are IUDF policy levers.

However, it is essential for municipalities to understand that these will not be achieved simply by supporting household and community gardens in the absence of integrating these into wider planning strategies. It is also essential to note that the success in terms of these criteria does also not necessarily equate to improved food security. While every effort should be made to integrate urban production into the urban form, it does not guarantee food security for the poor, nor can it be the only policy response to food insecurity.

3.3.2 Food imports and exports

The call for Tenders for this project asked the following question: 'Will the rural areas be expected to play a significant role in sustaining the production of food for urban areas?' Rural areas play an important role in ensuring continued flow of food into urban areas. However, in an increasingly globalised food system this is far from the only source of food for urban areas. The NDP acknowledges this mix of national and international sources of food:

'South Africa is food-secure and has been for a number of decades. This means that it earns a trade surplus from agricultural exports and is able to cover the cost of food imports from those exports. The country has also produced enough of the staple cereal (maize) for all but three of the past 50 years (the exceptions being the droughts of 1984, 1992 and 2007). The composition of the maize harvest is changing, however, with more yellow than white maize planted. This reflects the trend towards higher consumption of animal proteins and the fact that wheat, rice and potatoes are becoming the preferred staples as the population urbanises and becomes more affluent. In this regard, the national food-security goal should be to maintain a positive trade balance for primary and processed agricultural products, and not to achieve food self-sufficiency in staple foods at all costs.' (NPC 2012, 230)

Through this assertion, the NDP suggests that food security can be achieved through non-local sources of food, and therefore that rural areas need not be essential to urban food security. While this is true, this does increase vulnerability within the food system to food price instability. In recent years there has been considerable international food price instability. The increased dependence on international markets potentially exposes urban populations to greater risk of food price fluctuations. This is compounded by currency fluctuations. There are also concerns about the ability of South Africa's to import and offload bulk foods, such as grain, timeously in case of drought or other causes of local production failure. Additionally, it does not acknowledge the characteristics of the types of food imported and exported.

In 2012, South Africa exported R709 191.2 million and imported R831 402.7 million worth of agricultural products. Agricultural products represented 7.8% of total exports and 6.5% of total imports in 2012 (BFAP 2013, 18). The trade balance was positive in the case of vegetable products, negative in the case of animal and animal-related products and very similar in the case of processed foods.

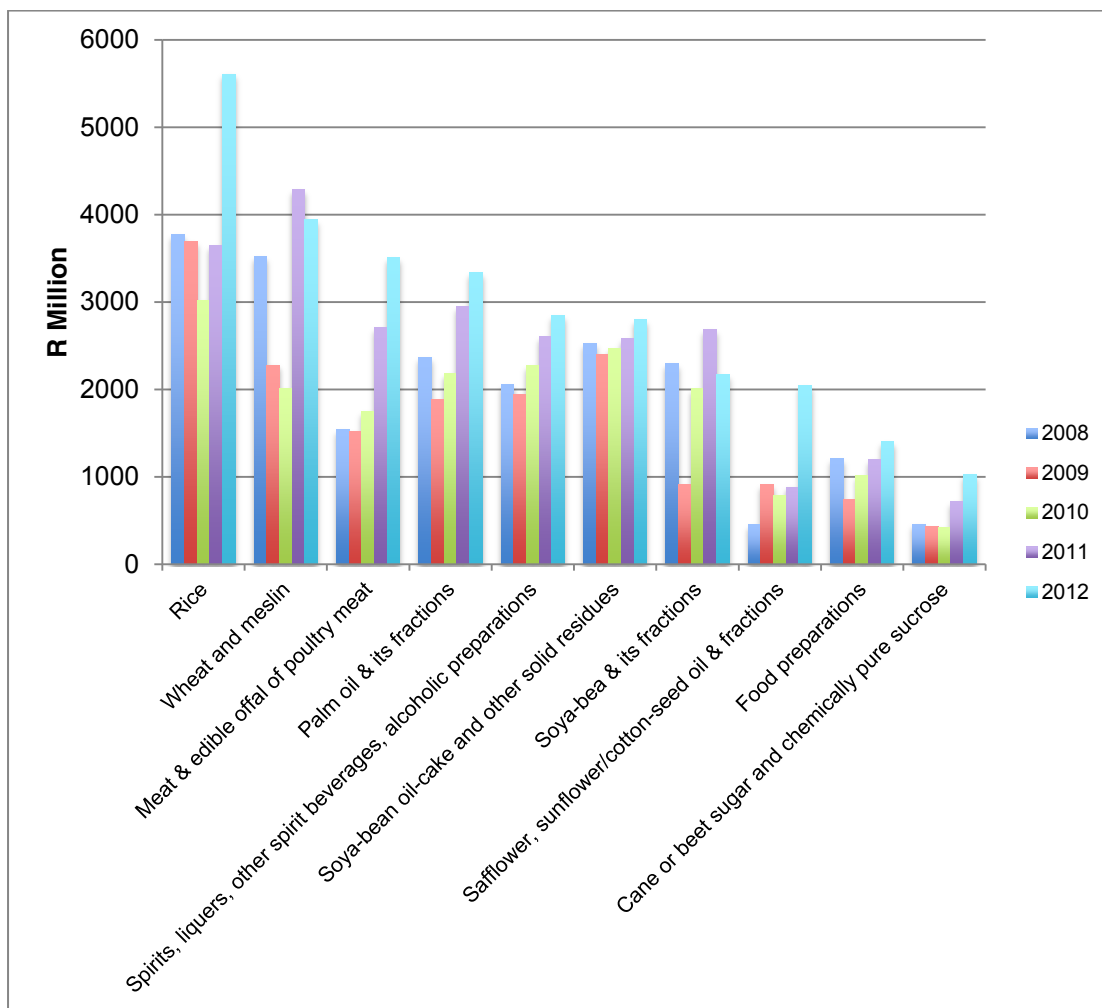


Figure 3.4 Top ten agricultural imports to 2012 import value (Source: BFAP 2013)

The agricultural trade balance in South Africa suggests that the increasingly open market to processed foods is accelerating the observed nutrition transition. Igumbor et al (2012) note: ‘In the past fifteen years, there has been a marked rise in imports of processed products. For example, the value of imported “Bread, Pastry, Cakes, Biscuits and Other Baker’s Wares” increased from approximately R5 million (US\$ 714,000; all conversions are based on the exchange rate at the relevant time) in 1992 to almost R250 million (US\$ 36 million) in 2006. In addition, the import of ingredients used in processed foods has increased. For example, imports of whey, a by-product of cheese production that is used in baked products and sweet snacks, increased from R15 million in 1993 to R80 million in 2007’ (Igumbor et al 2012). This is evident when the trend data on the top 10 types agricultural imports are examined (Figure 3.4).

The current trade balance figures highlight two concerns. The first is the increased presence of high processed foods within the South African food environment. The second is the need to engage in the ongoing debate on whether the openness of the South African economy is undermining local agriculture. The fairness of chicken imports, from Brazil and the USA in particular, have been the focus of considerable political debate over the last five years and shows little sign of abating.

3.3.3 Warehousing and Logistics

The urban food system depends on sophisticated warehousing and logistics operations to procure, store and distribute food to retailers. The requirements for warehousing and logistics depend on the type of commodity being moved and the relevant standards. Grains and dry goods require no refrigeration, while fresh produce easily spoils in transit and is subject to considerable wastage. As a result, formal retailers rely on sophisticated cold chains that keep produce cool throughout transportation.

Distribution centres (DCs) and warehousing are an important part of the urban food system and their location and efficiency are in part determined by urban spatial planning and transport planning structures. Distribution

centres, warehouses and logistics companies often locate in areas that are close to major transport infrastructure (e.g. airports), in industrial areas and close to fresh produce markets.

COMPANY	NUMBER OF CENTRAL DCS	LOCATIONS
Pick n Pay	3	Cape Town, Durban, Johannesburg
Shoprite	3 (+2)	Cape Town, Centurion, Durban (+ Freshmark DCS in Durban and Port Elizabeth)
Spar	6	Boksburg, Cape Town, Durban, Midrand, Nelspruit, Port Elizabeth
Woolworths	3	Cape Town, Durban, Midrand

Table 3.2 Location of central distribution of major supermarkets

The major retailers have a small number of central distribution centres Table 3.2. These are very large operations. The Shoprite DC in Centurion for example is 180 000m² and distributes about 90% of the ambient (i.e. non-refrigerated) products to Shoprite, Checkers and uSave stores in Gauteng. Over 1100 suppliers deliver to this DC (Shoprite Holdings undated). Pick n Pay's Longmeadow DC, also in Gauteng is 100 000m² and its Philippi DC in Cape Town is 41 388m². Pick n Pay's central distribution centres distribute over 14 000 different products (Pick n Pay 2014).

The increasingly centralized distribution systems operated by these retailers is intended to increase efficiency and reduce costs. The effective functioning of these DCs, and the smaller warehouses, are dependent on the quality of the urban infrastructure in order to manage transportation and a consistent cold chain.

Informal food retailers are equally dependent on urban transport infrastructure for their businesses. Traders restock frequently because of lack of storage, refrigeration and large capacity transport. Because of the small unit sizes in which they trade, it is essential that they are able to access produce daily, and that they spend a minimum amount of time on the road in order to reduce potential spoilage and absence from customers (See Figure 3.5).

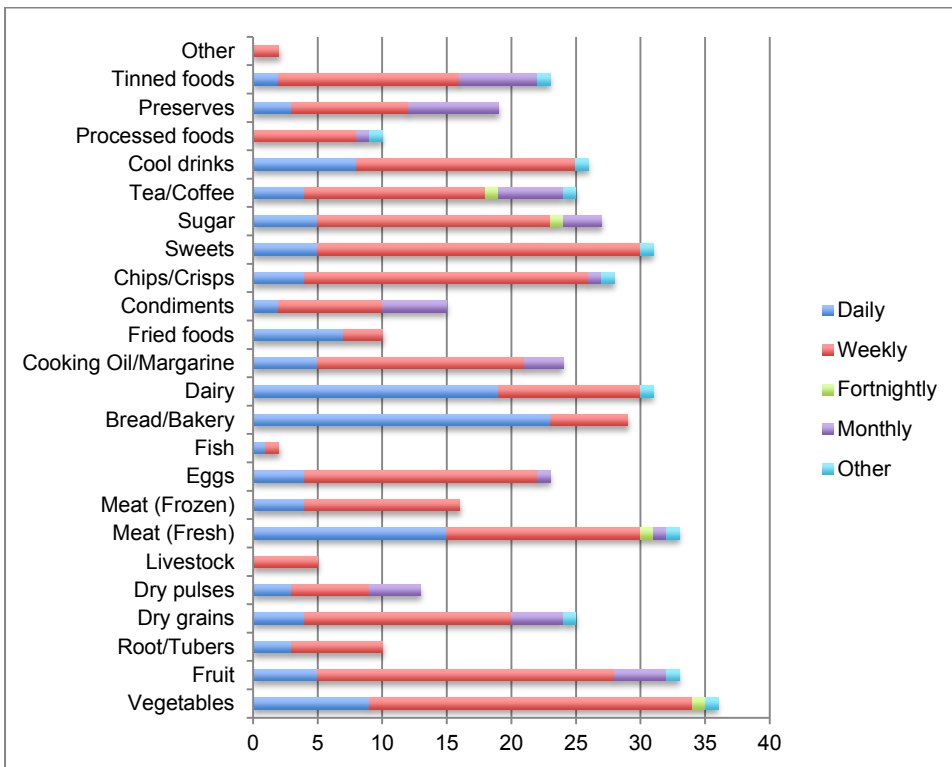


Figure 3.5 Frequency of food purchased by traders in Philippi and Khayelitsha, Cape Town (Source: AFSUN, with permission)

3.3.4 Processing

Food security policy has focused either at the household scale or at national primary production. However, consumers very rarely access completely unprocessed primary produce. Even fresh produce has generally been through some kind of packaging process. About 70% of South Africa's agricultural output is used in intermediate products in manufacturing and related sectors (Louw et al 2007, 4).

There is therefore a need to consider the role of processing within the food system and how it affects urban food security. The food processing industry in South Africa is a powerful player in the food system, shaping not just what foods are available to consumers, but also in shaping primary production. Many of these food-processing activities take place within urban areas and are therefore subject to urban governance.

Food processing is highly concentrated. The ten largest packaged food companies now account for 52% of total packaged food sales (compared to the global average of 26%). Artisanal packaged processed foods contribute only 7% of total sales. (Igumbor et al 2012, 2). While there are concerns about the impact of this concentration on consumer food choice, there are important questions about employment and concentration of power within the food system.

As Figure 3.6 indicates, large enterprises (i.e. a turnover of over R51m p.a.) account for around 91% of all income and 75% of all employment in the sector. Micro-industries (with an annual turnover of R5m or less) account for 1.4% of income and 6% of employment. The micro- and small-enterprises are therefore important generators of employment relative to income generated. These businesses are therefore well placed to be an employment-generating sector within urban areas. Within the DTI's IPAP2 the food sector has been identified as a sector with high employment multipliers and strong backward linkages and as a source of labour-intensive growth (DTI 2013, 86).

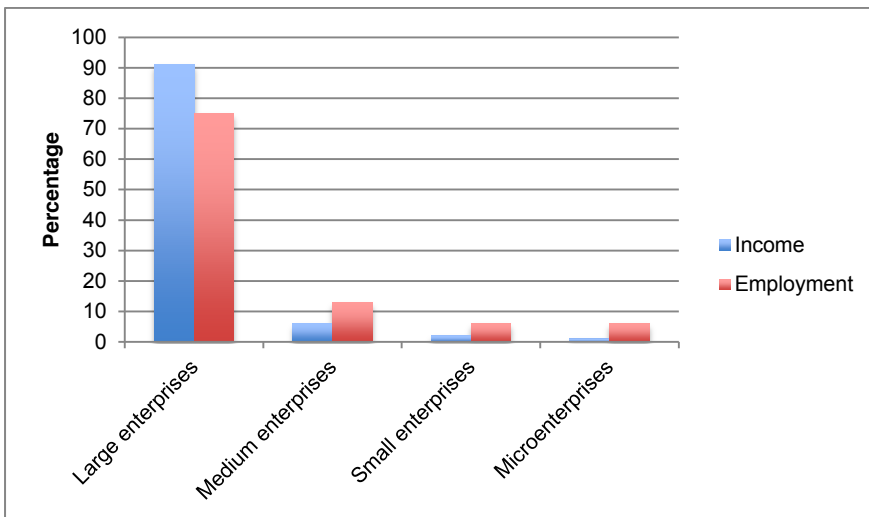


Figure 3.6 Contribution to income and employment (Source: DAFF 2012)

In 2012 the DTI announced that it had invested R736 million in incentives in the agro-processing sector in the previous three years, which retained 14 000 and created 7 000 new jobs (Esterhuizen 2012). Furthermore, DAFF released a new Agro-Processing Strategy in 2012 to address the problem of 'limited participation of small and medium agro-processing enterprises in agro-food value chains' (DAFF 2012, 8). These initiatives are in line with the concerns raised in the NDP about concentration within the agro-processing sector. Both Gauteng and the Western Cape have identified agro-processing as an area of focus for economic development. These agro-processing businesses are concentrated in urban areas, and are often clustered around business and industrial hubs.

3.3.5 Marketing and Retail

The retailing of food in South African cities takes place through five primary channels, including fresh produce markets, supermarkets, informal traders, restaurants and fast food chains. In addition, there are incipient alternative food retail networks, such as farmers markets and buyers clubs, which cater to very specific consumer groups. Municipal government plays an integral role in shaping the food retail environment and therefore food security. This section discusses different food retail channels in SA cities, including fresh produce markets, supermarkets, restaurants and fast food franchises, and informal food trade as well as food marketing.

Food Marketing

Marketing of food is driven by marketing companies employing various media. It is the business of marketing companies to influence consumer choices and promote the consumption of their clients' products. Big food employs the services of such companies to promote the consumption of foods that have multiple negative health consequences.

Print, broadcast and online media largely fall outside of municipal competence, however, municipalities do hold responsibilities for Billboards. This use of public space is clearly open to local government regulation and could provide a lever to shift food values and consumption patterns, both by prohibiting or penalising the promotion of unhealthy foods and by promoting healthy diets.

The development of ethical charters committing media and marketing companies to the promotion of foods that are healthy and ecologically sustainable presents an additional lever to reduce the promotion of unhealthy purchasing and consumption behaviour.

Fresh Produce Markets

South African cities contain 19 major fresh produce markets, some of which are among the largest in the southern hemisphere. These markets receive produce from throughout the region. They distribute huge volumes of produce, primarily potatoes, tomatoes and onions, to a variety of buyers including informal traders, retail chain stores, and private customers.

The Department of Agriculture introduced the system of National Fresh Produce Markets (NFPMS) in 1967. About 18% of overall fruit production was sold through these markets in 2005 (NAMC 2006), however it is likely that this proportion has declined because of increased direct sales to supermarkets and to the export market. The proportion of vegetables sold at Fresh Produce Markets has also declined, but these markets still account for over 40% of South Africa's total vegetable production (Barrientos & Visser 2013, 3). They therefore remain an important component of urban food systems.

VOLUME (T) AND VALUE (R) OF FRUIT AND VEGETABLES SOLD IN SACN FPMS ⁶		2011	2012	2013
Cape Town	T	303164	307493	299145
	R	993763916	1053830825	1199096419
Johannesburg	T	1118007	1202674	1224708
	R	4002197365	4440731020	5167933757
Msunduzi / Pietermaritzburg	T	93137	93550	87748
	R	275425746	286906274	313505907
City of Tshwane	T	569029	598291	606680
	R	1893120974	2038324318	2407033483
Buffalo City / East London	T	83215	85620	84960
	R	274156819	288253875	339736186
eThekweni / Durban	T	286221	296254	288100
	R	941691262	1011922226	1132864648
Nelson Mandela Metropole	T	84786	91020	83817
	R	251079853	274860441	303841810
Mangaung / Bloemfontein	T	89133	89350	85118
	R	287772136	303570224	338923650

Table 3.3 Volumes and values of trade at fresh produce markets

⁶ NDA (2013 & 2012) Based on data from: <http://www.daff.gov.za/daffweb3/Resource-Centre> Accessed 7 April 2015. All figures have been rounded to the nearest full number

The Fresh Produce Markets remain the most important site for traders in the informal markets. Potatoes South Africa estimate that informal traders account for 53% of all fresh potatoes sold at Fresh Produce Markets (DAFF 2012). At this point it is important to note that while major retailers are major players in the food system, 32% of food is sold through other channels, and these are largely still dependent on the fresh produce markets.

Supermarkets

The food system in South Africa and southern Africa is undergoing a rapid transformation. Large-scale supermarket retail chains are increasingly dominating urban food systems and are an important source of food for both wealthy and poor households in South African cities (Figure 3.7).

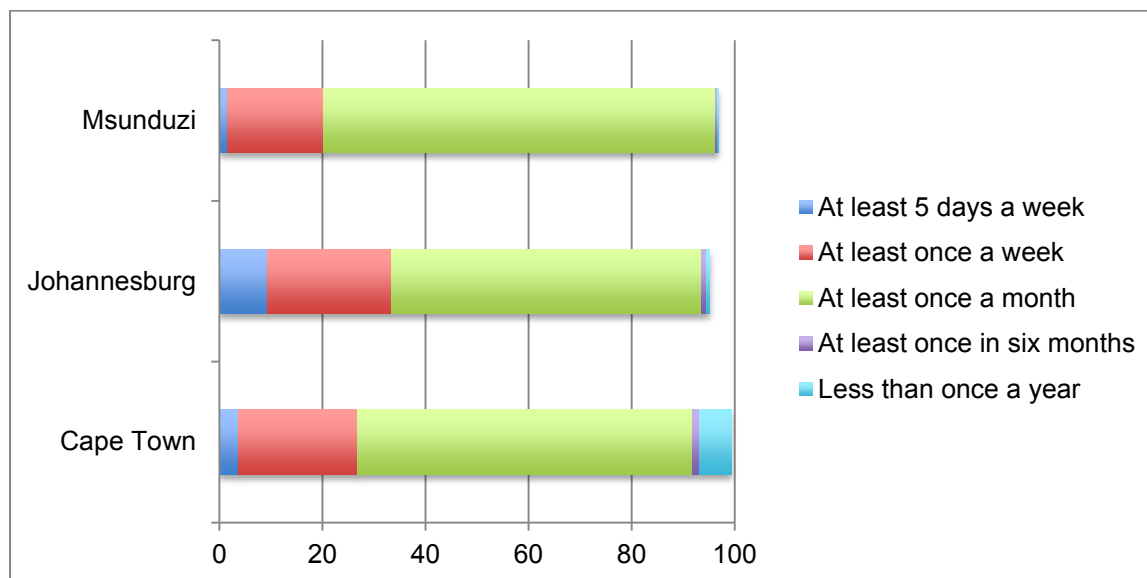


Figure 3.7 Frequency of sourcing food from supermarkets, 2008 (Source: AFSUN with permission)

The supermarket sector has grown rapidly in South Africa. Shoprite announced in February 2014 that it intended to open 101 new stores in South Africa between February and June 2014, and had opened 104 stores in the previous 12 months (Moorad 2014). In the 2014/2015 year Pick n Pay opened 127 stores (Pick n Pay 2015). Four major companies account for 97% of sales within the South African formal food retail sector. Shoprite Checkers currently controls around 38% of the formal food retail market, followed by Pick n Pay at around 31%, Spar with around 20% and Woolworths with around 8% (GAIN Report 2012).

Much of this growth is attributable to growing disposable income among African consumers, which has effectively opened new markets to the supermarkets and their subsidiaries (such as Boxer owned by Pick N Pay and Sentra owned by Shoprite) (Ligthelm 2008, van Wyk 2004). Social grants have also been identified as a draw for supermarkets to lower income areas (Steyn 2012, Joubert 2012)

Figure 3.9 provides an indication of the expansion of supermarkets in Cape Town. Figure 3.8 illustrates the location of supermarkets in Johannesburg. The maps from both cities indicate that although supermarkets are increasingly located in poorer areas of the city, they are still disproportionately present in wealthier areas.

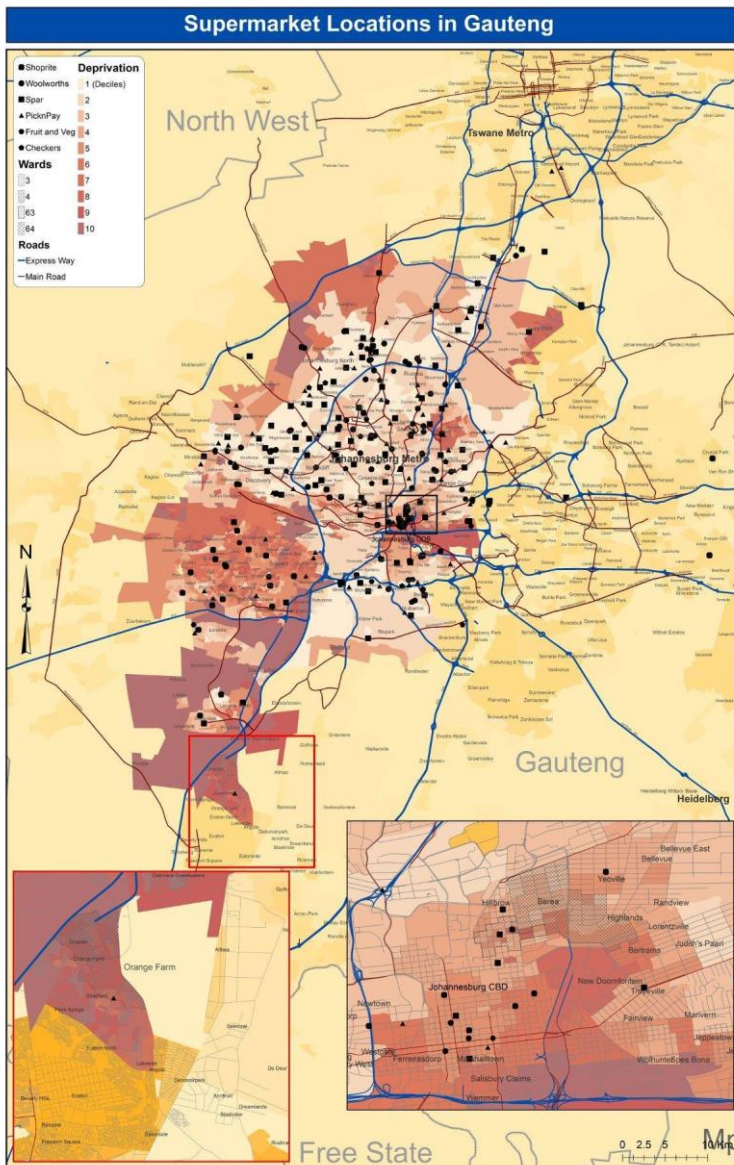


Figure 3.8 Location of Supermarkets in Johannesburg 2013 (Source: AFSUN with permission)

This expansion is due in part to demographic shifts, like the rising black middle class and improved household storage capacity (Reardon et al 2003). However, it is important to consider other drivers, such as post-apartheid market deregulation and trade liberalization have enabled the rapid expansion of the supermarket sector (Reardon et al 2007, van der Heijden & Vink 2013). Also important is the role of developers in driving the process of mall development, with supermarkets as anchor tenants.

Supermarkets generally enter low-income areas through new shopping mall developments, which have been argued to be a driver of regeneration and economic development. In 2010 the National Treasury held a Colloquium on Retail-led township development. In this colloquium it was argued that malls could act as stimuli for nodal development, for skills transfer, and local job creation and procurement (Clacherty 2011, 3). It has been argued that supermarkets may prove an 'urban food security boon' because of their capacity to lower food prices (Reardon & Minten 2011). However, concerns have been raised that the arrival of shopping malls and supermarkets undermines local businesses (Bissiker 2006, Ligthem 2008), and that they are a conduit for the entry of more highly processed, nutritionally poor foods. Shoprite supermarkets are often the anchor tenants of these new malls, and will have their fast food subsidiary, Hungry Lion, in the mall too. In most of the malls there are two to three fast food outlets.

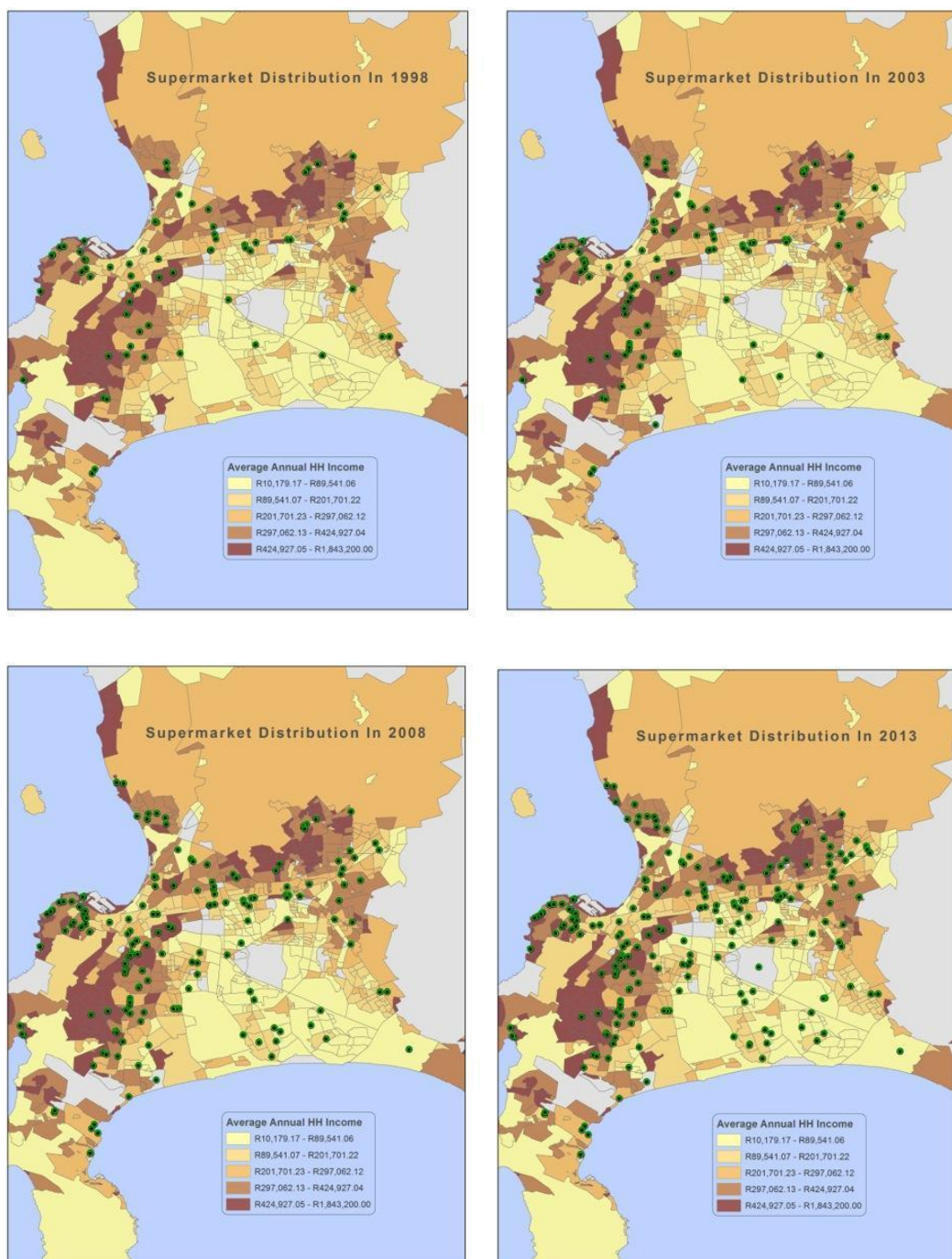


Figure 3.9 Location of supermarkets in Cape Town 1994-2013 (Maps drawn by Peyton & Marshak)

The supermarket sector is rapidly changing the local food retail environment, with seemingly little consideration of its impact, positive or negative on local food and nutrition security. There is considerable debate about the impacts of supermarket expansion and a need to weigh up the benefits brought by the expansion of supermarkets and shopping malls into low-income areas with the challenges of the malls and supermarkets providing cheaper access to less healthy foods (Temple et al 2009, Igumbor et al 2012), and the pressure they exert on local traders who have been identified as crucial to the food security of the poor.

Even if supermarkets are present in a low-income area, it is too simplistic to argue that they provide better access to food for the food insecure. In the AFSUN surveys and Cooke's research in Cape Town, poorer households were less likely to use supermarkets than their wealthier neighbours, due to lack of affordable unit sizes and lack of availability of credit. The reduced market share for individual traders and spazas as those who can afford to shop at supermarkets challenges the viability of these businesses. The demise of these

traders and spazas therefore may therefore mean that, paradoxically, the urban poor are more vulnerable to food security in the wake of the arrival of a supermarket in their area.

It is important to consider the impact of both supermarkets and informal food retail on the food security and nutritional security of the urban poor. The two should be viewed as part of the same over-arching food system and therefore considered as such with municipalities' thinking on food security.

In June 2015, the Competition Commission announced that it was launching an inquiry into the grocery retail sector. As part of its inquiry it will examine the impact of expansion, diversification and consolidation of national supermarket chains on small and independent retailers, noting the negative impact of the movement of supermarket chain on informal traders (Government Gazette No. 38863, 12 June 2015).

Fast food, franchise restaurants and convenience stores

Another emerging trend in urban food retail is the rapid expansion of fast-food outlets, most of which are large holding companies managing several brands, each operating hundreds of stores. According to recent market analysis reports, this industry is currently experiencing substantial growth. The 2011 and 2012 GAIN food retail sector report reflects the massive scale of operations and the degree of capital and governance concentration in this food system sector. A similar trend is unfolding in franchise restaurants, many of which are controlled by a handful of holding companies through franchising contracts. As in other segments of the food system, fast food and restaurants is highly concentrated, with Famous Brands controlling 20%, Yum Brands 15.6%, Nandos 9.5%, Spur Corp 3.9% and McDonalds Corp 2.5% of national market share in 2011 (Igumbor et al 2012). A further development is the roll-out of convenience stores located in forecourts of service stations. These developments are problematic: many of the foods sold are fried in fat and often have high sugar content, making them energy-dense and obesogenic. They typically also have a high salt content, thus contributing to hypertension and heart disease (Steyn & Labadarios, 2011; Igumbor et al 2012; Van Zyl, Steyn and Marais, 2010). A recent study conducted in Johannesburg found that 49% of respondents ate fast food at least once a week, with men and people with lower incomes more likely to eat fast foods. The most popular fast foods consumed were burgers, pizza and fried chicken. The most common reasons for these choices was lack of time, convenience and taste (Van Zyl, Steyn and Marais, 2010).

Informal food retail

Informal trade of food is ubiquitous in most South African urban areas. Although generally synonymous with Spazas, the informal food retail sector shows considerable diversity, from spazas to fresh produce traders to meat traders and processed food sellers, and from selling a couple of oranges from an upturned crate to traders outside the Cape Town Fresh Produce Market buying R15m of produce per year. Informal food retail is characterised by a high degree of flexibility and impermanence, as well as a lack of formalized registration in terms of tax, employee benefits or environmental health permits.

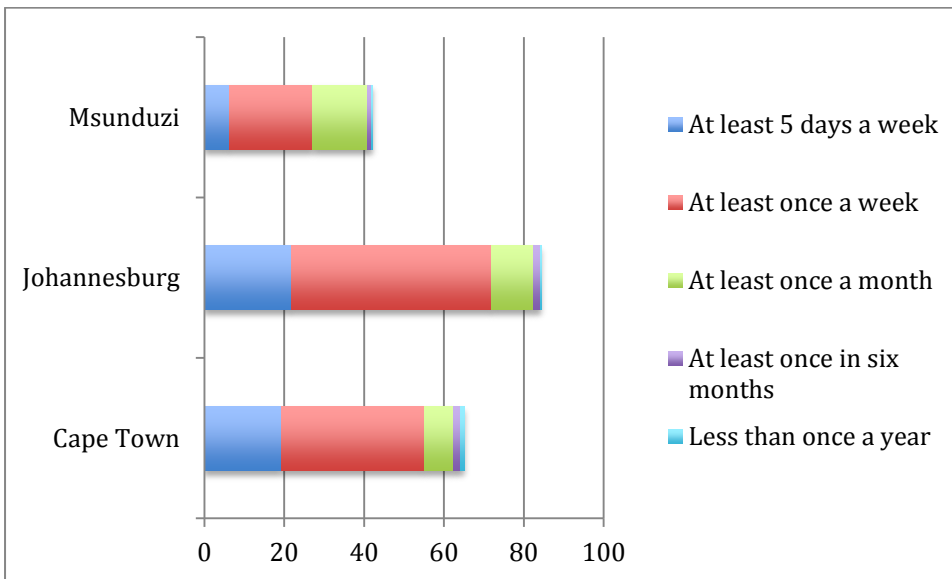


Figure 3.10 Frequency of sourcing food from informal trade, 2008 (Source: AFSUN with permission)

The informal food retail sector remains an important daily source of food for the urban poor (See Figure 3.10).

Municipal governments have tended to frame informal trade as a livelihood strategy and a part of economic development. This report argues that the sector needs to be reconsidered as part of the food system, and not just as a livelihood strategy.

Figures 3.11 and 3.12 present the findings of a mapping exercise conducted by AFSUN in Philippi and Khayelitsha in Cape Town in July and August 2013. The exercise mapped 492 traders, but it is acknowledged that there are actually significantly more traders operating on weekends or around payday. Figure 3.13 demonstrates the location of informal food retailers in Orange Farm and the Inner City, Johannesburg, conducted as part of the same study. There were distinct geographies of trade, with spaza being scattered throughout the wards, serving very local populations (Cooke 2012). Fresh produce traders clustered around the shopping malls, responding perhaps to the stocking strategies of supermarkets in low-income areas. There was also significant clustering of traders near train stations and taxi stops, suggesting that informal food retail and transport are complementary activities, as consumers buy from them on the way to and from work.

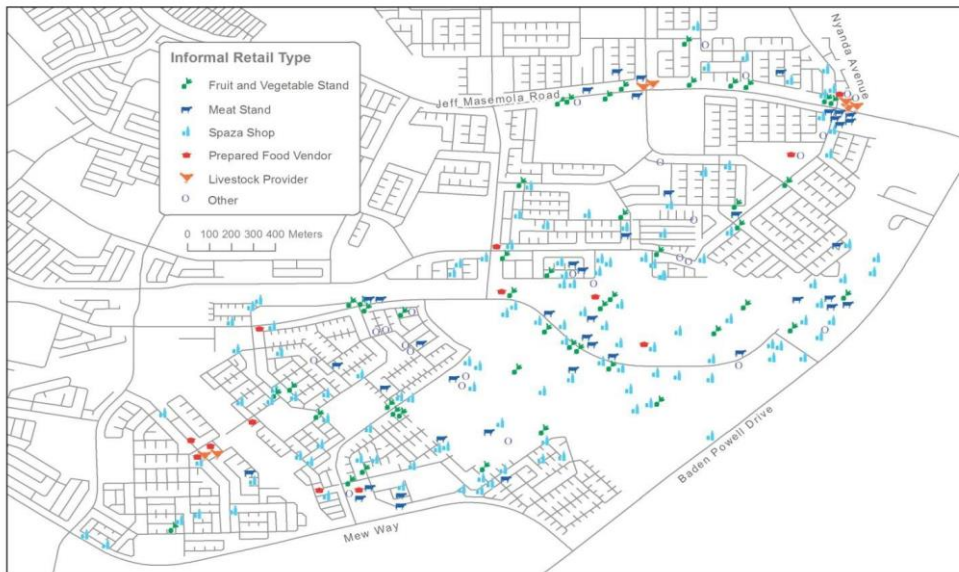


Figure 3.11 Location of Food vendors in Ward 95 (Source: AFSUN, used with permission)

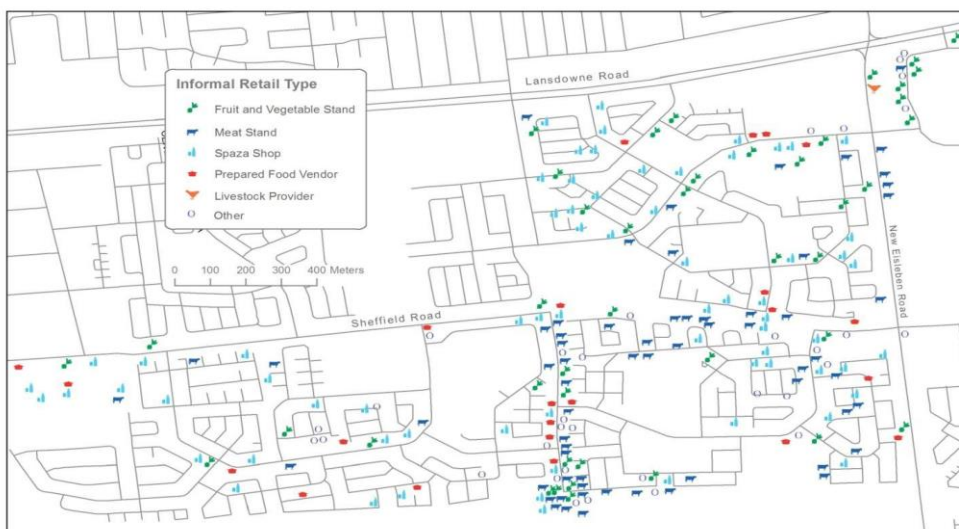


Figure 3.12 Location of food vendors in Ward 34 (Source: AFSUN, used with permission)

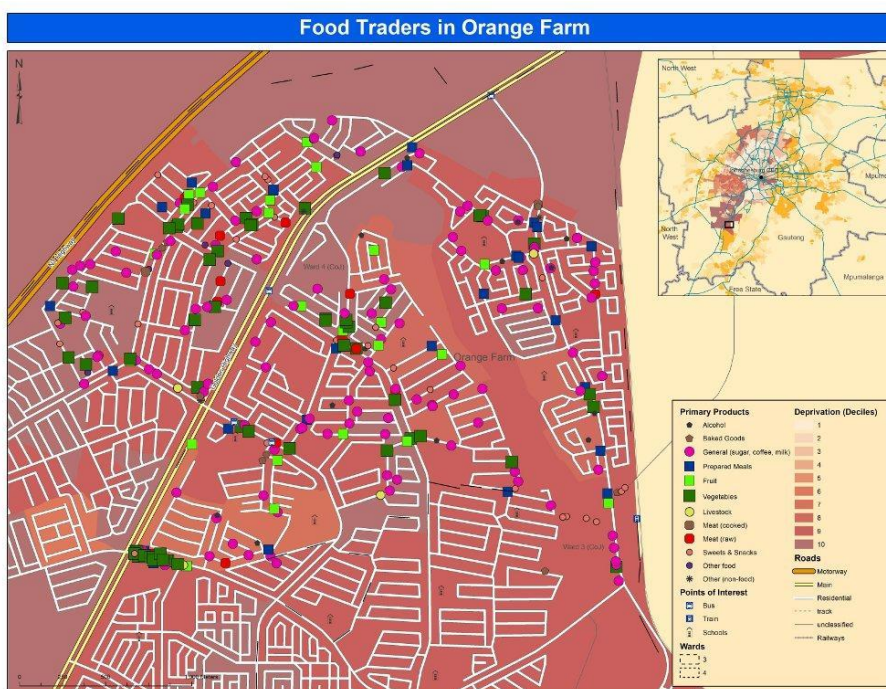


Figure 3.13 Location of food vendors in Orange Farm (Source: AFSUN, used with permission)

Although the traders occupy an important role in the local food system, they face a number of challenges including food spoilage, theft and vandalism, followed by environmental health problems. There are certainly opportunities for the municipalities to address these problems within its existing departmental mandates.

Formal and informal food retail are generally considered as separate entities, however, households use both to source food and maximize their food security. They will shop at large retailers when they have the financial resources to buy in the unit sizes sold by supermarkets, according to their household refrigeration and storage capacity. They will purchase more frequently from the informal food retail sector, which is better adapted to meet their purchasing power and household storage capacity. Table 3.4 summarises the key points made within this report about the relative importance of different forms of food retail for the food security of the urban poor.

	PROS	CONS
Supermarkets	Lower prices per unit Higher safety standards Large range of foods	Unit sizes unaffordable for poorest Inconvenient locations Limited opening hours No credit offered
Spazas	Affordable unit sizes for the poor Sale of food on credit Long opening hours Convenient locations	More expensive than supermarkets per unit weight Perceived low quality of food Limited range of foods
Fresh Produce Traders	Convenient location for daily purchase Produce restocked daily Often cheaper than supermarkets	Limited shelf life of produce due to lack of cold chain
Meat Traders and Livestock Traders	Cultural preferences Range of cuts of meat, including 'fifth quarter' Argued to taste better (live chicken)	Food safety

Table 3.4 Strengths and weaknesses of retail types for food security (Source Battersby forthcoming)

This report argues that the urban poor are best served by having access to a range of retail options. It therefore recommends that municipalities should seek to consciously plan food retail environments. This starts by monitoring the ongoing expansion of supermarkets and reframing informal trade policy to acknowledge the informal sector's role in providing food to the poor. The diversity of retail options, including informal trade, needs to be recognised and validated, regardless of the nationality of traders. There is a need for ongoing studies on the impact of supermarket expansion on informal food retail. There is also a need to understand the dynamics and practices of informal food retail before seeking to generate new trading spaces. There are a number of 'planned and developed trade areas' that are absent of trade, while other areas, generally more suited to the urban food geographies of the residents of an area are unplanned but bustling. Without such informed planning, valuable municipal resources will be wasted and no impact will be made on food security or livelihoods.

3.3.6 Waste

SA food systems produce alarmingly high levels of food waste, the non-organic waste associated with the food system, specifically packaging, and disposable items associated with food. The food system also generates wastewater at each stage. The food system is a major source of greenhouse gas emissions (see Figure 3.14). It is vitally important to note that these general figures show considerable variation across food types. So, transportation accounts for just 1% of red meat's GHG emissions, but up to 11% for fruit and vegetables (Weber and Matthews 2008).

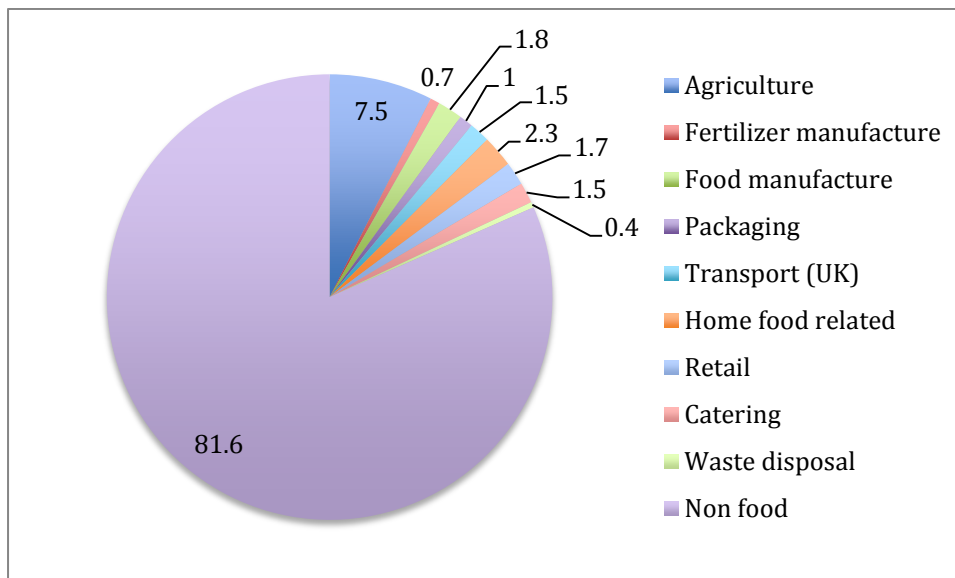


Fig 3.14 Food and its contribution to UK GHG emissions (Source: Garnett 2008, 13)

The food system is a considerable source of waste all along the supply chain (see Figure 3.15). Food processing and packaging are predominantly urban activities, and there is substantial retail and consumption within urban areas. It is clear therefore that there is considerable food waste generated with South African cities. This is both a challenge and an opportunity.

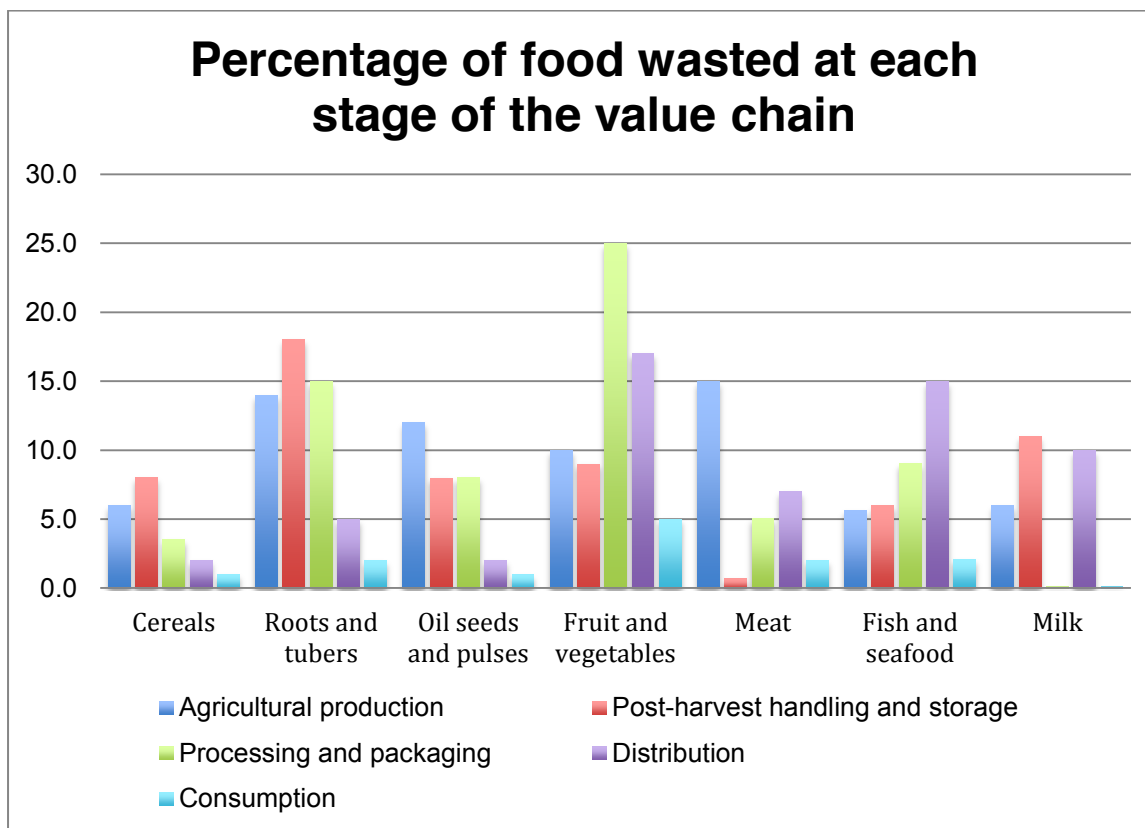


Figure 3.15 Food waste in South Africa (Source Nahman & de Lange 2013)

3.4 Sustainability and Environmental Impacts of Urban Food Systems in South Africa

The food system consumes resource inputs and produces waste at each phase of the food system, contributing to severe sustainability issues. When considering the food system and the links to sustainability, there are four key sustainability challenges: the first is climate change, the second is increasingly scarce viable water resources and the third is soil. Fourth, there is a broader resource challenge where issues such as peak phosphorous and Africa’s negative nitrogen balance all impact on the viability of production. These broader food system sustainability challenges intersect with a number of structural food system challenges that further undermine the overall sustainability of the food system. These issues include waste as well as the social sustainability challenges associated with both hunger and obesity and how this impacts on the broader society. When these challenges intersect with issues such as climate change, this makes for a highly vulnerable food system.

The food system depends on several other systems at all phases, which means that it is vulnerable to impacts from other systems. Agriculture accounts for 60% of water usage nationally (DWA, 2003). Although a relative small contributor to the national energy usage, the food system is profoundly impacted by increasing energy prices and the current load shedding. Increasing energy costs are greatly increasing the cost of agricultural production (including the costs of pumping and treating water), food processing and storage. The lack of reliable power supply is adding to costs as companies are being forced to buy generators and diesel to power them in order to maintain the cold chain.

Whilst impacted by environmental and economic externalities, the urban food system is also a driver of environmental change through waste, emissions and ecosystem degradation linked to food production and input extraction. These feedback loops can reinforce food system instability.

3.5 Megatrends and Food Systems Scenarios

Urban food security will be affected by a number of ‘megatrends’ - these are global developments which individual cities have little control or influence over, but which will affect them nevertheless. The extent to which South Africa’s cities will be affected by these megatrends depends on various factors including geographical location, size and their role in the broader socio-economic environment of southern Africa. These megatrends are introduced below, including some of the possible impacts on urban food security. However, the specific impacts are still poorly understood and additional research is required to assess the risks posed and identify risk management strategies for each.

- **Climate Change:** This is likely to cause an increase in extreme weather events (rainstorms, flooding, heat waves), higher average temperatures and a general reduction in rainfall. Although this may affect agricultural crop yields, it may also have more direct impacts on urban food systems by disrupting transport and power infrastructure, thus affecting supply lines and cold storage. Increased temperature will impact the shelf life of products, particularly impacting informal traders and households without refrigeration. Food has multiple pathways to consumers. It is argued that urban food security resilience can be enhanced by ensuring the viability of multiple flows (Battersby 2012, 2014).
- **Energy vulnerability:** Instability in the grid and increasing prices of energy have profound impacts on the viability of the food system, including increasing the cost of irrigation and cold storage.
- **Water Scarcity and changing water legislation:** South Africa is a water-scarce country and its water sources are rapidly being compromised through acid mine drainage, eutrophication and other forms of industrial pollution. Water scarcity and poor quality will not only contribute to rising food production and processing costs, but also pose food safety and sanitation risks which need to be managed carefully to protect millions of urban consumers. Incoming National Water Policies may impact the ability of farmers to irrigate effectively, thus impacting production
- **Soil loss and pollution:** Unsustainable agricultural practices and pollution linked to coal-based energy systems sustaining urban industries are likely to result in productivity losses in some of the most agriculturally productive areas of the country. Of particular concerns is the impact of Acid Mine Drainage on the continued viability of production in the maize-producing North of the country. This will probably increase South Africa’s dependence on imports of grains and oilseeds, exposing consumers to food price increases linked to global commodity price and currency fluctuations.
- **GMOs and biodiversity loss:** South Africa has been one of the most open countries to GM technology. There are concerns about the kinds of food system supported and generated by the current GM-centric agricultural model and about possible adverse health impacts. The patenting of seed means that entire food systems will become dependent on the intellectual property rights of a handful of transnational companies whose sole interest is profit. Although it is argued that GM increases resilience to climate change and pests, there are concerns that it may ultimately reduce resilience of the food system more broadly. The claims that GMO varieties increase resilience to climate change has also been challenged by recent findings in the Eastern Cape (Fischer & Hajdu 2014)
- **Economic Debt Crisis:** South Africa is currently riding on a bubble of cheap (foreign) credit which has resulted in massive debt in the public and private sector and exposes the economy to foreign currency fluctuations. This bubble is likely to pop soon, and when it does, it will result in widespread job losses, likely mine closures, the contraction of the economy and the stagnation of infrastructure development projects. This will have major impacts on urban food security as consumers lose income and urban economies are unable to absorb sudden large increases in unemployment.

These mega-trends are converging in what has been called a poly-crisis which will have severe ramifications for urban food security, public health, and urban governability. South African cities will urgently need to consider ways of anticipating the impacts and developing resilience strategies to reduce vulnerability to these impacts.

Interdependencies and feedbacks between these mega-trends and the sustainability challenges discussed above could de-stabilise urban food systems. This could result in widespread intensification of food insecurity which would not only entail massive and unsustainable public health impacts but would expose cities to social tensions which could make them ungovernable and undermine democracy. Recent violence and looting directed at informal food traders reflects the potential of such tensions to reach breaking-point. (Bar-Yam, Lagi & Bar-Yam 2013; Grant 2012; Hendrix & Haggard 2015)

In 2015 the Southern African Food Lab released a series of four scenarios examining possible futures of the food system in South Africa: <http://www.thefutureoffood.co.za>. These provide an excellent review of the potential impacts of a series of trends on the South African food system which were explored in four interlinked scenarios. Each scenario is informed by key vulnerabilities, trends, and catalytic events that trigger sudden transitions. These scenarios each approach food system futures from a different perspective and include:

- **Natural resource base and ecosystem vulnerability:** explores the impact of a severe dry-weather cycle on water and soil systems in South Africa, complicated by energy insecurity. This scenario anticipates that the capacity of the natural resource base to sustain food production is compromised.
- **Food production:** traces a possible sequence of events in land reform and considers what might happen to levels of farmer productivity and morale in the context of a polarised agricultural sector. The scenario projects that productivity and morale of farmers initially diminish, but start to recover.
- **Political economy:** this explores a scenario spanning the full food chain. It considers the dynamics of pricing and the affordability of food as the Rand depreciates and takes South Africans down the road of severe hunger. This scenario suggests that food prices will become unaffordable, resulting in widespread hunger and use of the ballot box to bring about change.
- **Nutrition:** this discusses potential impacts of malnourishment on a strategy towards national economic growth. This scenario predicts that malnourishment refocuses attention on nutrition as a foundation for a healthy economy.

A similar exercise focused on urban food systems could be very useful in stimulating informed debate and enabling urban planning and management to engage with food systems trends and impacts in a pro-active way. However, due to the greater relative importance of food processing, distribution, and retail in urban food systems, vulnerabilities and impact pathways are different to national-scale and rural scenarios though the general trends should be taken into account as shaping framework conditions. Different questions may therefore be more useful to inform urban food systems scenario planning. Four interesting questions which could inform an urban food systems scenarios process include:

- **Infrastructure Disruptions:** How would a collapse of urban energy and water infrastructure impact the availability, affordability and safety of food for city dwellers in South Africa as cold chains, food processing, water supply and sanitation are disrupted?
- **Transport challenges:** How would urban food access in spatially marginal, low-income settlements be impacted by intensifying fuel price inflation and the deterioration of urban transport infrastructure accelerated by extreme weather events?
- **Economic crunch:** How would urban food access be affected by an economic crunch and associated income losses due to wide-spread retrenchments in the mining, construction and manufacturing sectors?
- **Urban obesity:** How would a rising tide of obesity, diabetes, hypertension and compromised immunity affect already-strained urban healthcare facilities and urban economies?

As scenario planning processes require broad intersectoral participation to carry out, this section can only identify some key issues to spark deliberation. A separate report on scenarios (using the above mega-trends) for future urban food systems in South Africa is developed, however a more comprehensive process is therefore required to design a scenario planning process and could form a key project to galvanise stakeholder collaboration.

3.5.1 Governance responses to future food system challenges

Throughout the report, the highly complex nature of the food system has been noted. The food system is itself undergoing a series of changes in production, imports/exports, processing and retail. Evidence suggests that despite these changes and a number of programmatic interventions there are persistently high levels of food security. Given demographic shifts, this food security will be increasingly concentrated in urban areas. In cities this food insecurity manifests in different ways to the experiences of the past. Food security in this context is far more dependent on the structure of the market. Additionally, the nutrition transition is leading to new forms of malnutrition, characterised by obesity, hypertension and type-2 diabetes, as well as more traditional malnutrition profiles. This requires different policy and programmatic responses.

In addition, as highlighted in the previous section, there are a number of megatrends that will further exacerbate food insecurity. Evidence presented in this report attests to the fact that the food system is under severe threat and the vulnerable communities, particularly those in urban areas, face the worst possible outcomes from these negative impacts of these megatrends.

This report has argued that responses to the persistent food crisis have remained locked in a productionist/welfarist paradigm. In this paradigm, the primary response is agricultural and social safety nets are employed to catch those unable to access food through the prevailing food system. Simply put, the route to enabling food security is seen as being through producing more supported by social grants. In enacting this, and in the strategic planning and programming, the national government scale dominates. The remaining spheres of government are not much more than implementers of nationally generated and uniformly (in terms of distribution) applied programmes and projects, lacking contextual nuances and programming responses that engage local experiences.

The underlying logic is that food insecurity is predominantly about hunger-associated malnutrition caused by scarcity and inadequate income to purchase food. Under this diagnosis it is essential to increase production to reduce food prices. The success of the agricultural sector is maintained through free market principles and liberalised trade. Under this understanding, the private sector is key enabler within the food system to ensure food security.

This report has demonstrated that these assumptions are flawed.

- Firstly, the focus on caloric sufficiency misses other needs such as dietary diversity and culturally appropriate food.
- Secondly, the focus on economic efficiency fails to account for the negative environmental externalities of such a food system.
- Thirdly, the assumption that supermarkets and their associated supply chains will increase food access for the poor is questionable.
- Finally, the assumption that the solutions to food insecurity largely lay outside of the mandate of local government prevents innovative local solutions being generated.

This report argues that the food system trajectory under the current logic lacks resilience and is vulnerable to multiple predicted stresses. This brief section highlights the potential impacts of the energy crisis on food security.

Unpacking the energy crisis's impact on food security

The energy situation in South Africa over the next decade is likely to be characterised by persistent load shedding and increasing energy prices, to meet the costs of maintenance and build of new energy infrastructure.

This will have the following, interconnected, impacts on food security.

1) Household scale:

a) Increased cost of food utilization as households invest in alternative cooking technologies to prepare foods. The price of paraffin and gas will increase as demand stresses supply.

b) Households will change food-purchasing patterns to mitigate against spoilage as refrigeration and freezing become less reliable. This means that households will not bulk buy, therefore increasing the cost per unit. They will also buy more pre-prepared, quick cooking non-perishables.

c) As energy prices increase households will reduce household expenditure on food to be able to meet energy costs. Households will buy cheaper foods, which are often less nutritious. Households already vulnerable to food insecurity will be pushed into chronic food insecurity.

2) Retail scale:

- a) Retailers unable to afford generators will be put under considerable pressure and will be unable to afford to stock perishable foods. This will reduce physical access to fresh produce and other fresh foods for poor households dependent on these retailers.
- b) Larger retailers will buy generators. The cost of buying generators and running them will lead to increased cost of foods, therefore putting households at greater risk of food security
- c) Fresh Produce Markets will also become more dependent on generators to maintain stock quality. This has already increased the cost of apples to the extent that the Cape Town Fresh Produce Market makes a loss on the sale of apples. This increases the cost of fresh produce for informal and formal retailers, which in turn increases the cost for the consumer, which forces shifts in food purchasing and consumption.

3) Producer scale:

- a) Like the retailers, producers dependent on cold storage or irrigation systems will need to buy generators and fuel to run the generators. The cost of this is already forcing some producers out of business, including potato farmers on the West Coast in the Western Cape. Any break in the cold chain compromises the quality of produce, meaning that many goods cannot be sold to their intended markets, thus placing further financial burden on the producers.
- b) Efforts will be made to expand energy access and also to bring alternative energy sources onto the grid. The energy solutions planned span interventions such as using productive land to grow biofuels. An area where this is clear is where current approaches privilege energy needs over food system needs. This can be seen in the calls to use productive land in Mpumalanga for coal mining and the fracking question. Food security concerns are seen as being secondary to those of energy. The loss of agricultural land is viewed as being offset by the possibility of food imports. However, in the context of currency fluctuations and challenges to port and other transport infrastructure, this potentially increases the cost of food in cities.

The current approach to food security is not well placed to respond to the challenges of an energy system in crisis.

There is a need for a step change in thinking about food security for South Africa's future urban realities.

Future food scenarios often call for localised production and localisation (and at times food sovereignty) campaigns. While these perhaps hold some opportunity, the practicality of this, particularly in South Africa, is highly problematic and even unrealistic. Another often argued agenda is one where the state needs to be removed from all food system related practice. The localisation of the food system and the supplementing of the state with civil society organisations are being proposed as possible means to address food security at the urban scale. The withdrawal of the state from food system governance and overarching control would leave the food system in the hands of the market, a scenario that has shown to limit proactive food security responses.

This report argues that there is a need to focus not only on production but also on food access, the functioning of the markets, food pricing and how food is consumed, its nutritional value (as opposed to calorific value) and the stability of the food system. As will be argued in the following chapters, the route to food security is seen as being enabled through increased diversity within the food system, not just in terms of product but also in terms of market opportunities and food access typologies. The scale at which strategic responses to the challenges of food insecurity need to be programmed need to be at the scale at which issues of food access, utilisation and stability are felt most. This calls for increased participation of local government in food system planning to develop strategies that increase food system resilience to enhance food security. In order to achieve this local, provincial and national government need to develop a new understanding of food security's drivers and characteristics, and seek to engage a greater range of stakeholders, state and non-state, in developing a generative, resilient food system. Table 3.5 below presents the current logic and the logic food security logic recommended by this report. Governance responses aligned to these principles are presented in the following chapters.

	CURRENT	RECOMMENDED
Nutritional logic	Caloric sufficiency	Adequate nutrition
Economic logic	Economic efficiency through consolidation and large processors and retailers	Economic inclusion through balance of large and small producers, processors and retailers
Governance logic	National government focussing on production and social safety nets	All spheres of government and explicit stakeholder engagement, recognition of the range of government departments that shape the food system

Table 3.5 Current and recommended logics underpinning food security governance

3.6 Conclusion

South African urban food systems are an important contributor to household food security. The urban food system interacts with other systems, such as transport and housing to generate conditions that can enhance or hinder food security.

Local governments have tended to consider their food system role as providing access to urban agriculture. However, when the food system as a whole is considered, it becomes clear that local government plays a much wider role in shaping the characteristics and trends seen within the food system. There is a need therefore to acknowledge these existing roles and to consider how the local government can work with other food system stakeholders to enhance urban food security through food system interventions within existing mandates. Specific recommendations on how to achieve this are discussed in Chapter 5. At this point, it should be noted that mandated intervention pathways include planning tools like integrated development plans (IDPs), spatial development frameworks (SDFs), open space master plans, urban development plans (UDPs), urban management plans (UMPs), town planning schemes (TPS) and transport plans and how these engage with food systems infrastructure. For example, the advertising of unhealthy foods takes place within the public open space context. Service station forecourts are affected by transport mandates. Another point of leverage is through engagement with existing entities that manage food system components like municipal abattoirs, fresh produce markets, and key food environments including integrated rapid public transport (IRPT) nodes like taxi ranks and train stations as well as municipal institutions like schools and clinics. In each case it is important that comprehensive situational assessment of food environments, stakeholder consultation and expert advice are considered.

The achievement of food security in South Africa is currently hindered by an agricultural system that prioritises export-oriented agriculture over agriculture for food security. The potential risk factors associated with increased dependence on food imports with regard to food price volatility, logistical difficulties at ports and increased exposure to highly processed foods are not well recognized. Reflecting on the role of rural areas in supplying urban food, this report argues that although it does not meet all of South Africa's food needs, national food production for local consumption remains an essential component of the South African food system, and provides important buffering to international food system shocks.

Furthermore, there is a lack of transparency within the food system, and increasingly high levels of concentration at all stages of the system. This hinders the entry of smaller businesses and the potential for livelihoods.

Within the urban areas, it is essential that the role of retail location and retail mix on access to food be considered by municipal government. There is also a need to consider the environmental externalities of the food system in and beyond urban areas. Scenario planning processes informed by dependencies, externalities and vulnerabilities can be valuable tools to democratise food system planning and governance towards greater resilience, sustainability and equity. Recommendations from this chapter are included in Chapter 5's conclusions.

Chapter 4: Local government role in food security and pathways to stakeholder participation

Highlights

- National policies and strategies frame the ways in which provincial and local governments engage the challenge of food insecurity.
- These national policies and strategies neglect the urban, and focus on production-based or safety net-based solutions, with some focus on addressing food choice.
- A review of SACN member cities' IDPs and other strategic documents found that the promotion of urban agriculture and the provision of social safety nets are the main local government responses. There are however, a number of innovative approaches evident. Most of these are still in the planning or early implementation phase.
- A review of constitutional mandates reveals a far broader set of responsibilities regarding the food system.
- The challenges of food security and the urban food system cannot be addressed by local government alone. It is therefore essential to engage a range of stakeholders.
- A model for stakeholder engagement is suggested, and an ongoing role of the SACN is identified.

4.1 Introduction

There is currently no formal mandate for local government to address food security. However, the right to food and nutrition is enshrined in the Constitution under Sections 27.1b and 28.1.c. The Constitution outlines that 'every citizen has the right to have access to sufficient food, water and social security' and that the state must take reasonable legislative and other measures within its available resources, to achieve this right. It is therefore the duty of national, provincial and municipal government to work towards these rights. This chapter examines how food security is positioned in South African policy with particular relevance to the urban context and the role of municipal government in working towards urban food security. It builds an argument that given local government's existing role in shaping the food system through its existing mandates, local government already plays a significant role in shaping the food security of its residents. It is acknowledged that a number of municipalities have already taken pro-active steps to alleviate food insecurity. These are highlighted within this section in order to provide locally-relevant examples for municipalities seeking to develop food system governance initiatives.

Additionally, the chapter identifies key stakeholders within and outside of local government that impact food security and proposes a mode of stakeholder engagement and dialogue.

4.2 National Policies, Programmes and Strategies

The State's role in food security has, until the recent passing of the National Policy on Food and Nutrition Security, been driven by three key strategies and programmes: the Integrated Food Security Strategy (housed in the Department of Agriculture, Forestry and Fisheries), the Integrated Nutrition Programme (housed in the Department of Health), and the National School Nutrition Programme (housed in the Department of Basic Education). The 2012 Food for All Campaign linking the Departments of Agriculture, Forestry and Fisheries, and Social Development was informed by Brazil's Zero Hunger strategy, but focussed largely on rural areas, and after an initial launch phase it has lost traction.

These national strategies have informed the way in which food security is articulated by the state in its broader strategic documents, such as the Medium Term Strategic Framework. This framing has left little scope for municipalities to address food insecurity as a) there are no local government departments of Agriculture, Forestry and Fisheries, Health or Education (with the exception of the City of Tshwane's Agriculture and Environmental Management Department), b) food security is overwhelmingly identified as a rural problem. This means that there is no funding allocation to municipalities to address food insecurity.

The National Development Plan and the draft Integrated Urban Development Framework do however, provide new framings which allow for new approaches to urban food security to be conceived.

4.2.1 Integrated Food Security Strategy

The Integrated Food Security Strategy (IFSS) was approved by Cabinet in 2002 and was envisaged as a strategy that would integrate previously fragmented food security policy and programmes and work towards a collective vision. Furthermore it aimed to foster co-operation and co-ordination between governmental departments. Until the recent development of the National Policy on Food and Nutrition Security (NPFNS), the IFSS was the principal national guiding document on food security. The strategic objectives of the IFSS were to a) increase household food production and trading b) improve income generation and job creation opportunities c) to improve nutrition and food safety d) increase safety nets and food emergency management systems e) improve analysis and information management system f) provide capacity building g) hold stakeholder dialogue. The then Department of Agriculture was appointed as the lead Department responsible for the IFSS and a cluster of social departments were identified to play a supportive role. The IFSS has been critiqued for its lack of action.

The IFSS emphasises that it ‘focuses on household food security without overlooking national food security’ (DOA 2002, 13). This is an important step in thinking holistically about different scales of the food system, however there is no discussion of the complexities of the urban scale. Battersby (2012) speaks about how a focus on household scale ‘unfortunately largely neglect[s] the spatial determinants of food security and focus[es] too heavily on household capacities to respond to their vulnerability contexts rather than analyzing the contexts themselves’ (Battersby, 2012).

4.2.2 Integrated Nutrition Programme

The Integrated Nutrition Programme (INP), housed in the Department of Health, has eight strategic focus areas: 1) Contribution to household food security 2) Disease specific nutritional treatment and counseling 3) Growth monitoring and promotion 4) Nutritional promotion, education and advocacy 5) Promotion, protection and support of breast feeding 6) Micronutrient malnutrition control 7) Food service management 8) A nutritional intervention programme HIV and AIDS and TB (DOH, 2002:1).

The program has been critiqued by Chopra et al (2009) for proposing to be an ‘integrated’ program, despite being almost entirely located within the guidance of the DOH. Therefore failing to engage with the wider food system environment. At the outset the INP attempted to initiate Community-Based Nutrition Projects aimed at encouraging ‘multi-sectoral government support to communities to ‘solve’ their own nutritional problems’ through income generation projects (Ladabarios et al, 2005,102). However these projects did not have a high success rate - which has been attributed to unrealistic objectives and lack of appropriate resources. Therefore the reviewed objectives in 2001 and 2007 did not include this motivation. This had the effect of removing any focus on local food systems and food economies from the INP.

The Department of Health’s Strategic Plan 2014/15-18/19 outlines the Department’s food-related objectives, ‘We have to upscale our health promotion and nutrition interventions over this five year period. We must find effective ways to engage the whole population in healthy eating habits, physical activity and responsible lifestyles. We will need to create healthy communities. Our interventions will have to cover everything from pre-natal and post-natal care to the food supply and marketing chain to built environments that promote healthy eating and active living. ‘(DOH 2014, IV) To this end there has been new legislation to regulate salt and trans fats.

4.2.3 National School Nutrition Programme

The Primary School Nutrition Program was established in 1994 and was initially located within the Department of Health (DOH) but was transferred to the Department of Basic Education (DBE) in 2004 and the title changed to the National School Nutrition Programme (NSNP). Its aim is to alleviate short-term hunger and enhance learning capacity among learners. It therefore seeks to enhance learning through school feeding, to strengthen nutrition education in schools, to promote food gardens in school and to develop and strengthen partnerships to enhance the programme (DOE 2012, 7).

The NSNP is managed by Provincial level Education Departments who appoint private service providers to implement the programme in schools. In 2012, the programme produced meals for over 8 million learners each school day throughout the 9 provinces (DBE 2013). A program of this scale raises many questions about procurement and engagements with the larger food system, such as potential engagements with SMME’s and emerging farmers. Although procurement guidelines are not yet in place, they could offer far-reaching benefits to businesses and learners therefore contributing to a holistic food security approach (Rendall-Mkosi et al, DBE 2013, 63).

4.2.4 National Policy on Food and Nutrition Security

The National Policy on Food and Nutrition Security (NPFNS) (2014) was developed with the intention of working towards a Food and Nutrition Security Act for South Africa. The NPFNS aims to provide a broad framework for the fulfillment of the Constitutional mandates for food security and to 'serve as a guide to national, provincial' - and importantly 'local government in working towards food and nutrition security at every level' (DAFF, 2014,29) Furthermore it aims to 'maximize synergy between the different strategies and programmes of government and civil society' (DAFF, 2014,28).

The policy focuses at the national and household levels. There is no mention of urban or city-specific food security dimensions within the Policy, therefore potentially over-looking the systemic drivers of food insecurity. However the NPFNS outlines that the Office of the Deputy President will convene a National Food and Nutrition Security Advisory Committee (FNSAC) to lead the development of Policy. This Committee should be 'comprised of recognised experts from organized agriculture, food security and consumer bodies, as well as climate change and environmental practitioners and representatives of organised communities.' It suggests that 'similar structures could be established at provincial and local levels, and should be supported by relevant government Departments' (DAFF, 2014, 12). This could be an important step in working towards engaging with local level complexities within the food system and extending the mandate to municipal authorities.

The policy continues to identify food insecurity as primarily a rural problem, despite multiple studies indicating high levels of food insecurity in urban areas, and an increasingly urban national population. The new National Policy should be read in conjunction with the Department of Social Development's Household Food and Nutrition Security Strategy approved at the same time as the National Policy. This Strategy explicitly seeks to ensure the provision of access to poor and vulnerable households, and therefore focuses exclusively on the enhancing of social safety nets.

4.2.5 Government Outcomes Approach

In 2010 Cabinet adopted the 12 Government Outcomes approach. These outcomes were developed to help frame public service delivery priorities and targets through the three tiers of government and have been used in guiding planning strategies at various levels of government. Cabinet ministers signed performance agreements linked to these outcomes and a number of municipalities have used them in their IDPs. Number 7 relates specifically to food security: Vibrant, equitable and sustainable rural communities with food security for all. This has been influential in shaping Provincial responses to food insecurity. As informed by the IFSS, it has a specifically rural focus.

4.2.6 National Development Plan

The 2012 National Development Plan Vision 2030 (NDP) (NPC, 2012) is an overarching plan for South Africa to work towards eliminating poverty and reducing unemployment and inequality in South Africa by 2030. It looks towards doing this through developing an inclusive economy, boosting the capacity of the state and society and promoting leadership and partnerships with all stakeholders in society. This plan provides a broader understanding of the State's role in working towards food security than previous policies and frameworks have. The plan explicitly connects food and nutrition security to the wider food system. It does this in a number of ways. It expands the concept of food security to include nutrition security therefore outlining the importance of the quality of food intake not just calories consumed. It calls for further investment in agricultural and agro-processing sectors and to increase the production of fruit and vegetable production to align with the nutritional intake guidelines (NPC 2012, 231). Further it connects this with SMME growth and job creation to work towards redressing power and ownership imbalances (NPC 2012, 142). It identifies the need to utilise procurement programmes to help emerging farmers to connect to the market (vital in the face of high market concentration in South Africa). It looks at the need for interventions that reduce food costs and help to create stable inflation environments. This is vital for urban populations who spend a majority of their income on food. It also considers the connections between local food systems and international food systems.

The NDP outlines the need to address food security as part of the government's strategic mandate and to develop a policy framework to engage with food security (NPC 2012, 289). It also calls for better integration between departmental functions outlining the need to 'identify the main elements of a comprehensive food security and nutrition strategy and launch a campaign' involving a range of stakeholders and departments. Overall the NDP offers a far more holistic approach to previous documents, which focused on increasing production.

4.2.6 Integrated Urban Development Framework

While the Integrated Urban Development Framework (IUDF) does not explicitly address food security, it does offer some vital theoretical perspectives for the development of food security policy. It problematizes the way in which rural and urban spaces and activities are often seen as mutually exclusive in Policy. It argues that the 'economic social and environmental interdependence between rural and urban areas' (COGTA 2014, 17) is vitally important and needs to be reflected in Policy. It calls for this link to be strengthened to 'enhance growth by facilitating the flow of resources to where they have the largest net economic and social benefits'. It argues that strategies (e.g. for addressing poverty) must recognise the 'interdependence of rural and urban spaces, while a comprehensive, integrated approach to urban development needs to respond to the reality of migration to peri-urban areas.' (COGTA 2014, 22).

Like the NDP, the IUDF calls for inter-sectoral collaboration and taking this further to specifically speaks to the importance of geographical and spatial links. It states that 'the ultimate goal of sustainable human settlement design and construction is a decent standard of living, which includes access to transport, safety and security, adequate healthcare, nutrition, housing, water, electricity and sanitation services, among others. To achieve this requires finding the right mechanisms and levers to bring out fundamental spatial transformation.' (COGTA 2014, 29).

Although it does not specifically engage food security or food systems, the call for inter-sectoral and multi-governance scale activity provides a valuable entry point from which to develop appropriate urban food security interventions.

4.3 Provincial Level Food Security Policy

South Africa's nine provinces all are guided by National Policy and mandates, and each has its own Legislature, Premier and Executive Councils. However, each also has its own unique social and natural geography and related priorities. Although it is not a legislative requirement Provinces are required to produce a Provincial Growth Strategy in order to align development planning with national objectives articulated in the NDP, while grounding these in the social and geographical context of each province and associated opportunities and constraints (DPLG, 2005). The nine SACN municipalities fall within five provinces. The Growth and Development Strategies of these Provinces inform the food security agendas of these cities. This section has briefly reviewed the Growth and Development strategies and plans of these five provinces to explore the positioning of food security within these documents. While these differ in their approach they offer some insight into how food security is framed. Other relevant policies and strategic documents, including the Strategy documents of Provincial Departments of Social Development and Health, however this serves only to offer further insight. Not all provincial policy pertaining to food security has been included.

In each of the five provinces, informed by the national framing of food insecurity, approaches to food security are linked to rural and agricultural development and nutrition interventions. However, other critical issues are also identified. The connection of food security programming to employment generation through public works programmes is identified by Gauteng and the Western Cape. The connection of food security to climate change is identified by the Western Cape and KwaZulu Natal. Gauteng identifies food security as a cross cutting theme, which is influenced by issues such as industrial development and spatial planning. KwaZulu Natal argues that food security requires an iterative process between stakeholders in spatial planning and infrastructure development, and that there is need to focus on the informal economy.

It was only possible to find a Social Development Strategy for one province, the Western Cape. This identified levels of food insecurity and argued that food security was more prevalent in rural areas, using percentages to justify the assertion, despite the province being 90% urban. EPWP opportunities, food security and social welfare interventions were identified as strategies to alleviate food insecurity. Only the Western Cape and KwaZulu Natal had accessible Health Strategies. The Western Cape flagged a need to increase wellness, safety and reduce social ills, in part through generating environments that 'allow for affordable, easy access to healthy food' (WCDOH 2015, 20) Within its focus on a Healthy Workforce it suggests a need to 'pro-actively promote all domains of wellness amongst [Western Cape Government] employees, increase access to healthy foods in government buildings and events...' (WCDOH 2015, 20). The Strategy also identifies the absence of breastfeeding and malnutrition as risk factors in Maternal and Child Health. In KwaZulu Natal the Department of Health's Strategic Plan 2015-2019 flagged diet and nutrition as important drivers of long-term health outcomes, however actually programming is not well defined. At present Gauteng and KwaZulu Natal have the most nuanced overall approaches to food security.

At present municipal policies and programmes are informed by national and provincial priorities.

4.4 Municipal Policy

While historically local government has had no specific policy mandate to work towards food security, all municipalities are involved in the governing of the urban food system. They are involved through a number of specific programs aimed at targeting food and nutrition security in various ways (often spread between directorates, departments and sub directorates).

Furthermore municipalities are involved in many facets of governing the food system and food security outcomes even if this is not explicitly recognized. This fundamentally shapes the experience of food security in urban areas. There is therefore argued to be considerable scope for municipal governments to address food security within their existing mandates. The Areas of specific Legislative Competence of local government as identified in Schedule 4 of the Constitution are as follows (the areas emboldened have specific food system and food security relevance):

Beaches and amusement facilities

Billboards and the display of advertisements in public places

Cemeteries, funeral parlours and crematoria

Cleansing

Control of public nuisances

Control of undertakings that sell liquor to the public

Facilities for the accommodation, care and burial of animals

Fencing and fences

Licensing of dogs

Licensing and control of undertakings that sell food to the public

Local amenities

Local sport facilities

Markets

Municipal abattoirs

Municipal parks and recreation

Municipal roads

Noise pollution

Pounds

Public places

Refuse removal, refuse dumps and solid waste disposal

Street trading

Street lighting

Traffic and parking

A review of the IDPs of the SACN municipalities was conducted, as well as an overview of other relevant local policy. Several municipalities (Buffalo City, Ekurhuleni, Mangaung, and Msunduzi) explicitly referred their food security focus being informed by Number 7/8 of the 12 Government Outcomes in the National Medium Term Strategic Frameworks. This Outcome is 'Vibrant, equitable and sustainable rural communities with food security for all'. eThekweni also connected its food security to national guidelines, namely the National Programme of Action's focus area 3, 'Develop and implement a comprehensive rural development strategy linked to land and agrarian reform and food security' (eThekweni Municipality (IDP), 2014/15 Review, 10). The IDPs also frequently aligned themselves to the Provincial Growth and Development Plans. This indicates the extent to which municipalities' agendas are informed by policies in other spheres of government. As noted earlier however, the national framing of food security does not acknowledge urban food insecurity and therefore provides little for municipalities to build on.

Details of the various municipalities' food security approaches are included below for comparison, but also to provide insights into novel approaches within existing mandates

4.4.1 Buffalo City

Buffalo City is identified as having food insecurity levels of 52% in the Eastern Cape Socio-Economic Review and Outlook 2013 (ECSEO 2013:50). The current Buffalo City Municipality IDP (2011-2016) identifies the need to work towards goals set by national and provincial legislation, policies and strategies in terms of food security, including the 12 Government Outcomes and the Provincial Growth and Development Plan. This Provincial plan has the following food security objective 'To reduce hunger and 'establish food self-sufficiency in the province by 2014' (Buffalo City Metropolitan Municipality, 2011,17) .

The approach taken by Buffalo City is centred on the promotion of food security through agricultural production. This is achieved by partnering with the Provincial Department of Rural Development and Agrarian Reform.

In 2006/7 an Integrated Agriculture and Rural Development Strategy (IARDS) was developed. However the current Draft IDP Review expresses that the majority of food security projects could not be implemented due to capacity challenges and difficulties in providing land. Two programmes were however implemented. These were a hydroponics programme and a Macadamia nut growing programme. Buffalo City Municipality is currently reviewing the IARDS strategy (DIDP 2014-15,131).

Importantly, the East London Fresh Produce Market is identified as a project, which has the potential to encourage transformation in the food system. Key objective of the East London Fresh Produce Market 'is to transform the market and encourage participation of historically disadvantaged groups' through facilitating access to the market system (for informal traders and SMMEs) and improving the functioning of the market (DIDP 2014,,132). Various programs were undertaken such as upgrading of the Sales System, Upgrading of informal traders (hawkers) storage facilities, upgrade of cold room facilities, extension of the trading hall.

4.4.2 Ekurhuleni

The Ekurhuleni IDP Budget and SDBIP 2013/14 - 2015/16 also draws on outcome 7 of the 12 Outcomes. However there is a strong urban food security focus within the document. In the Ekurhuleni Growth and Development Strategy 2025 'food scarcity' is recognized as one of six 'strategic tensions' critical to the municipality. Here the connection between urban poverty and food insecurity is outlined as a 'lack of food for many households which has to do with the fact food is mostly a cash commodity.' It proposes that this requires that 'the City considers serious investment in food networks that will be able to support those in the City that are cash strapped' it goes on to outline that new urban development should create 'urban spaces that are not only meant for houses but also food production networks' (CoE 2013, 21).

Food security is also included in the City's Macro Strategic Framework, which identifies Sustainable Agriculture as a programme within the 'Re-industrialise' strategic goal.

4.4.3 eThekweni

The eThekweni IDP (review 2014/15) refers to the Governmental 2009-2014 National Programme of Action's 10 focus areas of which number 3 is to 'Develop and implement a comprehensive rural development strategy linked to land and agrarian reform and food security.' It also reflects the provincial priorities outlined in the state of Province address which include the creation of more jobs and Rural development, land reform and food security. The eThekweni IDP 2011-2016 recognizes hunger and food security as a major challenge facing residents. This is seen as being 'compounded by the shortage of land to undertake food production' (eThekweni Municipality 201,7). The IDP calls for a 'multi-pronged approach' which is needed to improve livelihoods. It outlines that the municipality has initiated programmes to assist in the alleviation of food-insecurity. These include community support farms, community gardens, hydroponic projects, provision of seedlings and compost and professional support programmes (eThekweni IDP 2011, 16). Further it speaks of the development of pilot school, church and home gardens which have been implemented by the Municipality in partnership with the Department of Agriculture and academic institutions. The municipality further encourages cooperatives to pursue commercial agriculture programmes.

The Plan states that 'the municipality could play a major role in ensuring food security' through 'initiatives such as shifting to new crops which are more resilient to climatic conditions and can meet the demands of an ever growing population, maintaining agricultural land so as to keep it arable, introducing mitigation methods to fight climate change, promotion of sustainable agricultural production, ensuring reasonable food costing as well as introducing and managing community gardens... The Municipality could play a major role in ensuring food security. The Municipality has also introduced initiatives such as soup kitchens and employment for food programmes' (eThekweni IDP 2011, 40).

In the eThekweni State of Innovation Report (2011) it is noted that eThekweni Municipality established an Agricultural Management Section (AMS) in May 2009. The long-term vision of the AMS is food sovereignty for eThekweni residents, with food security, economic empowerment and environmental sustainability as immediate aims. However, it was not possible to find further information on this.

4.4.4 Johannesburg

The Johannesburg 2012/16 IDP references Johannesburg's long-term 2040 Growth and Development strategy, which sets the backdrop for the IDP.

Food security is identified as a 'major challenge in the City' and 'poor households are particularly at risk given the high proportion of income used for food'. 'Estimates state that as many as 42% of poor households are food insecure.' The link between poverty and food insecurity on health is also outlined.

The City's 'priority on Agriculture and Food Security is one of the key strategic interventions identified to break the inter-generational cycle of poverty' through contributing to employment generation and sustainable livelihoods. The City's focus is on a 'multi-pronged approach which will include actively supporting and providing incentives for small-scale growers to provide a steady support of fresh produce from the urban food system, improve access to markets and ensuring that the City has various strategies and policies in place to realise the right to food.'

Urban Agriculture is posed as an important solution. Other proposed areas of focus include: Child nutrition, food safety compliance linked to a healthy eating campaign, Agri-resource centres and processing hubs providing value chain support to emerging farmers, apprenticeship programmes, a land release programme for agricultural land, people's restaurant systems, food for waste exchanges, credits and linear markets, food empowerment zones and food garden development in every house, school and community centre. There is also reference to a link with the green economy and food security through growing and planting of fruit trees.

The Municipality identifies a range of stakeholders that can work towards food security, including Government (national and provincial), the Joburg Market and DED, School feeding schemes, food producers, citizens, restaurants and hospitality industry, retailers, Gauteng Department of Agriculture and Rural Development (GDARD), departments of Health and Social Development, NGOs and CBOs.

In 2011 The City of Johannesburg began developing the Food Resilience: Urban Agriculture Support Programme as Part of the IDP sub Programme –Food Resilience and Food Security. The project is coordinated under Human and Social Development Cluster and is overseen by Health and Social Development. This project aims to carry out 3 tasks: a) The development of 'a spatial food security index' to collect and map information about the city, b) Coordinate and support urban agriculture projects in the City, which had developed in a range of City Departments and often were unsuccessful due to lack of support and capacity). A series of Urban Agriculture support centres will be established, which would offer training, and assistance would help access land and also offer 'food parcels, food vouchers and basic livelihood empowerment' (City of Johannesburg 2011,8), and finally c) to 'lay groundwork for the Food Empowerment Zone programme over the next 2-4 years. These are envisioned as geographically defined zones where shared infrastructure and incentives provide the conditions for enhancing the development of robust and localized food supply chains and market systems. The project works together with arrange of stakeholders from Provincial government to research institutions to NGOs and Private sector.

The City of Johannesburg's Food Resilience Programme is complex and ambitious and appears to have integrated aspects of the Brazilian Zero Hunger Strategy. One aspect worth noting is the 'Healthy Food Pledge' launched in 2013. In April 2015, 20 restaurants pledged to offer healthier options to customers (City of Johannesburg 2015).

However, informal interviews with City of Johannesburg Social Development staff indicate that the programme is significantly under-resourced despite being labeled a Mayoral Priority Programme. There are also indications that the bureaucratic processes mandated by the Municipal Finance Management Act resulted in the award of food security project tenders to bidders who were not experienced or technically qualified to implement them, which is likely to lead to unsustainable outcomes. The City of Johannesburg did commission a baseline food security study in 2012 which has generated some useful baseline data despite methodological and analytical weaknesses. However, the City's recent Operation Clean Sweep, during which over 1200 informal traders were removed from their places of work, indicates that the City does not recognise or support the significant role that informal trade plays in the urban food system.

4.4.5 Cape Town

Cape Town's IDP 2012-17 references food in two specific ways: The first is a discussion of the City's role in municipal Environmental Health through food control and the second is in reference to rainwater harvesting for food gardens as part of a water conservation initiative.

Previous IDPs have only engaged with food security through the lens of Urban Agriculture, which has been the City's key response to food security since 2007. This is further developed in the Urban Agriculture Policy (2007) and the Food Gardens Policy (2013), as well as in the Draft Poverty Alleviation and Reduction Policy (2013) and the Economic Growth Strategy (2013). The Economic Development and Facilitation Programme within the Economic Department houses an Urban Agriculture Unit. This unit engages with policy development around urban agriculture, food security and poverty alleviation. The Urban Agriculture Policy (2007) sought to establish a place for urban agriculture in the City. The Food Gardens Policy (2013) seeks to address food insecurity and create local economic opportunities through the establishment of sustainable food gardens. It is envisioned that these gardens will be able to provide nutritious food to those who need it such as to ECDs. This falls within the City's strategic focus area 'the Caring City' (CoCT 2013a, 4). The recent Strategic Development Plan for the Development of Urban Agriculture in the City of Cape Town (2013/14 - 2015/16) has developed 7 key focus areas related to translating the urban agriculture policy into action. This includes a focus on, awareness and advocacy, policy and legal frameworks, research and knowledge development, multi-stakeholder participation, production and marketing and youth engagement.

The other explicit reference to food within the IDP is through the Environmental Health Control program, which deals with food safety. The Social Development Strategy is also referenced which states that 'the City will work with the Provincial Government of the Western Cape to look at introducing a nutrition programme for children under 5 years of age in ECD facilities.

In 2013 the City commissioned a food system and food security study, but this has yet to be publicly released or used to inform policy.

4.4.6 Mangaung

The Mangaung IDP (2014/15 Review) draws on Outcome 7/8 of the 12 Government Outcomes. It also draws on the guidance of the NDP, highlighting the following imperatives which the municipality should consider: to 'ensure household food and nutrition security', to 'Reduce the cost of living for low-income and working class households (cost of food, commuter transport and housing should be reduced) and to 'Invest in new infrastructure in areas affecting the poor (value chain, public transport). These imperatives suggest a link between food and spatial urban dimensions.

The establishment of both rural and urban food gardens is put forward as a poverty reduction and household food security strategy with a 2014/15 target set of developing 2800 urban and rural households food gardens. Within the IDP food is also mentioned in relation to Environmental Health and food control.

4.4.7 Tshwane

The Tshwane IDP does not elaborate greatly on Food Security. However food security falls under the following objective: Objective 3: Sustainable communities with clean, healthy and safe environments and integrated social services. Under this a number of programmes are identified which are overseen by various departments, these include: the Agricultural Starter Pack Programme which is run by the Agriculture and Environmental Management Department and focuses on the Distribution of garden tools and seedlings to support homestead and community food gardens; the Food Bank project which is also overseen by the Department of Agriculture and Environmental Management and provides food parcels to NPO's. Further it outlines that the Health and Social Development oversee a number of food security focused projects. This includes projects for the elderly, daycare projects, and initiative for women. These include soups kitchens, food gardens and training, information sharing, exercise programs and income generating activities. The municipality partners with a number of NGOs on these projects. A further project is geared towards the expansion of school feeding. And finally a nutrition project motivated by reducing child mortality focuses on vaccinations, HIV and Aids complications and malnutrition

Strategic Objective 5 in the IDP also connects to food security through the promotion of sound governance, which calls for agricultural land to be protected for agricultural development and job creation. This is in line with the New Metropolitan Spatial Development Frameworks, which outlines this, and is overseen by the Department of Spatial Planning.

4.4.8 Msunduzi

Like other municipalities, the Msunduzi IDP 2013/14 draws on the 12 governmental outcomes for guidance. Within the document a number of provincial priorities are outlined, of which one is working towards 'Greater food security through home garden programmes' (MIDP 2013, 31). Home gardens are positioned as a response and solution to food insecurity. The strategy references a study by AFSUN on Gender and food insecurity in Southern Africa which found that in Msunduzi an average of 52% of household income is spent on food (particularly female headed households), therefore reflecting food insecurity. It illustrates that this makes the population vulnerable to price shocks. Overall the figures quoted that an average of 60% of Msunduzi households and 64% of female-headed households are severely food insecure. While this is outlined, it is not expanded upon further in the IDP. Food is further discussed with reference to food safety and Environmental Health and briefly under disaster risk in terms of emergency relief.

4.4.9 Nelson Mandela Bay

The Eastern Cape Provincial Growth and Development Plan (PGDP) plays an important role in shaping the Nelson Mandela Bay Municipality's IDP 2011-2016 (NMBIDP). The PGDP of the Eastern Cape Provincial Government is reflected as follows in the Municipality's key performance areas of which 'Agrarian Transformation and Food Security' are included (Nelson Mandela Metropolitan Municipality 2014,26). Food security is positioned under Goal 6 of the MCMM's goals, which is: Nelson Mandela Bay offers opportunities for enhanced livelihoods. Within this the integration of food security into spatial planning through the identification of land parcels for food gardens in all suburbs, as well as the 'the development of food gardens and 'orchards' on vacant or underutilized private and public land' are proposed as strategic programmes/activities.

Chapter 3 of the IDP focuses on spatial development, sector plan linkages and infrastructure development. Within this section Urban Agriculture (co-operatives and community projects), led by the Municipality's Economic Development, Tourism and Agricultural Directorate are seen as projects that 'will allow poor and disadvantaged communities to secure food and enter into related economic activities'. This is put forward as 'part of the Municipality's long-term vision to develop agriculture into a strategic economic sector'.

As in Buffalo City, the municipality partners with the Provincial Departments of Rural Development and Agrarian Reform and Social development are involved in a number of food gardening projects. Overall, boosting emerging agricultural development, urban agriculture and food garden development is seen as a strategy for poverty alleviation and food security.

Finally, food security is mentioned within the framework of the Integrated HIV and AIDS Plan for Nelson Mandela Bay (2012 – 2016). Food security is also mentioned briefly within environmental Health. Overall food Security is largely seen as an outcome of increasing food production.

4.4.10 Conclusion

Within the IDPs and other municipal documents it is clear that municipalities are guided in their food security thinking by national level thinking and strategic approaches to food insecurity. These are dominated by productionist solutions, with some additional focus on social safety nets. There are however a number of points of innovation that suggest a wider conceptualisation of appropriate responses is possible. These include:

- Recognising the role of the Fresh Produce Market as a means to generate a more inclusive food system (Buffalo City)
- Recognising the municipal role in the characteristics of value chains (Ekurhuleni and Johannesburg)
- Recognising the need for planning to consider the generation of food networks (Ekurhuleni), and the need to understand the spatial determinants of food insecurity (Johannesburg, Mangaung)
- Connecting food security to climate change mitigation strategies (eThekweni, Cape Town)
- Developing a co-ordinated multi-pronged approach to food security (Johannesburg)
- The need to engage stakeholders outside of municipal government (Johannesburg)
- Conducting baseline evaluations to determine different levels of food security in different municipal wards (Johannesburg)

The recommendations in Chapter 5 are partly informed by these innovations. The above examples highlight the centrality of strategic planning in integrating food system approaches in urban governance processes.

Planning is a key urban food system driver and as Pothukuchi argues ‘the absence of food system planning does not have neutral, but negative consequences (2009). The same author also recognises what urban planners are engaging in, arguing that:

‘Since about 2000 there has been a renewed focus on the part of urban planners in the relationship between food and the urban. This has resulted in the emergence of city plans, ordinances, and actions recognizing food system activities such as those related to agriculture and food retail, food policy platforms developed by sister institutions, and the incorporation by health fields of the built environment and related planning as significant factors in improving access to healthy food and reducing obesity rates’(Pothukuchi, 2010, 350)

These perspectives highlight the importance of planning as an urban food system tool but planners require a mandate and a strategic urban food system plan in which to operate. Central to the process of planning is stakeholder engagement. Food system stakeholders have been found to be drivers of change within the food system.

4.5 Key Stakeholders and Modes of Engagement

It is essential to engage stakeholders external to local government in generating strategies to address food insecurity, as they are both affected by and affect the food security of urban residents. Furthermore, stakeholders may have knowledge about the food system or food security that can contribute to a better understanding and contextualisation of food security, and therefore help generate more appropriate and viable responses to the problem. Finally, it may be possible to generate partnerships with stakeholders to make interventions more impactful. The more stakeholders are integrated into policy making processes, the higher the chances of producing adequate and effective policy responses (Edelenbos and Klijn 2006).

It will be important to engage actors from a range of stakeholder clusters, including representatives from all spheres of government from national to ward level, NGOs, business (formal and informal) and researchers at critical points in the food system. While it is important to engage this range of stakeholders, it is essential to note that these groups have different interests and investments in particular perspectives in the food system. Stakeholder engagement will inevitably lead to moments of tension and conflict. These cannot and should not be avoided; as it is only through understanding these dynamics that viable solutions will be developed. In processes characterised by such tensions, it is thus also essential to ensure that deliberation occurs in ‘safe’ spaces that permit open dialogue, and that such processes are skillfully facilitated by neutral parties whose legitimacy is not seen to be tarnished by a particular bias.

The report recommends that municipalities engage in a process of stakeholder mapping according to a food systems understanding of food security. It is important to generate a core group of stakeholders that can become a trusted group helping the municipality understand food insecurity and think through its responses. This report suggests a number of potential points of interventions for municipalities, it is recommended that municipalities convene workshops on interventions that are most appropriate to the local context, and that stakeholders from key groupings be invited. The State has two important roles to play in stakeholder this process: the Convening role, as described above; and a Mediating role, to ensure that no single perspective dominates. This is important in the context of systemic inequalities in South African cities and in the South African food system.

The stakeholder engagement process is therefore a) mapping of key stakeholder groups representing all stages of urban food systems, b) development of key stakeholder groups for ongoing engagement, c) identification and engagement with stakeholders specific to planned areas of policy and programme focus. In a second phase, this can be expanded up by d) sustained engagement with stakeholder groups through facilitated social dialogue and scenario planning processes. e) institutionalisation of democratic and representative stakeholder forums and networks.

4.6 Conclusions

The current national framing of food security and the political location of the mandate to address food insecurity currently make it hard for municipalities to address urban food security in a manner that is informed by the actual nature, characteristics and systemic drivers of food insecurity. It is essential that the role of local government in addressing food security be acknowledged that strategies are streamlined to work constructively together towards a holistic urban food security objective which interacts with national and provincial scales and policy, but is sensitive to local level issues and complexities. This needs to extend beyond adopting national and provincial priorities and work towards integrating and connecting priorities and actions between government scales.

While many food system challenges exist at the municipal and city scale, without explicit policy mandates there can be no dedicated budgets in place for programmes. There is an important role of the SACN to use its convening power to motivate to national government that the food security role of municipal governments be formally acknowledged, as only with this formal mandate will municipalities be able to dedicate time and resources to addressing food security in ways that address the multi-faceted nature of the problem.

The review of the Municipal IDPs and other strategic documents has illustrated that many municipal responses are based on encouraging urban food production, or providing social safety nets. However, a number of innovative plans, working within existing local government constitutional mandates have been identified. These can potentially be transferred to other municipalities through horizontal knowledge exchange strategies.

Finally, as highlighted by the City of Johannesburg, addressing food security is a complex challenge and will require on-going engagement with stakeholders outside of local government. The final chapter of this report identifies potential policy and governance recommendations based on the findings of Chapters 2, 3 and 4 and informed by models of good practice from elsewhere.

Chapter 5: Recommendations

Highlights

- Municipalities need to develop an overarching approach and strategy to address food insecurity, informed by a systems perspective. This would start with the development of a Food Charter and would ultimately lead to an Urban Food Strategy. Although the mandate to address food security is not presently clear, the National Policy on Food and Nutrition Security indicates an increased role for local government in ensuring food security.
- International models of good practice and specific interventions were reviewed. It was noted that the most productive interventions are those that are aligned to wider municipal objectives or connected different parts of the food system.
- South African examples of innovation are highlighted to guide municipalities to think more broadly within their existing mandates.
- A strategic approach is suggested, which is designed specifically to overcome identified barriers to food system and food security planning.
- There is a need for greater monitoring of food security and food systems.
- The SACN can play an ongoing role through engaging national government to request amendments to data collection and disaggregation approaches, and by serving as a platform for horizontal learning. The SACN can also play an important role in lobbying national government for inclusion of a municipal role in national policies.
- Municipalities should more explicitly incorporate food systems (i.e. beyond urban agriculture) planning within existing planning tools including IDPs, SDFs, UDPs and EIAs as well as addressing food systems in community engagement mandated in urban planning processes..
- Municipalities should establish a food security oversight structure.
- A series of specific interventions are suggested.

5.1 Introduction

This report has provided an overview of the state of food insecurity in South African cities. It has argued that food insecurity needs to be understood in the context of the wider food system, and other systems. It also argues that municipalities do, in fact, have a considerable role to play in food security through their various regulatory and social mandates in shaping the food system. This concluding chapter therefore provides a set of recommendations for municipalities to aid them in their efforts to address food insecurity. The chapter reviews international good practice and consider its applicability to the South African context. It then suggests an approach and a set of specific interventions for municipalities.

5.2 International models of good practice

5.2.1 Governance approaches

There has been a rise in interest surrounding urban food governance for food security (and other benefits) in the last 15 to 20 years. There have been three distinct threads to this. The first is the Food Policy Council model, that is largely North American in origin, but is spreading into the global south. This model is characterised by a highly stakeholder driven process, with or without engagement by the State. The second model is the state-driven approach used in South America, most notably in Belo Horizonte, Brazil and Bogota, Colombia. The final model is still in formation, but there has been an emerging interest in generating food system assessments, led by organisations like the FAO, International Institute for Environment and Development, the EU and the Prince of Wales’s International Sustainability Unit. This model seeks to generate new knowledge, in conjunction with local government and other stakeholders and collaboratively generate viable solutions to the challenges that emerge.

These models all have strengths and weaknesses, as described in Table 5.1:

APPROACH	STRENGTHS	WEAKNESSES
Food Policy Council	<ul style="list-style-type: none"> Linking of multiple stakeholders (and their resources) Acknowledgement of role of non-state actors in food system and food security solutions Little resource cost to local government No required mandate from national government 	<ul style="list-style-type: none"> May not align with municipal objectives Voluntary nature makes it hard to enact plans No statutory power May not represent the interests of most vulnerable
South American Model	<ul style="list-style-type: none"> Allows for the development of coherent, interrelated sets of projects Aligns projects to broader local government objectives 	<ul style="list-style-type: none"> If continued lack of mandate, it will remain under-resourced and under-prioritised Lack of external stakeholder engagement
Food System Assessment ⁷	<ul style="list-style-type: none"> Generates data to fill knowledge gaps Responsive to local government needs 	<ul style="list-style-type: none"> Funding not clear May reinforce entrenched ways of thinking As yet untested.

Table 5.1 Strengths and weaknesses of urban food governance approaches

Given the South African political context, it may be most appropriate to base engagement on the South American model, but modified to ensure a higher level of stakeholder engagement. An approach to ensuring that this occurs is presented in Section 5.3.

A very large number of interventions have attempted to address food urban insecurity around the world. This section provides thumbnail sketches of a few of them. However, this report argues that describing the interventions themselves is not of great value as there will always be questions of transferability and relevance given local conditions. They are included, however, to provide a sense of the range of options that exist. This section takes a step back and considers the context in which interventions can gain traction.

It has been argued that individual interventions, programmes and policies have a high risk of being siloed and therefore missing the required interconnections required to address a complex problem like food insecurity. There has therefore, been a movement towards developing Urban Food Strategies as a means to build consensus with and beyond local government, define roles and responsibilities and to serve as a roadmap to guide future interventions (Hatfield 2012). An Urban Food Strategy (UFS) is:

‘[A] process consisting of how a city envisions change in its food system, and how it strives towards this change. UFS aim to place food on the urban agenda, capitalizing on efforts made by existing actors and creating synergistic effects by linking different stakeholder groups. Written milestones in

⁷ This approach is still very new and therefore it is largely untested.

this process can be charters, action plans or full strategies.... Ideally, UFS take a holistic approach to the food system of a city, considering horizontal and vertical dimensions' (Moragues et al 2013, 6).

An Urban Food Strategy has often been aided by the development of a Food Charter, which establishes the principles underpinning food system and food security interventions. These short documents do not hold any formal power, but have been used as a powerful tool to instigate and legitimate longer-term food engagements (BCC 2010). A Food Charter is a short document that lays out principles underpinning food security engagements, and sets out over-arching objectives. For examples see: Bristol (<http://tinyurl.com/kruh7qf>), Oxford (<http://tinyurl.com/lo3rs7w>) and Toronto (<http://tinyurl.com/mmp295p>).

5.2.2 Specific interventions

There are a plethora of specific interventions that have been enacted at City scale. This section provides insights into a few, focussing on those that adopt a more systemic vision. It is important to describe the most comprehensive set of interventions conducted in one city, Belo Horizonte, in order to generate a vision of what is possible.

In 1993, the city government of Belo Horizonte, Brazil, established the Secretariat for Food Policy and Supply – effectively a Department of Food. The programme they generated had three key objectives: to assist poor families and individuals at risk through supplementing their food access; to work with the private sector to bring food to areas of the city previously neglected by commercial outlets; and, to increase urban and peri-urban food production and supply. In 2009 there were six main sets of programmes:

Subsidised Food Sales;

Food and Nutrition Assistance;

Supply and Regulation of Food Markets;

Support to Urban Agriculture;

Education for Food Consumption; and

Job and Income Generation (Rocha and Lessa, 2009: 391)

Projects of these programmes were integrated, so that for example, food grown by the peri-urban smallholder farmers was used to contribute to school feeding programmes, and the school food was prepared onsite by previously unemployed adults as a form of job generation. The entire programme has cost the city no more than two percent of the city's operating budget (Göpel, 2009). This has been achieved through partnerships and through effective use of state funds for other lines of programming, such as health, which are argued to be more able to achieve their outcomes if aligned with increased food security.

Production

As in South Africa, there has been considerable focus on production. However, projects are increasingly looking beyond food production as a means of ensuring food security alone, and are consciously seeking to use urban and peri-urban food production as a means to meet a wider set of municipal objectives or explicitly connect to other components of the food system. So, for example, *Rosario (Argentina)* began to support urban agriculture following the financial crisis and so views food production as a nutrition intervention, but it also seeks to use production as a means to create multifunctional public spaces (Donovan et al 2011, 49). An explicit focus on generating multifunctional green spaces and an ecosystem services approach also informs the urban food production in *Bobo-Dioulasso (Burkina Faso)*, where production is viewed as a way to protect urban greenspace (Dubbeling 2013, 6). In *Wakefield (England)*, urban agriculture has been used to economically and ecologically regenerate a former landfill site. This is a collaborative project between local government and the private sector (Donovan 2011, 37). These interventions suggest that urban food production can be used effectively to move towards municipal sustainability goals, but that this proposed outcome needs to be effectively planned.

In *Kathmandu (Nepal)* there has been a focus on developing safe rooftop gardens as an appropriate urban response. In order to do this, the municipality partnered with local NGOs, research institutions and international organizations in order to develop the gardens and to train masons in construction techniques. Local planning legislation was amended to include rooftop gardens in its building codes (Dubbeling 2013, 10). Similarly in *Amman (Jordan)*, rooftop gardens were established with a particular focus on the re-use of greywater (Dubbeling 2013, 8). These demonstrate particularly urban forms of production attuned to local urban realities.

Finally, in *Havana (Cuba)*, the state proactively sought land for farming and developed new forms of marketing, i.e. the sale of farm produce (Donovan 2011, 50). Access to markets is a particular challenge to the viability of urban agriculture in South Africa.

The approaches taken elsewhere are useful for helping municipalities consider how to connect urban agriculture to wider city objectives and to be better attuned to local urban realities.

Processing and trade

As with urban food production, a number of cities have developed initiatives centred on generating local food trade and food processing, but working towards broader city priorities.

So, for example, in *Belo Horizonte (Brazil)*, *Rotterdam (Holland)* and the state of *Illinois (USA)* policies and programmes have been put in place to support trade of locally produced foods. In Rotterdam neighbourhood markets, connecting producers to consumers are supported. In Belo Horizonte, the City provides specific trading spaces for smallholder farmers and for organic producers. In Belo Horizonte and Illinois, locally produced food is procured by the state for schools, hospitals and other state facilities. This food is then processed locally, before being distributed thereby creating local employment and skills development, as well as guaranteeing high quality food to state-run programmes. Targeted procurement of local, small-scale production can increase the viability of smaller farmers and agro-processing companies. This model is currently employed in the NSNP (school feeding programme) in KwaZulu Natal. Other provinces continue with a more centralised system on the basis of market efficiency and concerns about potential corruption. However, if well managed, it is possible to integrate systems.

Retailing

Access to affordable, nutritious food is a major determinant of food security in the South African cities. Many cities have developed interventions to improve the food retail environment. There are two strands to these interventions, the first is regulation, the second is preferential trading for healthier foods.

Regulation: There are many cities around the world that have put in place local by-laws and ordinances to prevent fast food vendors or traders selling unhealthy foods near schools. Although this started in the USA in cities like *Palm Desert (California)*, *San Francisco (California)* and *Detroit (Michigan)*, they have also become popular in the *Philippines (Davao, Venezuela City, Kabayan)*. There have also been ordinances to regulate what foods can be sold in vending machines. Given the prevalence of such machines in state-run institutions, like hospitals, this could be a simple, but effective means of ensuring better food choices by urban residents, and a means to ensure that the nutrition education which is part of the Integrated Nutrition Plan is not contradicted within the very institutions that promote healthy eating. The most well-known, and controversial intervention has been *New York City's Soda Tax*.

Preferential trading: The second, and often complementary, approach is preferential trading of healthier food options. It is important to note, however, that these are rarely effective without corresponding regulation of less healthy options. In *New York City (USA)*, the Green Carts and Shop Healthy programmes were developed. Green Carts provides special licenses to vendors who are only allowed to sell raw fruits and vegetables. The Shop Healthy program works with small, corner stores in low-income areas to encourage them to stock and promote healthy foods, whilst concurrently working with community organizations to raise nutrition awareness (NYC 2013). The Green Carts programme has not been viewed as a success. Only 350 of the available 1000 permits have been taken up. It has been argued that the programme (as with Toronto's similar A la Carte programme) has been over-regulated and too strict, which has made it less appealing to traders (Browne et al 2011, Jahn & Shavitz 2012). Preferential trading of healthier foods, particularly in low-income areas and near transport hubs, is an important intervention, but municipalities need to be aware of the risk of over-regulating. In Pennsylvania (USA) the State government has developed a Fresh Food Financing Initiative, which provides loans and grants to retailers to attract fresh food retailers to low-income areas (Donovan et al). *Belo Horizonte (Brazil)* also operates a scheme like this where the state partners with retailers to ensure that a set of core food items are available at a regulated price, and where retailers must operate mobile vending in low-income areas to ensure low-cost access to healthy foods. There is incipient interest in developing projects like this in South Africa, as evidenced by the Go Jozi project launched in Johannesburg in 2013 (Tau 2013). It is not possible to comment on the performance of this project yet. The City of Johannesburg's Food Resilience Strategy will be evaluated in late 2015.

Alternative trading networks: In Gent, Belgium, a local currency (the Torekes) has been developed in a low-income area. Volunteers working on a community garden project, and other community services, earn

Torekes which can be used in local businesses, including a community restaurant that sells meals at market-related prices and at subsidized prices, and a community store that sells a number of healthy food items at subsidized prices. Both the store and restaurant purchase vegetables from the community garden project using Torekes.

Planning interventions

Municipalities are increasingly looking to incorporate whole systems thinking in their planning. The *City of Seattle (USA)* commissioned a project to enable them to better understand the spatial and economic determinants of food choice, because:

'While our health is influenced by personal decisions, it is also shaped by the places we live, work and play. Making healthy food choices can be difficult in neighborhoods with few food retailers that carry fresh groceries and other nutritious staples. Limited income and limited transportation choices can further compound some households' ability to access healthy food. By overlaying and examining income, food retail, land use, and transit, the maps identify areas in Seattle that have the most challenging environments for accessing healthy food' (Seattle Office of Sustainability & Environment, 2013, 1).

The study provided data that is enabling the City to interact with private sector stakeholders in the food system and community groups to better develop spatial and economic interventions targeted at the most vulnerable neighbourhoods.

Wadonga (Australia) has included principles of food sensitive urban design in its planning, including the development of walkable neighbourhood catchments and the rezoning of land to develop more diverse shopping environments in the suburban areas.

Lessons from within South Africa

In all the cases described above, municipalities were acting within their existing mandates to address food security and food system issues that are often seen as being beyond their jurisdiction. As Chapter 4 illustrated, here are novel approaches being employed within South Africa, which can be used for horizontal learning. These were identified as:

1. Recognising the role of the Fresh Produce Market as a means to generate a more inclusive food system (Buffalo City)
2. Recognising the municipal role in the characteristics of value chains (Ekurhuleni and Johannesburg)
3. Recognising the need for planning to consider the generation of food networks (Ekurhuleni), and the need to understand the spatial determinants of food insecurity (Johannesburg, Mangaung)
4. Connecting food security to climate change mitigation strategies (eThekweni, Cape Town)
5. Developing a co-ordinated multi-pronged approach to food security (Johannesburg)
6. The need to engage stakeholders outside of municipal government (Johannesburg)
7. Conducting baseline evaluations to determine different levels of food security in different municipal wards (Johannesburg)

5.3 A strategic approach to food security programming

As indicated above, there are a large number of projects, programmes and policies in place to address local food security and food system issues around the world. However, as with all programming, not all have been successful. This section therefore considers lessons learned from elsewhere to attempt to develop a strategic approach that is most likely to lead to successful interventions. This report argues that having an over-arching structure on which to build food security interventions is essential.

Working in Australia, Donovan et al (2011) identify a series of barriers to food planning, which translate well to the South African context. It is essential that strategies work with these constraints in mind. The identified constraints are:

'Awareness of issues and responsibilities. Everyone recognises that food is essential for life, and many planners understand that this has implications for how land is allocated. However, the scale and complexity of conventional food systems can obscure the effects of planning decisions on food supply. For example, it is difficult to see how the re-zoning of a small site from a farming use to an urban use will affect a global food system that spans several international markets. Consequently, it is understandable that planners and the community in general see planning for food as a global issue rather than a local one, and so 'outside their control'. As a result food issues can fall through the cracks as planners see addressing these issues as someone else's responsibility.

Political will. Planners typically advise or advocate for a course of action that will eventually be decided by an elected representative of the wider community. Ultimately these elected representatives are responsible for the way priorities are weighed up, and have to answer to their electorate for their decisions. If that electorate does not place a high priority on the need to plan for food, there may not be the political will to follow that through in their decisions, no matter what the planners advise.

This is particularly the case where opportunity costs are felt or have an immediate impact on the local area, but benefits accrue to the broader community or are realised in the future.

Time and financial constraints: Planners are typically under considerable pressure to prepare plans or process applications. In the private sector, clients will usually not pay more to allow planners to consider food issues, seeing them as unnecessary. In the public sector, planners have little extra capacity to consider additional issues to their traditional concerns.

Conflict with other priorities: Some planners feel that planning for food, when it is considered at all, is a subset of sustainability. This means it is given a relatively low priority when weighing planning for food with other worthy objectives of planning (e.g. accommodating all the urban uses needed to support our wellbeing). Furthermore, there are relatively few tools available to measure the impacts of planning decisions on food considerations, but several measures for other priorities (such as measuring the available land supply for housing). Elements with strong evidence and data available tend to receive a higher priority.

Policy vacuum. There is no **explicit** recognition of planning for food within the *Planning and Environment Act*, or the *State Planning Policy Framework*, which would strengthen the case for considering impacts of decisions on food. However, Municipal Public Health and Wellbeing Plans do present opportunities for securing food systems and therefore potential for including consideration of food.

Sphere of influence: Many decisions about land use and food production are currently beyond the control of planning – for example the mix of specific shops in a shopping centre, or the actual use of land zoned for farming. A planning scheme cannot require land zoned for farming to be used for agriculture; it can only prevent certain other uses and developments from taking place' (Donovan et al 2011, 9).

Therefore, in recognition of these constraints it is recommended that a strategy be developed that systematically addresses these barriers.

1. There is a need to generate an understanding of the role of the municipality, across departments, in ensuring food security. This can be done through the production of short case studies, or guided fieldtrips to the Fresh Produce Market and a mall in a low-income area on social grant pay day to help municipal officials and politicians 'see' the food system and how it interacts with other municipal competencies. Innovative ways to grow municipal officials' capacity to engage with the complexities and tensions in urban food systems are essential. These could include horizontal learning processes where municipal officials learn from each other's experiences and from successes and challenges in cities in other parts of the world.

2. Municipalities may be cautious to follow Donovan et al's argument for generating community awareness of the problem of food insecurity in order to generate political will. This is potentially divisive. However, it is argued that this is an important step, as the solutions to food insecurity cannot be the responsibility of municipal government alone. As noted in Chapter 4, this is a complex problem that will require the involvement of a range of stakeholders in order to generate workable solutions (and spread the resource load). Efforts should be taken to increase civil society, and private sector, awareness of the impacts of food insecurity in order to develop stakeholder engagement, and to give legitimacy to the local government to act. It is essential that a specific individual within the municipality be identified who will hold an oversight for food security and food system programming. This person

will work with a small, core group of stakeholders within and beyond the municipality. Another suggestion would be the development of a Food Security Charter, as a document to develop consensus between various stakeholders on approaches to address food security, and to generate political awareness and political will.

Additionally, food can also be seen as a key theme around which to build political consensus and develop the legitimacy of local government as truly serving its constituencies, particularly the most vulnerable. Food issues could thus present an opportunity for local government to position itself more advantageously and promote the IUDF objective of engaged and empowered citizenry.

3. Time and financial constraints may be overcome if food security and food system programming is aligned to other municipal priorities, as was the case in many of the examples cited. In Belo Horizonte this was particularly well done, in that a vast number of very large programmes were supported using just 2% of municipal budget.

4. Point 3 will also help in preventing conflict with other priorities. However, there are likely to be some points of conflict that will remain. The most apparent ones would be conflict over land use for agriculture or urban development, and if questions are asked about the appropriateness of shopping mall-led local economic development. In both cases it will be essential to convene a dialogue between departments involved in the competing planning processes and the assumptions and values and proposed outcomes of development trajectories be discussed. Too often food security is not considered in planning decisions, because of the apparent policy vacuum.

5. To address the policy vacuum, this report suggests two approaches. The first is to use the Constitution, and the mandates of each municipal department, to demonstrate that despite a lack of formal mandate to address food security, there are many functions of local government, under existing mandates that shape the food system and food security. Local government therefore does play an important role in determining food security within its existing mandates, and therefore has considerable scope to act. The second is that the convening power of the South African Cities Network be used to initiate a sustained dialogue with National and Provincial Government to ensure that urban food issues be recognised within policy and strategy documents.

6. The concern that many decisions about the food system take place outside of municipal borders is valid, however, this report argues for municipalities to engage directly with Provincial and National government, as well as other stakeholders, on issues of food security. This already happens, to a limited extent within working groups for Provincial Strategic Objectives. This needs to continue, but with the broadened view of the nature and drivers of food insecurity in urban areas and the recognition of the close interdependence of rural and urban food systems.

This report argues that these steps are foundational in building effective food security programming for municipalities.

7. A final suggestion is that there is a need to work towards developing an over-arching food security and food system strategy, but that in order to generate political will and buy in, the municipality should start with a few small, doable projects. These projects should be determined by local need and competence, but could include a project to address retail food waste, or a project to plan for the sale of healthier foods near transport hubs. There is need for some kind of enduring institutional framework constituted by representatives of several departments, with a clear food mandate and adequate financial resources to drive inter-sectoral programmes and ensure continuity.

An over-arching strategy is essential to prevent projects being isolated and ad hoc, as is currently the case. However, it is acknowledged that such a strategy may seem to be removed from the core business of many departments. It is therefore suggested that the municipalities identify a few projects that are likely to have quick implementation and easily monitor-able outcomes. These projects should always include more than one department in order to generate shared understanding of the problem and relationships across departments.

5.4 Specific recommendations

5.4.1 Recommendations to National Government

National government should establish a directorate for urban food security which convenes regular consultations with municipal delegations, co-ordinates programmes, mandates the collection of urban food

security and food systems information at provincial and municipal level through existing channels such as primary health care, environmental programmes, education and the social sector as well as by mandating the sharing of information held in the private sector by establishing reporting standards. National government should engage with StatsSA and NAMC to address some of the data collection and aggregation issues that make it difficult for cities to monitor food security and its drivers. These changes would enable more proactive food security planning by municipalities. The proposed directorate for urban food security would facilitate the horizontal exchange of information. It would also conduct capacity development and planning interventions, such as a national-level urban food systems scenario planning process. The directorate would facilitate inter-departmental alignment around urban food systems governance, which is essential given the complex drivers of food insecurity. This directorate should incorporate advice from urban food systems experts. Finally, such a directorate needs to be adequately resourced with dedicated staff, binding mandates and sufficient financial resources to support a sustained programme of engagement with the issue of food systems governance.

5.4.2 Food Security and Food System Monitoring

The existing data on food security in South African cities remains patchy. There are food security indicators within the General Household Survey and other national large-scale surveys, but they lack some crucial information. Additionally, their sample sizes are too small at the individual city or town scale to effectively monitor food security. Outside of these surveys, there have been a number of individual sub-city scale case studies. These are useful in that they ask a wider variety of food security questions, but they lack representivity.

This report argues that there is a need to monitor food security and food system change more effectively.

Food security specific monitoring: One of the challenges associated with measuring food insecurity is that there is no single way of measuring food security, as it is multi-dimensional (Carletto et al 2012). This makes it hard to compare results of different surveys, as is the case with the General Household Survey, SANHANES survey and the case studies presented (de Cock et al 2013). It has therefore been advocated that a range of measures be used (Ballard et al 2013).

This report argues that the suite of tools developed by FANTA to measure food insecurity be adopted as a norm:

a) the Household Food Insecurity Access Scale (HFIAS); b) the Household Food Insecurity Access Prevalence Indicator (HFIAP); c) the Household Dietary Diversity Score (HDDS); d) the Months of Adequate Household Food Provisioning (MAHFP) measurement of household food access. The HFIAP has been commonly used in many of the case studies cited in this report and provides a clear indication of objective and subjective experiences of food insecurity. The Household Dietary Diversity Score⁸ can be used to provide a snapshot of diet that is a useful proxy for malnutrition. The Months of Adequate Household Provisioning is a useful indicator of the chronic or transitory nature of household food insecurity, and provides an indication to municipalities of when particular efforts are required.

Use of national surveys:

The ideal would be for municipalities to partner with local research institutions to conduct longitudinal surveys to track food security. The indicators recommended would provide a nuanced view of the state and drivers of food insecurity. However, not all municipalities will be able to do this. It is therefore recommended that these municipalities use findings from the General Household Survey (GHS) to track food insecurity. The GHS questions provide sufficient data to indicate the incidence of, but not necessarily the depth, of food insecurity, but it must be noted that the sample size for individual municipalities is small. The GHS lacks a question that provides an insight into dietary diversity, an indicator of malnutrition. It would be extremely valuable to have the HDDS questions in the survey. Although a simple tool, it provides a good indication of nutritional adequacy. The South African Cities Network should use its voice for urban areas to approach StatsSA to request that this indicator be included in future surveys.

It may be viable to use household income as a proxy for food security, income poverty is one of the most important predictors of food insecurity. This is useful as many municipalities hold good data on income that is

⁸ A variant of this may need to be developed in order to ensure that the processed foods present in the South African urban diet are adequately reflected.

spatially disaggregated. This would give a good indication of where the most food insecure areas of cities and towns are. As noted in Chapter 2, there are various income measures that can be used to indicate likely food insecurity.

This report cautions about being too dependent on proxy indicators, as food insecurity cannot be reduced to just a lack of income. There are a number of other factors at the household scale and beyond that impact a household's ability to access sufficient nutritious food. These include stability of income, housing characteristics, household structure, as well as characteristics of the neighbourhood food system and geographical location.

Food system monitoring:

Although food security is mainly experienced at the household scale, this report has confirmed that many of the drivers of food insecurity are attributable to extra-household factors. The urban food system in South Africa is undergoing rapid transition, with both rapid urban change and rapid change in the characteristics of food retail and the mix and pricing of food being sold. There is therefore a need for some ongoing food system evaluation. Pothukuchi and Kaufman (2000) argue that this facilitates the tracking of progress in identified problem areas.

There is no set method for conducting food system assessments, but it is suggested that municipalities draw largely on existing data, and proactively modify data collection to include details useful for food system assessments. It would be extremely helpful if these data had spatial data associated with them (even if just to note which clinic data were collected from).

1. Health and food security: Levels of food insecurity; Rates of low birth weight and infant stunting; Rates of overweight and obesity; Incidence of diabetes and hyper-tension.
2. Retail environment: Location of supermarkets, convenience stores, fast food retailers and informal traders; Number of supermarkets per 1000 households
3. Agriculture: Audit of land available for agriculture (formally zones for agriculture and municipal open space)
4. Number, location and production profile of food processors within the municipality
5. Price of basic basket of goods in different locations in the municipality and from different retail types.
6. Shelf space analysis of retailers in different parts of municipality to assess relative access to healthy and less healthy foods.
7. Safety nets: Number and location of food-providing NGOs, FBOs and CBOs; number of households; number and location of grant receiving households.

5.4.3 Recommendations for the South African Cities Network

This report has identified few important roles for the SACN. The first is to provide a platform for cities to lobby national government to include an urban angle for food security in policy, strategy documents and programming (including budgeting).

The second is to use the same platform to engage StatsSA to request modifications to data collection and disaggregation strategies to allow municipalities to develop a better understanding of the state of food security and local food system conditions, as indicated in Section 5.4.1.

The SACN can have an ongoing role in facilitating workshops and dialogues between cities to encourage horizontal learning. Finally, there is a potential role for the Network as an archiving hub for urban food security resources, to collect data on all municipal food security projects and their foci, as well as updates about their progress. This would link up participating municipalities and enable the creation of a collaborative environment. It would also help interested citizens/groups get involved, as they would be able to see what possibilities exist for engagement.

5.4.4 Establishment of a municipal oversight structure

As discussed in Section 5.3, there is a need to develop a set of structures and processes in order to maximise potential impact of any programming and policies.

These begin with the development of a Food Charter, which can be used to raise awareness of the issue within local government and with stakeholders. It also serves to build consensus and guide strategic planning towards an Urban Food Strategy document.

There is need to develop a structure in which one key person has oversight of all food security and food systems work. Ideally this person would engage a multi-departmental working group, and have a small group of external stakeholders. There is a need to identify an alternative individual in case this individual moves on.

Stakeholder engagement is essential, as the food system is the product of many activities. There needs to be a small, core group of stakeholders that will be engaged on an ongoing basis. There also needs to be a much larger group of stakeholders who can be engaged at specific points on specific projects.

A further useful tool for stakeholder engagement is represented by transformative scenario planning processes. Such a process has recently been concluded on a national level by the Southern African Food Lab, identifying five key scenarios which reflect how different forces may shape transformations in the food system over the coming 15 years. However, such scenario planning processes could also be fruitfully applied at an urban scale, enabling stakeholders to explore the potential impacts of various trends currently apparent.

Where feasible, it is recommended that municipalities establish working groups, including representatives from CSOs and academia, that address food system knowledge management and innovation. These groups would help identify knowledge gaps, formulate research agendas, help build municipal capacity and conduct relevant research to inform urban food policy development. A lot of work to promote urban food security is already being done by a plethora of CSOs, NGOs, FBOs and CBOs, as well as provincial government. These efforts could be more effectively aligned, co-ordinated and supported by including them in forums which inform urban food security interventions and which allow these organisations to develop a more coherent voice to express the kind of support required from municipal structures.

Essential for all these recommendations to gain traction is that these structures be formally institutionalised, well-resourced, and have the necessary clout to encourage change - they should thus play a key advisory role at a mayoral or similarly senior executive level.

5.4.4 Areas for projects: Key intervention sites

The findings from Chapters 2, 3 and 4 provide the justification of the recommendations made below. This report has been cautious to make specific project and programmatic recommendations. This is based on a) a recognition of differences between municipalities, their competencies and strategic goals, and b) on the need for municipalities to take ownership of generating appropriate projects.

The recommendations are therefore based on identifying types of interventions and potential points of intervention within the system. All recommendations fall within existing municipal mandates and competencies.

1. **Improve the evidence base on food insecurity**, including household dietary diversity.

- a. Use the SACN as a convening mechanism to request that the General Household Survey include a measure of dietary diversity. Additionally, it could argue for the inclusion of a credible food security question in the upcoming Community Survey.
- b. Partner with local research institutions to conduct food security surveys which would enable better targeting of food security interventions.

2. Develop strategies to respond to the **temporal dimensions of food security**, including time specific state and NGO safety nets, such as soup kitchens. Municipalities can also partner with NGOs, such as SaveAct, to increase access to less exploitative lending mechanisms.

3. Aspects like **refrigeration and storage** should be considered in planning of new residential and upgrading of informal settlements. If incorporating these storage aspects into new buildings is beyond the function of the municipality, it should use its convening power to draw in international donors and NGOs to support this process, as has been the case with the Cool Shack initiative trialled at the University of Cape Town (Collins 2015). This also should form a key consideration for the planning of informal trading facilities. Low energy, safe cooking technologies, such as the WonderBag, should be promoted in order to enhance food utilization. This was trialled in Malmesbury in the Western Cape.

4. **Urban agriculture**:

- a. There must be better monitoring of urban agriculture in terms of who is benefiting, what is being grown, and where the food goes.
- b. There is a need to understand why projects fail to thrive.
- c. Municipalities should partner with NGOs, where possible, to increase the impact of projects. The City of Cape Town has a contract with an NGO to assist with training, for example.

5. Food price monitoring:

- a. Through the SACN, municipalities should motivate for monitoring of food prices which better represents the purchasing patterns of the urban poor.
- b. Municipalities can advertise prices of a small cluster of basic food items to enable consumers to shop more cost effectively. This has been done in Belo Horizonte in Brazil.

6. Better data for food system monitoring:

- a. Advocate, through the SACN, for more appropriate data to be available to municipalities to help them monitor the food system. This would include better disaggregated data on food production, and a request for the Human Rights Commission to aid the State in accessing data on food flows within the private sector.
- b. Municipalities should better monitor food security projects, including urban agriculture. Furthermore, data on what is being produced by food processors should be gathered annually.
- c. Promote the sharing of food systems information in food systems charters that encourages retailers and processors to contribute information in a way that does not compromise competition commission rulings and mandate such sharing via national-level entities such as SARS, the South African Human Rights Commission or StatsSA.

7. Food production:

- a. Work with Provincial government to develop strategies to include food production as a consideration in land use planning, particularly with reference to amendments to the urban edge.
- b. Audit of all land used for urban food production, and available for urban food production (from subsistence to commercial scale), to better facilitate integrated planning for food production.
- c. Include urban food production, in all its forms, in wider urban planning to achieve municipal strategic goals (i.e. remove urban agriculture from its food security ghetto).

8. Integrate food transport planning, formal and informal, into transport planning:

- a. Connect food retail space planning, formal and informal, to transport planning

9. Acknowledge the critical role that **Fresh Produce Markets** play in the urban food system, and their role in generating secondary food and logistical business opportunities. Ensure equitable and transparent pricing regimes at FPMs.

10. **Support agro-processing**, particularly SMMEs, as a key point of potential employment generation.

- a. Use agro-processing as a magnet to attract employment into low-income areas.
- b. Monitor what food is produced and provide incentives for companies that produce healthier foods.

11. Retail:

- a. Monitor the expansion of the supermarket sector in terms of location and floor space.
- b. Create an internal municipal dialogue on the development of food retail environments that are responsive to the needs of the poor.
- c. Create an enabling environment for informal food retailers, based on analysis of needs.
- d. Provide incentivisation for the promotion and sale of healthier foods, preferably derived from agro-ecological methods.
- e. Where possible, regulate the sale of less healthy foods near schools and clinics.
- f. Monitor and disincentivise the marketing of less healthy foods, such as soft drinks, on municipal billboards.

12. **Waste:** Municipal government can play a number of roles in reducing food waste and creating opportunities for waste to be converted into a useable resource. Food processing tends to be clustered around business parks and industrial areas. It may be possible for municipalities to trial waste transformation systems in these areas. Additionally, it may be possible to generate compost from the food waste generated at the Fresh Produce Markets to feed back into agriculture, as is being trialled at the Cape Town Fresh Produce Market. Municipalities could also incentivise retailers to reduce the amount of packaging, particularly

non-biodegradable plastics, used for fruit, vegetables, and processed foods and to switch towards biodegradable packaging.

13. **Water:** Encourage the improvement of water-use efficiency, particularly in food processing and manufacture. Municipal wastewater treatment standards should be revised to take account of phosphate loads and encourage the development of phosphate reclamation processes.

14. **Energy:** Encourage the de-coupling of food retail and processing from dirty fossil-fuel energy sources by incentivising the transition to renewable energy sources by retailers, processors and food warehousing and distribution infrastructure.

5.5 Conclusions

The challenge of urban food security in South Africa is a critical, but under-acknowledged development challenge. This report has provided an overview of current urban food insecurity in South Africa and argued that food insecurity is best understood not simply as a household scale problem, but as one that must be understood in the context of the wider food system and urban system. It therefore argued that strategies to address food insecurity must extend beyond household- or community-scale interventions. Current responses have tended to focus on urban agriculture as the only solution to food insecurity, yet there is little evidence to support the continued promotion of food production to alleviate food insecurity. This report has argued that there are a number of other approaches that can and should be taken by municipalities to create urban conditions which can generate food security.

Although municipalities have no direct mandate to address food insecurity, this report has argued that they already play an important role in shaping the food system and the urban system. This means that municipalities do actually already have the power to address food insecurity within their existing mandates. This aligns with emergent thinking within the NDP and IUDF.

This report therefore argues that municipalities have significant capacity to address food insecurity and generate additional municipal benefits by consciously focussing on the urban food system. We thus conclude with the quote that the report started with:

'Suppose I told you that New York City had the opportunity to create thousands of new jobs – but we just weren't doing it. You'd probably be pretty upset. Now suppose I went on to say that we've actually had that opportunity for years, we just weren't paying close enough attention. I bet you'd all have some choice words for me – the kind that shouldn't be repeated in polite company.

Alright, now suppose I told you that by taking steps to create those jobs, we could also improve public health and reduce our energy consumption. We could fight childhood obesity and asthma. We could keep millions of dollars in the local economy, instead of sending those dollars across the country or around the world. But we still weren't doing it.

Well the fact is, we have been ignoring those exact opportunities. For years, we've been missing a chance to create a greener, healthier, and more economically vibrant city. How? By ignoring the enormous potential of our city's food system.' (Quinn 2009)

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