Jonathan Crush · Jane Battersby *Editors*

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Abbreviations

3ADI	Accelerated Agribusiness and Agro-industries Development Initiative
ADB	African Development Bank
AFSUN	African Food Security Urban Network
AIDS	Acquired Immune Deficiency Syndrome
ALV	African Leafy Vegetables
AMICAALL	Alliance of Mayors Initiative for Community Action on HIV and AIDS at the Local Level
APHRC	African Population and Health Research Center
BP	British Petroleum
CBD	Central Business District
CBOs	Community-Based Organisations
CFSVA	Comprehensive Food Security and Vulnerability Analysis
CI	Confidence Interval
CIGI	Centre for International Governance Innovation
CRFS	City Region Food System
CSO	Central Statistics Office
DPMO	Deputy Prime Minister's Office
DSW	Social Welfare Department
ESAP	Economic Structural Adjustment Programme
EU	European Union
FANTA	Food and Nutrition Technical Assistance
FAO	Food and Agriculture Organization of the United Nations
FDI	Foreign Direct Investment
FEWSNET	Famine Early Warning Systems Network
FTLRP	Fast Track Land Reform Programme
GDP	Gross Domestic Product
GIS	Geographic Information Systems
GNU	Government of National Unity
GPS	Global Positioning Systems
HCP	Hungry Cities Partnership

HDDS	Household Dietary Diversity Score
HDI	Human Development Index
HFIAP	Household Food Insecurity Access Prevalence
HFIAS	Household Food Insecurity Access Scale
HFZ	Humid Forest Zone
HIV	Human Immunodeficiency Virus
IDPs	Internally Displaced Persons
IDRC	International Development Research Centre
IDSUE	Indicator Development for Surveillance of Urban Emergencies
IFAD	International Fund for Agricultural Development
ILO	International Labour Organization
IMF	International Monetary Fund
IPaSS	International Partnership for Sustainable Societies
ISU	International Sustainability Unit
KCCA	Kampala Capital City Authority
KES	Kenyan Shilling
LPI	Lived Poverty Index
MAHFP	Months of Adequate Household Food Provisioning
MDGs	Millennium Development Goals
MINFOF	Ministère des Forêts et de la Faune
NAD	Namibian Dollar
NCCU	National Children's Coordinating Unit
NCPs	Neighbourhood Care Points
NDP	Uganda's National Development Plan
NERCHA	National Emergency Response Council on HIV/AIDS
NGOs	Non-governmental Organisations
NMP	National Migration Policy
NRM	National Resistance Movement
NUHDSS	Nairobi Urban Health and Demographic Surveillance System
OAG	Old Age Grant
OR	Odds Ratio
OVC	Orphaned and Vulnerable Children
PAG	Public Assistance Grants
PMA	Plan for the Modernisation of Agriculture
PRSP	Poverty Reduction Strategy Plan
PSU	Primary Sampling Unit
RHVP	Regional Hunger and Vulnerability Programme
RUAF	Resources Centres on Urban Agriculture and Food Security
SADC	Southern African Development Community
SAP	Structural Adjustment Programme
SDG	Sustainable Development Goal
SDI	Slum Dwellers International
SSHRC	Social Sciences and Humanities Research Council of Canada
SUDP	Strategic Urban Development Plan
SZL	Swaziland Lilangeni

TSUPU	Transforming the Settlements for the Urban Poor in Uganda
UA	Urban Agriculture
UCCB	University Central Consultancy Bureau
UK	United Kingdom
UN	United Nations
UNDP	United Nations Development Program
UNFP	Uganda's National Food and Nutrition Policy
UNHABITAT	United Nations Human Settlements Programme
UNICEF	United Nations Children's Emergency Fund
UNUF	Uganda National Urban Forum
UNUP	Uganda's National Urban Policy
UPH	Urban and Peri-urban Horticulture
USA	United States of America
USAID	United States Agency for International Development
USD	United States Dollar
USPS	Urban Sector Profiling Study
VAC	Vulnerability Assessment Committee
WFP	World Food Programme
WHO	World Health Organization
ZWD	Zimbabwean Dollar

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Chapter 1
The Making of Urban Food Deserts

Jane Battersby and Jonathan Crush

Abstract The main objective of this book is to examine aspects of the relationship between food and cities in the Global South, and Africa in particular. While food security policy thinking at the global and national scale has largely neglected the urban dimension, those concerned with urban transformation have largely ignored food security and food systems. It is therefore important to understand the dimensions and character of the continent's 21st century urban transition and to lay out what we do know about urban food systems and the drivers of food insecurity in the cities. The chapter first describes the urban transition currently under way in Africa and the main characteristics of Africa's urban revolution. The next section examines the dimensions and challenges of urban food insecurity in African cities. Then the chapter turns to the actual connections between food and cities as seen through the lens of the concept of "food deserts." It shows how each of the contributions to this volume illuminates different facets of the complex reality of the African urban food desert.

Keywords Africa · Food security · Urbanization · Urban revolution · Food deserts · SDGs

1.1 Introduction

In September 2015, the United Nations (UN) adopted a new global development agenda—the Sustainable Development Goals (SDGs)—which will drive international development policies and interventions for the next two decades. Amongst the goals and targets are two of particular relevance for this volume: (a) SDG 2: End hunger, achieve food security and improved nutrition, and promote sustainable

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agriculture; and (b) SDG 11: Make cities inclusive, safe, resilient and sustainable. One of the most striking features of these two goals, and their accompanying targets, is that they appear to have nothing to do with one another. For example, SDG2 makes no reference to the implications of urbanization for the achievement of the goal of ending hunger and achieving food security. Instead, the primary focus is on agricultural production and productivity, especially amongst small farmers. SDG2 thus successfully reproduces the problematic anti-urban bias that has dominated the global discourse on food security for the last two decades (Crush and Frayne 2014). In addition, the goal displays an unfortunate tendency to conflate food insecurity and hunger. SDG2 is already being abbreviated simply to "End hunger" or "Zero Hunger" in popular and promotional materials, thus ensuring that food insecurity continues to be seen as a lack of food, rather than an issue of food access and inadequate diets (UN 2015a).

While food security policy thinking at the global and national scale has largely neglected the urban dimension, those concerned with urban transformation have largely ignored food security and food systems (Crush and Frayne 2014). SDG 11's aim of making cities inclusive, safe, and resilient is consistent with this line of thinking. The goal has eleven targets that include safe and affordable housing and slum upgrading; safe, affordable, accessible and sustainable transport systems; improved air quality and waste management; access to safe, inclusive and accessible, green and public spaces; disaster risk management and the use of local materials in buildings. Food is fundamental to urban resilience and sustainability yet the goal makes no mention of it. As Pothukuchi and Kaufman (2000) have argued: "Air, water, food and shelter are among the essentials of life. Planners have been involved in efforts to improve the quality of air and water through pollution control programs and more comprehensively in shelter planning. But the fourth essential, food, has been virtually ignored." In the many existing international, national and municipal strategies for urban management, it is rather as if the 50 % of the world's population who live in cities do not need to eat. The UNHABITAT website, for example, identifies a number of urban themes in the agency's portfolio (including land, water, sanitation, housing, energy and mobility) but food is conspicuously absent. UNHABITAT's recent *Towards an Africa Urban Agenda*, similarly does not mention food as part of the "institutional architecture to optimise Africa's urban future" (UNHABITAT 2015, p. 38).

The silo effect evident within the SDG process means that urban food issues are likely to continue to be sidelined in both global food security and urban development agendas (Battersby forthcoming). Yet, as Carolyn Steel (2008, p. ix) observes in her seminal book, *Hungry City*, "Food and cities are so fundamental to our everyday lives that they are almost too big to see. Yet if you put them together, a remarkable relationship emerges." The main objective of this volume is to examine aspects of the "remarkable relationship" between food and cities in the Global South, and Africa in particular. There is little likelihood that a collection of essays dedicated to exploring the connection between food and the urban will break down any silos. But by drawing attention to the daily significance of food and its accessibility for the millions living in and moving to cities, and the many complex

challenges of feeding the urban poor, it may help to further a new and urgently needed research agenda. Such was the ambition of the African Food Security Urban Network (AFSUN) when it was founded in 2008 and this book presents some of the case study research conducted since that time by AFSUN and the Hungry Cities Partnership (Crush 2013).

Before examining the nature of the relationship between food and cities in Africa, it is important to understand the dimensions and character of the continent's 21st century urban transition and to lay out what we do know about urban food systems and the drivers of food insecurity in the cities. The next section of the introduction therefore describes the urban transition currently under way in Africa and the main characteristics of Africa's urban revolution. The second section examines the dimensions and challenges of urban food insecurity in African cities. Then the chapter turns to the actual connections between food and cities as seen through the lens of the concept of "food deserts." The chapter shows how each of the contributions to this volume illuminates different facets of the complex reality of the African urban food desert.

1.2 The African Revolution

Globally, more people now live in towns and cities than in the countryside. In 1950, 30 % of the world's population was urbanized (UN 2015b). By 2014, the proportion had risen to 54 % and is projected to increase further to 66 % by mid-century. Natural increase and migration will add another 2.5 billion people to the world's urban population by 2050, almost all of whom will be living in cities of the Global South (UN 2015b). Even Africa, often seen as a predominantly rural continent, is undergoing a rapid process of urbanization. Parnell and Pieterse (2014) convincingly argue that the nature and pace of change constitutes an "urban revolution" which will see more than half of the population living in towns and cities by mid-century (Fig. 1.1). The continent's urban population is projected to increase from 455 million in 2014 to 1.26 billion by 2050, which will amount to nearly 60 % of the total population (Fig. 1.2).

Africa's urban revolution has several characteristics, which are of particular relevance to the themes of this volume (Parnell and Pieterse 2014). First, there are considerable variations in current levels and rates of urbanization across the continent. But no region or country is becoming *less* urbanized; all are on the same trajectory, all are participating in the revolution. At present, only Northern Africa is more than 50 % urban with Eastern Africa the least urbanized (Table 1.1). By 2050, all regions except Eastern Africa are projected to be over 50 % urban. Some of the most urbanized states—like South Africa, Djibouti, Gabon, Congo, and Algeria — already have over 60 % of the population living in cities, while in many others less than a third of the population is urbanized. This volume contains chapters from ten African countries, all with very different levels of urbanization. At present, just three are more than 50 % urban (South Africa, Botswana and Cameroon) (Table 1.2). By

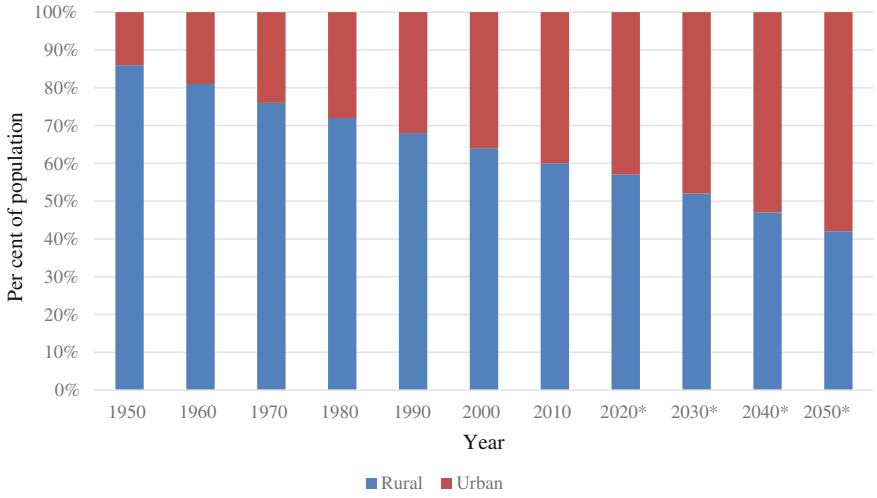

Fig. 1.1 Urban and rural population of Africa, 1950–2050. *Projected. *Source* Data from UNHABITAT (2015: 266)

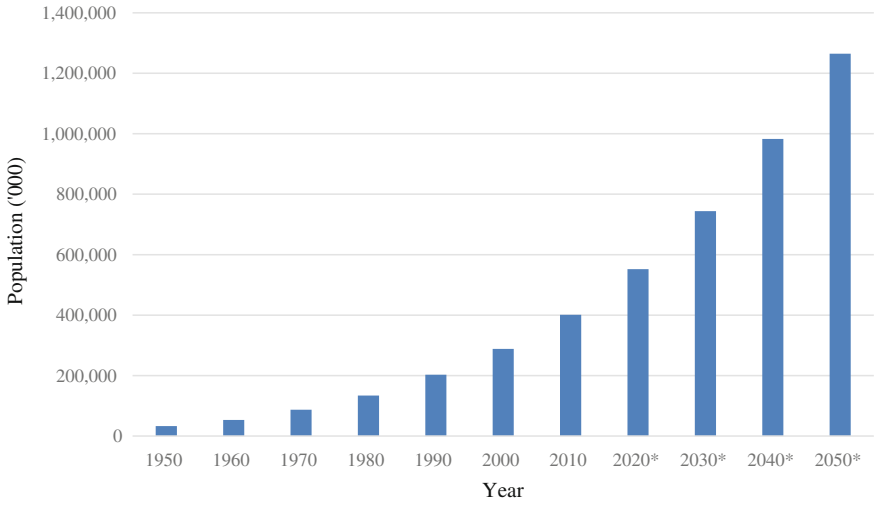

Fig. 1.2 Growth in the Urban African population, 1950–2050. *Projected. *Source* Data from UNHABITAT (2015: 264)

2050, UNHABITAT projects that six will be more than half urban while the others will also have seen major growth in the proportion of the population living in urban areas. Overall, the number of people in urban areas in these ten countries is projected to increase from 72 million in 2010 to 218 million in 2050.

A second feature of the urban revolution is both a significant increase in the number of very large cities and rapid growth of urban areas further down the urban

Table 1.1 Levels of urbanization in Africa by region, 1990–2050

	Urban population ('000)			% Urban		
	1990	2010	2050*	1990	2014	2050*
Eastern Africa	35,104	77,954	358,974	18	23	45
Central Africa	71,676	126,689	278,350	32	41	62
Northern Africa	63,969	102,249	195,877	46	51	65
Southern Africa	42,093	57,780	67,327	49	59	74
Western Africa	60,554	134,810	488,886	33	44	66

*Projected. *Source* Data from UN-Habitat (2015: 264–267)

Table 1.2 Levels of urbanization in case study countries, 2010–2050

	2010 ('000)		2050 ('000)*	
	No.	% Urban	No.	% Urban
South Africa	30,855	62	43,616	77
Botswana	1224	61	1964	79
Cameroon	10,096	52	37,387	71
Namibia	863	39	2214	62
Zimbabwe	4793	38	12,490	61
Mozambique	7241	31	25,335	51
Kenya	9594	24	44,302	46
Swaziland	253	21	499	30
Malawi	2316	16	15,670	32
Uganda	5067	15	34,815	37

*Projected. *Source* Data from UNHABITAT (2015)

hierarchy (generally labelled secondary urbanization) (Roberts 2014). Urban primacy, where the largest city is several times the size of the second largest, is still a characteristic feature of African urbanization. At the same time, "Africa is no longer a continent of villages and towns; it encompasses the full spectrum of scale in urban settlement" (Parnell and Pieterse 2014, p. 4). The vast majority of urban Africans (almost 60 %) live in cities or towns of fewer than 500,000 (Parnell and Pieterse 2014, p. 8) (Fig. 1.3). However, the proportion of the urban population in urban areas of this size is projected by UNHABITAT (2015) to fall to 46 % by 2030. At the other end of the urban hierarchy, cities of 1 to 5 million and over 5 million will command an increasing share of the overall African urban population. By 2030, an estimated 44 % of the urban population will be in cities of this size, up from 29 % in 1990.

A third feature of the urban revolution is that cities of all sizes maintain close connections with their rural hinterlands through a continuous and complex "web of relations and connections incorporating rural and urban dimensions and all that is in between" (Tacoli 2007). These rural-urban linkages include "reciprocal flows" of people, goods, services, money, and food between rural and urban locations (Berdegué and Proctor 2014). Considerable attention has been devoted to the circulation of people between urban and rural areas (Potts 2010). Over time, as more

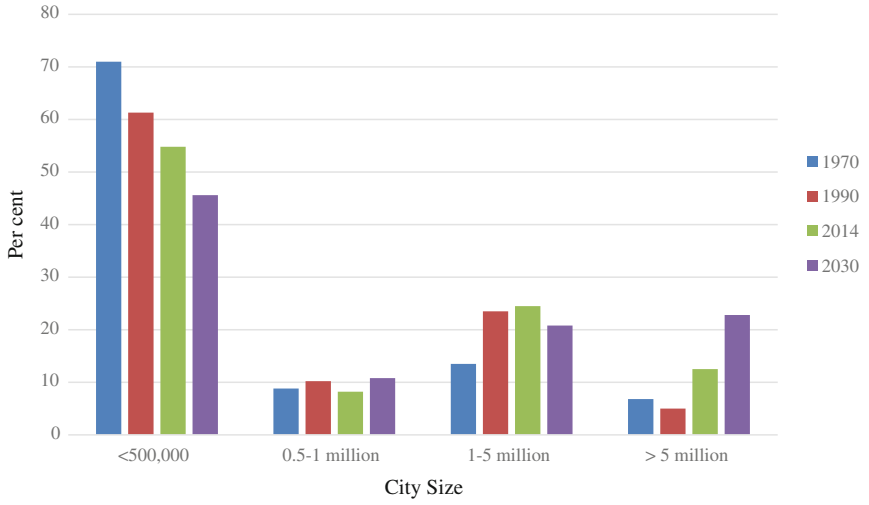

Fig. 1.3 Proportion of African urban population in different sized cities, 1970–2030. *Source* Data from UN (2015b: 87)

and more people move permanently to the cities, and the proportion of urban-born in the population continues to rise, these linkages will loosen and in many cases start to dissolve. However, they are unlikely to disappear altogether as long as urban dwellers maintain contact with distant rural "homes." One of the most common contemporary forms of linkage binding urban and rural areas is reciprocal remittances in the form of cash flows from town to countryside and informal food remittances outside market channels in the other direction (Crush and Caesar 2016; Frayne 2010).

Finally, there is what Parnell and Pieterse (2014, p. 9) refer to as "the predominance of informal modes of urbanisation." The most obvious expression of this process is the large number of urban residents who live in informal settlements. In UNHABITAT (2015)'s lexicon, these "slums" house the majority of the population in many African cities as new housing construction fails to keep pace with in-migration and natural population growth. In 2014, the total slum population in Sub-Saharan Africa was 201 million out of a total urban population of 359 million (or 56 % of the total, more than double that in most other regions of the Global South). Another related aspect of informal modes of urbanisation is the fact that many urban-dwellers are involved in the large and growing urban informal sector. Formal sector unemployment is high in many cities and the informal economy has become the major livelihood source. In Sub-Saharan Africa as a whole, employment and self-employment in the informal economy account for 66 % of all non-agricultural jobs, and 74 % of women's jobs (Vanek et al. 2014, p. 8). These figures vary considerably from country to country: in South Africa, for example, it is only 34 % whereas in Mali it is as high as 82 %.

1.3 Food Insecurities of African Cities

Each of the chapters in this volume sheds light on one or more of these features of the urban revolution in relation to different-sized cities in countries with different levels of urbanization, and does so through the lens of food security. Midgley (2013) has recently provided a historiography of the concept of "food (in)security" and shown how its many and shifting interpretations were finally consolidated into a single all-embracing definition at the 1996 World Food Summit (FAO 1996). This definition (with minor modifications) is now cited in virtually all publications and forums on the subject: "Food security is… the situation that exists when all people, at all times, have physical, social and economic access to sufficient safe and nutritious food that meets their dietary needs and food preferences for an active and healthy life." Subsequent unpacking of this definition by the FAO (the United Nations Food and Agriculture Organization) suggested that it contains four essential dimensions or "pillars" all of which have to be satisfied for a state of food security to exist at whatever scale we are concerned with: food availability, food access, food utilization and food stability. In practice, more research and policy attention has been given to the first pillar (availability) than the other three combined.

The FAO estimates that there are now 218 million undernourished people in Africa (up from 182 million in 1990–1992). Such figures have led to the conclusion that there is a chronic problem of food shortage, which can be addressed through increased agricultural production and productivity (FAO et al. 2015, p 8). In fact, the framing of food insecurity as an agricultural and rural issue is justified by the claim that "across the developing world, the majority of the poor and most of the hungry live in rural areas" (FAO et al. 2015, p. 26). Further, "to accelerate progress in improving access to food by the poor, lagging regions, particularly sub-Saharan Africa, will increasingly have to transform their agricultural policies to significantly improve agricultural productivity and increase the quantity of food supplied by family farmers" (FAO et al. 2015, p. 33). This reiteration of a deeply-entrenched conventional wisdom about the nature and solutions to food insecurity focuses almost exclusively on rural areas and on food shortages (availability). It has little of substance to say about urbanization, the food security of urban populations, and the other three pillars of food security, all of which are central in the urban context.

The last decade has seen three major shifts of emphasis in thinking about food insecurity which appear, at first glance, to be making a positive break with FAO orthodoxy. First, there is a growing discussion about the potential role of agribusiness and large-scale commercial farming in increasing agricultural production (the South African example writ large). In 2010, the FAO, IFAD (International Fund for Agricultural Development) and the ADB (African Development Bank) launched the Accelerated Agribusiness and Agro-industries Development Initiative (3ADI) which aims at enhancing the productivity and profitability of agribusinesses in Africa. According to Yumkella et al. (2011, p. 51), "agribusiness and agro-industry have the potential to contribute to a range of economic and social development processes, including increased employment

generation (particularly female employment), income generation, poverty reduction and improvements in nutrition, health and overall food security." This "neoliberal" agenda has attracted criticism but it does not fundamentally shift the food security debate away from issues of food production and availability, simply intensifying arguments about who should be doing the producing, for whose benefit and with what impacts on rural populations.

The second shift in international policy debates about food security has been the emergence of a new set of discussions about embedding urban food policies and programming, centred on the concept of the City Region Food System (CRFS) (ISU 2015). This initiative has coalesced in the 'City Region Food Systems: Sustainable Food Systems and Urbanization' cluster, a collaborative project of several national and international organizations including the FAO and WFP (Santini 2015). The group's advocacy efforts have led to food being incorporated in a number of ways in the Zero Draft of the New Urban Agenda document which will shape the ongoing urban agenda post-Habitat III (UNHABITAT 2016). The CRFS approach places significant focus on intra-national rural-urban linkages and food flows, and therefore on food production. While its advocates have successfully teased open a space to engage urban food issues, their focus is firmly productionist and centred on food availability so that other aspects of the food system that contribute to food security are being given less attention. Additionally, this approach is unlikely to have a sufficient focus on the specifically urban aspects of food systems governance and policy, such as zoning, informal trade, and the interactions of formal and informal retailing.

The third development of note is the consolidation of a vociferous and powerful global nutrition lobby which argues for the need to go beyond the pillar of availability to the pillar of utilization (Global Nutrition Report 2015). As early as 2002 a joint WHO/FAO report had noted that, "Given the rapidity with which traditional diets and lifestyles are changing in many developing countries, it is not surprising that food insecurity and undernutrition persist in the same countries where chronic diseases are emerging as a major epidemic" (WHO and FAO 2002, p. 8). Although the FAO focuses almost exclusively on undernourishment in their Africa work, their latest Africa report acknowledges overweight is on the rise among children under 5 years old (FAO 2015, p. 26). The 2015 Global Nutrition Report (2015) flags high levels of adult obesity in Africa, with 33 % of the African adult population being overweight, and a further 11 %, obese. Changing diets in Africa are increasingly not an indicator of wealth, but of the intersection of a changing food system with poverty. In Eastern and Southern Africa, for example, "diet change is happening most rapidly among the three-quarters of the population that currently lies under the international poverty line of USD2 per capita per day" (Tschirley et al. 2015, p. 110).

The Global South now increasingly experiences food insecurity as a triple burden of undernourishment, micronutrient deficiencies, and over-nutrition manifesting in overweight and obesity (Gómez et al. 2013; Popkin 2014; Popkin et al. 2010). The striking thing about "double and triple burden" discourse is that it is broadening the policy debate around food security thematically while simultaneously erasing its

fine-grained geography. The discussion takes place rather as if where people live is not germane to their vulnerability to the triple burden, except at the national scale (Imamura et al. 2015). With some exceptions, the urban is not represented as a space in which the challenge of the burden is particularly acute and qualitatively and quantitatively different than in rural areas of the Global South.

In the late 1990s, Maxwell (1999) suggested that the absence of concerted policy thinking about the urban food security challenge in Africa could largely be attributed to three things. Firstly, urban policy makers and practitioners have limited budgets and capacity and therefore give priority to "more urgently visible problems" (Maxwell 1999, p. 1940), such as housing and sanitation. Secondly, food insecurity in urban areas largely manifests at the household scale and households employ a range of coping strategies which effectively render food insecurity invisible. Finally, the long-standing perception of food insecurity as a rural issue makes policy makers less likely to see urban food insecurity. While these points are undeniable, it is essential to note also that the neglect of urban food security is driven by a lack of a clear food mandate for urban governments, informed by the framing of food security as a production issue rooted and to be solved in rural areas (Battersby 2015). When there are urban food security interventions, they are dominated by discussions of the potential of urban agriculture to solve the problem of food availability.

Urban food insecurity in Africa is not primarily a problem of food availability, nor one that can be addressed with social safety nets, as these fail to address the systemic drivers of food insecurity (Crush 2014). It is a problem of structural poverty, markets and market structure, policy dysfunction, relative affordability of different types of food, food safety challenges wrought by inadequate urban infrastructure, and inadequate storage, refrigeration and cooking technologies in the home (Frayne et al. 2014; Haysom 2015; Hawkes and Popkin 2015). In the urban context, it is essential that the all four dimensions of food security be expanded upon in order to highlight particular issues within the food system and other systems that affect food security. Although food insecurity is primarily experienced at the household scale, its causes extend well beyond the household. In the urban context, the concept of *availability* needs 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.

The key concept of *access* draws attention to the household's capability to access food which suggests a focus on whether it has sufficient income to purchase food. However, it is essential to consider economic, social and physical access. So, 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 competitive and business strategies of the different types of formal and informal retail within the urban food system (Crush and Frayne 2011; Reardon et al. 2003, 2010). 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 concept of *utilization* in the urban context includes such issues as cultural preferences, access to clean water and sanitation, as well as safe storage and refrigeration which are essential components of a household's capacity to achieve food security, and of food retailers to deliver safe preferred foods. The concept of *stability* in the urban context is not as tied to the agricultural calendar as it is in rural areas but is affected by other periodic demands on income (such as school fees and medical expenses) and cultural events such as holidays and festivals. In many parts of urban Africa, the "hungry season" occurs after end of year festivities, for example. Stability is also affected by sudden shocks such as food and fuel hikes, layoffs and retrenchments, illness and death of breadwinners, extreme weather events and political and economic crises.

There is now a lively debate on how best to measure and track food insecurity (Calogero et al. 2013; Masset 2011; Coates 2013; Jones et al. 2013; Leroy et al. 2015). In many instances, food security policies are based on weak proxy data, such as food poverty lines, or income and expenditure surveys, which assume that if a household has sufficient income, they can achieve food security. This fails to acknowledge price differences in food from various sources, the ability of households to buy in appropriate unit sizes, storage capacity and dietary choice. Another approach is to determine levels of food insecurity based on questions of whether individuals in households have gone hungry. However, as noted, hunger and food insecurity are not synonymous. Many of the chapters in this book rely on a suite of established, cross-cultural food security assessment tools developed by the Food and Nutrition Technical Assistance (FANTA) project (Bilinsky and Swindale 2010; Coates et al. 2007; Swindale and Bilinsky 2005). These tools were designed to generate data that can provide general insights into the access, utilization and stability dimensions of food security and are therefore particularly applicable to urban areas because of their emphasis on food access as well as dietary diversity and stability of the household food supply.

These measures have been used widely, including in a number of urban food security studies in Africa, to develop an understanding of the extent and nature of food insecurity in urban areas. Ahmed et al. (2007), for example, found that in 12 out of 18 sampled low-income developing countries the incidence of food insecurity was the same or higher in urban areas than in rural areas, despite the higher incomes of urban households. Within African countries sampled Ethiopia, Malawi, Zambia, Senegal and Ghana all had a higher incidence of food insecurity in urban than rural areas. Rwanda, Mozambique, Burundi and Kenya all had higher incidence in rural areas. It is noteworthy that these four had experienced considerable political instability and civil wars which had disrupted productive systems. Another cross-national example is the AFSUN food security survey conducted in 11 cities in nine southern African countries in 2008 which found that 76 % of households in sampled low-income areas of the cities were moderately or severely food insecure according to the HFIAP tool (Crush et al. 2014).

1.4 Urban Food Deserts

One of the aims of this volume is to introduce a finer sense of spatiality to food security debates and to do so in two main ways. First, as argued above, "the urban" is largely missing from current policy debates on food security and needs to be acknowledged as a distinctive space in which the determinants and drivers of food insecurity are necessarily different from those in most rural areas. Second, there is a need to look "within" the urban and to disaggregate food security across the urban space-economy. A great deal of attention has been devoted in the Global South to spatial variations in urban poverty and inequality within cities. Much less attention has been given to spatial variations in food security and access within urban spaces. The concept of the "urban food desert" emerged in the United Kingdom and North America in the 1990s to conceptualise spatial variations in food access and to link food insecurity at the household level with broader food system effects and constraints (Wrigley 2002).

The term "food desert" was coined in the mid-1990s by Beaumont et al. (1995), and has since been extensively used in empirical research on food retailing and nutrition in poor urban neighbourhoods of UK, US and Canadian cities. Wrigley (2002, p. 2032) defines the food desert as "the complex nexus of interlinkages between increasing health inequalities, retail-development-induced differential access to food retail provision, compromised diets, undernutrition and social exclusion." Although there are now alternate definitions of food deserts—and growing debate over the utility of the concept for understanding the actual determinants of urban food insecurity—they are commonly characterised as economically-disadvantaged areas of cities where there is relatively poor access to healthy and affordable food (McEntee 2009; Donald 2013; Shaw 2006). Much of the early research was focused on deprived areas in cities in the UK (Cummins and McIntyre 2002; Whelan et al. 2002; Wrigley 2002). More recently, the food desert concept has been widely applied to North American inner-city neighbourhoods (Besharov et al. 2010; Thomas 2010; Walker et al. 2010).

Studies of food deserts assign a pivotal role to the type and nature of food retail outlets as indicators of access to affordable, healthy food. The absence of modern retail outlets, particularly supermarkets, in poorer areas of the city is seen as a major determinant of a lack of access to healthy and affordable food. The spatial location of food deserts has been quantified by mapping cities according to income or ethnicity and overlaying data on supermarket distribution. These methodological approaches have been refined over time and now include such strategies as measuring actual street network distance from stores, incorporating a wider range of store types, using travel time to measure accessibility, and taking account of various social barriers to food access.

The concept of the food desert has not been applied in any systematic way to cities of the Global South and African cities in particular. In the African context, there are a number of possible reasons for this (Battersby 2012). Firstly, as argued above, food security and undernutrition are invariably viewed as rural issues in both the research and policy domains. Secondly, the close association of food deserts

with the presence or absence of supermarkets seems far less appropriate in African cities. Although supermarkets are playing an increasingly important role in urban food systems in Africa, this is a comparatively recent development in most countries (Crush and Frayne 2011; Reardon et al. 2003, 2010). Thirdly, such research as does exist on food insecurity in African cities has tended to focus on the household scale. While this has provided useful analysis of the extent of food insecurity and characteristics of food insecure households, it does not unveil the structural drivers of food insecurity that operate beyond the household scale.

The fact that food deserts have not been explicitly identified or discussed in relation to African cities does not, of course, mean that they do not exist. African cities contain many poor neighbourhoods whose residents are far more food insecure and malnourished than their counterparts in the UK or North America. The key question is whether the Euro-American understanding of food deserts is applicable to Africa's rapidly-growing towns and cities. There are reasons for caution. The history and geography of urban food retail in the UK and North America differs from that currently unfolding in Africa. Supermarkets in African cities are focused on an upper-income customer base, but they are slowly working their way into lower-income areas. Another problem in uncritically applying the Euro-American food desert approach in Africa is its use of distance from a supermarket as a proxy for access to healthy food at affordable prices. In African cities, retail typologies are fundamentally different and lack of access to supermarkets is a less significant factor in creating large swathes of food insecurity.

The dynamism and complexity of the informal economy offers a particular set of challenges to a conventional food deserts approach, which assumes spatial fixity on the part of the retail outlets being mapped. The informal food retail environment in African cities is marked by great fluidity. Many traders and vendors operate only at particular times of day, or days of the week, or days of the month. The fluidity of trade is an essential part of the urban food system and generates a food system responsive to the needs of low-income consumers. The static nature of food desert mapping also fails to capture the everyday mobility of residents whose lives are not circumscribed by the neighbourhoods in which they live. Indeed, in many African cities, low-income residential areas are located far from places of employment. These cities are characterised by high daily mobility even by the very poor, and households do not necessarily shop in the neighbourhoods where they live. The phenomenon of 'out-shopping' (shopping outside of the residential location) is common, and engrained in the everyday food practices of urban residents. It is essential to recognise these mobilities and how they shape access to food and the spatial configuration of the food system in understanding the nature of the African food desert.

Another challenge is that the conventional understanding fails to adequately account for differences between households operating within the same food environment. In the African context, households in the same areas of the city have different mobility patterns, different geographical access to food and different levels of food security. AFSUN's baseline survey found statistically significant relationships (of variable strength from city to city and neighbourhood to neighbourhood) between food insecurity and a whole range of household variables including size,

gender, structure, education, employment, income, poverty and migration status (Crush et al. 2014). Additionally, households with different income patterns source food differently within the same food environment. The development of a food deserts approach to the African city requires that the household, neighbourhood and city scales be considered together as the inter-play between these scales has a strong influence on urban food security.

Despite these limitations and qualifications, the idea of the food desert is a useful concept to help broaden understanding of the spatiality of food insecurity in African cities. While supermarkets are an increasingly important element of the food environment in African cities, a simple focus on modern retail does not adequately capture the complexity of the African food desert. The use of the food deserts concept in the African context also requires a much more sophisticated understanding of the multiple market and non-market food sources, of the spatial mobility of informal retail and poor of consumers, of the changing dynamics of food security over time, of the inter-household differences that lead to different experiences of food insecurity, and of the Africa-specific conditions that lead to compromised diets, undernutrition and social exclusion. Here we define African food deserts as poor, often informal, urban neighbourhoods characterised by high food insecurity and low dietary diversity, with multiple market and non-market food sources but variable household access to food.

Each of the chapters in this volume sheds light on one or more aspects of the African food desert, illustrating both the common elements and the great variability between cities. What ties these chapters together is a common concern with levels of and determinants of food insecurity in food deserts. Residents of Africa's urban food deserts do not only rely on formal and informal retail outlets for their purchase. One of these is own production, which is widely advocated as a way of mitigating urban food insecurity in African cities. In the next chapter of the volume, Bruce Frayne, Cameron McCordic and Helena Shilomboleni test this hypothesis using data from 11 cities and show that the prevalence of urban agriculture varies considerably from city to city. They attribute these differences to distinctive local histories and geographies, suggesting that generalizations about the actual and potential mitigating role of urban agriculture in African food deserts are unwise. Their statistical analysis further demonstrates that urban agriculture is not an effective household food security strategy for poor urban households, with few significant relationships between urban agriculture and food security.

The next two chapters in this collection deal directly with a central concern of the standard food deserts literature; that is, the spatial behaviour of supermarkets and the implications for food security of residents of poor neighbourhoods. Jane Battersby and Stephen Peyton map the spatial distribution of supermarkets, income and transportation corridors in Cape Town. They show that the distribution of supermarkets is highly unequal and the distance of low-income areas from high-income areas hinders access to supermarkets for the urban poor. However, contrary to the standard food deserts argument, supermarkets are moving closer to and become more accessible to poor urban consumers. Supermarkets in lower-income areas stock less healthy foods than those in wealthier areas and, as a

result, do not increase access to healthy foods. The assumption that supermarket access automatically guarantees a better diet is therefore highly questionable, especially in relation to the growing over-nutrition (obesity) epidemic in the Global South. Jonathan Crush and Mary Caesar's chapter on the Msunduzi Municipality demonstrates that supermarkets completely dominate the urban food system of this South African city. Unlike many African cities, the informal food economy in Msunduzi is relatively small and absent from most poor residential neighbourhoods. This raises the general question of the competitive relationship between the formal and informal food economies and how this plays out in urban food deserts and affects the food accessibility of poor urban consumers.

The relationship between positive macro-economic growth and food security in the urban food desert is explored in three of the chapters in this volume. Both Botswana and Mozambique have experienced rapid macro-economic growth over the last two decades and are amongst Africa's fastest growing economies. Zimbabwe was in the depths of an unprecedented economic crisis in 2008 but began to recover after the dollarization of the economy and the formation of a Unity government. Simply because there is an improvement in national and local economies and food availability, it does not automatically mean that food deserts will be eliminated, however. The chapter by Benjamin Acquah, Stephen Kapunda and Alexander Legwegoh, demonstrates this very clearly in the case of Gaborone, Botswana. Botswana has one of the most robust and well-managed economies in Africa yet levels of inequality and food insecurity remain stubbornly high. Residents of that city's food deserts do not enjoy significantly better diets than those living in food deserts in other countries and cities in Africa.

The case of Maputo is discussed in the chapter by Inês Raimundo, Jonathan Crush and Wade Pendleton, who show that despite rapid national economic growth, large sectors of the economy remain informal. Informality is central to livelihoods in large parts of Maputo and the informal sector is a major source of food. As their chapter shows, there is considerable inter-household variation in food security with female-centred households the most food insecure. The vibrant informal food economy, in which many women work, provides an income source and food access for many poor and food insecure households. In his chapter on Zimbabwe, Godfrey Tawodzera compares the prevalence of food insecurity in Harare's food deserts at the height of the country's political and economic crisis in 2008 with the situation in 2012, following several years of political stability and an improvement in the city's food supply. He shows that there has been a positive improvement in levels of food access amongst the urban poor. However, in aggregate terms, food insecurity levels were still very high in 2012, primarily because households could not afford the newly-available food.

As noted above, in Africa's urban food deserts, not all households enjoy equal access to food. A number of the chapters in this issue illuminate some of the major determinants of inter-household variability. The next three chapters in the book look inside the food desert and illuminate different aspects of inter-household variability in levels of food security. The chapter by Shukri Mohamed, Blessing Mberu and colleagues, on Nairobi focuses on the relationship between household

food security and the livelihood activities of the head of household. Having a stable formal job significantly improves household food security beyond the effect of income. As a corollary, heads in casual employment with lower and irregular income face food insecurity. One result is a distinct spatial clustering of food insecure and less food insecure households.

One of the major fault lines in African food deserts is gender. Women and men enjoy differential access to resources such as housing and jobs and therefore to income-generating opportunities. As Belinda Dodson and Liam Riley show in their study of gendered food access in Blantyre, Malawi, female-centred households are twice as likely to be severely food insecure as nuclear households. This they attribute to the fact that gender shapes mobility and thus a household's ability to procure food from the most affordable sources. Gender also shapes household income, which impacts on a household's economic access to food.

Wade Pendleton, Jonathan Crush and Ndeyapo Nickanor show that the majority of the residents of Windhoek's food deserts are recent migrants from the rural north of the country. These migrants maintain close ties with their rural families, one benefit of which is the informal transfer of agricultural produce to the city. Many poor urban households rely on these transfers to help mitigate severe food insecurity. This chapter also illustrates the importance of a conception of food deserts that takes into account the acquisition of food from non-market sources. This theme is taken up in the chapter by Lauren Sneyd on Cameroon who examines the importance of wild foods from the humid tropical zone to urban household food security in Yaoundé, the capital city, and the southwest peri-urban region. She clearly demonstrates the overall importance of wild foods to urban diets with over a quarter of household food budgets on average spent on wild foods. However, when the price of wild foods increases, consumers tend to substitute cheaper and less nutritious imported staples.

The final theme addressed in this issue concerns the governance of Africa's urban food deserts. Few, if any, African cities have explicit food security policies that address the full range of issues involved. A few have enabling urban agriculture policies but that is about as far as policy-thinking goes. The residents of many food deserts in cities in the North are able to benefit from state-funded social protection (such as social grants and food stamps) or charitable redistribution of surplus food (such as food banks and soup kitchens). Social protection is much less developed in the African context. South Africa's post-apartheid child grant system has had a major impact on household income and food security. In more impoverished countries such as Swaziland, state-funded social protection is very limited. In their study of food insecurity and social protection in Manzini's food deserts, Daniel Tevera and Nomcebo Simelane show that various forms of community and intra-household food sharing are an important food source for a minority of poor households. They argue that the national government needs to consider strengthening food-based social safety-net programmes that assist poor and vulnerable groups, a conclusion that applies to many of the cities discussed in this issue.

The final chapter by Andrea Brown examines Uganda's urban planning strategy, and finds that food rarely features (unlike housing, water, transport and municipal

services.) Through sins of omission and commission, national and local governments have the potential to exacerbate the severity of food insecurity in urban food deserts. For example, most municipalities are ambiguous at best about the informal food economy. In a predominantly neo-liberal world, supermarkets are generally free to do business without any significant degree of regulation. The urban informal food economy, on the other hand, is regularly the target of control, regulation and draconian eradication policies. There seems little chance of reversing the growth of urban food deserts without the development and implementation of sound, evidence-based, city-wide food security strategies.

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Chapter 2
The Mythology of Urban Agriculture

Bruce Frayne, Cameron McCordic and Helena Shilomboleni

Abstract The literature on Urban Agriculture (UA) as a food security and poverty alleviation strategy is bifurcating into two distinct positions. The first is that UA is a viable and effective pro-poor development strategy; the second is that UA has demonstrated limited positive outcomes on either food security or poverty. These two positions are tested against data generated by the African Urban Food Security Network's (AFSUN) baseline food security survey undertaken in 11 Southern African cities. At the aggregate level the analysis shows that (1) urban context is an important predictor of rates of household engagement in UA—the economic, political and historical circumstances and conditions of a city are key factors that either promote or hinder UA activity and scale; (2) UA is not an effective household food security strategy for poor urban households—the analysis found few significant relationships between UA participation and food security; and (3) household levels of earnings and land holdings may mediate UA impacts on food security—wealthier households derive greater net food security benefits from UA than do poor households. These findings call into question the potential benefits of UA as a broad urban development strategy and lend support to the position that UA has limited poverty alleviation benefits under current modes of practice and regulation.

Keywords Southern africa · Cities · Food security · Poverty · Urban agriculture

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2.1 Introduction

Urban Agriculture (UA) is increasingly celebrated as playing a significant role in promoting food security, income opportunities, and economic growth in developing countries. According to the UN Food and Agriculture Organization's (FAO) first status report on Urban and Peri-urban Horticulture (UPH), UA serves locally grown, fresh fruits and vegetables to over 22 million people in Africa's cities, hence playing an important role in food supply and income opportunities (FAO 2012). On this basis, the FAO (2012) argues further that UPH could see even greater expansion—and help Africa's expanding cities achieve "zero hunger"—if better technical and institutional support is allocated to the sector.

The research and policy debate surrounding urban agriculture tends to divide between those who support it as an effective pro-poor development strategy (Smit et al. 2001; Cofie and Drechsel 2007; Kwambisi et al. 2011; FAO 2012) and those who are more sceptical about the extent of its positive impact on food security and poverty alleviation (Crush et al. 2011; Lee-Smith 2013; Stewart et al. 2013). Optimism about UA's potential benefits is demonstrated by respectable development institutions through several initiatives, e.g., the United Nations Development Program's (UNDP's) and UN Habitat's "Sustainable Cities Program", and Canada's International Development Research Centre's "Urban Poverty and Environment" program (Stewart et al. 2013). Despite such support, there is little empirical evidence on the scale and scope of UA to prove its level of impact (Stewart et al. 2013).

In Southern Africa, research based on data from the African Food Security Urban Network (AFSUN) demonstrates the levels and dimensions of UA (Crush et al. 2014), as well as the relationship between UA and food security (Crush et al. 2011). The results show that UA across the region is practised to some degree by about 22 % of the surveyed households, though there are major variations in the production levels between cities (Crush et al. 2011). These households rely upon several "coping strategies" to access food—income from wage and casual work, remittances (cash and food transfer), social grants, growing it and borrowing it from neighbours (Crush et al. 2014). As one of these coping strategies, UA is a comparatively less significant means of household food security, even in cities with policies to support and encourage it such as Cape Town (Battersby 2011). This chapter builds on this research, and uses data from the AFSUN and other urban studies to investigate the factors that explain households' engagement in UA as well as its effectiveness as a food security strategy in Southern African cities.

In this chapter, we demonstrate, first, that urban context is an important predictor of rates of household engagement in UA—the economic, political and historical circumstances and conditions of a city are key factors that either promote or hinder UA activity and scale. Second, UA is not an effective household food security strategy for poor urban households—the analysis found few significant relationships between UA participation and food security. And third, household levels of earnings and land holdings are good predictors of UA impacts on food

security—wealthier households derive greater net food security benefits from UA than do poor households.

Based on these findings, the chapter concludes that while some poor households in Southern African cities may practice forms of small-scale urban agriculture, they do not derive significant economic or food security benefits from these practices. These findings call into question the potential benefits of UA as a broad urban development strategy, and lend support to the second position evident in the literature—that UA has limited poverty alleviation benefits under current modes of practice and regulation. However, the importance of context highlighted by the analysis suggests that further comparative and more fine-grained research is required, which aims to understand specific factors within cities that either promote or hinder UA as a successful development strategy.

2.2 Methodology

This chapter is based on data from AFSUN that surveyed 6453 households in 11 Southern African cities in 2008–2009 (Table 2.1). The surveys were administered using a systematic random sampling of poor households in these cities and covered information regarding income, poverty, food security, the role of remittances and household demographic information. A full analysis of the results can be found in Crush et al. (2014).

This baseline survey measures household food security using the Household Food Insecurity Access Scale (HFIAS), the Household Dietary Diversity Score (HDDS) and the Months of Adequate Household Food Provisioning (MAHFP). We use Mann Whitney U tests to determine the significance and effect size of any differences in food security scores between households according to UA engagement. The effect sizes of these differences are categorized using the framework suggested by Cohen (1988) where: (a) effect sizes distributed around 0.10 are

Table 2.1 Household sample size by city

City	No.	%
Windhoek	448	6.9
Gaborone	400	6.2
Maseru	802	12.4
Manzini	500	7.7
Maputo	397	6.2
Blantyre	432	6.7
Lusaka	400	6.2
Harare	462	7.2
Cape Town	1060	16.4
Msunduzi	556	8.6
Johannesburg	996	15.4
Total	*6453*	*100.0*

categorized as small; (b) effect sizes distributed around 0.30 are categorized as medium; and (c) effect sizes distributed around 0.50 are categorized as large.

Among those households engaged in UA, we determine the extent to which frequency of household UA engagement as a food source is correlated with scores on the HFIAS, HDDS and MAHFP. Household frequency of engagement in UA as a food source is ranked according to whether a household has obtained food from UA five times per week, once per week, once per month, once every 6 months or less than once per year. The quality and strength of the relationship between food security and household UA engagement frequency is evaluated using Spearman's Rho. This correlation statistic can test correlational strength using both ordinal and continuous variables. The Spearman's Rho does not require the measured variables to be normally distributed and is sensitive to non-linear relationships (Corder and Foreman 2009). The strength of the Spearman's Rho correlation is calculated using the following framework:

(a) Rho values less than 0.15 are categorized as very weak;
(b) Rho values between 0.15 and 0.25 are categorized as weak;
(c) Rho values between 0.25 and 0.40 are categorized as moderate;
(d) Rho values between 0.40 and 0.75 are categorized as strong; and
(e) Rho values greater than 0.75 are categorized as very strong.

2.3 Rates of Urban Agriculture Engagement in Different Urban Contexts

There are significant contextual differences between Southern African cities with regards to the practice of UA. As Fig. 2.1 demonstrates, the rates of household UA engagement among the surveyed population vary from less than 6 % in Windhoek to over 60 % in Blantyre.

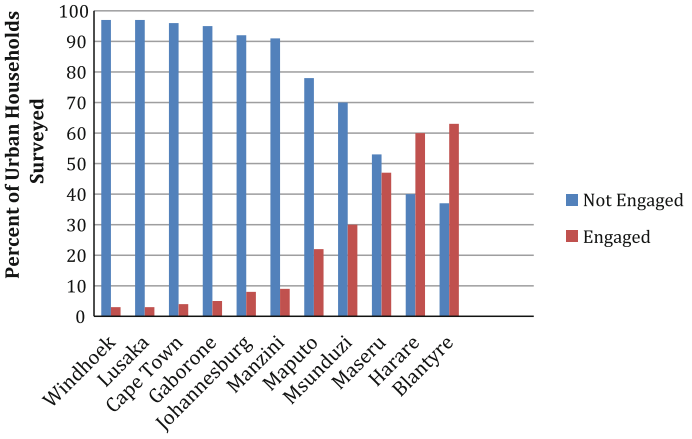

Fig. 2.1 Urban household engagement in urban agriculture in Southern African cities

A chi-square analysis further reveals that these differences in household UA engagement between cities are very significant and not random ($x^2(10, N = 6222) = 1665.865$, $p < 0.001$). While this statistic should be interpreted with care, given the large sample size, the chi square value demonstrates the importance of urban context as an influence in the rates of household UA engagement among Southern African cities. Given this finding, it is evident that UA engagement should be examined in the context in which it occurs.

The high rates of UA engagement in Malawi (Blantyre), Zimbabwe (Harare) and Lesotho (Maseru) may result from increasing economic hardships in these countries (Kutiwa et al. 2010; Crush et al. 2011; Tawodzera 2012). All three countries show persistent high levels of socio-economic fragility. Blantyre, which has the highest household UA engagement rates (about 65 %), also struggles with high rates of urban poverty (at 24 %) and high food prices (Kwambisi et al. 2011). The country's average annual Gross Domestic Product (GDP) per capita is among the lowest in the region, at USD 305 in 2008 when the ASFUN research was conducted. In comparison, in Botswana (another small nation in the region), the GDP per capita was $6877 in 2008, a sixfold increase from the mid-1980s.

Malawi's socio-economic fragility can be explained by the broader political economy of Sub-Saharan Africa from the late 1960s when many countries experienced worsening terms of trade for their primary goods on global markets, which reduced their export to import ratio. Pressed by fiscal deficits, the country sought financial assistance from the International Monetary Fund and the World Bank to address its balance of payment problems. Malawi instituted Structural Adjustment Programmes (SAPs) in 1981, which were designed to promote market competition through financial sector reforms and the removal of government subsidies. A lasting impact of the SAPs was a significant decline in total formal sector employment and increased poverty and food insecurity in urban areas.

Economic trends alone do not explain the high levels of UA engagement in Malawi. During British rule, the administration fenced off forest reserves and crown lands, which remained undeveloped long after independence. Founding President Kamuzu Banda retained the colonial concept of "garden city", where woodland and green spaces featured prominently within cities. This changed at the height of the SAPs, when forest reserves lost state protection and people started to deforest and utilize the land, including for UA cultivation. In Blantyre, the City Assembly introduced policies that granted farm plots to urban residents in return for tree planting in the mid-1990s. Many low-income residents in the vicinity of the Ndirande forest reserve took up this opportunity; today, a significant number benefit from UA as a source of both food and income (Riley 2012). Thus, the combination of economic hardships and extensive open spaces made UA a viable livelihood means in Blantyre and other urban areas in Malawi.

Harare (Zimbabwe) has the second highest rates of UA in the region. Starting in the mid-1980s, Zimbabwe experienced declining economic performance, which reduced the standard of living and forced urban dwellers to engage in farming activities (Kutiwa et al. 2010; Tawodzera 2012). Like Malawi, Zimbabwe undertook SAPs in order to address its fiscal deficit problem. At first, the government

implemented "voluntary" SAPs in an attempt to avoid the World Bank's stringent demands but perceived internal mismanagement eventually forced the country to adhere to conventional SAP standards. Unemployment rates rose as the formal sector retrenched jobs. Meanwhile, the country saw rapid rural-urban migration, previously tightly controlled under the British rule. In response to increased poverty, some urban residents took up UA to supplement their household food supply (Mbiba 2000). Growers utilized the city's open spaces, primarily vleis (poor drainage soil systems) land that was unsuitable for development.

Since 2000, problems associated with land reforms and political unrest have further impoverished urban populations and food shortages have become widespread. Tawodzera (2012, p. 59) notes that the disruption of large-scale commercial farms and recurring droughts in the country have turned the country from "being the bread basket of the region to a basket case perennially banking on humanitarian aid for the survival of the population." GDP per capita rates declined from USD 916 in 1980 to USD 534 in 2000 and to a low of USD 354 by 2008. These conditions compelled large segments of Harare's residents, including middle and upper income households, to grow food to mitigate their declining standard of living (Tawodzera 2012).

Maseru in Lesotho is another city with relatively high levels of UA—about 47 % of the households sampled by ASFUN. The country struggles with poverty rates of about 50 % and an unemployment rate over 30 %. Historically, Lesotho's economy has been supported by a large share of remittances sent by Basotho migrant workers in South Africa. Until the 1980s, remittances made up 60 % of the country's GDP, and contributed as much as 70 % of average household income. Demand for migrant labourers in South Africa has since declined, and remittances fell significantly, contributing about 20 % of the GDP by 2005. Lesotho's agricultural sector has also been in decline due to periodic droughts and excessive soil erosion—bringing about chronic food shortages. As a result, the country imports a large volume of food but low incomes and high cost restrict many households from accessing it. According to the AFSUN sample, 60 % of the surveyed population in Maseru are severely food insecure, 25 % moderately food insecure and about 10 % mildly food insecure. With high levels of food insecurity, many urban dwellers have resorted to UA as one coping strategy among many.

Maputo (Mozambique) and Lusaka (Zambia) need further explanation, because the AFSUN survey found surprisingly low UA rates in these two cities. Maputo has a strong history of urban and peri-urban gardening (Sheldon 1999). Shortly after independence, the country's civil war (1977–1992) disrupted rural production and forced millions of people to flee the countryside. With a large number of refugees and a high unemployment rate, Maputo faced a serious food shortage. The government encouraged UA—offering seeds and tools as incentives (Sheldon 1999, p. 128). Residents formed cooperatives to cultivate designated "green zones" and sell their produce to markets. As many as 70 % of economically active women were engaged in UA and 40 % of Maputo households had livestock in the city. With structural adjustment policies in the 1990s, the government reduced its support to the green zones. Market liberalization policies also resulted in cheap imports that displaced the city's cooperatives products.

Like Maputo, Lusaka had relatively higher levels of UA in the 1980s and 1990s. Simatele et al. (2012) note that UA is as old as the city itself. The city was designed around the model of a "garden city" with plenty of open space, which made it possible to practice UA. From the mid-1970s, the country experienced serious economic decline, particularly after the collapse of its nationalized copper industry. This forced the government to turn to international lending institutions for fiscal assistance and to the adoption of SAPs. By the mid-1980s, Zambia's formal employment sector had decreased by over 50 % while GDP per capita fell from USD 614 in 1974 to USD 237 in 1986. With widespread urban poverty, households turned to UA to meet their food requirements. In the 1980s and 1990s, UA accounted for about 30 % of the food supply in low-income neighbourhoods (Simatele and Binns 2008).

The ASFUN survey found very low levels of UA in Lusaka (at 4 % of households). Simatele and Binns (2008), by contrast, found relatively high levels of UA activities—at 41 %—in three areas of Lusaka: Garden Compound, Chilenje and Seven Miles. In these areas, 41 % of the households practiced UA for home consumption, while 13 % also grew food for sale (Simatele and Binns 2008, p. 9). Crush et al. (2011) explain the mismatch between these figures by pointing out that UA varies across the city and is hardly practised at all in high-density, low-income areas. The AFSUN survey was conducted in Chipata Compound where "food production is extremely limited, and most households do not have access to the land to grow anything" (Crush et al. 2011, p. 297).

This history of UA in Southern African cities tends to show that it is more common in times of acute hardship but tends to decline when the economic situation improves. It also tends to be limited in cities with strong economies as opportunities to earn cash are better, allowing the population to purchase their food. Half of the cities surveyed by AFSUN—Windhoek (Namibia), Gaborone (Botswana), Manzini (Swaziland), Cape Town and Johannesburg (South Africa) — had less than 10 % of the sampled households engaged in UA.

In Cape Town, Battersby (2011) demonstrates that most urban dwellers are highly dependent on the cash economy to secure food. Half of the households surveyed by AFSUN were exclusively dependent on wage income to access food. 31 % also relied on a single other income source. Income from state social grants was the most significant of these (for 42 % of the surveyed households). Like Cape Town, Johannesburg's population indicated that most households rely on income to access food (Rudolph et al. 2012). Household incomes were primarily derived from wage work (47 %), followed by social grants (19 %) and casual work (8 %).

As in the South African cities, Windhoek's population relies on income to secure food. Pendleton et al. (2012) show that 84 % of the surveyed households rely on wage work to purchase food, 17 % on casual work, 16 % on remittances and 13 % on informal business (Pendleton et al. 2012). Informal rural-urban food transfers are an additional food source for many city dwellers (Frayne 2004; Pendleton et al. 2012).

Household purchasing power parity, often determined by income flows, tends to be the most significant determining factor in food security (Crush et al. 2014). However, households are under economic stress in most cities. Urban economies

are unable to expand fast enough to absorb the escalating rates of urban population growth, largely driven by rural-urban migration. As economic opportunities dwindle, unemployment and urban poverty rise and households become vulnerable to food insecurity.

2.4 Effectiveness of UA as a Food Security Strategy

The AFSUN data set shows considerable variation in UA rates between and across cities. However, it can also be used to shed light on the question of whether UA is an effective food security or poverty-reducing strategy for poor urban households. Statistical analysis shows that, in the majority of comparisons, there are no significant differences in food security scores between surveyed households engaged in UA as a food source and surveyed households which were not engaged in the practice (Table 2.2). There were marginal exceptions with four cities. In Maseru, there was a significant but weak difference in HFIAS scores ($z = -3.250$, $p = 0.001$, Effect Size = 0.115) and HDDS scores ($z = -3.269$, $p = 0.001$, Effect Size = 0.118) between households engaged and not engaged in UA. Households engaged in UA had slightly better food access and dietary diversity than other households sampled in this city.

Similarly, households engaged in UA in Lusaka had significant but marginally lower HFIAS scores ($z = -2.177$, $p = 0.030$, Effect Size = 0.115) and MAHFP scores ($z = -2.721$, $p = 0.007$, Effect Size = 0.143). This suggests that these households had slightly better food access, but lower adequate household provisioning than other households. Surveyed households in Cape Town showed similar trends; households engaged in UA demonstrated significant but marginally higher HDDS scores ($z = -0.611$, $p = 0.009$, Effect Size = 0.082), demonstrating that these households had slightly more dietary diversity. Households in Johannesburg engaged in UA also had significant but marginally higher HDDS scores ($z = -5.245$, $p < 0.001$, Effect Size = 0.172), 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 a similar picture (Table 2.3). There were no significant correlations observed for the majority of these associations. The Maseru households indicated a significant, weak and positive correlation between the frequency of household UA engagement and MAHFP scores (Rho (367) = 0.184, $p < 0.001$), indicating that these households had slightly better household food provisioning associated with more frequent UA engagement.

The other significant correlations indicate a negative relationship between frequency of household UA engagement and household food security scores.

Table 2.2 Comparison of household food security scores by UA engagement and city

City	Variable	z-value	Effect size ($z/\sqrt{n}$)	n (p-value)	Mean rank (UA engaged)	Mean rank (Not engaged in UA)
Windhoek	HFIAS	−0.571	NA	427 (0.568)	234.00	213.42
	HDDS	−1.697	NA	418 (0.090)	145.90	211.06
	MAHFP	−0.131	NA	428 (0.896)	210.04	214.63
Gaborone	HFIAS	−0.458	NA	386 (0.647)	182.08	194.09
	HDDS	−0.544	NA	366 (0.586)	196.64	182.82
	MAHFP	−0.173	NA	398 (0.862)	201.24	196.78
Maseru	HFIAS	−3.250**	0.115	794 (0.001)	369.13	422.13
	HDDS	−3.269**	0.118	767 (0.001)	411.51	360.42
	MAHFP	−1.450	NA	784 (0.147)	404.90	381.59
Manzini	HFIAS	−0.501	NA	487 (0.616)	253.77	242.96
	HDDS	−0.855	NA	476 (0.392)	255.36	236.83
	MAHFP	−0.492	NA	478 (0.622)	249.03	238.53
Maputo	HFIAS	−0.985	NA	244 (0.325)	130.74	120.10
	HDDS	−0.081	NA	245 (0.936)	122.34	123.20
	MAHFP	−0.255	NA	245 (0.798)	120.86	123.60
Blantyre	HFIAS	−0.251	NA	430 (0.802)	216.64	213.59
	HDDS	−0.916	NA	419 (0.360)	214.15	203.08
	MAHFP	−0.593	NA	431 (0.553)	218.65	211.65
Lusaka	HFIAS	−2.177*	0.115	356 (0.030)	115.04	180.71
	HDDS	−1.319	NA	354 (0.187)	217.14	176.23
	MAHFP	−2.721**	0.143	363 (0.007)	261.54	179.28
Harare	HFIAS	−0.416	NA	453 (0.677)	229.08	223.85
	HDDS	−0.533	NA	453 (0.594)	224.35	230.95
	MAHFP	−0.847	NA	438 (0.397)	223.70	213.31
Cape Town	HFIAS	−1.081	NA	1023 (0.280)	467.57	514.24
	HDDS	−2.611**	0.082	1006 (0.009)	615.94	498.48
	MAHFP	−1.171	NA	1040 (0.242)	568.63	518.12
Msunduzi	HFIAS	−0.821	NA	542 (0.411)	279.99	267.91
	HDDS	−1.771	NA	534 (0.077)	285.31	259.81
	MAHFP	−0.475	NA	525 (0.634)	258.32	265.03
Johannesburg	HFIAS	−0.371	NA	967 (0.710)	473.73	485.00
	HDDS	−5.245**	0.172	931 (<0.001)	611.81	451.54
	MAHFP	−0.888	NA	964 (0.375)	460.67	484.58

**$p < 0.01$
*$p < 0.05$

In Blantyre, there was a significant but weak negative correlation between frequency of household engagement in UA and HDDS scores (Rho (262) = −0.170, $p = 0.006$). This indicates that the more often a household relies on UA as a food source, the lower the dietary diversity of that household. Households in Harare

Table 2.3 Correlations of household food security scores with frequency of household UA engagement by city

City	HFIAS	HDDS	MAHFP
	Rho (n, *p*-value)	Rho (n, *p*-value)	Rho (n, *p*-value)
Windhoek	−0.382 (12, 0.221)	−0.070 (10, 0.847)	0.025 (12, 0.938)
Gaborone	−0.374 (19, 0.115)	0.098 (18, 0.699)	0.091 (19, 0.710)
Maseru	−0.093 (369, 0.074)	−0.015 (354, 0.782)	0.184** (367, <0.001)
Manzini	−0.245 (47, 0.098)	−0.133 (43, 0.394)	0.129 (44, 0.404)
Maputo	0.166 (55, 0.227)	0.027 (56, 0.843)	0.155 (54, 0.263)
Blantyre	0.034 (269, 0.575)	−0.170** (262, 0.006)	−0.021 (269, 0.736)
Lusaka	0.092 (12, 0.776)	0.338 (11, 0.309)	−0.379 (12, 0.224)
Harare	0.153* (273, 0.012)	0.005 (271, 0.931)	−0.049 (261, 0.426)
Cape Town	−0.042 (49, 0.776)	−0.078 (43, 0.619)	0.084 (49, 0.568)
Msunduzi	−0.041 (161, 0.606)	−0.024 (161, 0.765)	−0.059 (159, 0.461)
Johannesburg	0.391** (86, < 0.001)	−0.341** (84, 0.002)	−0.482** (84, <0.001)

**$p < 0.01$
* $p < 0.05$

demonstrated significant but weak positive relationships between UA frequency and HFIAS scores (Rho (273) = 0.153, $p = 0.012$), indicating that UA engagement frequency was associated with worse household food access in this city. Households in Johannesburg demonstrated a significant, moderate and positive correlation between household UA engagement frequency and HFIAS scores (Rho (86) = 0.391, $p < 0.001$) and negative correlations between household UA engagement frequency and HDDS scores (Rho (84) = −0.341, $p = 0.002$). These results indicate that the frequency of household engagement in UA was associated with moderately lower household food access and moderately lower dietary diversity. The households in Johannesburg also demonstrated a significant, strong and negative correlation between household UA engagement frequency and MAHFP scores (Rho (84) = −0.482, $p < 0.001$), indicating that frequent engagement in UA was strongly associated with low household food provisioning.

These results indicate that there are few direct relationships between engagement in UA as a food source and household food security or between frequency of engagement in UA as a food source and household food security. In the few cities which demonstrate a relationship between household UA engagement and food security, the results are mixed. Some cities demonstrate that households engaged in UA have significantly higher food security scores but these cities also demonstrate a negative relationship between frequency of UA engagement and food security. In general, it appears that household UA engagement as a food source is not an effective strategy for maintaining or increasing household food security, although there is variation in its effectiveness between urban contexts.

2.5 Households Earning and Landholdings as Predictors of UA Effectiveness

The AFSUN survey focused primarily on poor urban households. However, the effectiveness of UA as a food security intervention may be mediated by household socio-economic and demographic factors. For example, several scholars have found that UA participation is correlated with wealth/education and landholdings (Crush et al. 2011; Kwambisi et al. 2011). This is consistent with the AFSUN data. In Malawi, higher-income, better-educated, and (often) male-headed households reaped higher yields and consumed more UA produce than low-income, less-educated and (often) female-headed households. According to Kwambisi et al. (2011), high-income households harvested an average of 306 kg/capita compared to about 68 kg/capita cultivated by lower-income households. High-income households also consumed 75 % of what they grew, whereas low-income homes consumed only 34 %. Land ownership is a significant contributing factor to higher crop yields, with leased land yielding 1116 kg/ha, rented land about 940 kg/ha and public land only 450 kg/ha. These discrepancies occur because higher-income households have better access to agricultural inputs and extension services and can afford to hire extra labour. In contrast, poor households engage in UA in order to earn extra income rather than for direct consumption.

Similarly, in Botswana, Hovorka (2004) demonstrates that the scale of and economic benefits from UA are primarily captured by high-income, often male-headed households. Hovorka examined commercial poultry enterprise, which had an equal participation of males and females as well as high and low-income farmers. However, males, and in particular those in a higher income bracket, not only sold more poultry but also generated more income from the enterprise than their female counterparts. The author explains that there are social and gender differences that disproportionally accrue land leases and bigger farm plots to men, allowing them to have larger-scale and more diversified operations. In contrast, women farmers who were on average more efficient and effective at poultry production, tend to operate on public lands or out of their homes, and therefore at a much smaller scale. Hence, they earned much less income from participation.

The correlation of wealth/education and landholdings with UA productivity is also evident in Harare. Kutiwa et al. (2010) found significant statistical differences in crop yields between better-educated urban households who harvest an average of 209 kg per plot, compared to less-educated households who yielded about 110 kg. Crush et al. (2011, p. 289) cite Byerley (1996) to explain that middle-income city dwellers "choose to cultivate in order to attempt to preserve their standards of living during inflationary times of crises and also to reduce their vulnerability to the possible breakdown of formal food channels." UA studies from other regions similarly reveal that wealth, land holdings and education are important determining factors for food security net gains, as well as a source of additional income from the sector (Lee-Smith 2010, 2013).

2.6 Conclusion

Based on the findings presented in this chapter, the actual benefits of UA as a broad urban development and food security strategy are unclear. Our analysis lends support to the second position evident in the literature—that UA has limited poverty alleviation benefits under current modes of practice and regulation. As highlighted in this study, urban contexts tend to influence the key factors that either promote or hinder UA activity and scale. Thus, further comparative and more fine-grained research is required in order to understand specific factors within cities, and possibly identify coherent UA policy measures geared towards the livelihood needs of the urban poor.

This chapter draws three significant conclusions related to household engagement in UA as a food source. First, the urban context (i.e., economic, political and historical circumstances) tends to play a major role in determining the rate of household engagement in UA. In general, cities experiencing economic decline, with limited income opportunities for households, tend to have higher rates of UA participation than cities with economic growth. Second, this investigation found little evidence to suggest that UA is an effective household food security strategy. The majority of analyses in this investigation demonstrated no significant relationship between UA and food security. Where there was a significant relationship, we found that households engaged in UA had higher food security scores than other households, frequency of engagement in UA as a food source was associated with worsened household food security. And finally, UA participation is determined by each household's level of income as well as landholdings, with wealthier households more likely to participate and benefit than poorer households.

The major implication is that UA, like any form of agriculture, requires a complex set of preconditions, inputs, extension services, credit/financial access, production and marketing infrastructure, and knowledge for the urban farmer to succeed. Yet the literature usually considers UA a pro-poor, often self-help, process and strategy. Abdicating the responsibility for pro-poor urban development by placing the burden on the shoulders of the urban poor is simply not good development practice. If UA is indeed to become the pervasive food and nutrition strategy of the urban poor that so much of the literature claims it is or has the potential to be, this cannot be done without significant and ongoing investment in, and support for this sector. After all, the commercial agricultural sector is supported at all stages of the production chain, and yet the poorest of the poor, often living in informal and overcrowded conditions and marginal circumstances, are expected to show entrepreneurial spirit by growing themselves and their families out of poverty. The major research and policy challenge is therefore to understand what conditions are necessary to promote UA as a successful pro-poor development strategy and on that basis to develop meaningful and workable support programmes for the urban poor who wish to participate in growing and selling food in the city.

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Chapter 3
The Spatial Logic of Supermarket Expansion and Food Access

Jane Battersby and Stephen Peyton

Abstract Although the rapid expansion in the number of supermarkets in Africa in recent years is well-documented, the potential impact of this process is not well understood. The existing literature does not engage adequately with the spatial distribution of supermarkets within cities and is therefore unable to address the impact of these stores on household food security. The paper presents a mapping of the location of supermarkets in Cape Town with reference to income characteristics of neighbourhoods and transport routes. The distribution of supermarkets is shown to be highly unequal and the distance of low-income areas from high-income areas hinders access to supermarkets for the urban poor. The chapter further argues that the supermarkets in lower-income areas typically stock less healthy foods than those in wealthier areas and, as a result, the supermarkets do not increase access to healthy foods and may in fact accelerate the nutrition transition.

Keywords Supermarket expansion · Urban food security · South africa · Food access · Nutrition

3.1 Introduction

The food system in Africa is undergoing a rapid transformation as large supermarket companies seek to dominate from production to point of sale (Abrahams 2010; Crush and Frayne 2011). The impact of this transformation on food security and

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nutrition has been widely debated elsewhere, with some deeply concerned about the impact of supermarketization on food security and food sovereignty (Holt-Giménez and Shattuck 2011) and others arguing that supermarkets may prove an "urban food security boon" because of their capacity to lower food prices (Reardon and Minten 2011). The argument about the impact of supermarkets on the food security of the urban poor has been made primarily on the basis of price as the main determinant of access. This chapter argues that access needs to be understood as physically, as well as economically, determined. This point has been powerfully argued in the Global North in the context of 'food deserts', but the spatiality of supermarket expansion has been all but ignored in the African context (Battersby 2012).

This chapter first discusses the existing literature on supermarket expansion, with a particular focus on South Africa. It provides an overview of the international and local literature on the extent and drivers of supermarket expansion. The chapter argues that the lack of spatial analysis within the existing literature prevents conclusions being drawn about the actual impact of supermarket expansion on the food and nutrition security of urban residents. Following the mapping approach adopted by food desert researchers in Anglo-American countries, the chapter presents an analysis of the spatial distribution of supermarkets in Cape Town with particular focus on income, transport routes and store type. Through this analysis, the chapter seeks to address the question of whether supermarket expansion does improve access to food for residents of low-income areas of Cape Town.

3.2 Expansion of Supermarkets in Developing Countries

Developing countries are widely acknowledged to be undergoing a nutrition transition characterized by a shift towards a diet high in saturated fats, sugar and low-fibre refined foods. These shifts have been evident since the 1990s, mostly in urban areas (Popkin 2003). There is significant evidence of the nutrition transition in South Africa. Bourne et al. (2002, p. 158) compared dietary data of urban black South African adults from 1940 with similar data generated in 1990 and found an 11 % reduction in carbohydrate consumption as a proportion of all energy consumed and a 59 % increase in fat intake. In recent years there has been a dramatic shift in the South African diet. Sales of snack bars, ready meals and noodles rose by over 40 % between 2005 and 2010, and the average number of Coca Cola products consumed in South Africa increased from a high of 130 per person per year in 1992 to 254 per person per year in 2010 (Igumbor et al. 2012, p. 1).

The nutrition transition has been linked to a number of factors, most noticeably the higher-income profiles of urbanites, but changing diets cannot only be attributed to higher urban average incomes. Altman et al. (2009, p. 15), for example, note that "the differences between urban and rural food expenditure patterns can also be

traced to particular food types. It is surprising that rural households spend a larger share of their food budget on grain products, fruit and vegetables and a lower share on meat, than urban households in the same decile." The difference in the urban diet, irrespective of dietary type, has been attributed elsewhere to the time constraints of urban life, particularly women's employment away from the home, which have encouraged a shift towards the consumption of more processed foods.

These factors are clearly important, but it must be acknowledged that the shifts in diet analysed by Popkin have occurred within the same period as the rapid expansion of the supermarket sector within developing countries. Reardon and colleagues have identified three, or perhaps four, waves of supermarket expansion in developing countries (Reardon et al. 2001, 2004; Reardon and Minten 2011; Timmer 2008; Weatherspoon and Reardon 2003). Broadly speaking, these waves are as follows: the first wave in the early- to mid-1990s included much of South America and East Asia outside of China, and South Africa. The second wave took place in the early 2000s and included much of Southeast Asia and Central America. The third wave is currently underway in East Central Europe, China, and Africa outside of South Africa.

By 2003 the supermarket sector in South Africa accounted for 50–60 % of all food retail, although supermarkets accounted for just 2 % of all food retail outlets (Weatherspoon and Reardon 2003, p. 337). Reardon et al. (2003, p. 1142) note that these 1700 supermarkets were equivalent to 350,000 spaza stores in terms of sales. The supermarket sector continues to grow, with a share of the food retail market increasing to 68 % in 2010 (Planting 2010, p. 34). 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 31 %, Spar with 20 %, and Woolworths with 8 % (GAIN Report 2012).

The supermarket sector in South Africa continues to expand both within the country and in the wider African continent. Shoprite opened its first non-South African store in 1995 and by the end of 2012 had 131 non-South African supermarkets in 16 African countries. Within South Africa, the major supermarkets are expanding into rural areas and lower-income urban areas previously without supermarkets. The expansion can be attributed both 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). Pick n Pay announced plans to open 225 stores in the 18 months from October 2012. Of these new stores, 119 would be Pick n Pay supermarkets and the rest would be Boxer Superstores, small format and express stores (Magwaza 2013). In addition to entering new markets, the supermarkets are expanding through the opening of new store formats. Pick n Pay, for example, recently announced a partnership with BP to build 120 new convenience stores on petrol station forecourts. Woolworths currently have 45 such stores in partnership with Engen (Mantshantsha 2013).

3.3 Reasons for the Expansion of the Supermarket Sector

Reardon et al. (2004) view supermarket expansion as driven both by demand by customers and a series of supply side determinants. On the demand side, factors such as the rapid urbanization of developing countries, the increased presence of women in the labour force and improved household storage capacity have been identified as drivers of supermarket expansion (Reardon et al. 2001). On the supply side, structural changes such as increased retail foreign direct investment (FDI), institutional and regulatory reforms, and the modernization of supermarket procurement systems have all enabled the expansion of the supermarket sector (Reardon et al. 2007).

Within South Africa, the rapid growth of the black post-apartheid middle class has opened up new markets for supermarkets within townships (Ligthelm 2008). In addition, improvements in infrastructure in many townships have made the presence of large retail businesses more feasible (Tustin and Strydom 2006, p. 56). In the post-apartheid era there have also been considerable changes in the agricultural sector, which have allowed supermarkets to expand their procurement systems and gain market dominance (Van der Heijden and Vink 2013).

The impact of supermarket expansion has been widely debated with authors such as Lang and Barling (2012) drawing attention to the confluence of 'Big Food', supermarkets and the nutrition transition. Within Africa much of the focus to date has been on the impact of the supermarket sector on food producers (Louw et al. 2008; Neven et al. 2009; Van der Heijden and Vink 2013). In South Africa there has been a small body of work on the impact of mall developments (which generally include supermarkets as anchor tenants) on local economic development in township areas. The African Cooperative for Hawkers and Informal Businesses has stated that about 150 informal retail stores stores in Soweto alone have been forced out of business, partly because of the entry of large retail chains into the township (Bisseker 2006). Initial findings from a Demacon survey on the impact of Jabulani Mall in Soweto are less conclusive, with 76 % of informal traders and retailers reporting no change, although the weighted percentage spent at local traders dropped from 25 to 14 % (McGaffin 2010, p. 4). Ligthelm (2008) found that small traders were generally negatively impacted by the presence of a mall development and that those who were able to survive did so by changing their business models. Battersby (2011) has argued that the loss of these small businesses is potentially damaging to the food security of residents in these areas as these traders sell amounts that are affordable for the poor and provide food on credit.

In her work on supermarketization in Zambia, Abrahams (2010, p. 116) cautions against "supermarket revolution myopia" and presents a discussion on the types of transformation occurring in other sectors of the food system that challenge the assumption of the inevitable dominance of the supermarket sector. As Humphrey (2007, p. 438) has argued, "the depth and implications of retail transformation in developing countries is still unclear. A transformation is taking place. The literature on the supermarket revolution captures this and highlights its potential implications.

However, when a significant new trend is first located, it is quite common for the pioneering analyses to over-generalise both its react and its impact."

This chapter seeks to address the potential impact of supermarket expansion on the food security of the urban poor in Cape Town through a spatial analysis of supermarket location. While the expansion of the supermarket sector has been well-documented in terms of market share and general location of stores, the actual geography of supermarkets has not been interrogated. This reflects a tendency to equate access to food with affordability of food and to neglect the role of geography in shaping food access (Battersby 2012). Reardon and Minten (2011, p. 5) suggest that, "there is emerging evidence that modern retail charges lower prices than traditional retail, which may prove an urban food security boon from retail transformation." This assumes that the cost of food is the only transaction cost, and ignores the transport and time costs associated with obtaining cheaper food. It also assumes that the product range available in supermarkets in low-income urban areas is the same as that in higher-income areas. However, Reardon and Timmer (2012) note that the spread of supermarkets into lower-income areas has been accomplished through the adoption of different market strategies and retail formats.

3.4 Methodology

For this study, the spatial distribution of stores of the four largest food retail companies in Cape Town (namely Shoprite, Pick n Pay, Woolworths, and Spar) were first mapped. These chains dominate the food retail sector in the city and operate a variety of store types to accommodate different consumers. In addition to their standard supermarkets, the companies have a convenience store format. Furthermore, Shoprite has three different supermarket formats for low, medium and high quality retail outlets, namely USave, Shoprite, and Checkers respectively. A total of 269 supermarket retail outlets were found in the Cape Town metropolitan area, consisting of 99 Shoprite stores, 67 Pick n Pay stores, 56 Woolworths stores and 47 Spars. This includes their convenience stores, supermarkets, and hypermarket formats.

Supermarket locations were gathered from online store locators from company websites. This information was cross-referenced using Google Maps and then manually standardized. The data were geocoded and converted into a readable shapefile using Batch Geo's online website. This approach did not work for three of the 269 stores identified, and their addresses were inputted manually using Google Maps' street view tool to confirm their location. Once properly geocoded and formatted for use in geospatial software, the data were inputted into ArcGIS 9.3 software for further analysis.

The store locations were then overlaid on a series of maps of socio-economic and infrastructure information. In order to engage with questions of spatial inequity in the distribution of supermarkets in Cape Town, household income and informal dwelling frequency data were collected from Census 2001 datasets. These data sets, disaggregated down to the finest spatial scale available (the sub-place level), were

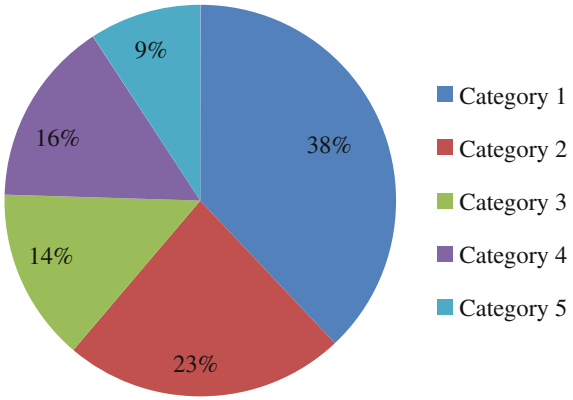

Fig. 3.1 Proportion of households in sub-places by income quintile

then joined to a spatial enumeration unit shapefile. In addition, a street file was used to determine main road transportation routes.

At the time of the research, the data for Census 2011 were not yet available at the sub-place level. It is acknowledged that Census 2001 is now out of date. The total population of Cape Town increased from 2,893,249 in 2001 to 3,740,026 in 2011. The number of individuals self-identifying as black African increased from 916,584 to 1,444,939, and the number self-identifying as Coloured increased from 1,392,594 to 1,584,286. Given the historical racial inequalities in the country, it is likely that the vast majority of these new residents reside in lower-income areas of the city. This therefore means that present levels of spatial inequality within supermarket distribution are likely to be higher than those reflected using Census 2001 data.

All sub-places were divided into five ranked quintiles using an ARCGIS software algorithm. According to these generated quintiles, Category 1 areas had average household incomes of R0-R39,537 per annum; Category 2: R39,537–R77,993 per annum; Category 3: R77,993–R124,689 per annum; Category 4: R124,689–R200,493 per annum, and Category 5: R200,493+ per annum. This exercise provided a map of equal numbers of sub-places within each quintile. However, it is important to note that this does not reflect equal numbers of households. For example, the sub-places located within the lowest-income quintile (Category 1), contained 295,526 households, while the total number of households in all Category 5 sub-places was 71,757 (Fig. 3.1). Over 60 % of Cape Town's households lived in sub-places that fell into the lowest two income quintiles. Since lower-income sub-places have far greater numbers of households than higher-income sub-places, analysis of census data using enumeration units tends to mask the full extent of inequality within the city. This needs to be considered when interpreting the maps presented in this chapter.

The major road transport infrastructure was also mapped in order to provide a sense of physical accessibility of stores to residents and to understand the spatial logic of store location. Roads labelled as "expressway", "freeway", "primary arterial", and "secondary arterial" were selected, while those labelled "minor road",

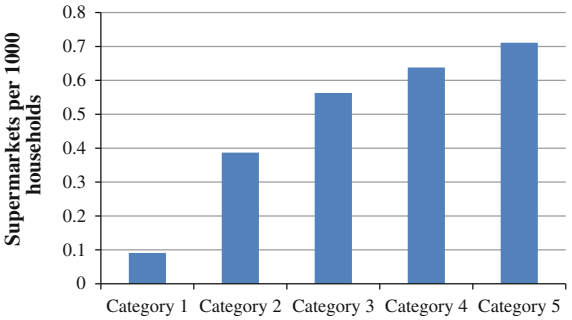

Fig. 3.2 Number of supermarkets according to average income of sub-places

"private road", and unlabelled were discarded. This choice was made in order to include only those routes that were likely to be significant enough to be used by public transportation systems such as buses or minibus taxis.

3.5 Supermarket Location

The distribution of supermarkets in Cape Town is highly unequal. Residents in the highest-income quintile sub-places had almost eight times as many supermarkets per household as those in the lowest-income quintile sub-places (Fig. 3.2). These findings reflect the general trend noted by Reardon et al. (2004, p. 19) where supermarkets initially occupy "a small niche in capital cities serving only the rich and middle class" and then spread well beyond the middle class "in order to penetrate deeply into the food markets of the poor." The spatial logic of supermarkets is profit-seeking behaviour, the desire to seek new markets at minimal risk, and gaining an advantage over competitors (Tustin and Strydom 2006, p. 51). For these reasons, supermarkets continue to concentrate in wealthier areas of the city.

3.6 Location of Supermarkets Relative to Transport Routes

Cape Town's supermarkets are clustered around major roads, in particular roads that form arterial routes for taxis and buses (Fig. 3.3). Of the 269 stores mapped, 195 were located within 200 m of a main road. This locational strategy expands the spatial reach of individual stores, enabling them to tap residents from other parts of the city. Supermarkets clustered around busy transport hubs noticeably cater to lower-income workers commuting via these hubs. These stores stock cheaper brands and more limited fresh produce than other nearby stores that cater to residents of the wealthy areas in which they are located. The Shoprite store in Mowbray

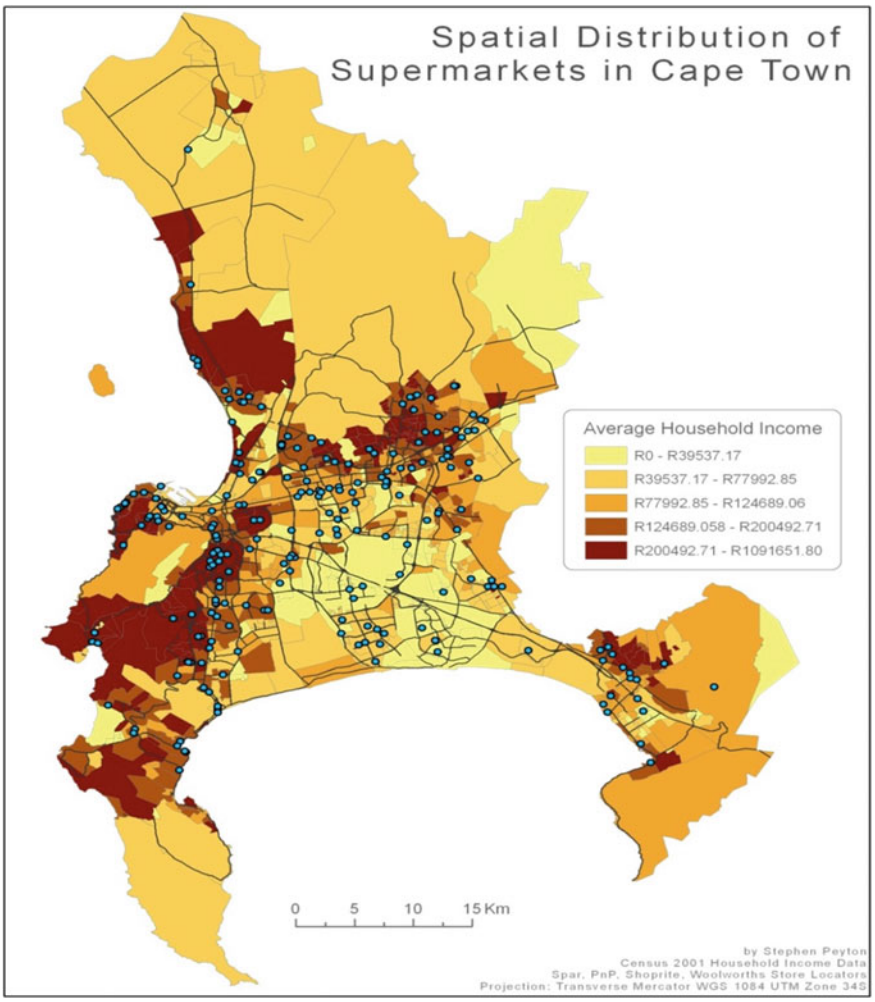

Fig. 3.3 Spatial distribution of supermarkets in Cape Town

and the Pick n Pay on Wynberg's Main Road are particularly popular for workers commuting from the lower-income Cape Flats.

Supermarkets in Cape Town are unequally distributed by income. However, it would be incorrect to assume that households necessarily purchase their food within their residential area. The location of supermarkets along major transport routes increases the accessibility of supermarkets to residents of lower-income areas. The practice of 'outshopping' (shopping outside of residential location) is well recognised in South Africa and was traditionally associated with a lack of formal retail in township areas (Strydom 2011). Although the retail environment has shifted and supermarkets have begun to spread into lower-income areas, 'outshopping' still

occurs, but not in a uniform manner. Research conducted in Soweto in 2004, for example, found that almost half of the expenditure of the poorest households (49 %) occurred within the area. By contrast, 91 % of the retail expenditure of the most affluent households occurred outside Soweto (Ligthelm 2008, p. 38).

Despite the widespread practice of 'outshopping', it would be incorrect to conclude that the spatial location of supermarkets therefore does not matter. As the Soweto study indicated, purchasing habits are in part determined by financial resources. The supermarkets in the wealthier parts of Cape Town are only accessible if households have sufficient resources to get to them. For working household members, the transport cost is a part of the cost of their daily commute. For households without a working member, the cost makes regular supermarket purchases unfeasible.

A distinguishing feature of the South African city is the spatial legacy of apartheid, which systematically located the poorest households furthest from the wealthiest (Fig. 3.3). Such spatial inequality has meant that low-income households are not only located far from places of potential employment, but also from opportunities to access food from supermarkets. The 2008–2009 AFSUN food security baseline survey in Cape Town found that food-secure households purchased food more frequently at supermarkets than food-insecure households (Battersby 2011). This is attributable to the higher incomes of the latter, which makes shopping in bulk at supermarkets possible, and also to the greater physical accessibility of supermarkets to working households.

3.7 Location of USave Supermarkets

The expansion of supermarkets into lower-income areas of Cape Town is exemplified by the distribution of Shoprite's USave stores (Fig. 3.4). Shoprite claims that "the USave chain's focus is on the lower-income groups. Customers who are serious about saving and do not need the expensive frills and spills of regular shopping centres, are invited to put USave to the test" (www.shopriteholdings.co.za). While these stores are indeed in lower-income areas, they are not in the lowest-income areas of the city (Fig. 3.5). There are almost 2.5 times as many USave stores per household in the second lowest income quintile sub-places as in the lowest-income quintile sub-places. Even when entering low-income areas, the supermarkets' locational strategy is by necessity based on market efficiency, not social efficiency. The diffusion of supermarkets in its current phase cannot therefore be argued to be bringing low-cost food to the poorest households.

There is also a need to interrogate what foods are being sold in these supermarkets. The alternative format stores, such as USave and Boxer, tend to stock a more limited range of products. In particular, they carry less fresh produce than the full supermarkets in wealthier areas. This distribution and stocking profile reflects the international trend identified by Reardon et al. (2007, p. 407) in which the diffusion of supermarkets is characterised by format diversification and "consumer

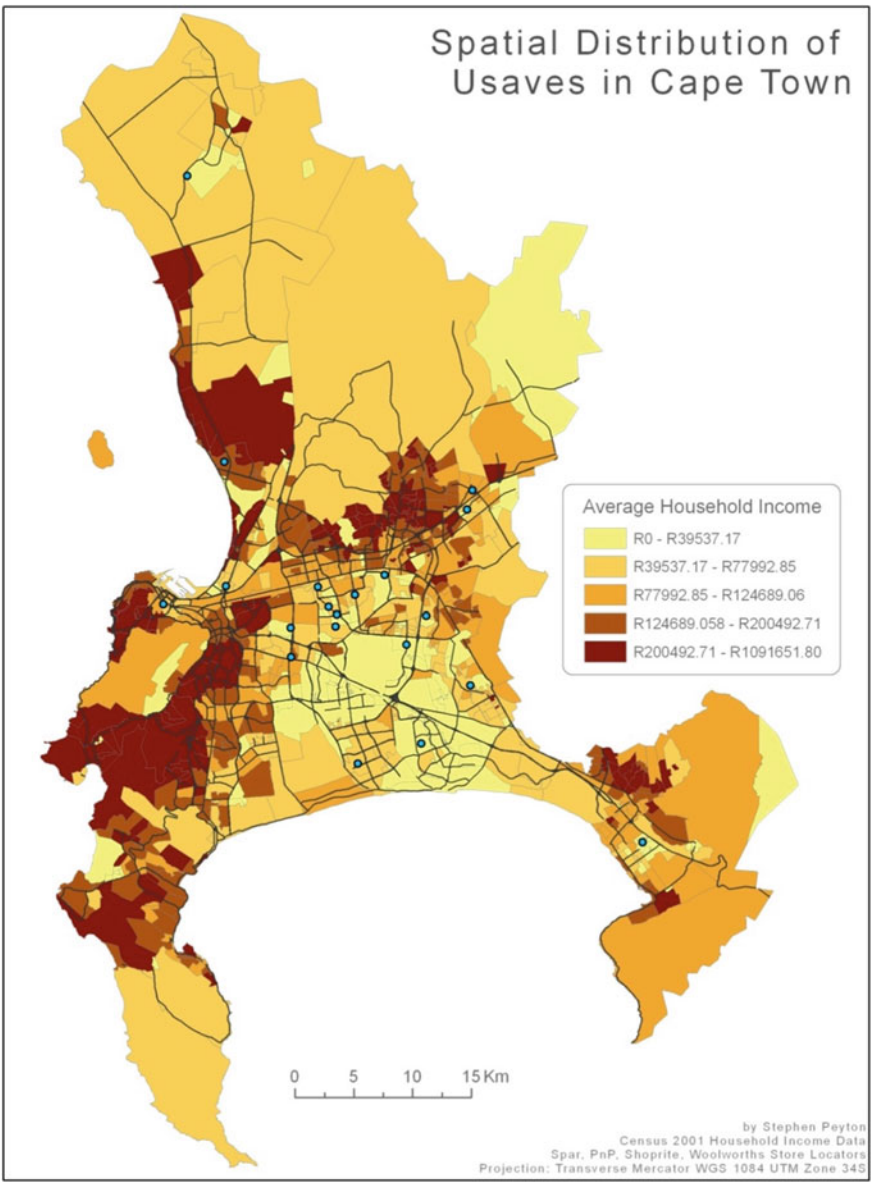

Fig. 3.4 Spatial distribution of USaves in Cape Town

segment differentiation." Not only are there different spatial waves of diffusion, there are also waves of diffusion by product type.

The first wave of product penetration is characterised by processed foods like rice, noodles, edible oils, canned and dried foods. Following this come the

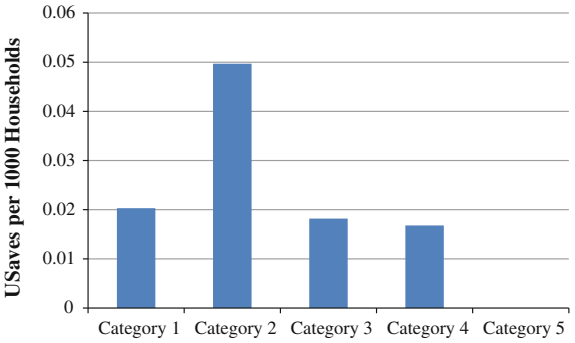

Fig. 3.5 Number of USave supermarkets by average income of sub-places

semi-processed foods, such as dairy products and meats. The final, and slowest, wave to penetrate the local supermarket sector is fresh produce (Reardon et al. 2007, p. 408). The limited penetration of fresh produce into supermarkets in lower-income areas is in part due to consumers' perceptions of the low relative freshness and quality of the produce compared to traditional vendors (Humphrey 2007, p. 439). It is also the result of a general lack of refrigeration, which means that low-income consumers prefer to buy fresh produce in smaller, more frequent purchases from informal traders (Reardon et al. 2007; Strydom 2011).

The primary outcome of this process is that residents of low-income areas with supermarkets are receiving better access to calorie-dense, nutritionally-poor foods rather than fresh produce (Temple and Steyn 2009). Temple et al. (2010, p. 57) compare the prices of six commonly consumed foods with healthier versions of those foods. The healthier foods cost between 10 and 60 % more than the regular foods, based on weight, and between 30 and 110 % more based on the cost of food energy. The economies of scale conferred by supermarket supply chains, coupled with their relationships with large food producers, allow supermarkets entering low-income areas to reduce their prices artificially and undercut local retailers. Given the dependence of the urban poor on buying food on credit from local businesses, this process may actually reduce accessibility to affordable, nutritious food for the urban poor.

3.8 Conclusion

The food system in South Africa is undergoing a rapid transition. The implications of this for food security, particularly in urban areas, is not well understood. Food policy in South Africa has tended to neglect the impact of the market on food security (Kirsten 2012; Van der Heijden and Vink 2013). Failure to understand the changing structure of the food system and to develop policies and strategies to address its impacts will hinder the country's ability to realise the constitutional right to food. The data presented in this chapter suggest the need for more fine-grained

research into the process and outcomes of supermarket expansion in low-income areas, particularly with reference to the locational and stocking strategies of supermarkets, and the pricing mechanisms of supermarkets in relation to products available through other forms of retail.

The distribution of supermarkets in Cape Town reflects the model of supermarket diffusion identified in the international literature. Supermarkets are still overwhelmingly located in wealthier areas of the city but are moving into lower-income areas. Within the international literature there are speculative statements about what impact supermarket expansion may have on the food security of the poor. However, this literature only speaks in general terms about the location of supermarkets. This chapter has mapped the actual spatial location of stores in Cape Town with reference to the income characteristics of the areas they are located within and transport routes. The analysis demonstrates that supermarket location is highly stratified according to income. Some residents of lower-income areas are able to access these supermarkets due to their location along public transport commuting routes, but this increased accessibility is not available to all residents of areas lacking supermarkets.

Although Reardon and Minten (2011) suggest that the lower prices offered by supermarkets may improve urban food security, the discussion of the characteristics of the supermarket formats operating in lower-income areas of Cape Town found that this phase of diffusion may only provide better access to less-nutritious processed foods. This will accelerate the nutrition transition in these areas, but not necessarily address food and nutrition insecurity. The increased presence of these stores may actually reduce food security by putting out of business local retailers that had allowed customers to buy food on credit.

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Chapter 4
Food Access and Insecurity in a Supermarket City

Mary Caesar and Jonathan Crush

Abstract The economic revival of Msunduzi over the last decade has been driven by the influx of capital to a city that claims to offer significant advantages to the investor. This chapter examines whether this marketing ploy has enlarged the choices of the poorer residents of the city, with particular regard to their food security. Using data from the 2008–9 AFSUN baseline survey, the chapter shows that Msunduzi's residents experience higher levels of food insecurity than like neighbourhoods in Cape Town and Johannesburg and many other cities in the SADC region. Unlike a number of these cities, the food sourcing strategies of households are severely constrained. Urban agriculture and rural–urban food transfers are limited and the informal food economy is much less significant than elsewhere. The control of the urban food system largely rests in the hands of supermarkets whose location and pricing policies put quality food outside the reach of most poor households. Although many are forced to buy supermarket food through lack of choice, food shortages and a lack of dietary diversity are endemic. Worst off are female-headed households whose levels of unemployment are higher than average and whose incomes are lower than average.

Keywords Urban food poverty · South Africa · Msunduzi municipality · Female-headed households

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4.1 Introduction

Like all South African cities, Msunduzi shows visible signs of the apartheid legacy including "uneven development between city and suburbs, the spatial allocation of land—which still runs along strongly racial lines—and the serious underdevelopment in traditionally 'black' townships" (Robbins and Hobbs 2012, p. 37). The implications of such uneven development have been explored in relation to issues such as housing, water, electricity, sanitation and pollution (Boayke and Akor 2012; Goebel and Dodson 2011; Goebel et al. 2010; Smith and Green 2005). However, food security has been given precious little attention in research and policy formulation in relation to poverty and livelihoods in Msunduzi (and urban KwaZulu-Natal more generally).

The Msunduzi Integrated Development Plan (2011–2016), for example, has almost nothing to say about food security, other than repeating President Jacob Zuma's call for a national development strategy based on land reform and a rural food security (Msunduzi Municipality 2010, p. 21). The 2010 Msunduzi Draft Strategic Environmental Assessment does note that the Municipality should "take steps to eradicate hunger, malnutrition and food insecurity by 2015" (SRK Consulting 2010, p. 37). The report proposes (a) an 'urban greening programme' using indigenous trees and fruit trees to enhance food security; and (b) that most of the daily food needs of Msunduzi are sustainably grown, processed and packaged in rural and urban agricultural schemes in the city and surrounding rural areas. However, it contains no information or analysis on the extent and determinants of food insecurity in Msunduzi or awareness of the city's dependence on non-local sources for its food. Rather than being based on substantive information about the state of food security, then, the recommendations are generic solutions that reflect broader, problematical thinking about urban food security in South Africa and elsewhere (Crush and Frayne 2011a).

The official motto of Msunduzi is "City of Choice." As we will show in this chapter, such a moniker is singularly inappropriate for the many thousands of food insecure households surviving on the margins of the city. This conclusion is based on the findings of the AFSUN food security baseline survey, which was implemented in Msunduzi in late 2008. The survey was administered to a sample of 556 households located in different types of lower-income neighbourhood including new and old townships, informal settlements and peri-urban areas with "traditional" housing. This chapter first provides a detailed empirical analysis of the prevalence and determinants of food insecurity at the household level in Msunduzi. Second, it identifies which households are most vulnerable to food insecurity. And third, it examines whether urban agriculture might mitigate food insecurity in Msunduzi as proposed by the Msunduzi Environmental Assessment. The chapter shows that both urban agriculture and rural-urban food transfers are of little importance in Msunduzi.

4.2 Profile of Surveyed Households

The Msunduzi Municipality (hereafter "Msunduzi") is the capital of the South African province of KwaZulu-Natal, combining Edendale, one of the largest urban townships in the province, and Pietermaritzburg, the previous capital. The 2011 Census recorded over 600,000 people in 164,000 households within the Msunduzi municipal boundaries (SSA 2012). The Censuses of 1996, 2001, and 2011 provide basic data on the Msunduzi populace and show how the profile has changed in the post-apartheid years. The Census also provides a point of comparison with the sub-sample of households in the AFSUN survey. The total population of Msunduzi grew from 521,000 in 1996 to 617,000 in 2011 (an increase of nearly 20 %) (Table 4.1). The black population of the city increased by 120,000 between 1996 and 2011, while both the white and Indian/Asian populations declined. Proportionally, the black population increased from 73 % in 1996 to 81 % in 2011. The total number of households in the city grew from 117,149 in 1996 to 130,292 in 2001 and to 163,993 in 2011.

Average household size declined from 4.5 in 1996 to 4.1 in 2001 to 3.6 in 2011. This is consistent with the findings of a national study which found evidence of rapidly shrinking size of households throughout South Africa (Van Zyl et al. 2008). However, the average household size of the surveyed households was much larger than the city average in both 2001 and 2011. The mean size of the surveyed households was 5.2, suggesting that poorer urban households may not be "unbundling" as quickly as those in the city as a whole. In the survey sample, 53 % of the households were female-centred, confirming that they are disproportionately represented in the poorer areas of the city. Much less numerous were nuclear households (at 22 % of the total) and extended and male-centred households (13 and 12 % respectively).

The 2011 Census showed that the population of Msunduzi is extremely youthful with around half of the residents under 30 and nearly 40 % under 20. The survey sample was even younger with almost 70 % of household members under 30, one-third under the age of 15, and 12 % under the age of 5 (Fig. 4.1). In other words, households in the poorer parts of the city have significantly higher numbers of youthful members. This has particular implications for food security since children are especially prone to the worst effects of undernutrition, including wasting and stunting. Large numbers of household members in Msunduzi do not generate

Table 4.1 Population of Msunduzi, 1996–2011

	1996		2001		2011	
	No	%	No	%	No	%
Black	381,099	73.0	424,654	76.9	501,506	81.3
Indian/Asian	68,113	13.1	64,821	11.7	60,591	9.8
White	56,154	10.8	44,954	8.1	36,860	6.0
Coloured	16,096	3.1	18,408	3.3	17,758	2.9
Total	521,462	100.0	552,837	100.0	616,715	100.0

Source Statistics South Africa

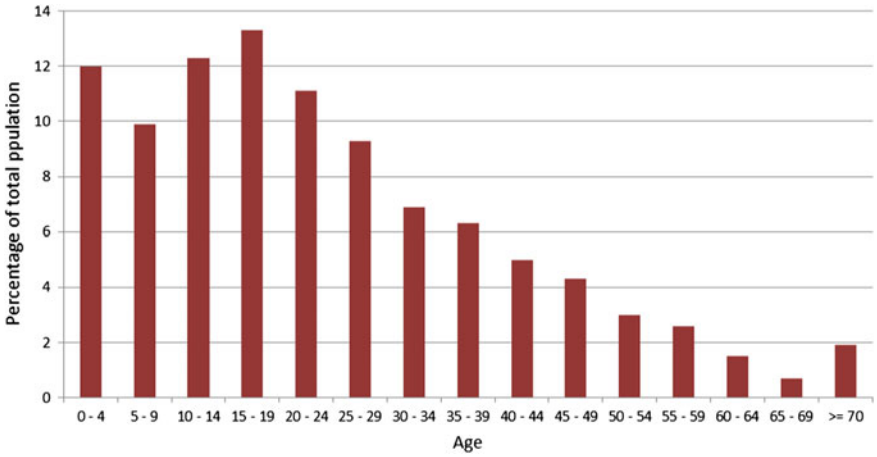

Fig. 4.1 Age distribution of survey household members

income and are dependent for food on the household head. As a group, they are also highly vulnerable to the negative impact of HIV and AIDS on the adult members of the household (Crush et al. 2011a).

A recent ILO (International Labour Organization) review of the local economy notes that five to ten years ago, Msunduzi was in serious economic decline with no new outside investment and rising unemployment and poverty (Robbins and Hobbs 2012). The area's shoe manufacturing industry had collapsed under the weight of cheap imports, shedding over 4000 jobs between 1990 and 2003. To address the challenge, the local government embarked on an aggressive campaign to market the city and attract investment. According to the ILO, the results of this pro-growth strategy were "startling" with several thousand new jobs being created and declining levels of unemployment (Robbins and Hobbs 2012, p. 45). Unemployment in the city as a whole fell from 48 % in 2001 to 33 % in 2011. The relevant question is whether this economic "mini-boom" had a positive impact on the livelihoods and food security of the urban poor.

In the AFSUN survey households, only 21 % of the adult population were in full-time employment, with another 18 % working part-time or casually. This leaves 61 % who were either unemployed and looking for work (35 %) or unemployed and not looking for work (26 %). Since the Census applies a strict definition of unemployment (unemployed and looking), the rate in the surveyed households is similar to that for the city as a whole in 2011 (33 %). The unemployment rate in the survey sample was higher amongst females than males (38 % vs. 32 %). The other significant gender difference was in the relative proportions in full-time employment: 28 % of male household members and only 15 % of females. Since wage employment and income is a major determinant of urban food security, this suggests that female-centred households may be significantly more vulnerable to food insecurity.

Table 4.2 Sources of household income

	Female centred	Other	Percent of total households	Average annual income from source
Main sources:				
Social grants	68.2	60.9	65.5	R 9636
Wage work	28.4	48.1	38.1	R 31,932
Casual work	29.0	34.2	32.2	R 13,788
Other sources:				
Informal economy	12.5	11.5	12.4	R 13,488
Rentals	3.4	2.7	2.9	R 3060
Remittances	3.0	2.3	2.7	R 5880
Gifts	1.7	0.4	1.1	R 19,200
Sale of farm produce	0.3	0.8	0.5	R 7800
Formal business	0.0	0.4	0.1	R 120,000

The Census found that the average annual household income in Msunduzi increased from R 50,178 in 2001 to R 108,926 in 2011, another indicator of improvement in the local economy over the last decade. In stark contrast, the average 2008 household income for the surveyed households was only R 24,420, which was half the city average in 2001 and only a quarter of the average in 2011. What explains why these households are significantly worse off in terms of earnings than the city average? The majority of the jobs performed by household members are low-paying and menial in nature and households do not have many alternative income streams. As a group, the surveyed households had three main sources of income: social grants, wage employment and part-time work (Table 4.2). Social grants (in the form of child grants and pensions) were an income source for two-thirds of the households. A total of 38 % of households obtained some income through wage work and 32 % earned income from casual labour. One significant difference between female-centred households and other households was the proportion receiving income from wage work (28 % vs. 48 %).

Other sources of income were relatively insignificant. This confirms that access to employment is the critical determinant of household income. And, in turn, this means that female-centred households are at a significant disadvantage. However, even amongst those in wage employment there was a marked gender difference. Female-centred households with a wage worker, for example, earned an average of R 21,976 per annum compared with an average of R 38,148 per annum for other households. Gender differences are also apparent in the income tercile data where female-centred households are disproportionately represented in the lowest income tercile (Fig. 4.2). Households unable to place a member in wage employment face a considerable struggle to make ends meet through a combination of low-paying casual work, social grant income and, for a few, scraping by in the informal economy.

Only 12 % of surveyed households obtain income through informal activity. Other studies of Msunduzi have addressed the low rate of participation in the

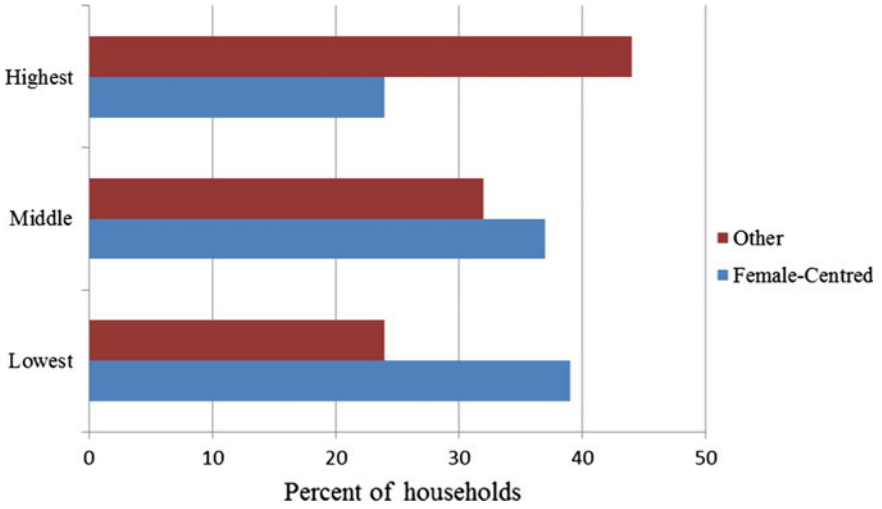

Fig. 4.2 Income terciles of female-centred and other households

informal economy and suggested that such activity that exists is focused on the Central Business District (CBD) and arterial streets. Quazi (2011, pp. 28, 32), for example, notes that these areas have "dense informal activities." At the same time, the author correctly notes that the informal economy in Msunduzi is small compared to other city centres and that the data is actually quite sparse. In 2006, another study noted that there were only 2500 informal traders in the city but that competition for space in the downtown was intense (Gengan 2006). Two-thirds of businesses in the informal economy were estimated to earn less than R 1000 per month. The ILO reports that the municipal response to informality has been "inconsistent and contradictory" and that the pro-growth strategy of the city by-passes informal entrepreneurs (Robbins and Hobbs 2012, p. 39). The money earned is barely enough to even warrant the label "survivalist" and can be more accurately described as "disguised unemployment."

4.3 Levels of Food Insecurity

The prevalence of food insecurity in Msunduzi was measured with the indicators developed by the Food and Nutrition Technical Assistance (FANTA) project in Washington, DC (Coates et al. 2007; Swindale and Bilinsky 2006). The Household Food Insecurity Access Scale (HFIAS) ranges from 0 (completely food secure) to 27 (totally food insecure). The mean score for the Msunduzi households was 11.3 (with a median of 11) which indicates high overall levels of food insecurity. Only four of the eleven SADC cities surveyed by AFSUN (Manzini, Harare, Maseru, and Lusaka) had higher scores than Msunduzi. Nearly 30 % of the Msunduzi

households had HFIAS scores of 15 or above and 13 % had scores of 20 or above. The HFIAS varied with the size and type of household, as well as household income. The largest households (<10 members) averaged 14.3 compared to 10.9 for the smaller households (with 1–5 members). Households in the lowest income tercile scored 14.5 compared with only 8.4 amongst those in the upper tercile. And female-centred households had a higher than average HFIAS score, at 12.2. This is consistent with the fact that they generally have less access to wage employment and low earnings when they do obtain jobs.

The Household Food Insecurity Access Prevalence (HFIAP) measure assigns households to one of four household food insecurity categories: food secure; mildly food insecure; moderately food insecure and severely food insecure. Sixty percent of the Msunduzi households fell into the severely food insecure category and another 27 % were moderately food insecure. Only 7 % of the households in the survey were completely food secure which means that they experienced no worries about food, experienced no shortages of food and were able to consume the types of food that they preferred.

As with the HFIAS, there were significant differences within the survey sample (Table 4.3). For example, more female-centred households experienced food insecurity than other household types: 64 % of female-centred households were severely food insecure compared with 56 % of other households. And only 5 % of female-centred households classified as completely food secure compared to 9 % of other households. Income exercises the greatest effect on levels of food insecurity. As many as 78 % of households in the lowest income bracket were severely food insecure and only one percent were food secure. The equivalent figures amongst households in the upper income bracket were 44 % and 22 %.

The Household Dietary Diversity Score (HDDS) addresses the dietary quality component of food insecurity. The mean HDDS for the survey households was 5.5 out of a possible 12, which means that the average household ate food from six of

Table 4.3 HFIAP scores by household type, size and income

	Food insecure (percent)			Food secure (percent)	N
	Severe	Moderate	Mild		
Household type:					
Female-headed	64	27	4	5	291
Other households	56	27	8	9	257
Household size:					
1–5	59	26	7	8	345
6–10	58	31	5	7	178
>10	88	4	0	8	25
Income terciles:					
Lowest	78	21	1	1	143
Middle	64	28	4	4	159
Highest	44	34	11	11	150

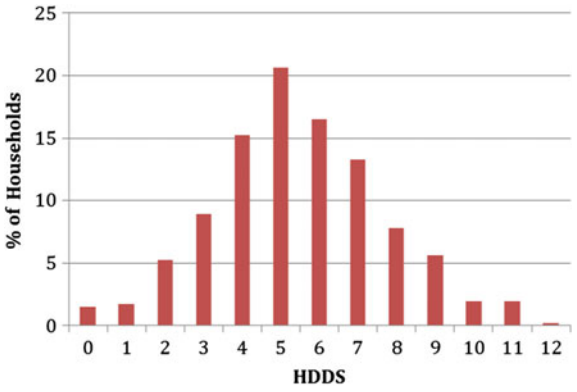

Fig. 4.3 Distribution of dietary diversity scores

the twelve major African food groups in the day prior to the survey. In total, over half of the households (53 %) ate from 5 or fewer food groups (Fig. 4.3). The food groups that the majority of households ate from included cereals (primarily maize) (96 %), sugars (80 %), oils and fats (61 %), and roots and tubers (mainly potatoes) (53 %). Over 40 % had eaten vegetables and meat or poultry but, in general, the diet is not particularly diverse and is heavy in fats, sugars, and starch.

Questions about household responses to food insecurity provided further insights into food availability, dietary quality and the satisfaction of food preferences. Over the previous month, around half of the households (51 %) had sometimes/often worried that the household would not have enough food. To what extent does worrying about the lack of food translate into actually going without? One-third, reported that the household had sometimes/often had no food to eat of any kind because of a lack of resources. Around 20 % said the household had sometimes/often gone to bed hungry and 16 % that it had gone a whole day and night without food. The majority of households were dissatisfied with the quality of their diet. For example, 58 % said that the household had sometimes/often eaten a limited variety of foods due to a lack of resources. An even higher number (64 %) said that the household members were sometimes/often unable to eat the kinds of foods they preferred because of a lack of resources. Finally, 60 % had sometimes/often eaten foods that they really did not want to because of a lack of resources to obtain preferred food.

4.4 Sources of Food

Virtually all households in Msunduzi purchase the food that they consume which means that there is a strong relationship between food security and household income. What distinguishes Msunduzi from many other cities, however, is the extraordinary high levels of reliance on supermarkets, especially compared with the informal food economy. Msunduzi has an extremely high concentration of

supermarkets for a city of its size. A 2010 study of the supermarket sector showed that all of the major South African chains are well-represented: Pick n Pay (3 outlets), Shoprite (4), Spar (7), and Woolworths (4) (Naidoo et al. 2010). A local company, Save Cash and Carry, also has two supermarkets. The supermarkets are integrated into centralised procurement and distribution systems, generally sourcing their produce via company Distribution Centres in Msunduzi or Durban, rather than from local producers. Some Spar and Save Cash and Carry outlets do source fresh produce from local white-owned commercial farms and the Mkondeni Municipality Market. There is little evidence that rural smallholders supply any of the produce sold in supermarkets. None of the major supermarkets are located in poorer urban neighbourhoods.

Despite the lack of proximity of supermarkets, they still constitute the major source of food for poor households. In the eleven cities surveyed by AFSUN, 79 % of households normally purchase some of their food direct from supermarkets (Crush and Frayne 2011b). In Msunduzi, the equivalent figure is 97 %, or almost every poor household regardless of type, income, size or degree of food insecurity. Only 40 % of Msunduzi households source food from smaller retail outlets (compared to 68 % for the sample as a whole) which suggests that the supermarkets may be having a significant negative impact on the viability of the small independent food retail sector.

Three quarters of the households source food from supermarkets on a monthly basis which tends to coincide with the payment of social grants and monthly wages. In an increasing number of South African cities, social grants are actually paid out at supermarkets. The monthly pattern of patronage suggests that households primarily obtain non-perishable items and staples in bulk at supermarkets. The 20 % of households who shop at supermarkets at least once per week are probably buying meat, chicken and vegetables. In comparison to most other cities, where poor households rely on the informal food economy for their daily food needs, the Msunduzi households have amongst the lowest rates of patronage of informal sources in the region. Some 42 % of households in Msunduzi regularly source food from the informal economy, for example, compared with 72 % for the region as a whole. The small size of the informal economy in Msunduzi, and its concentration outside residential areas, is clearly a major factor explaining the low patronage pattern.

Urban agriculture has been consistently advocated as a way of ensuring greater food security for poor households in South African cities (Crush et al. 2011b). In Msunduzi, this argument is premised on the belief that newcomers have rural farming skills which can be used to good effect in the city (RUAF 2007). Furthermore, some claim that "the land constraint is much less than in other large urban centres in South Africa. Individual households in most cases have some land available around their houses for cultivation" (Njokwe and McCosh 2005, p. 4). Despite these optimistic views about the potential role of urban agriculture, the AFSUN survey actually found that urban agriculture was insignificant in the poorer areas of Msunduzi.

First, only a minority of households were using their supposed agricultural skills and available land to engage in food production. While 30 % of households said that they eat food that they have grown themselves during the course of the year, only 14 % said they do so on a regular basis (at least once per week) and just 11 % cited urban agriculture as a regular food source. Second, of those growing food, the vast majority were doing so in their own gardens. There is very little of the kind of field agriculture on public and private open space seen in cities such as Harare and Lusaka (Mutonodzo 2009; Simatele and Binns 2008). Third, there is virtually no household agricultural production for sale in Msunduzi.

There is a growing literature which emphasizes the importance of ongoing informal rural-urban links and their role in providing food for urban residents (Frayne 2010). AFSUN found that in many cities, informal food transfers are an important "pathway" for urban households to access food. These transfers are primarily from rural areas where relatives still live and farm or from other urban areas where they live and work. Rural-urban transfers of food turned out to be far more important than urban-urban transfers. However, the volume of these informal food transfers, the frequency with which they occur and the types of produce transferred varied considerably from city to city.

In some cities, such as Windhoek, Lusaka, and Harare, over 40 % of households surveyed receive food from outside the city. In these cities, virtually all of the transfers are from the rural areas. In the case of the three South African cities in the survey the proportion of households receiving food transfers is very much lower (less than 25 % in Johannesburg, Cape Town, and Msunduzi). There are at least two reasons for the lower South African figures. First, South Africa is easily the most urbanized of all the countries and many urbanites have tenuous links with the rural areas. Second, rural agriculture by smallholders in South Africa is in an advanced state of disintegration. Rural families do not produce enough to feed themselves, let alone send food to relatives in the towns.

Just 24 % of the surveyed households in Msunduzi receive food from family and friends outside the city but where does the food come from, how often is it sent and do the transfers improve dietary diversity and alleviate food insecurity? Despite Msunduzi's location in one of South Africa's more rural provinces, only 4 % of households had received food from relatives and friends in the rural areas in the previous year. In other words, informal rural-urban food transfers are virtually non-existent. The other 20 % received transfers not from the rural areas but from family and friends living in other urban areas. This does point to an interesting phenomenon requiring further research in a rapidly urbanizing society: that is, the existence of informal food networks linking cities and households in different cities. The kinds of foods transferred tended to conform to the main food groups already eaten in Msunduzi—cereals, potatoes, meat and poultry, and vegetables. In other words, the food is transferred primarily to make up for shortfalls in the existing food basket rather than diversifying or improving the quality of the diet.

4.5 Conclusion

Msunduzi is a city in which there is plenty of food but the majority of the urban poor have little food choice and regularly go hungry. Nearly 90 % of households were found to be severely or moderately food insecure. One-third of the households reported that they sometimes or often have no food to eat of any kind. The situation was just as bad on other indicators: nearly 60 % eat a limited variety of foods due to a lack of resources and eat smaller meals than they need. Nearly half cut back on the number of meals for the same reason. Dietary diversity is also extremely low. Household size did not make a great deal of difference to levels of insecurity but female-centred households are more food insecure than other households.

For female-centred households, the fundamental food insecurity determinants include income and employment. In the short term, the role of the social protection system is very significant. The Msunduzi study found a large number of households were accessing social grants and that these even served as the sole source of cash income for some. While this illustrates the importance of social grants for the survival of poor households, one can ask why this particular strategy cannot guarantee food security? Part of the reason for this is that the amounts paid out in social grants are relatively small and insufficient to meet all of the competing draws on limited household income. They may take the edge off hunger but they do not eliminate food insecurity.

Msunduzi is a classic case of a city whose food supply system is dominated by modern supermarket supply chains. The informal food economy is relatively small, urban agriculture is not especially significant in the city and informal rural-urban food transfers are lower than in many other cities. In this respect, Msunduzi offers other African cities a picture of their own future. Supermarket expansion is occurring at an extremely rapid rate throughout Southern Africa, tying urban spaces and populations into global, regional and national supply chains. While supermarkets offer greater variety and fresher produce than many other outlets, they clearly do not meet the needs of the poor. Their pricing structures and profit margins are such that poor households in Msunduzi tend to patronise them only on payday and social grants day when they buy staples in bulk. However, unlike in other cities, with vibrant informal food systems that make food more accessible to the urban poor on a daily basis, Msunduzi's 'food deserts' are notable for the relative absence of informal food sources. In this respect, they more closely resemble the food deserts of Europe and North America (Battersby 2012).

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Chapter 5
Rapid Economic Growth and Urban Food Insecurity

Benjamin Acquah, Stephen Kapunda and Alexander Legwegoh

Abstract Research on food security in Botswana has mainly focused on the country's rural areas. Much less is known about the extent and nature of food insecurity in the country's cities and towns. This makes it difficult for development practitioners and policy makers to quantify the challenge and make plans to reduce the food gap that exists in urban areas. In an effort to understand the extent and determinants of food insecurity in Gaborone, AFSUN undertook a baseline study of 400 households drawn from Old Naledi, White City/Bontleng and Broadhurst. Levels of food insecurity in these areas of Gaborone were high and, despite the economic health of Botswana compared to other SADC countries, no better than in many other cities. Only 12 % of households were completely food secure while 62 % were severely food insecure. Food insecurity is endemic in the poorer parts of Gaborone and Botswana's 'economic miracle' is clearly not reaching many of these households.

Keywords Botswana · Food insecurity · Gaborone · Urban · Rural

5.1 Introduction

Botswana has had high and sustained rates of economic growth for the past five decades and is generally considered to be one the best economic performers in Sub-Saharan Africa (IMF 2012). The last decade has seen a significant fall in the incidence of poverty, with the absolute number of persons living below the poverty line declining from 500,000 in 2002/3 to about 373,000 in 2009/10. Despite these positive economic indicators, unemployment levels have remained stubbornly high, the incidence of urban poverty has increased over the last decade and income

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Table 5.1 Growth of population in urban settlements: 1964–2001

	1964	1971	1981	1991	2001	2011
No. of urban places	3	5	8	25	34	n/a
Total urban	20,989	54,300	166,400	600,100	909,800	1,243,320
Total population	57,494	596,900	941,000	1,326,800	1,680,900	2,038,228
% Urban	3.8	9.1	17.7	45.2	54.1	61.0

Source Central Statistics Office (CSO)

inequality is growing (Selolwane 2012). This chapter examines how Botswana's record of economic growth and growing inequality has affected the food security of the urban poor.

Much of the research on food security in Botswana has focused on the country's rural areas. In contrast, little is known about the extent and nature of food insecurity in the country's cities and towns. This makes it difficult for development practitioners and policy makers to quantify the challenge and make plans to reduce the food gap that exists in urban areas. Botswana is one of the most rapidly-urbanizing countries in Africa (Cavrić and Keiner 2006; Gwebu 2012; Ritsema 2010). Between independence in 1966 and 2011, the proportion of the population living in urban areas increased from 5 to 61 % (Table 5.1). The percentage of the national population residing in Gaborone and its adjacent satellite communities grew from 15 % in 1981 to 25 % in 2011.

Gaborone has witnessed extensive public and private investment in the last decade, which has resulted in opportunities for wage employment and a modern lifestyle, with shopping malls, business districts, service industries, and other facilities. The city's rapid growth stems largely from migration from rural areas where harsh agrarian conditions, recurrent drought and agricultural failure have caused people to depend increasingly on remittances for survival (Campbell 2008, 2010). One in every four persons in Botswana now resides within the Gaborone subsystem of settlements. In the same period, agriculture dropped from being the primary contributor to GDP, to current levels of under 3 %. In Botswana, recurring droughts and changes in rain patterns believed to be caused by climate change, coupled with low productivity of the subsistence farming sector, have contributed to large cereal/food deficits. Botswana depends heavily on neighbouring South Africa for food imports making the purchase of foodstuffs inevitable. The question of whether economic growth and rapid urbanization is leading to greater or reduced food insecurity is therefore a critical one.

5.2 Survey Methodology

In an effort to understand the extent and determinants of food insecurity in Gaborone, the African Food Security Urban Network (AFSUN) undertook a baseline study in October 2008 of a sample of 400 households drawn from three of

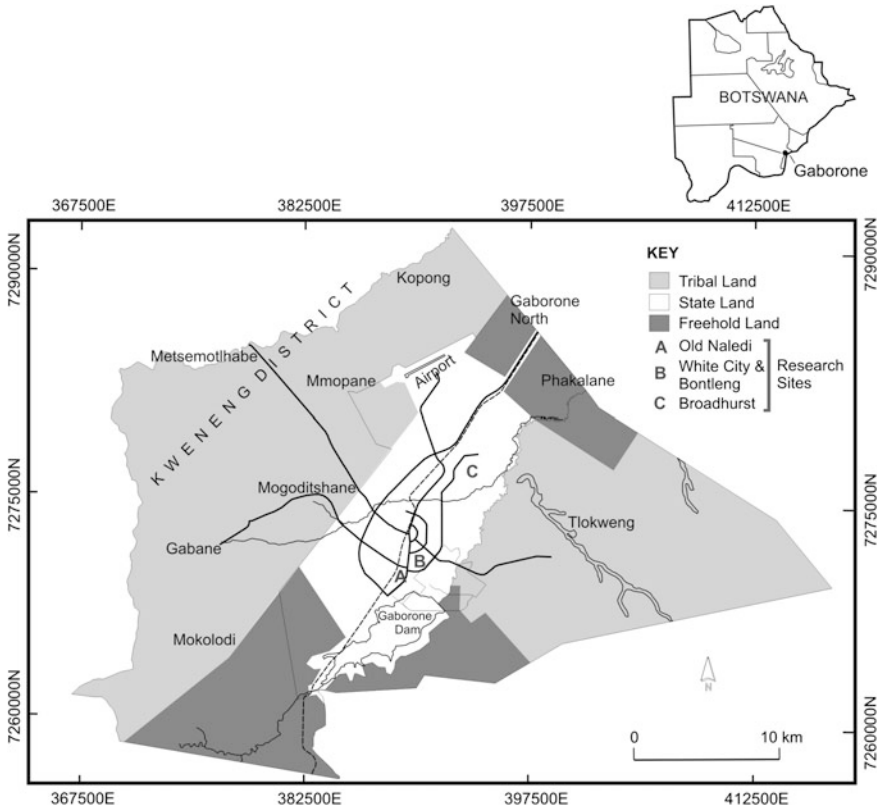

Fig. 5.1 Location of survey sites, Gaborone

Gaborone's poorer areas: Old Naledi (150 households), White City/Bontleng (125 households), and Broadhurst (125 households) (Fig. 5.1). Old Naledi is a low-income "congested, overcrowded settlement" located south of the city adjacent to the north-south railway line. The White City/Bontleng area is immediately south of and was planned as low- and medium-income areas with running water, tarred/gravel roads, and a sewer system. Following upgrading, the areas have also received the excess population from Old Naledi. Broadhurst is located to the north of the city and has similar characteristics to Bontleng/White City with a mix of low- and some medium-income households. Systematic random sampling was used to select households for interviews in each site.

5.3 Household Profile

The average size of the surveyed households was only 3.0. The 2006 Botswana Demographic Survey found that the average size of Gaborone households was 3.3 (and the national average was 4.2) (CSO 2009). In other words, poor urban households in Gaborone tend to be smaller than average. Second, these poorer areas of Gaborone have a large proportion of female-centred households (47 %) and male-centred households (23 %) and much smaller numbers of nuclear and extended family households. Most of the heads of male- and female-centred households were single. The low rates of marriage are consistent with broader trends in Botswana: marriage rates have been steadily declining in recent decades and only 31 % of all household heads in the country were married in 2001 (Mookodi 2004). The total population of the sampled households was relatively young, with 23 % under the age of 15 and 64 % under the age of 30. This may reflect the practice in Botswana of parents working in the urban areas and leaving their children in the care of grandparents and other relatives in the rural areas. However, the number of children in the sample was still relatively high.

The educational levels of the sampled population were generally low. For example, 61 % of adult household members only had a primary school education or lower. Another 12 % had completed high school and 9 % had a post-secondary qualification. The generally low educational attainment of the population tends to relegate them to lower-skilled, lower-paying jobs, or to unemployment. The survey found that 62 % of adults in these poorer areas of Gaborone were unemployed (Table 5.2). Among the sample, 26 % were in full-time employment and 11 % were employed part-time. Unemployment was higher among women than men (at 69 and 57 % respectively). Just over half of the surveyed households (51 %) receive income from wage work and 24 % from casual work (Table 5.3). Other minor sources of income include rent (10 %), informal business (8 %), formal business (8 %), and social grants (6 %). Remittances (from household members working on Botswana's diamond mines) are received by 8 % of households. The proportion of households that receive income from the sale of urban farm products is less than one percent.

The majority of the household residents were internal migrants. Only 28 % of the household members were born in urban areas (23 % in Gaborone itself and 5 % in another urban area). Gaborone had the highest number of migrant households

Table 5.2 Employment status by sex

	Male (%)	Female (%)	Total (%)
Working full-time	32	21	26
Working part-time/casual	12	10	11
Not working—looking	13	19	15
Not working—not looking	44	50	47

Table 5.3 Sources of income by household type

	All (% of households)	Female-centred (% of households)	Male-centred (% of households)	Nuclear (% of households)	Extended (% of households)
Wage work	51	43	56	80	45
Casual work	24	25	22	24	15
Rent	10	9	8	13	15
Formal business	8	9	6	9	12
Informal business	8	7	7	15	3
Remittances	8	10	7	4	15
Social grants	6	8	2	3	6
Gifts	5	8	6	1	3
Aid	2	4	2	1	9
Urban agriculture	<1	<1	0	0	0
N	379	188	90	78	33
Average monthly income		P 1674	P 2403	P 2813	P 2733

(that is, households in which every member was born outside the city) at 67 % and the lowest number of non-migrant households (5 %) of all cities surveyed by AFSUN.

The most important finding from a food security perspective is that 80 % of nuclear households earn wage income compared with 56 % of male-centred households and only 43 % of female-centred households (Table 5.3). More nuclear households are also involved in formal and informal businesses, usually run by the female spouse or partner (28 % vs. 16 % of female-centred households). As a result, nuclear households have the highest average incomes (at P 2813 per month), followed by extended family households (P 2733 per month), and male-centred households (P 2403 per month). Female-centred households earn considerably less on average than the other types of household (P 1674 per month).

5.4 Levels of Food Insecurity

Levels of food insecurity in Gaborone were high and, despite the economic health of Botswana compared to other SADC countries, no better than in many other cities. The Household Food Insecurity Access Score (HFIAS) for Gaborone was 10.8, comparable to the poorer areas of Cape Town but higher (indicating greater levels of food insecurity) than cities such as Maputo, Windhoek, Blantyre, and Johannesburg. The Household Food Insecurity Access Prevalence (HFIAP)

Table 5.4 Levels of food insecurity by type of household levels by type of household

	Female-centred (%)	Male-centred (%)	Nuclear (%)	Extended (%)	Total (%)
Food secure	13	12	13	3	12
Mildly food insecure	4	4	15	7	7
Moderately food insecure	13	22	15	24	19
Severely food insecure	64	61	57	66	62

indicator found that only 12 % of households were completely food secure, with 7 % mildly food insecure, 19 % moderately food insecure, and 62 % severely food insecure (Table 5.4). Food insecurity therefore appears to be endemic in the poorer parts of Gaborone. Botswana's 'economic miracle' is clearly not reaching many of these households.

Female-centred households were not significantly more food insecure than other types of household, as they are in many other SADC cities (Dodson et al. 2012). Given the lower rates of participation in the formal economy, the relegation of many women to the lower end of the labour market, and the fact that the average incomes of these households are well below those of other types of household, this was a surprising finding. There are two possible explanations: first, the food-secure female-centred households could be headed by white-collar workers with a regular wage. For example, the maximum household income among the female-centred household group was P 12,050 per month, which is more than five times the average. A second explanation is that women heads of households prioritize food expenditures and therefore spend a greater proportion of their income on food. There is some evidence from the survey to support this proposition. For example, in female-centred households, 39 % of total household expenditure is on food, compared with 32 % in male-centred households, and 27 % in extended households.

Several recent studies of nutrition and dietary diversity among the elderly and youth in urban and rural settings in Botswana have shown a recurrent pattern of poor dietary diversity among the most vulnerable groups in society (Clausen et al. 2005; Maruapula and Chapman-Novakofski 2006; Maruapula et al. 2011). Specific studies of groups of urban poor in Gaborone confirm that dietary diversity is extremely low with negative nutritional outcomes. For example, one study of 522 young children in Gaborone found that 11 % were stunted and 14 % were wasted. Stunting and wasting ranged from 9 and 4 % in middle- and high-income neighbourhoods to 18 and 21 % in low-income neighbourhoods, respectively (Nnyepi 2007).

The mean Household Dietary Diversity Score (HDDS) for the Gaborone households was 6.5 out of 12. This indicates relatively low dietary diversity, although there is some variation. For example, while 32 % had a score of 5 or lower, 37 % scored 7 or more. The composition of household dietary scores is also important to note as the most popular food groups included cereals (consumed by

97 % of households), other foods such as tea, coffee, and condiments (76 %), sugar or honey (73 %), animal protein (66 %), vegetables (65 %), and foods made with oil, fat or butter (63 %). Compared with other cities surveyed by AFSUN, there was a relatively high consumption of meat and vegetables which is attributable to the traditional Batswana staple meal of maize meal, vegetable relish, and beef. Particularly concerning was the high consumption of sugar and oil which, when combined with high cereal and beef consumption, could explain why nearly 40 % of the population is overweight, 16 % are obese, and 16 % have raised blood pressure (Botswana Ministry of Health 2007).

5.5 Urban Food Sources

Botswana's proximity to South Africa has meant that it is increasingly integrated into the supermarket-driven food supply chains that dominate that country's food retail sector. Southern Africa's "supermarket revolution" has transformed the way in which urban (and rural) residents of Botswana source their food (Crush and Frayne 2011). Supermarkets have expanded in Botswana over the past 30 years, a growth driven by a rapidly increasing urban population, a growing middle-class and a favourable economic and political climate for investment including trade liberalization and stable democracy (Emongor and Kirsten 2009). Supermarkets handle around 50–60 % of food retail in cities and major urban villages in Botswana. Within Gaborone, supermarkets are scattered around the city and are accessible to most urban consumers. There are two main types of supermarkets. First, there are the major South African supermarket chains (such as Shoprite, Spar and Woolworths) that have become increasingly well-established in Gaborone's urban food market. Second, there are smaller, locally-owned supermarkets that tend to target poorer areas of the city. Some Gaborone-based supermarket chains have been expanding to towns outside the capital. In a recent reversal of the trend of supermarket expansion from South Africa to other African countries, one of these chains (Choppies) has been opening stores in South Africa.

Supermarkets sell a variety of perishable and non-perishable products, including maize meal, sugar, flour, and milk, at significantly lower costs than most other food outlets within Gaborone (Lane et al. 2012). Low-income households take advantage of the central role that supermarkets play in the food system, using them to purchase large quantities of staple foods. Supermarkets have also increased the availability of highly-processed foods, which poses dietary concerns especially given growing evidence of a nutrition transition and the co-existence of diet-related disease and obesity. The AFSUN survey found that supermarkets are easily the most important food source for the urban poor in Gaborone (Table 5.5), with 92 % of households using them as a normal food source. As many as 73 % of households had also purchased food at supermarkets in the week prior to the survey. One-third of the households said they buy from supermarkets at least once per week. Another two-thirds shop there at least once per month. Only 4 % of households never shop

Table 5.5 Sources of food

	Normal source (% of households)	In previous week (% of households)
Supermarkets	92	73
Small outlets	54	52
Informal food economy	29	23
Urban agriculture	5	2
Food aid	5	5
Food remittances	4	4
Sharing meals with neighbours/other households	21	16
Food from neighbours/other households	21	18
Borrow food from others	4	3

at supermarkets. Supermarkets are a more important food source in Gaborone than in any other city in the AFSUN survey, including the three South African cities (Crush and Frayne 2011).

According to the Central Statistics Office, the informal economy in Gaborone has been expanding quickly in recent years (CSO 2009). The CSO's Informal Sector Survey estimated the total number of informal enterprises in Botswana at 44,000 in 2007, an increase of 54 % since the 1999 Survey. Gaborone had a larger share of the enterprises than any other part of the country (around 11,000 or 23 % of the total). On the other hand, another study has suggested that the presence of South African supermarkets and the absence of a supportive policy environment means that the informal economy in Botswana is neither large nor flourishing (Obasi et al. 2008).

The AFSUN survey found that the informal food economy is relatively unimportant for the majority of poor urban households. Only 29 % of the households said they normally obtained food from informal sources and just 23 % had done so in the previous week. Most of this is consumption of cooked street food during the day. As many as 71 % of the households never obtain food from informal sources. The informal food economy and small retail outlets were far less important in Gaborone than in most other cities. Around half the households obtained food from this source on a regular basis, compared with a regional average of 68 %. As many as 43 % of Gaborone households never obtain food from small outlets.

The Botswana Ministry of Agriculture encourages urban and peri-urban agriculture initiatives as a policy strategy for ensuring urban food security in an era of rapid urbanization, economic decline, urban poverty, and HIV and AIDS (Madisa and Assefa 2011). Empirical studies from Gaborone have highlighted the challenging environmental conditions that limit agricultural production, with urban and peri-urban agriculture offering limited prospects for the urban poor (Hovorka 2006). On the other hand, well-educated middle-income entrepreneurs involved mainly in poultry farming do generate foodstuffs for the urban market. These entrepreneurs are adept at taking advantage of government funding schemes and land tenure

policy in Gaborone, creating productive agricultural ventures. The potential for urban agriculture to address food insecurity can be overemphasized, given its limited share in income and overall agricultural production. The insignificance of urban agriculture as an income source for Gaborone's urban poor is clear. Urban agriculture is also unimportant as a household food source for the urban poor. Only 4 % of households consume some home-grown produce during the course of the year.

The AFSUN survey found that rural-urban food transfers are not particularly significant in Gaborone, and certainly nowhere near as important as in cities such as Windhoek, Harare, and Lusaka (Frayne 2010). Three-quarters of the households never receive food transfers from outside Gaborone. However, food transfers do assist a minority of households to deal with the challenge of food insecurity. A total of 16 % of households regularly receive transfers from rural areas, 4 % receive food from other urban centres and 3 % receive food from both. Nuclear households tend to have the strongest links in terms of rural-urban transfers (29 %) and female-centred households the weakest (16 %). The most common types of food transferred are peas, beans and nuts, cereals, and vegetables.

A minority rely on other households to meet some of their food needs. For example, 21 % said they share meals with, or receive food from, neighbours and/or relatives. Just over 15 % had done so in the week prior to the survey. However, nearly 80 % of households never obtain food this way. Food borrowing, food aid, and food remittances contribute to less than 5 % of households.

5.6 Conclusion

The survey results show that not everyone is benefitting from Botswana's strong and growing economy and that many of the urban poor in Gaborone experience extremely high levels of food insecurity. The survey collected data on a broad range of issues that affect household food insecurity and illustrates how in Gaborone, a relatively wealthy city, a high number of households are food insecure. Approximately four out of five households in the survey reported severe or moderate food insecurity. In contrast, only 18 % were either food secure or mildly food insecure. Income level is a particularly important determinant of food insecurity as most households access food from the marketplace rather than grow their own. The data show a significant correlation between household income and food security, with the poorest households being most severely affected by food insecurity.

The pace of urbanization in Botswana is unlikely to decline, particularly in view of the country's post-independence history of temporary and semi-permanent movement off the land and given the continued expansion of the formal-sector economy. People will continue to migrate to towns in increasing numbers. The short- and long-term impacts of chronic food insecurity on Gaborone's population are likely to be considerable unless this problem is urgently addressed. The problem is largely invisible because there appears to be no shortage of food in the shops and

on the streets of this booming city. The challenge is not one of food supply but food accessibility and food quality. Around Gaborone, all neighbourhoods (both high and low income), are well serviced with food access points. Malls have become a defining characteristic of the city and most include several supermarkets. Complementing the supermarkets are general provision stores (cash and carry), stores at filling stations, fast-food chains, restaurants, and street vendors. While sufficient food is available at these diverse access points, the major issue is affordability and, more specifically, affordability of nutritious foods.

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Chapter 6
Food Insecurity, Poverty and Informality

Inês Raimundo, Jonathan Crush and Wade Pendleton

Abstract Although Mozambique has one of Africa's fastest growing formal economies, its informal economy has remained extremely dynamic and resilient. This is particularly evident in the capital, Maputo where over 75 % of the economically-active population are estimated to be in informal employment. The informal sector plays a critical role in the urban food system of Maputo and is the major supplier of food to households in Maputo's poverty belt, where the majority of the population lives. This chapter therefore focuses on the relationship between the levels of household food insecurity in Maputo and the informal food system. Using data from AFSUN's baseline survey in the city, the chapter demonstrates that the poverty belt is characterised by high levels of food insecurity but that the informal economy plays a critical role in making food accessible to poor urban households. Without the ability to access food from informal sources, households would be significantly worse off than they already are.

Keywords Mozambique · Maputo · Food insecurity · Informal sector · Poverty

6.1 Introduction

In February 2008, there was widespread rioting on the streets of Maputo. Minivan taxis (or *chapas*) were the first to be attacked by protestors, leading some to blame the riots on the rising costs of transport (Sumich 2010). Subsequent analyses have

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re-labelled them "food riots" and part of a general global protest movement that shook the streets of many cities across the Global South in the wake of escalating food prices on international, regional and local markets (Berazneva and Lee 2013; Hanlon 2009). Whether or not increased food prices were the direct cause of the protests, poor households throughout Maputo were severely impacted by food price escalation in 2008. If there is some dispute about whether the 2008 unrest was "transport riots" or "food riots", no such ambiguity surrounds a second wave of protests in September 2010.

The protests followed an announcement that the government was withdrawing its subsidy on imported wheat and that, as a result, the price of a loaf of bread would immediately increase by 25 %. The announcement coincided with sharp increases in the cost of other basic needs such as water and fuel. Following several days of rioting, the government reversed its position and maintained the subsidy. One study of participation in the riots notes that no group in the poor areas of the city absented themselves from taking part (Bertelsen 2013). Given the high levels of poverty and food insecurity in the city's informal *bairros* (wards), the high proportion of meagre household income that is spent on food purchase and the reliance on a small number of staples (including bread) in the daily diet, broad reaction to sudden food price increases is hardly surprising.

A recent study of Maputo's urban landscape divides the city into two major zones: "the city of cement" (the CBD) and the "poverty belt" (the poorer neighbourhoods and the peri-urban districts) (Barros et al. 2014). About three-quarters of Maputo's population live in informal *bairros* (wards) in the poverty belt. Although these *bairros* share certain general characteristics, including overcrowding, inadequate services and high levels of informal economic activity, they vary in character and appearance. For example, most of the more central *bairros* are "congested and hectic, with overpopulated houses, narrow alleyways and filled with small shops, markets, vendors, repair-shops, bars and other institutions" and a large number of people who rent houses or rooms to be closer to the city centre (Paulo et al. 2007, p. 29). In less dense, peri-urban *bairros*, there is less congestion, a more orderly arrangement of housing, fewer commercial activities and people tend to leave during the day to work or seek work elsewhere. In all semi-formal and informal *bairros*, the poorest and most destitute live in rural "stick houses" or corrugated iron shacks (Paulo et al. 2007, p. 56).

Several recent studies have shed light on different facets of the struggle for survival in the city's informal *bairros*. These include studies of household poverty (Paulo et al. 2011), housing and land access (Raimundo and Raimundo 2012), water supply (Ahlers et al. 2013; Carolini 2012; Matsinhe et al. 2008; Schwartz et al. 2015; Zuin et al. 2014), waste-picking (Allen and Jossias 2011), and informal enterprise (Byiers 2008, 2009; Dana and Gailbraith 2006). While these studies provide useful background for understanding the dynamics of poverty in Maputo, none explicitly focuses on the dimensions and determinants of food security. One exception is a study of the nutritional status of children and youth in the city published in 2003 using longitudinal anthropometric data from the 1990s (Prista et al. 2003). The study collected data on over 2000 schoolchildren and found that

the primary nutritional deficiency was wasting (low weight for height), while rates of stunting (low height for age) had fallen significantly over the decade and rates of overweight had increased. Wasting and stunting were more prevalent amongst children of lower socio-economic status. The study did not relate the nutritional status of children to household characteristics and did not identify where and how children accessed food.

This chapter focuses on the relationship between food security and informality in Maputo's poverty belt. The first section examines the nature and importance of the informal food economy to households in the belt. The next two sections examine household engagement with the informal food economy at two levels based on the results of AFSUN's 2008 baseline survey of the city. First, urban households in the poverty belt are consumers and patrons of the informal food economy, sourcing many of their foodstuffs from informal markets and vendors. Second, some poor urban households participate in the informal food economy and earn income from activity as informal producers and retailers. Both of these forms of participation—as consumers and participants—impact upon the food security of households in the poverty belt.

6.2 Maputo's Informal Food Economy

Although Mozambique has one of the fastest growing formal economies in Africa, its informal economy has proven extremely dynamic and resilient. The Ministry of Planning and Development, for example, estimated that informal activity represented 40 % of GDP in 2004 (Byiers 2008, p. 6). In 2005, 75 % of the economically active population was estimated to be informally employed in Mozambique. Paulo et al. (2007) found that 70 % of Maputo households were involved in some form of informal economic activity and that 64 % of jobs were in the informal economy. The involvement was significantly higher in female-headed households (86 %) than male-headed households (62 %).

A number of studies have highlighted the heterogeneity of Maputo's informal economy (Cappiello 2008; Dana and Gailbraith 2006). The most common types of activity are the sale of products such as foodstuffs and consumer goods. Common types of informal activity include the sale of water, production of building material and furniture, garbage picking, selling cell phone airtime, the sale of charcoal and home brewing (Bhatt 2014; Brooks 2010; Brouwer 2010; Ericsson and Brooks 2015; Matsinhe et al. 2008). The most profitable activities include hairdressing, the sale of second-hand clothes, and traditional medicine. Many are also involved in *desenrascar* (literally "finding a way out") which involves everything from small-scale repairs to

illicit activities such as petty theft and sex work. One description of informality in Maputo captures elements of the dynamic character of the sector:

> Street commerce has burgeoned all over the city. *Dumba-nengues* [concentrations of informal traders] mushroomed, and some grew to engulf entire neighbourhoods. This proliferation has all but choked the more traditional forms of small-scale commerce – by the turn of the century, many of Maputo's formal marketplaces lay dormant, surrounded by the swarming hives of street commerce. In the process of growth, some of the street commerce has become stationary and formalized through the city's attempts to tax and regulate it; much of it, however, has remained mobile, affording an easy point of entry into the urban economy for workers with the lowest level of financial and human capital. Hence, despite the status and income disadvantage of street commerce relative to other forms of urban employment, this sector itself is internally stratified, with stationary commerce (in make-shift kiosks or stands) commanding higher prestige and income than mobile vending (Agadjanian 2005, p. 259).

Conventionally, women have dominated the informal economy but unemployed men have a growing presence, although they tend to view participation as a "stop-gap" on the road to wage employment (Agadjanian 2005; Bertelsen et al. 2014; Monteiro 2002; Peberdy and Crush 2001).

In Maputo, the municipal authorities have traditionally adopted a relatively tolerant approach to the informal economy, primarily because it does provide a livelihood to so many and because of the unrest likely to be generated by an assault on informality. Maputo has experienced two rounds of food and fuel riots in recent years (in 2008 and 2010) and any activity that increases access and cheapens the cost of food is unlikely to be tampered with. While the informal economy has been subject to periodic harassment, it is generally viewed within official circles as an important and sustainable source of livelihood for the urban poor. However, as one study points out the state is "not universally tolerant of informal activities" and has "embraced a modernizing agenda, aimed at promoting formalization" (Dibben et al. 2015).

The policy aim is not to eliminate informality but to "discourage" illegality through registration and formalization. To date, informal entrepreneurs have been largely resistant to such efforts which are simply seen as a money grab by the government (Kaufmann and Parlmeyer 2006; Krause et al. 2010). The vast majority (80 %) of firms in a 2005 survey had no kind of documentation and are officially "illegal" (Byiers 2008). According to Byiers (2009), "it is important to understand why greater formalization might be desirable. While the government tends to focus on raising revenues, where micro informal firms are concerned, the benefit from formalization is more likely to be the secondary effects of allowing enterprises to operate legitimately, and thus potentially raising their productivity and ability to integrate more deeply with the national economy."

Much informal activity, particularly in the food sector, takes place in and around municipal markets. There are four different classes of marketplace in the city. Class A and B markets are provided with infrastructure (including toilets and drainage) while Class C markets are not. Class D markets are more informal and are not acknowledged as such. In 2008/2009, there were 6 Class A, 7 Class B, 27 Class C, and 23 Class D markets in Maputo (Ulset 2010, pp. 68–69). Many stands in the markets remain unoccupied. As Ulset (2010, pp. 68–69) has noted: "What they say in Maputo is that there are thousands of spaces available in the legal

official municipal markets which are not being taken up. People don't do this because if they move into the markets they will have to pay taxes. All these people would prefer to sell their stuff on the pavements." However, those selling on the streets are also taxed, but at lower rates.

One of Maputo's major informal markets—Xikhelene—has been 'upgraded' which has involved forcing vendors to rent new stands and eliminated all associated street trading on the streets around the market (Ulset 2010). Before 2009, Xikhelene was a typical Class D market with several thousand static and mobile vendors selling a wide variety of goods and services including fruit, vegetables, fish, meat, live poultry, cellphone services, new and second-hand clothes, groceries, sweets, spices, soft drinks, alcoholic drinks, traditional medicine, equipment, and cosmetics (Ulset 2010, p. 72). Vendors obtained their supplies direct from the countryside or from other markets (such as the wholesale market in Zimpeto) or from shops and supermarkets, where they bought in bulk and sold in smaller units. Every day, trucks arrived at the market with goods in large quantities (such as frozen fish from Angola, bread from local bakeries, and fruit from South Africa) to sell to the vendors (Ulset 2010, pp. 73–74). In 2009, under the World Bank-funded ProMaputo upgrading project, two-thirds of the market was demolished to make way for a new transportation hub, causing considerable hardship and financial loss for the vendors (Ulset 2010, pp. 90–96).

The informal food economy is not confined to the markets and is particularly visible and extensive on the streets and in the *bairros* of Maputo. Tens of thousands of street vendors sell a range of fresh and processed food, often from the same stall. Most of the fresh fruit and vegetables and processed food (such as sweets and chips) are imported from South Africa. Within the *bairros*, many individual dwellings have small backyard stalls selling the same items in smaller quantities. A recent study of the central Mafalala *bairro* suggests that the purpose of these stalls (*bancas*) is not simply to generate income through food sales but to supplement the food available to the household (Stein 2012). The household sells food from the *banca* and consumes anything that it does not sell. Outside schools, where children do not receive any sustenance during the day, informal vendors sell a variety of products including candies, popcorn, chips, biscuits, badijas, and pop in smaller, affordable quantities. The absence of fresh produce is notable as is the fact that many of the backyard and school *bancas* are managed by children.

The most common type of small retail outlet is the *loja*, which is owned and operated by local retailers and carries a wide variety of consumer and household goods as well as fresh produce (Stein 2012, p. 59). In terms of food stocks, *lojas* specialize in non-perishables including canned goods and frozen fish and poultry. The majority of households in Maputo's poverty belt regularly obtain food from *lojas*, informal street vendors and markets, many on an almost daily basis. Daily purchasing is necessitated by unpredictable income flows and a lack of accumulated funds (Stein 2012, p. 75). Such "fragmentary purchasing" raises the unit cost per item and leads to higher household expenditures on food.

6.3 Food Security and Informal Food

This section of the chapter focuses on the state of food insecurity in Maputo's poverty belt and the role of the informal food economy as a food source for poor households. The data presented was collected as part of the eleven-city AFSUN baseline survey in 2008/09. The number of households selected for interview in each city district was proportional to the overall population of the district in 2007. Within each *bairro* in a district, the same number of households were randomly selected for interview. A total of 397 questionnaires were completed in 43 wards across the city. The Household Food Insecurity Access Score (HFIAS) for the surveyed households was 10.4, which is very close to the average for poor neighbourhoods in all eleven cities surveyed (10.3) (Coates et al. 2007).

Maputo's poor would appear to be less food insecure than those in many other cities surveyed (Crush and Frayne 2010). However, a different picture emerges when the Household Food Insecurity Access Prevalence (HFIAP) is used. First, only 5 % of the households were found to be completely food secure (well below the regional average of 15 %), which is one of the worst scores in the region (only Harare and Lusaka had a lower figure). Second, Maputo has the highest proportion of moderately food insecure households in the region (at 32 %, considerably higher than the regional average of 20 %). Third, Maputo has one of the lowest proportions of severely food insecure households in the region at 54 %, when in most other cities the proportion is 60–80 %. These findings suggest that Maputo has two basic kinds of food insecure household: half experiencing severe food insecurity and the other half in a state of chronic food insecurity.

To better understand what aspects of food insecurity most affect Maputo households, the answers to the individual HFIAS questions were disaggregated. As Table 6.1 shows, 56 % of household heads sometimes or often worried that the household would not have enough food to eat. And these worries seem justified for the 45–50 % that had sometimes or often responded by eating smaller meals or

Table 6.1 Responses to food insecurity

In the last month, did your household	% Sometimes/often
Not eat the kinds of foods you preferred because of a lack of resources?	62.2
Eat a limited variety of foods due to a lack of resources?	58.5
Worry that your household would not have enough food?	55.8
Eat foods you did not want to because of a lack of resources to obtain other types of food?	51.6
Eat smaller meals than you needed because there was not enough food?	46.7
Eat fewer meals in a day because there was not enough food?	45.0
Eat no food of any kind because of a lack of resources to obtain food?	20.9
Go to sleep hungry because there was not enough food?	16.5
Go a whole day and night without eating anything?	9.6

fewer meals in a day. There is also a group of extremely insecure households that sometimes/often have no food at all (21 %), in which household members go to sleep hungry (16 %) and go a whole day and night without eating (10 %). But the majority do not experience such critical shortages of food. Rather, it is the quality of what they eat that is their major concern with 62 % not eating preferred foods and 58 % eating a less varied diet due to a lack of resources.

The Maputo diet is dominated by the consumption of rice and bread. Rice has rapidly become more important than maize as a staple. Rice consumption in Mozambique as a whole increased dramatically after 2000. National consumption of rice more than doubled from 8 kg/person/year in 2000 to 21 kg/person/year in 2007. Consumption of fresh and frozen fish is relatively common, although much of the frozen fish is imported from Angola. Chicken is the most common other form of animal protein and beef is rarely eaten. Frozen chicken is imported from Brazil. A fairly wide variety of vegetables (including beans, squash, onions, cassava, and cabbage) are consumed but not in great quantities. The only fruits to feature in the average diet are coconuts and tomatoes. This might lead us to the conclusion that the diet of the Maputo poor is relatively diverse. In fact, around 60 % of households had not been able to eat the kinds of food they preferred and 52 % had eaten foods that they did not want to because of a lack of resources in the previous year.

6.4 Food Sourcing in the Poverty Belt

Across the Southern African region as a whole, over three-quarters of poor urban households normally source some of their food from supermarkets (Crush and Frayne 2011; Dakor 2012). The picture in Maputo is very different (Miller 2006) (Table 6.2). The number of supermarkets is currently small: just 14 % of the surveyed households said they normally obtain food there and only 2 % had been to a supermarket in the week prior to the survey. A total of 77 % of households said they never shop at supermarkets. Non-market sources of food also proved to be relatively unimportant in the poverty belt. Only 14 % of the households grow any of their own food and only 9 % had consumed home-grown produce in the week prior to the survey. Other relatively unimportant food sources (used by a small minority of households) included food remittances. Households that have migrant members in South Africa receive food remittances but only 7 % in total said they normally obtain food this way.

Various forms of informal social protection are relied on by a minority of households; for example, sharing meals with other households, obtaining food from other households or borrowing food, is less common (10–12 %). Regular use of these sources is even less common, suggesting that these sources are only called upon at times of crisis. Stein (2012, p. 82) argues that these coping mechanisms are in decline and that households are less willing or able to share with anyone outside the household: “The dissolution of these safety nets … points to a nuclearization of economic decisions which include food access strategies.” As a result, “the

Table 6.2 Household food sources

	Normal food source		Used source in previous week	
	No.	% of HH	No.	% of HH
Market sources				
Informal market/street food	244	61.5	232	58.4
Small food outlet	193	48.6	98	24.7
Supermarket	57	14.3	8	2.0
Non-market sources				
Grow it	56	14.1	37	9.3
Borrow food	49	12.3	22	5.5
Share meals with others	47	11.8	27	6.8
Food remittances	29	7.3	15	3.8
Food provided by others	26	6.5	15	3.8
Charitable sources				
Community food kitchen	1	0.2	1	0.2
Food aid	0	0.0	2	0.4

Note N = 397. More than one answer permitted

household comes to be the primary mediator of social coping and food access without the support or involvement of relatives and neighbours who were previously deemed crucial to these activities."

Patterns of patronage of various food purchasing sources vary considerably (Table 6.3). The small number of households who shop at supermarkets do so very infrequently. Those who shop at small outlets tend to obtain supplies there on a weekly (18 %) or monthly (60 %) basis. In sharp contrast, the informal food economy is used extremely frequently by households. Of the 249 households for which there were complete answers, 75 % said that they obtained food from

Table 6.3 Frequency of food purchase at different outlets

Frequency	Informal markets/street food (% of HH)	Small Shops (% of HH)	Supermarkets (% of HH)
At least five days per week	75.5	8.0	0.0
At least once per week	17.3	14.1	0.0
At least once per month	4.8	45.4	6.4
At least once per six months	0.0	8.4	2.0
Less than once per year	0.0	1.2	12.8
Never	2.4	22.9	77.2

informal sources "at least five days a week" and another 17 % "at least once a week." As Stein (2012) points out, daily purchasing is necessitated by unpredictable incomes and a lack of accumulated funds. Such "fragmentary purchasing" raises the unit cost per item and can lead to higher household expenditures on food overall.

6.5 Participation in the Informal Economy

Households in the poverty belt are not just consumers of foodstuffs from the informal food economy, they are also participants. The survey found that almost one-third (31 %) of the households derive income from participating in the informal economy. Not all of these households would have been involved in food preparation and retailing, especially given the heterogeneity of the informal economy. However, it is of interest to see which types of households, in particular, are involved in the informal economy and which, by extension, could be both purveyors and consumers of informal food. The criterion used in this section is whether a household received or did not receive income from informal economy activity. The two groups of households were then compared and any differences identified.

The most striking differences between households that do and do not participate in the informal economy run along the fault lines of household type and size (Table 6.4). A total of 31 % of all female-centred households received informal economy income compared with only 23 % of all extended households, 19 % of male-centred households and 17 % of nuclear households Of the group of households participating in the informal economy, 44 % were extended households and

Table 6.4 Participation in informal economy by household type and size

	Participants (% of HH)	Non-participants (% of HH)	Participation by household type/size (% of HH)
Household type			
Female-centred	35.1	24.4	30.8
Male-centred	6.4	8.3	19.3
Nuclear	14.9	22.4	17.1
Extended	43.6	44.9	23.1
Total	100.0	100.0	
Household size			
1–5	31.9	36.0	21.6
6–10	59.6	52.1	26.2
>10	8.5	11.9	18.2
Total	100.0	100.0	

35 % were female-centred households. A total of 232 individuals in the 397 households interviewed were working in the informal economy. Of these, 77 % were female and only 23 % were male, a strong indicator of the gendered nature of participation in informal income-generating activity.

In terms of household size, those in the middle tercile (6–10 members) were more likely to be involved in the informal economy than smaller or very large households. Sixty percent of all households receiving informal income had 6–10 members, compared to 32 % of smaller (1–5 member) households and only 8 % of large households. Although there were no significant differences in the income levels or poverty levels of participating and non-participating households, they did differ in their levels of food insecurity. For example, participant households had a higher mean HFIAS than non-participant households (10.8 versus 10.2), indicating a higher level of food insecurity.

The differences in HFIAP scores were not statistically significant although more were severely food insecure (57.6 vs. 52.5 %) and fewer were completely food secure (4.3 % versus 5.1 %) (Table 6.5). Across the different food security groups, a similar percentage (20–25 % in all four categories) were involved in the informal economy. In other words, severely food insecure households were not significantly more likely to be involved than more food secure households. However, participating households did have slightly lower dietary diversity scores than non-participants with an average HDDS of 5.16 versus 5.82 for non-participant households. A total of 43 % of participating households had an HDDS of 6 or more compared with 56 % of non-participating households (Table 6.6). The reasons for this difference are not entirely clear but it could relate to the fact that households participating in the informal economy tend to consume any produce they do not sell (Stein 2012). In the normal course of events, this could mean consumption of a narrower range of foodstuffs.

Table 6.5 HFIAP scale among participants and non-participants in informal economy

Food security status	Participants (% of HH)	Non-participants (% of HH)	Participation by food security status (% of HH)
Food secure	4.3	5.1	21.0
Mildly food insecure	7.6	9.4	20.0
Moderately food insecure	30.4	33.0	22.2
Severely food insecure	57.6	52.5	25.3
Total	100.0	100.0	

Table 6.6 HDDS scores among participants and non-participants in informal economy

HDDS score	Participants (% HH)	Participants (Cum %HH)	Non-participants (% HH)	Non-participants (cum % HH)
0	0.0	0.0	0.7	0.7
1	1.1	1.1	0.0	0.7
2	5.5	6.6	3.0	3.7
3	9.9	16.5	5.4	9.1
4	18.7	35.2	18.2	27.3
5	22.0	57.2	17.2	44.5
6	23.1	80.3	20.5	65.0
7	12.1	92.4	15.8	80.8
8	4.4	96.8	9.8	90.6
9	2.2	99.0	6.1	96.7
10	0.0	99.0	2.4	99.1
11	1.0	100.0	0.6	99.7
12	0.0	100.0	0.3	100.0

6.6 Conclusion

Households in Maputo's poverty belt exist in a constant state of food insecurity manifested in a lack of access to sufficient affordable food, poor dietary quality, and undernutrition. Household income is meagre and only those households with access to wage income have any chance of holding food insecurity at bay. The most food secure households are those with higher household incomes. Households purchase the vast majority of the food they consume and spend half of their income on food. With a vibrant and dynamic informal food economy, Maputo's poor are surrounded by fresh and processed food. Food availability is therefore not the primary determinant of food insecurity in Maputo. Certainly large-scale food imports from South Africa and further afield make the market price of food inherently volatile. But, prices for the consumer are also driven down by the fact that there is intense competition among vendors on the streets and in the marketplaces.

As this chapter has demonstrated, the informal food economy is of critical importance to household food security in Maputo. Without it, households would be significantly worse off than they already are. The informal food economy is patronised on an almost daily basis by the majority of households, in sharp contrast to their more infrequent or non-existent use of supermarkets and small formal retail outlets. While this raises the overall food bill, it does provide the kind of purchasing flexibility that households require when incomes are low and often unpredictable. In addition, for around one-third of households in the poverty belt, participation in the informal economy as sellers as well as consumers, is an important source of household income. Much of this income is, of course, recycled into the informal food economy since they also rely on informal sources for food.

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Chapter 7
Food Insecurity in a State in Crisis

Godfrey Tawodzera

Abstract In 2008, Zimbabwe was in crisis, with an economy in ruins and a volatile political environment. The country's GDP had contracted by over 40 % since its 2000 level, the official unemployment rate was over 80 %, hyperinflation was running at over 200 million percent, and food production deficits of the staple crop, maize, hovered around 1,000,000 tonnes. Within this hyperinflationary environment, food shortages were acute and over 80 % of households in the country survived on less than USD 2 per day. While this deleterious environment affected the whole country, the vulnerability of the urban poor to the economic meltdown and food insecurity was especially severe given their heavy reliance on food purchases and increases in other urban expenses such as rent, electricity and transport. This chapter assesses the vulnerability of poor households to food insecurity in Zimbabwe's capital, Harare, under the crisis conditions and beyond. It argues that while the ushering in of the Government of National Unity in 2009 stabilized the political and economic situation by bringing down inflation, introducing a multi-currency regime, and improving the food supply, the general livelihoods of the poor did not drastically improve. The food security challenges facing poor urban households in Harare did not immediately improve for reasons that are discussed in the chapter. The analysis is based on a comparison of data from two household surveys conducted in Harare, the first at the height of the crisis in 2008 and the second in 2012.

Keywords Zimbabwe · Harare · Urban food security · Economic crisis · Poverty

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7.1 Introduction

For more than a decade Zimbabwe has faced severe political, economic, and social challenges, which have impacted negatively on people's livelihoods. Although the country was a net exporter of food in the 1980s and early 1990s, the period after 2000 saw it move from being the breadbasket of the region to becoming a net food importer and a major recipient of food aid. Up to 2008, the crisis, which affected the whole country, was characterized by a negative Gross Domestic Product (GDP) growth rate, rising unemployment, increasing poverty, hyperinflation, and recurrent national food shortages. This tumultuous period saw the majority of households in the country struggling to meet their food needs and household food security becoming a major challenge. While both rural and urban households were subjected to this turbulent environment, the challenges for households in the city, particularly the poor, were enormous given the massive job losses resulting from economic decline and the increases in other urban costs such as housing, water, electricity and transportation due to hyperinflation.

The formation of the Government of National Unity in 2009, following disputed elections, stabilized the situation somewhat by arresting the GDP decline, bringing down inflation, introducing a multi-currency regime, and improving the food supply. However, the general livelihoods of the poor did not drastically improve. This is because, in addition to the continuing problems of unemployment and low salaries, most households faced new challenges: the debt burden resulting from the unilateral conversion of household water, electricity, and other municipal charges to the US dollar, high tariffs charged by local authorities, the cost of food in relation to wages and salaries, and the high costs of health and education services and transportation, which left residents with little money to purchase food. Against this background, this chapter assesses the food security situation of households in Harare during the crisis period and its immediate aftermath, and discusses the new food security challenges faced by poor households in the city.

7.2 Background to the 2008 Crisis

To understand the food security situation that confronted households in Harare during the 2008 crisis, one needs to appreciate the socio-political and economic developments that Zimbabwe has experienced since independence in 1980. These include the implementation of the Economic Structural Adjustment Programme (ESAP), the Fast Track Land Reform Programme (FTLRP) and Operation Murambatsvina (Operation Restore Order), all of which played a fundamental role in undermining urban livelihoods and increasing household food insecurity. ESAP was introduced in Zimbabwe in 1991 when the country's post-independence economic growth was slowing, foreign investment was declining, and the unemployment rate was starting to increase. ESAP was meant to revamp the economy,

encourage investment, and reduce the country's domestic and international debt through a three-pronged strategy of trade liberalization, domestic deregulation and investment promotion, and fiscal and monetary policies to curtail state expenditure. In practice, these austerity measures led to the closure of many factories, massive retrenchment, declining real wages, skyrocketing consumer prices, and a decline in the formal economy (Carmody 2008; Chattopadhyay 2000; Potts 2011).

Although ESAP cannot be wholly blamed for the economic woes that have bedevilled Zimbabwe after 1990, it laid the foundation for the serious downward trajectory in the country's economy in the late 1990s and 2000s. Any progress made in the initial years of ESAP was wiped out by its negative impacts and its stated objectives were never realized. The urban population especially was made more vulnerable because of declining real wages in an environment where prices of basic commodities were skyrocketing. Thus, although there are other causes immediate to the 2008 crisis, the impact was much more pronounced in that it compounded an already grave situation.

Another critical event linked to the crisis was the Zimbabwean government's fast-track land reform programme. In 2000, the government launched a programme to expropriate white-owned farms for redistribution to indigenous black farmers. By the end of 2002, only 600 of the original 4500 white farmers were left in the country (Scoones et al. 2010). Although over 1.2 million black farmers benefited from the land reform programme, agricultural production levels drastically declined as the new occupants lacked the financial resources, inputs, equipment, and expertise to produce on the same scale and with the same productivity. As a result, the country quickly changed from being a net exporter to a net importer of food. Maize production deficits averaged over 500,000 tonnes per annum after 2000. While production levels improved somewhat in the newly resettled areas after 2004, and success stories have been recorded in some provinces, they have not offset the losses incurred by the destruction of white commercial agriculture. From its inception, the programme greatly increased food insecurity in the country. In urban areas, the impact was catastrophic as very little food filtered into towns and cities from the rural areas to feed those already reeling under the general macro-economic meltdown.

In 2005, the government launched its assault on urban informality, Operation Murambatsvina. Under this programme, the authorities destroyed urban backyard houses, vending stalls, flea markets, and informal businesses in cities (Potts 2006). The government argued that the operation was an attempt to restore order and ensure orderly urbanization in the country. Although the motives behind the campaign are disputed (some seeing it as a politically-motivated attack on the opposition), there is no disputing that it caused massive disruption of livelihoods and destruction of urban housing. Many income-generating projects were destroyed and more than 700,000 urbanites lost their homes, jobs, and livelihoods. Operation Garikayi, launched in the aftermath of Operation Murambatsvina to construct houses for some of the affected families, came too little too late to mitigate the impacts, as the government had neither the capacity nor sufficient resources to ensure meaningful mitigation. Operation Murambatsvina rearranged Zimbabwe's

urban landscape and worsened the plight of the urban poor, increasing their vulnerability to hunger and food insecurity.

Because of, and in addition to, these processes, Zimbabwe began a general and sustained economic decline after 2000. The country's GDP contracted by over 40 % between 2000 and 2006. Annual inflation increased from two-digit figures in 2000 to 231 million percent in July 2008 (Hanke and Kwok 2009). And the country's external debt ballooned to USD 6 billion in 2008. Life expectancy, which had peaked at 61 years in 1990, fell to around 36 years in 2008. The country's Human Development Index (HDI) dropped from 0.621 in 1985 to 0.468 in 2003, indicating a drastic decline in the welfare of the Zimbabwean people. Zimbabwe received USD 490 million in humanitarian aid in 2008, while its foreign currency reserves that year stood at only USD 6 million.

Further aggravating the crisis was the political uncertainty resulting from the 2008 disputed presidential elections. Harmonized elections for municipal, parliamentary and presidential positions were held in March 2008, but disputes surrounding the outcome of the presidential election and the subsequent run-off poll that was boycotted by the opposition created a tense and volatile atmosphere in the country. Eight months passed from the election run-off to the inauguration of the Government of National Unity in February 2009. The political uncertainty in this period also impacted heavily on the availability of food, fuel, electricity, and other essential goods and services in the country.

7.3 Household Food Insecurity in Harare

The food security situation in Zimbabwe in 2008 was dire. The International Federation of Red Cross and Red Crescent Societies estimated that about 5.1 million of the country's 11.6 million people would have no access to food by the end of the year. Food production in the country was low and inadequate. The government was constrained from importing food due to inadequate funding and rampant inflation. From April to October 2008, both the government and humanitarian agencies managed to import a total of only 316,000 metric tonnes of cereals, leaving the cereal harvest deficit for 2008/2009 at 666,000 metric tonnes. Although the government indicated that it would import 600,000 tonnes of maize from South Africa, only 175,000 metric tonnes had been imported by the end of August 2008. For most of 2008, then, the market was characterized by constant staple food shortages. The formal food system had virtually collapsed and most foodstuffs could only be accessed on the parallel market. The situation was particularly grave in urban areas where households had to purchase most of their food. The high levels of food insecurity among households in the city resulted from a number of factors, including poverty, unemployment, inadequate food supplies on the market, hyperinflation, skyrocketing food prices, and fast-rising costs of other basic services such as housing, electricity, water, and transport.

The 2008 AFSUN survey found very high levels of poverty in Harare, as measured by the Lived Poverty Index (LPI). The LPI is a self-reporting measure that calculates how often households go without basic necessities such as an income, food, water, electricity and access to medical facilities. The LPI ranges in value from a minimum of 0.0 to a maximum of 4.0. The Harare average of 2.20 indicated high levels of lived poverty among the population. A survey carried out in another poor area of the city in early 2009, found an LPI of 2.80, with a median of 2.68 and a maximum of 3.88 (Tawodzera 2010). Urban food insecurity is clearly linked to poverty, which is closely associated with unemployment.

By 2008, most of the factories in Harare were closed. At the few that remained open, employees were working on a roster basis, some working only one day per week. The AFSUN survey found that only 40 % of the adult population in the surveyed areas were in full-time employment. A further 14 % had casual or part-time employment. Only 14 % were unemployed and actively looking for work, while 29 % had given up looking (Tawodzera et al. 2012, p. 10). Only 55 % of the surveyed households derived income from full-time wage employment (with as many as 42 % relying on the informal economy to generate income).

Along with the high unemployment levels, the food insecurity situation in the city was exacerbated by unprecedented increases in the prices of foodstuffs. Zimbabwe's urban population was especially vulnerable as the country was meeting most of its food requirements through imports. Global food price increases wreaked havoc among urban populations in the developing world (with prices of wheat, soybean, corn, and rice rising by 146, 71, 41, and 29 % respectively between 2007 and 2008). In Zimbabwe, the impact was worsened by the country's hyperinflationary conditions that saw food prices rising more than once per day. In November 2008, FEWSNET reported that the price of maize had increased by 1431 % that month, and by 306,232 % in the previous three months (FEWSNET/USAID 2008). As many as 97 % of the households surveyed by AFSUN in Harare in 2008, said they had been negatively affected by food price increases. Under such conditions, most households were unable to access basic foodstuffs such as bread, milk, meat, and eggs.

To aggravate the situation further, the water supply in Harare was unstable for most of 2008, with frequent cut-offs as well as poor quality drinking water. The Harare municipality was unable to supply even one-third of the city's requirements. Close to 40 % of the city's water was being lost through leakages caused by aging water pipes, some of them over 50 years old (Nhapi 2009). The water treatment plant, built in 1954 for a much smaller population, could not cope with the high demand. Residents were forced to resort to alternative water sources that were detrimental to their health. Households in Mabvuku, Tafara, Dzivarasekwa, Budiriro, and Glen View, for example, were getting their water from unprotected wells and ditches. Harare's wastewater treatment system was functioning at only 20–25 % of its capacity and burst sewer pipes exposed residents to raw effluent, leading to frequent disease outbreaks. The cholera epidemic that hit Harare during the last quarter of 2008 is evidence of the critical state of the water and sewerage systems in the city.

Residents of the city frequently found themselves without water to drink or for other necessary uses such as cooking, washing dishes, and flushing toilets. In addition, power supplies were not guaranteed. Although the country was importing around 600 megawatts of electricity from South Africa, Mozambique, and the Democratic Republic of the Congo, demand still far outstripped supply. Power supply to households was erratic, heightening challenges related to food preparation and storage. Other factors that heightened household food insecurity were the difficulties in withdrawing cash from banks as well as the low withdrawal limits set by the Reserve Bank. As inflation increased and the value of the Zimbabwe dollar tumbled against major currencies, the government resorted to printing trillions of paper money to increase liquidity in the market (Hanke and Kwok 2009). The ZWD 170 trillion in circulation in the country in January 2008 could not meet demand because of the high cost of goods. Most banks limited cash withdrawals to ZWD 50 million per day per person, a wholly inadequate amount given that a loaf of bread cost ZWD 35 million at the time. The situation was so desperate that a section of the country's loyal army rioted, raiding black market dealers in frustration after having failed to withdraw their salaries at major banks in Harare. Most people were unable to use their savings or earnings to purchase food, unless they had access to foreign currency.

The survey carried out by AFSUN in late 2008 found that household food insecurity was all-pervasive in the poorer parts of the city (Tawodzera et al. 2012). Conducted in the low-income residential areas of Dzivarasekwa, Tafara and Mabvuku, the survey found that 95 % of the households were food insecure, with 72 % being classified as severely food insecure. The AFSUN study also measured the dietary diversity of households and found that two-thirds had consumed food from only five or fewer out of a possible 12 food groups in the previous day. Most of this food consisted of cereals, vegetables, sugar and foods made from fat or oil. In addition, 92 % of the households had experienced several months over the previous year when they did not have adequate food to feed their members (Tawodzera et al. 2012).

7.4 Beyond 2008

The economic crisis that gripped Zimbabwe in the aftermath of the disputed June 2008 presidential elections was catastrophic. All sectors of the economy ground to a virtual halt as the country ran out of food, fuel, electricity, water, and other basic commodities. The dire situation in the country forced political parties to the negotiating table and an agreement was reached and signed in September 2008. However, disagreements on the composition of the unity government and other modalities of implementation ensured that the new Government of National Unity (GNU) was not inaugurated until February 2009. The inauguration of the GNU heralded the beginning of a new era with significant implications for food security in the country. These developments included the implementation of a

multi-currency regime, reduction of the rate of inflation, stabilization of the economy, and a general improvement in the supply of foodstuffs to shops in the country.

Although the GNU is credited with introducing the multi-currency regime, the dollarization process had already begun in the last quarter of 2008 when most of the trade in the country began to be conducted in foreign currency, albeit informally (Noko 2011). The coalition government simply formalized an already operational system, since the United States dollar, the South African rand, the Botswana pula, and the UK pound had replaced the Zimbabwean dollar as the trading currency. On 29 January 2009, acting Finance Minister, Patrick Chinamasa, officially introduced the multi-currency regime and promised to pay civil servants USD 100 per month to cushion them against inflation. By April 2009, the Zimbabwean dollar ceased to exist as legal tender.

The multi-currency regime brought relief to consumers in a number of areas. First, they no longer had to spend long hours in bank queues to withdraw money, a feature of the later Zimbabwean dollar era. Second, the use of hard currencies enabled retailers to import food from other countries. And, third, the price of goods stabilized and consumers could afford to budget for their food and other expenses without the fear and inconvenience of constant price increases. Monthly inflation turned negative and was reported to be at −2.3 % in January, −3.1 % in February, −1.1 % in April, and −1.0 % in May 2009. By December 2009, year-on-year inflation was estimated to be -7.7 %. GDP, which had contracted by −14.4 % in 2008, grew by 5.7 % in 2009 and by 8.1 % in 2010. Several factories that had closed down during the crisis period re-opened (Mutengezanwa et al. 2012). Industrial capacity utilization improved from about 10 % at the beginning of 2009 to between 35 and 60 % by December. Some employees were rehired and others began to work more regularly. In addition to the stable political environment, the economic environment was further improved by the implementation of the Short Term Emergency Recovery Programme, which was designed to remedy hyperinflation.

The net effect of these measures was a general improvement in the livelihoods of the population, especially in relation to food. According to FEWSNET/USAID (2008, p. 1) “since the adoption of the multiple currency system and introduction of the duty-free regulation on imported basic commodities, there has been a marked improvement in stocking levels in most shops, and prices have declined.” The price of maize, which averaged about USD 1.15 per kg in 2008, dropped to between USD 0.23 and USD 0.34 per kg in 2009. Shops which had empty shelves during 2008, were fully stocked with food during 2009. The major determining factor of food security was now whether a household had enough money to purchase the food that was readily found in shops and supermarkets. Even the agricultural sector, which for close to a decade had been in a gradual decline, was showing signs of recovery.

A comparison of the 2008 and 2012 AFSUN survey findings shows that poor households were able to diversify their food sourcing strategies and to rely more on

Table 7.1 Food sources in Harare, 2008 and 2012

	2008	2012
	% of households	% of households
Supermarket	12	61
Small shop/restaurant/take away	9	62
Informal market/street food	96	87
Grow it	39	25
Remittances of food	7	2
Shared meal with neighbours and/or other households	9	6
Food provided by neighbours and/or other households	9	9
Borrow food from others	22	19

Table 7.2 Levels of household food insecurity, 2008 and 2012

HFIAP Categories	2008	2012
	% of households	% of households
Food secure	2	9
Mildly food insecure	3	6
Moderately food insecure	24	22
Severely food insecure	72	63

a resurrected formal food system. Table 7.1 compares the food shopping patterns of households at the two points in time. In 2008, only 12 % of households had shopped at supermarkets in the week prior to the survey. In 2012, this figure had increased to 61 %. Similarly, in another sign of the rejuvenation of the formal system, the proportion of households sourcing food from small retail outlets increased from 9 % in 2008 to 62 % in 2012. The informal food economy remained extremely important to most households although the absolute reliance on this source declined slightly (from 96 to 87 % of households). Other signs of change included a slight drop in the proportion of households sourcing food through informal social networks and, interestingly, in reliance on urban agriculture (from 39 to 25 % of households).

While food has clearly become more available to the residents of Harare, the fundamental question is whether it had become more accessible. A comparison of the food security indicators for 2008 and 2012 sheds considerable light on this critical issue. The average HFIAS score for the surveyed households fell from 14.7 in 2008 to 9.8 in 2012, indicating a general overall improvement in household food security. Dietary diversity had also improved with the average HDDS increasing from 4.8 to 6.1. However, a score of 6 (out of 12) still does not indicate great diversity. As Table 7.2 shows, there were also shifts in the HFIAP scores. The proportion of severely food insecure households fell from 72 to 63 % and the proportion of completely food secure households increased from 2 to 9 %. This

indicates that despite the greater availability of food in 2012, and the fact that there had been some improvement since 2008, the majority of households remained in a food insecure state four years after the 2008 crisis.

Why should such high levels of food insecurity have persisted in Harare several years after the 2008 crisis? While a stable political situation and the resultant economic stabilization led to a marked improvement in the livelihoods of the population, the new political and economic regime was certainly not problem-free. These difficulties were related to the dollarization of the economy and its impacts on banking, rents, rates, and other monetary activities. In addition, dollarization did not automatically entail the cessation of the underlying problems that had bedevilled the country for close to a decade (Mutengezanwa et al. 2012). These included a dilapidated industrial infrastructure and old factory machinery, a lack of direct investment, low remuneration for employees, persistent and unscheduled water and electricity cuts, and high food prices.

The situation has been exacerbated by resurgent inflation. The cost of living for an urban family of six, which was pegged at USD 381.23 in January 2009, for example, had increased to USD 546.34 by November 2011 and to USD 565.34 in September 2012. Wages have not kept pace with inflation and remain low, particularly for the civil service which is the largest employer in the country. For the first half of 2009, the government only paid civil servants an allowance of USD 100 and salary increments thereafter have been minimal. When the Public Service Minister announced a 5.3 % salary increment for the civil service in January 2013, that increment brought the average salary of the lowest paid civil servant to USD 296 per month, well below the USD 600 required for an average family of six to survive. The 2012 AFSUN survey found that the proportion of household members who were in full-time employment was actually lower in 2012 than in 2008 (24 % vs. 28 %). The unemployment rate was very similar at both points in time (around 60 %). The only employment category where there was a marked improvement was in the proportion of those with part-time or casual employment (up from 10 in 2008 to 16 % in 2012) (Table 7.3).

Although the dollarization process brought a degree of stability to the market, food prices themselves remained relatively high for the basic commodities required by poor urban households. A two-litre bottle of cooking oil, for example, cost around USD 2.50 in 2009 but was selling for almost USD 5 in mid-2011. This was

Table 7.3 Levels of employment and unemployment, 2008 and 2012

		2008	2012
		%	%
Work status	1. Working full-time	28.1	24.0
	2. Working part-time/casual	9.6	15.7
	3. Not working—looking	10.2	13.4
	4. Not working—not looking	52.1	46.9
Total		100.0	100.0

higher than the cost of the same product in South Africa, where it could be bought for the equivalent of USD 3. Such price disparities are partly explicable by the Ministry of Finance's re-introduction of import duties on basic foodstuffs in July 2011, as well as the speculative nature of the trading environment, coupled with greed as businesses continued the profiteering of the Zimbabwe dollar era. One-third of the surveyed households in 2012 considered their economic condition to be worse or the same as a year earlier and two-thirds indicated that they had gone without food or other basic necessities such as water, electricity, or a cash income in the month preceding the survey.

In addition to high food prices, unemployment and low wages, Harare's poor face high monthly utility bills from a variety of service providers, including the city council and the electricity supply authority. The Harare Residents' Association, for example, has on numerous occasions threatened to take the Zimbabwe Electricity Supply Authority to court for overcharging residents. In 2012, the Harare Residents' Trust indicated that it had intervened in over 900 cases relating to chaotic billing by the Authority. In addition, the power utility also unilaterally increased the rates without government approval. In September 2011, for example, the power utility was ordered by the Administrative Court to revert to 2009 tariffs because increases had been imposed without following the correct channels. The situation is the same for water supplies. In its 2010/11 budget, the Harare City Council proposed a 40 % increase in water tariffs despite the fact that residents were already paying unsustainably high bills of between USD 40 and USD 100 per month. Residents who do not pay their water and electricity bills risk having their supplies disconnected.

When the changeover from the Zimbabwean dollar to the multi-currency regime took place, service providers converted existing household debts to US dollars at arbitrary exchange rates. Households were saddled with debts that they were unable to settle. In some instances, the council responded by confiscating property with the intention of selling them to offset the debts. Those threatened with confiscation tried to make arrangements with the city to pay off the debt in instalments, but even this proved unrealistic as households rarely have surplus cash to service the debt. Poor households in the city are faced with the seemingly insurmountable task of generating an income to feed their members as well as pay off debts from an earlier era.

7.5 Conclusion

Although the whole country was affected by Zimbabwe's economic meltdown, at the time, the vulnerability of the urban poor to food insecurity was especially severe given their heavy reliance on food purchases and the need to meet other obligatory expenses. The major factors that underpinned food insecurity during the crisis period included persistent shortages of food on the market, hyperinflation, rapidly escalating food prices, low wages, and the general collapse of the formal food

system. In 2009, the coming of the Government of National Unity stabilized the situation by bringing down inflation, introducing a multi-currency regime and improving the general food supply. This chapter argues, however, that the general livelihoods of the urban poor have not dramatically improved as new challenges have emerged that continue to threaten household food security. These challenges include persistent unemployment and low wages, the enormous debt burden thrust on the poor due to the conversion of rents, electricity and water arrears from the Zimbabwean to the US dollar, the high tariffs that service providers continue to charge, and the high cost of food in relation to wages. Thus, although the dollarization process and the stable political climate brought welcome relief to residents, the urban poor continue to be threatened by severe food insecurity.

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Chapter 8
Poverty and Uneven Food Security in Urban Slums

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Abstract Despite increased recognition that urban slum dwellers are both extremely vulnerable and highly underserved, the national and international commitment to address urban food crises is constrained by a dearth of information. In Nairobi, Kenya, an estimated 60 % of the population live in slums or slum-like conditions. On average, the Nairobi poor spend 40–50 % of their income on food. This chapter asks whether the livelihood source of the primary breadwinner in the household determines the level of household food insecurity in an urban slum and analyses the predictors of overall food insecurity in a local slum context. Based on a survey of over 3000 households, the study found that having a stable formal job improves the urban household's food security beyond the significant effect of income. As a corollary, urban dwellers in casual employment with lower and irregular income face chronic food insecurity. The study also found varying levels of food insecurity between different slums and across sub-groups within particular slums for reasons explored in this chapter.

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8.1 Introduction

Despite increased recognition that urban slum dwellers are both extremely vulnerable and highly underserved, the national and international commitment to address urban food crises are constrained by a dearth of information. Until recently, urban slum or informal settlement areas were often excluded from national and sub-national surveys because they were illegal. Even when they were included, data was rarely disaggregated by neighbourhood, leading to averages that concealed glaring disparities between wealthier urban areas and slums (Fotso et al. 2008). Several recent studies have begun to rectify this information gap. Faye et al. (2011), for example, found that hunger is widespread in the Nairobi slums discussed in this chapter. Kimani-Murage et al. (2014), using a mixed method approach, found that households were extremely vulnerable to food insecurity. However, these studies do not investigate the impact of livelihoods on food security.

In Nairobi, Kenya's capital city, an estimated 60 % of the population live in slums or slum-like conditions (Candiracci and Syrjänen 2007). Nairobi's slum dwellers face all of the conditions that make slums vulnerable to emergencies and economic shocks. For example, the increase in global food prices led to an increase in the price of the staple food maize by 133 % between 2007 and 2008 (Care International 2009). This rise, coupled with a 21 % decrease in income, had a profound effect on the poor urban population as they spend a large proportion of their income on food (Alem and Söderbom 2012; World Bank and IMF 2012; World Bank 2006). The 2005/06 Integrated Household Budget Survey reported that poor urban households spend 57 % of their budget on food (Kenya National Bureau of Statistics 2007), while the World Bank (2006) estimated that the Nairobi poor spent, on average, 43 % of their income on food. A more recent study using 2012 and 2013 data on Nairobi's urban poor, found that slum residents spent 52 % of their income and 42 % of their expenditures on food (Amendah et al. 2014).

This chapter asks whether the livelihood source of the primary breadwinner in the household determines the level of the household's food insecurity in an urban slum. The chapter also analyses the predictors of overall food insecurity in a local context, where most slum dwellers lack a consistent source of income, relying instead on casual labour or petty trade, the availability of which fluctuates on a daily and weekly basis (Ruel et al. 1998). Further, the analysis aims to contribute to the increasing search for critical pathways to address growing vulnerabilities to food insecurity among urban populations.

8.2 Study Methodology

The study discussed in this chapter was conducted in Korogocho and Viwandani, two Nairobi slums located on the outskirts of Nairobi City and about 10 km from the city centre. The two communities are informal settlements characterized by high unemployment, poverty and overcrowding, lack of clean water and adequate sanitation (Zulu et al. 2011; Mberu et al. 2014). Viwandani slum is located very close to the city's industrial area and is home to predominantly migrant young males working in the nearby industries. As a result, Viwandani has a much higher proportion of men than women and household size tends to be small. Korogocho, by contrast, is a more established informal settlement with a high proportion of married men living with their spouses and children (Emina et al. 2011).

The study used data from two African Population and Health Research Center (APHRC) projects. The APHRC has been running the Nairobi Urban Health and Demographic Surveillance System (NUHDSS) in those two informal settlements since 2003. The NUHDSS captures routine information on births, deaths and migration from households three times a year. In 2012, the NUHDSS covered 75,000 individuals in about 30,000 households (APHRC 2012). Resident households (living in the area for 6 consecutive months) were selected randomly from the universe of the NUHDSS database. The study also drew on data from the Indicator Development for Surveillance of Urban Emergencies (IDSUE) project which aimed to develop early warning indicators for slow-onset humanitarian emergencies in urban slums (Schofield et al. 2013). The IDSUE project collected data through an interviewer-administered household level survey. Questions were asked in various domains including water and sanitation, food security, livelihoods, health status, personal and property security, and housing and tenure.

In this chapter, the dependent outcome focuses on questions in the food security domain, the independent outcomes fall in the livelihoods, personal security and health status domains. Data were collected in three rounds: March–April 2011 (1045 households), July–August 2011 (1118 households) and December 2011–January 2012 (1047 households). Data from the three rounds were then pooled to provide a total sample size of 3210 households which was used for this analysis. Households were randomly sampled from the NUHDSS so that only about 10 % were involved in at least two of the three rounds. There was fairly equal representation from the two slums in each of the rounds.

A household food insecurity indicator score was computed for each household based on a modified version of the Household Food Insecurity Access Scale (HFIAS) (Coates et al. 2007). Based on the HFIAS scores, the HFIAP categorizes households into four types: food secure, mild food insecurity, moderate food insecurity, and severe food insecurity. For ease of analysis, only households in the first category were considered food secure. All of the other categories were aggregated as food insecure. Thus, we have two categories of household food security status: food secure and food insecure, coded as "0"and "1" respectively.

The key predictor variable in the analysis was the source of livelihood of the primary breadwinner (highest earner in the household) defined in terms of whether they are in (i) formal employment, (ii) casual employment, (iii) own-business, or (iv) other (such as scavenging and receiving remittances). Formal employment was operationalized as having a regular paid job, regardless of how long employment was held, whether benefits such as health insurance or paid leave were offered or not. Casual work was defined as having employment contingent on work availability. This type of employment is irregular and offers no benefits. Many construction workers fall in this category. Small business owners were those that operated small-scale businesses including petty trading.

Other key predictors in the model include breadwinner's income (self-reported); sex of the breadwinner; education level of the breadwinner; household size; whether the household had experienced a shock (fire, floods, mugging/stabbing, burglary, eviction, property destruction, sexual violence) in the previous 4 weeks; whether any household members had been ill (diarrhoea, fever, cough, headache, vomiting, convulsions/seizures, difficult or fast breathing, measles, and injury) in the last 2 weeks; the level of perceived community insecurity in the last 4 weeks; the slum of residence and the household dependency ratio. The data analysis first generated descriptive statistics of the sample of households in the two slums. Then, correlations between household food security status and predictor variables were examined. A binary logistic regression was then conducted. A logistic multilevel approach was used to study the extent to which individual, household, and community level characteristics were associated with household food security status. The analysis used Stata version 13.0 and statistical significance defined as a p-value less than 0.05 (2-sided).

Global Positioning Systems (GPS) receivers were used to collect coordinates from the sampled households. Geo referencing and spatial mapping of sampled households within the slums in terms of their food security status across the three rounds of data collection was also performed. Scores were generated using the Household Food Insecurity Access Scale (HFIAS) for the four different levels of household food insecurity (food secure, mild food insecure, moderately food insecure, and severely food insecure). These scores were plotted on the map using ArcGIS, a spatial analysis software that uses GIS coordinates.

The Gi* statistic returned for each household (placed by the GIS coordinates) in the data-set is a z-score. The resultant z-score and p-values from the spatial analysis tell us where households with either high or low values cluster spatially. A statistically significant hot spot will have a high value (in this case) and will be surrounded by others with high values as well (clustering). The same will apply for lower values (cold spots). For statistically significant positive z-scores, the larger the z-score is, the more intense the clustering of high values (hot spot) – in this case severely food insecure households. For statistically significant negative z-scores, the smaller the z-score is, the more intense the clustering of low values (cold spot) —in this case food secure households. Colour coding is used to show clustering of different scores (intense red for higher values or severely food insecure households and green for lower values or food secure households).

Some data limitations need to be identified. First, income of the main breadwinner was self-reported and not verified independently. Second, the study only took into account the income and livelihood of the main breadwinner and not that of other household members. Third, the study did not investigate the intra-household allocation of food. Fourth, it also did not collect data on monetary and non-monetary transfers though they could influence urban household levels of food security. Lastly, the interpretations of the findings should consider the wide sample disparity in food security status (15 % food secure vs. 85 % food insecure).

8.3 Predictors of Food Insecurity

The background characteristics of sampled households are summarized in Table 8.1. About 85 % of the households surveyed in the two Nairobi slums were food insecure. In terms of livelihood sources, only 21 % of households had primary breadwinners employed in the formal economy. Other primary breadwinners were

Table 8.1 Distribution of background characteristics of households

Characteristics of household	Frequency	Percentages (%)
Food security status		
Food secure	502	15.6
Food insecure	2708	84.4
Sources of livelihood		
Formal employment	688	21.4
Casual employment	1450	45.2
Own small business	894	27.9
Other	178	5.6
Age of breadwinner		
16–24	365	11.4
25–34	1193	37.2
35–49	1080	33.6
>50	464	14.5
Missing[a]	108	3.4
Sex of breadwinner		
Male	2436	75.9
Female	774	24.1
Education level of breadwinner		
No education	133	4.1
Primary school	1588	49.5
High school or higher	1489	46.4

(continued)

Table 8.1 (continued)

Characteristics of household	Frequency	Percentages (%)
Household size		
1 person	886	27.6
2–3 persons	1073	33.4
4–5 persons	801	25.0
>6 persons	450	14.0
Household income (KES)[b]		
<5000	759	23.6
5000–10,000	1198	37.3
>10,000	798	24.9
Missing[a]	455	14.2
Household experienced shock		
No	2754	85.79
Yes	456	14.21
Illness in the household		
No	1956	60.9
Yes	1254	39.1
Perceived community security status		
Bad	1603	49.9
Satisfactory	1148	35.8
Good	459	14.3
Slum of residence		
Viwandani	1589	49.5
Korogocho	1621	50.5
Total (N)	3210	100.0

[a]Those that had no age or income reported, [b]1 USD = 90 KES

engaged in casual work (45 %), owned small businesses (28 %), or engaged in other activities (6 %). The largest proportion (37 %) of the household breadwinners were in the 25–34 years age group while the lowest proportion were in the 16–24 age group (11 %). There was a significant level of household poverty, with 23 % of the sample earning less than KES 5000 per month (about USD 55.5) and 37 % earning between KES 5000 and KES 10,000 per month. Only 25 % earned more than KES 10,000 per month. A key finding was that 76 % of breadwinners were male and that almost half (49 %) only had primary level education. Furthermore, male breadwinners were more than four times likely to be in the formal and casual employment than their female counterparts.

Table 8.2 summarizes the bivariate relationships between household characteristics and food insecurity. Household shocks, ill-health and perceptions of insecurity were common features in the two communities, with nearly 14 % of households having experienced a shock in the reference period. Most of these shocks involved a loss of income or property. Approximately 39 % of households

Table 8.2 Household characteristics by food security status

	Food secure N = 502	Food insecure N = 2708	Total	Chi^2 test
	%	%	(n)	*P*-value
Sources of livelihood				***
Formal employment	27.9	72.1	688	
Casual employment	10.7	89.3	1450	
Own small business	15.3	84.7	894	
Other	10.1	89.9	178	
Age of breadwinner				***
16–24	20.6	79.5	365	
25–34	18.6	81.4	1193	
35–49	13.5	86.5	1080	
>50	10.8	89.2	464	
Missing	8.3	91.7	108	
Sex of breadwinner				
Male	16.5	83.5	2436	
Female	12.9	87.1	774	
Education level of breadwinner				***
No education	5.3	94.7	133	
Primary school	13.9	86.1	1588	
High school or higher	18.4	81.6	1489	
Household size				***
1 person	19.1	80.9	886	
2–3 persons	18.6	81.3	1073	
4–5 persons	12.7	87.3	801	
>6 persons	6.9	93.1	450	
*Household Income (KES)**				***
<5000	5.7	94.3	759	
5000–10,000	13.4	86.6	1198	
>10,000	27.4	72.6	798	
Missing[a]	17.6	82.4	455	
Household experiencing shock				***
No	16.6	83.4	2754	
Yes	9.9	90.1	456	
Illness in the household				***
No	19.0	81.0	1956	
Yes	10.5	89.5	1254	

(continued)

Table 8.2 (continued)

	Food secure N = 502	Food insecure N = 2708	Total	Chi^2 test
	%	%	(n)	*P*-value
Perceived community security status				***
Bad	10.8	89.2	1603	
Satisfactory	16.4	83.6	1148	
Good	30.5	69.5	459	
Slum of residence				***
Viwandani	25.4	74.6	1589	
Korogocho	6.0	94.0	1621	
Dependency ratio				N/A
Average	1.07	1.86	3210	

***p value <0.001, [a]those that had no income reported

experienced an illness, while only 14 % of households perceived their security status as good over their respective reference period. The unadjusted relationship between food security status and background household characteristics are summarized in Table 8.2 (column 2). They indicate that almost all of the variables, including source of livelihood, were significantly associated with food insecurity at the bivariate level.

The results of the unadjusted logistic regression and the multilevel adjusted models showing the association between food security status and livelihoods net of the effects of confounding variables are summarized in Table 8.3. Model 1 included only individual characteristics in the logistic regression; Model 2 included individual and household characteristics; and, Model 3 has results including all the characteristics (individual, household and community level characteristics).

Households whose breadwinner was in casual employment had 89 % higher odds of being food insecure than those whose breadwinners were in formal employment (Model 3) (OR = 1.89 95 % CI 1.45–2.46). These odds-ratio are lower in Model 3 than in Model 1 (with only individual level characteristics) and Model 2 (individual and household characteristics) suggesting the importance of a full set of variables to better determine existing associations. Also in Model 3, breadwinners aged 35+ years were 85 % times as likely to be food insecure compared to those younger than 25 years (OR = 1.85 95 % CI 1.30–2.64). The sex and education level of the breadwinner was not associated with food security status.

Household level characteristics suggest that relative to households with incomes of less than KES 5000, those with incomes greater than KES 5000 had lower odds of being food insecure. Similarly, household with incomes higher than KES 10,000 had lower odds of being food insecure than households with incomes of less than KES 5000 (OR = 0.38 95 % CI 0.30–0.48). Households that experienced a shock four weeks prior to the survey had 83 % higher odds of being food insecure compared to households that did not experience a shock. Households that had

Table 8.3 Determinants of food security status

Variables	Unadjusted models	Adjusted models		
	OR (95 % CI):	OR (95 % CI):	OR (95 % CI):	OR (95 % CI):
	Unadjusted	Model 1	Model 2	Model 3
Sources of livelihood (ref = Formal)				
Casual	3.23*** [2.56,4.09]	3.29*** [2.58,4.20]	2.53*** [1.96,3.26]	1.89*** [1.45,2.46]
Business	2.14*** [1.67,2.74]	1.76*** [1.36,2.28]	1.31 [1.00,1.73]	0.95 [0.71,1.26]
Others	3.44*** [2.06,5.76]	2.40** [1.34,4.27]	1.67 [0.91,3.07]	1.23 [0.66,2.31]
Age of breadwinner (ref = 16–24)				
25–34	1.13 [0.84,1.52]	1.30 [0.96,1.76]	1.33 [0.97,1.82]	1.34 [0.97,1.87]
35–49	1.65** [1.22,2.25]	1.95*** [1.42,2.69]	1.85*** [1.32,2.59]	1.85*** [1.30,2.64]
>50	2.14*** [1.45,3.16]	2.38*** [1.59,3.56]	2.27*** [1.49,3.45]	1.88** [1.22,2.91]
Sex of breadwinner (ref = Male)				
Female	1.33* [1.05,1.69]	1.30* [1.01,1.68]	0.95 [0.72,1.24]	0.97 [0.74,1.28]
Education (ref = No education)				
Primary	0.34** [00.16,00.75]	0.45 [0.20,1.00]	0.46 [0.20,1.04]	0.62 [0.26,1.46]
Secondary or higher	0.25*** [00.11,00.53]	0.38* [0.17,0.83]	0.41* [0.18,0.92]	0.63 [0.27,1.48]
Household size (ref = 1 person)				
2–3 persons	1.03 [0.82,1.29]		1.12 [0.87,1.43]	0.90 [0.68,1.19]
4–5 persons	1.62*** [1.24,2.11]		1.49** [1.11,2.00]	0.82 [0.54,1.25]
6+ persons	3.19*** [2.13,4.76]		2.47*** [1.61,3.80]	0.80 [0.43,1.49]
Household income (KSH) (ref = <5000)				
5000–10,000	0.39*** [0.27,0.55]		0.45*** [0.31,0.65]	0.51*** [0.35,0.74]
>10,000	0.16*** [0.11,0.22]		0.19*** [0.13,0.28]	0.24*** [0.17,0.35]
~Other[a]	0.28*** [0.19,0.42]		0.26*** [0.17,0.40]	0.32*** [0.21,0.50]
Shock experienced (ref = No)				
Yes	1.82*** [1.31,2.51]		1.66** [1.18,2.33]	1.83*** [1.29,2.59]

(continued)

Table 8.3 (continued)

Variables	Unadjusted models	Adjusted models		
	OR (95 % CI):	OR (95 % CI):	OR (95 % CI):	OR (95 % CI):
	Unadjusted	Model 1	Model 2	Model 3
Illness in the household (ref = No)				
Yes	2.01*** [1.62,2.48]		1.62*** [1.29,2.05]	1.43** [1.12,1.81]
Rate of community security (ref = Bad)				
Satisfactory	0.62*** [0.50,0.78]			0.78* [0.61,0.99]
Good	0.28*** [0.22,0.36]			0.44*** [0.33,0.58]
Slum of residence (ref = Viwandani)				
Korogocho	5.30*** [4.20,6.69]			3.28*** [2.53,4.25]
Dependency ratio	1.30*** [1.22,1.39]			1.26*** [1.12,1.42]
Total (N)		3102	3102	

*$p < 0.05$, **$p < 0.01$, ***$p < 0.001$; *OR* = odds ratio, *CI* = confidence interval, [a]those that had no income reported, *Model 1* = individual characteristic logistic results, *Model 2* = Individual and Household characteristics results and *Model 3* = Individual, Household and community characteristics results

experienced illness in the two-week period prior to the survey had 43 % higher odds of being food insecure compared to households that did not experience illness in the same period. While household size had no significant relationship with food insecurity, a unit increase in the household dependency ratio was significantly associated with 26 % higher odds of being food insecure (OR = 1.26, 95 % CI 1.12–1.42) after controlling for all variables.

In terms of community characteristics, households that rated their community security as either satisfactory or good had 22 % ($p < 0.05$) and 56 % ($p < 0.001$) lower odds respectively of being food insecure than households that rated the security of the community as bad. Also, households in Korogocho had significantly higher odds of being food insecure compared to Viwandani residents (OR = 3.28 95 % CI 2.53–4.25). This is consistent with evidence from previous studies indicating that living conditions are worse off in Korogocho compared to Viwandani (Emina et al. 2011), and can be explained by the socio-demographic characteristics of those settlements and their geographical location. The proximity of Viwandani to the major source of casual employment in the city (the industrial area), speaks to the primary role of economic opportunities in addressing urban poverty, particularly the positive role of location of industries in addressing local livelihood opportunities (Mberu et al. 2014).

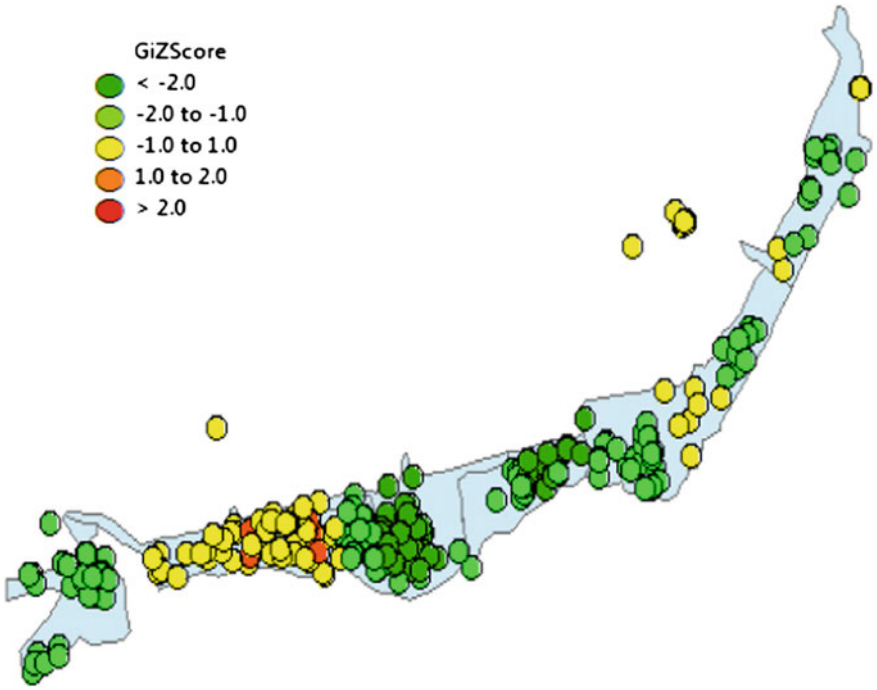

Fig. 8.1 Distribution of household food insecurity within Viwandani

The spatial analysis of GPS data shows a tendency for households of similar food security status to cluster together. Figures 8.1 and 8.2 represent the spread of the households based on their food security situation in the two slums of Korogocho and Viwandani respectively. In both slums, the distribution of food and food insecure households are clearly visible. In Viwandani, there is a greater spread of households with low z-scores (of −1.0 or lower) and a pocket with more food insecure households (−1.0 to 1.0). However, there were no extremely food insecure households (with z-scores >2.0). In Korogocho, by contrast, there are a significant number of such households in the central parts of the slum. All of the less food insecure households are clustered together in the southern area.

The results of the study suggest that the age of the breadwinner is an important factor in determining food security status in this community. This finding contradicts the notion that higher age group breadwinners should be more food secure compared to those in the younger age groups, suggesting a negative association between aging and food security (Tefera and Tefera 2014). So it is possible that the younger age groups may have the required skill set (computer literacy for instance) to be employed and remain food secure compared to older age groups. Older people in urban areas have been identified as being particularly vulnerable to social and economic hardships due to their lack of support networks in urban areas and in the context of dominant informal employment that requires raw strength rather than

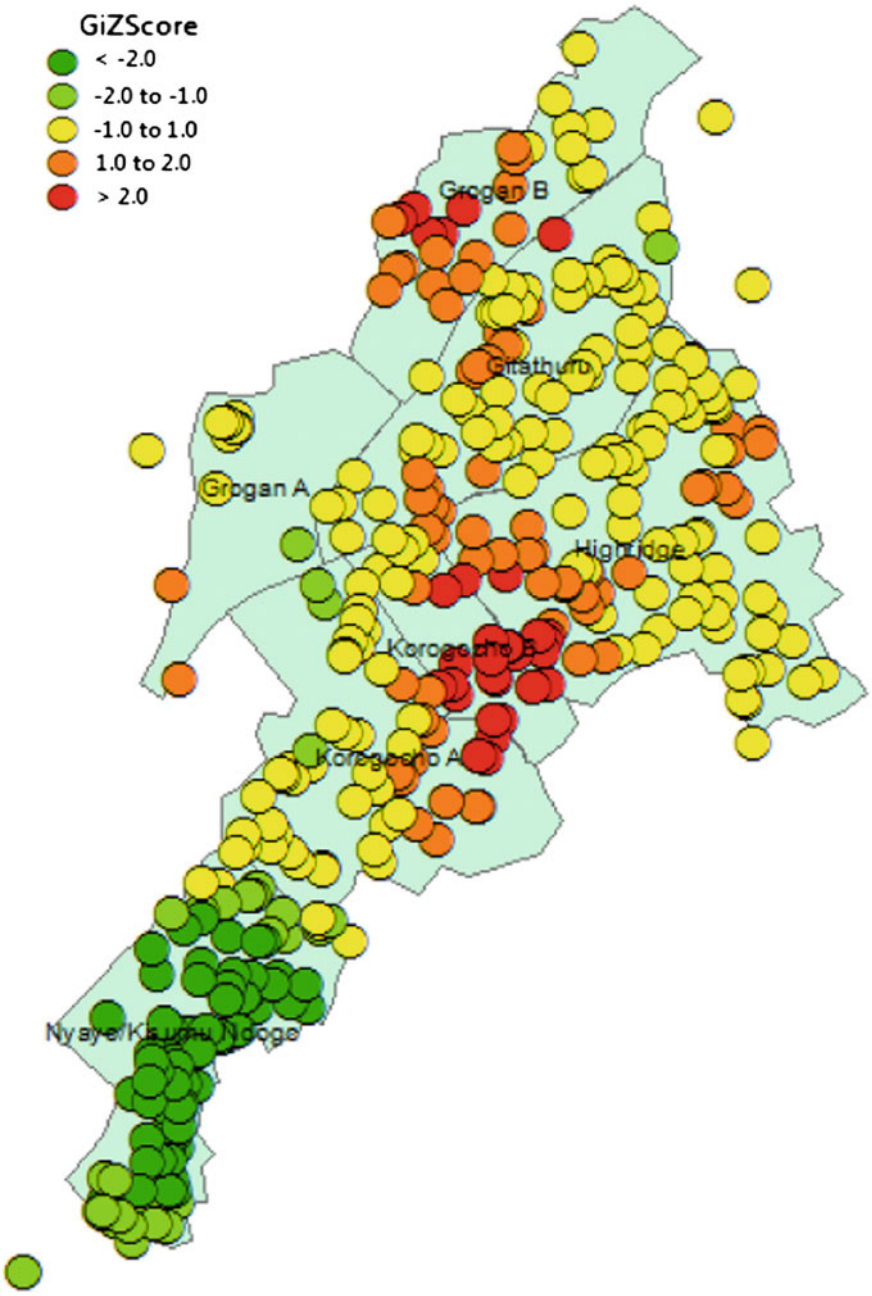

Fig. 8.2 Distribution of household food insecurity within Korogocho

experience, older age may be an indicator of economic disadvantage and diminished opportunity for manual work (Mudege and Ezeh 2009).

The main findings of the study were therefore that the source of livelihood of the main breadwinner in the household is an important predictor of food security, and households engaged in formal labour were more food secure than the others. When the head of the household works in the formal sector or owns a business, the household is more likely to be food secure than when the head is engaged in casual work or other informal income-generating activities. This result is consistent with other studies suggesting that access to better livelihoods and income opportunities protects the household against food insecurity (Bogale and Shimelis 2009). These findings are also consistent with evidence reported in a previous study on household poverty, which showed that households in these two Nairobi informal settlements were able to consistently stay out or move out of chronic poverty over a four year period (2006–09), only if the head of household consistently held formal employment over the same period (Mberu et al. 2014).

The employment effect is not simply about income and may be due to the additional credit worthiness that the breadwinner enjoys in the community. A study of the coping strategies of slum dwellers indicated that buying foodstuff on credit or borrowing money are the top two strategies used in Nairobi informal settlements (Amendah et al. 2014). In addition, when the main breadwinner of a household is in formal employment, household members are less likely to skip a meal because of lack of food or spend a whole day without eating. These findings are significant, given the context of dominant informal employment, low wages, and the near total absence of social safety nets for vulnerable households. Because people are constantly living on the margins, minor shocks like losing employment for a short period, easily result in households falling back to poverty and food insecurity.

A third significant result was the importance of variables other than livelihoods to explain food insecurity among the urban poor. Higher household incomes and higher perceived community security were associated with higher levels of food security while households that experienced a shock or illness were associated with increased food insecurity. Other net predictors included shocks within households, high dependency ratios, and the particular slum of residence. Korogocho households had the strongest coefficient in the whole regression.

8.4 Conclusion

This study found that the severity of food insecurity varies according to the livelihood of the main breadwinner. Having a stable formal job therefore improves the urban household's food security beyond the significant effect of income. Therefore, policies that bolster economic growth resulting in more formal jobs for slum dwellers and an increase in their earnings, are likely to reduce food insecurity in these settings. As a corollary, urban dwellers in casual employment with lower and irregular income face food insecurity. Public programmes that offer protection

and safety nets targeted at the most vulnerable households in urban settings, such as older persons, are needed to reduce food insecurity.

The results also contribute to a more nuanced understanding of food security among Kenya's urban poor by highlighting the varying levels of food insecurity between different slums and across sub-groups within slums. Food insecurity levels are generally worse in Korogocho than Viwandani, which is consistent with evidence that the poverty situation is twice as high in the former as the latter (Mberu et al. 2014). The relative food security advantage of Viwandani over Korogocho supports previous findings on the primary role of economic opportunities in addressing local livelihood opportunities. There is also distinctive spatial variation in levels of food insecurity across both informal settlements. Although slum residents share identifiable common and generalized characteristics and challenges, they also have specific and peculiar characteristics and challenges that predispose them to different vulnerabilities within the same deprived urban environment. Neglecting these nuances even within the same environment, may be overlooking or masking information on the within-group variations necessary to address urban vulnerabilities.

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Chapter 9
Gender, Mobility and Food Security

Liam Riley and Belinda Dodson

Abstract Access to food, rather than a shortage of food availability, is the central problem for urban household food security. Blantyre in Malawi presents a useful case study for demonstrating the importance of linking gender and urban food security. Rates of urban food insecurity are less severe than in other cities surveyed by AFSUN. Yet female-centred households were twice as likely to be severely food insecure as nuclear households. This paper offers some explanations for the survey findings by drawing on qualitative research to understand the gendered geographies of food access in Blantyre. The first point is that gender shapes mobility, which in turn shapes a household's ability to increase its food security by procuring food from the most affordable sources, particularly peri-urban markets. The second point is that gender shapes a household's ability to produce its own food, a popular livelihood strategy in Blantyre that often mitigates the effects of low incomes on household food security. The third point is that gender influences a person's potential income, which shapes the household's economic access to food. These three points demonstrate the multi-dimensional relationship between gender and urban food security.

Keywords Malawi · Food security · Urban · Gender · Mobility · Blantyre · Southern Africa

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9.1 Introduction

Food insecurity is a major problem in Southern African cities, where most low-income households struggle to feed themselves (Crush and Frayne 2011; Crush et al. 2014). For the majority of households, this problem is the result of increasingly insufficient and precarious incomes and steadily rising food costs. Food insecurity in this sense is emblematic of the region's deepening urban poverty, which also includes inadequate housing, water, education, and sanitation (Murray and Myers 2006; Rakodi 1997). Whereas food insecurity is integral to this overall picture of urban poverty, it is set apart because of the broad range of entitlements that can allow low-income households to become food secure in different contexts. Research has shown some households producing their own food (Mougeot 2005; Redwood 2008), receiving food through social networks (Hanson 2005), and obtaining food from rural sources (Frayne 2004, 2010; Lynch 2005). Household gender roles and gendered livelihood opportunities further shape the relationship between income and food security status (Dodson et al. 2012). Women, long economically marginalised in Southern African cities, are most likely to be tasked with processing, preparing, allocating, and producing food at home (Blackdon and Woden 2006). The configuration and negotiability of household gender roles and the livelihood opportunities afforded to women within and outside their households are crucial factors for understanding and addressing urban food insecurity.

This chapter seeks to make three contributions to the understanding of gender and urban food insecurity in Southern Africa. The first is to build on the analysis of the African Food Security Urban Network (AFSUN) data presented in Dodson et al. (2012), by incorporating findings from a qualitative study in Blantyre, Malawi. The AFSUN data provided insights into how gender shapes household food security status, mostly through comparisons between household types of different composition in terms of male and female members. The qualitative study provides more detailed information about individual actors and about the local context of food provisioning in Blantyre. It also helps to address one of the major observations in the gender analysis of the AFSUN data, which was that there was a high degree of variability among the cities (Dodson et al. 2012). Examining a single urban case study can help to elucidate the significance of context and the limitations of generalising across Southern African cities.

The second contribution is to introduce the concept of mobility into debates on urban food security in Southern Africa. A geographical analysis of where people buy food in Blantyre revealed the central role of mobility, and the analysis guiding the qualitative case study foregrounded the practical ways in which mobility in Blantyre is gendered. Hanson (2010, p. 6) remarks that mobility and gender "are completely bound up with each other, to the point of almost being inseparable." Blantyre is an appropriate case study for observing the effects of immobility on household food security because there is minimal urban planning of markets and public transit (UNHABITAT 2011). Furthermore, urban–rural linkages are crucial for urban livelihoods, perhaps to a greater extent than in other cities due to the agricultural productivity of the area surrounding the city and the lack of formal

employment opportunities there (Riley and Legwegoh 2014). Reliance on rural resources to sustain urban households heightens the importance of mobility for food security in this context.

The third contribution of this chapter is to provide additional analysis of the AFSUN survey findings as they pertain to Blantyre, which was an exceptional case in several respects (Mvula and Chiweza 2013). Most notable was (a) the exceptionally high rate of food-secure households in Blantyre, which belied Malawi's low development status relative to other SADC countries; (b) a high rate of engagement with urban agriculture (Crush et al. 2011); (c) a much higher rate of severe food insecurity among female-centred households relative to other household types (Dodson et al. 2012); and (d) limited penetration of supermarkets, amongst the lowest in the region (Crush and Frayne 2011).

The following section outlines the two methodologies that provide the basis for this chapter: the AFSUN survey's approach and categories of analysis, and the Blantyre case study approach, particularly with reference to the participative mapping activity. The subsequent section addresses three factors of household food access that are shaped by gendered mobilities: first, the physical access to markets, which is crucial in Blantyre's largely informal food marketing system with its strong emphasis on peri-urban markets; second, physical access to land for farming, which for low-income households often takes place on customary land in rural areas near the city; and third, the importance of mobility for the viability of informal economic activities, which are a common occupation for women and require mobility for sourcing and selling goods at the highest profit margins. The use of AFSUN data in relation to each topic helps to situate the Blantyre case study in a broader context of urbanism in the region. This serves as a bridge to extend the relevance of these locally specific findings to wider debates about how gender shapes urban food security in Southern Africa.

9.2 Methodology

This chapter draws simultaneously from the Blantyre component of a regional household survey of 6453 households in low-income neighbourhoods of 11 cities in nine countries conducted by AFSUN and a qualitative case study conducted in Blantyre. The qualitative study adds depth to the baseline survey findings, while the baseline survey brings a broader comparative framework to the qualitative findings. The analysis seeks to integrate the two studies in order to shed light on how gendered mobilities shape urban food security in Blantyre, and to build toward a conjecture about the importance of gendered mobilities for urban food security in other Southern African contexts.

The AFSUN survey in Blantyre was conducted in late 2008 and 432 households (including 2730 individuals) were interviewed, all within the low-income peri-urban neighbourhood of South Lunzu (Mvula and Chiweza 2013). South Lunzu Ward is located at the north-east edge of the city, on the far side of Mount Ndirande. It was the last area annexed by the City of Blantyre (in 1988), and

although it received substantial public investments in housing upgrades from the Malawi Housing Corporation, there is ongoing tension between indigenous groups and settlers. Like other parts of Blantyre, South Lunzu was administered under the Traditional Housing Area scheme, meaning that traditional authorities (Village Headmen, Group Village Headmen, and Chiefs) were kept in place to provide local governance under the guidance of the Malawi Housing Corporation. Recent changes to the institutions of local government have officially nullified the legal jurisdiction of 'town chiefs' (Cammack et al. 2009), and yet they continue to exert de facto control over their territories because of the lack of capacity among formal local governing bodies (Tambulasi 2010). One of the implications for household food security is that some households in peripheral communities within the City of Blantyre continue to have customary entitlements to the use of farmland in town granted by the local traditional authority, which provides a food security advantage over other low-income urban households.

The case study in Blantyre used a gender lens focused on men's and women's roles within households rather than on household level food security outcomes. The research activities included 36 in-depth interviews; 32 were with individual men and women, one was with a husband and his wife, one with a father and his adult son, and two were with pairs of friends from separate households who requested they be interviewed together. These interviews provided detailed information about the challenges people face in achieving food security, the advantages that certain people have over others, and how residents perceive the link between gender and urban food security. Research activities were concentrated within six urban wards (Soche East, Soche West, Limbe West, Likhubula, Ndirande North, and Nkolokoti), which represented a variety of poverty rates, formal and informal spaces, prevalence of female household headship and household size. Semi-participant observation in markets, key informant interviews, newspaper analysis and participative mapping complemented the in-depth interviews.

The findings from participative mapping are a focal point of the analysis in this chapter. The activity drew attention to the spatial dimensions of food access, which was a crucial element in linking mobility, gender, and food security. Eight sessions were conducted in the six pre-selected wards. Local partners in each ward assembled groups of friends and neighbours. The size of the groups ranged from four to eight members. Most of the participants were women (although in three sessions men also participated). A research assistant drew the maps schematically according to instructions from participants. The information was then plotted on Google Earth satellite images for spatial analysis, calculation of distances, and cross-group comparisons.

9.3 Food Security Implications of Gendered Mobilities

Despite the differences in methodology (quantitative and qualitative), scale (regional cities and one city), and units of analysis (households and individuals), both studies show that gender shapes food security. After a summary of the gender

Table 9.1 Household food security levels by household type

	Female-centred households	Male-centred households	Nuclear households	Extended households	Total
Regional					
Food secure	14	19	18	15	16
Mildly food insecure	6	6	8	9	7
Moderately food insecure	19	17	21	24	20
Severely food insecure	62	59	53	53	57
Total	100	100	100	100	100
Blantyre					
Food secure	22	52	34	39	34
Mildly food insecure	12	16	13	17	14
Moderately food insecure	26	16	34	30	30
Severely food insecure	40	16	19	14	21
Total	100	100	100	100	100

breakdown of the Blantyre survey findings in comparison to the overall regional AFSUN survey findings, each subsection of this chapter focuses on a central feature of food access in Blantyre. Each begins with a summary of what the regional AFSUN survey found in terms of gender differences and then follows with evidence from the qualitative case study that provides locally-specific insights into the implications and possible explanations of the AFSUN findings. The common thread throughout these subsections is the centrality of the issues of space and mobility, and the ways in which space and mobility have a gendered effect on household food security.

The link between gender and urban food security is evident in the comparison of food security status by household type in the AFSUN survey results. Table 9.1 provides the aggregate findings for all 11 cities and shows that female-centred households had the lowest proportion (14 %) in the food secure category, only slightly lower than the extended households (15 %), but less than nuclear households (18 %) and male-centred households (19 %). Although female-centred and extended households show a similar proportion of food secure households, far more female-centred households were *severely* food insecure (62 %) relative to extended households (53 %). Nuclear households were also less likely to be severely food insecure (53 %) relative to female-centred or male-centred households (59 %). Some reasons for this unevenness lie in the composition and size of the households. Female-centred and male-centred households by definition have fewer adult members to earn money, procure food and perform domestic chores, which often creates an inherent economic disadvantage (Dodson et al. 2012).

The survey found significant inter-city differences in the food security status of female-centred households relative to other types of households (Dodson et al. 2012). In eight cities, the difference between the proportion of female-centred households that were severely food insecure and the proportion of nuclear households that were severely food insecure was less than 6 percentage points, but in Blantyre, it was 21 percentage points (Dodson et al. 2012, pp. 27–28). The difference between the proportion of severely food insecure female-centred households and severely food insecure extended households in Blantyre was even greater (26 percentage points) (Table 9.1). Female-centred households were far less likely than nuclear households and extended households to be food secure (22, 34, and 39 % respectively). The AFSUN survey findings in Blantyre raise compelling questions about the link between gender and urban food security because, while households in the Blantyre sample had much higher food security overall, they also showed much more variation by household type relative to other cities.

9.4 Food Sources, Mobility and Access

The issue of physical access to healthy food for urban populations has risen to prominence largely in the context of 'food deserts' in cities in the Global North. With weaker planning capacity in most cities in Southern Africa, particularly for low income and informal settlements, the issue of where people are accessing food and the implications of this geography for household food security, has posed a more serious challenge (Battersby 2012). While urban food systems in the Global North are overwhelmingly dominated by supermarkets, low-income households in Southern African cities draw on a wide variety of formal and informal sources (Crush and Frayne 2011). Many of these sources are outside the purview of urban planners and urban food security researchers. The complexity and diversity of informal food marketing systems compounds the problem of political 'invisibility' of urban food security (Maxwell 1999), in part because urban policymakers and planners have a limited perspective on what low-income households require. This chapter demonstrates that policy actions such as improving intra-urban mobility networks to improve food access can emerge from spatial analysis of people's daily experiences of accessing food in the city.

Blantyre belongs to a set of cities that rely more heavily on informal than formal food sources. Ninety-five percent of households buy food from the informal economy at least once per week (compared with a regional average of only 59 %). Only 21 % patronise supermarkets with the same frequency and 48 % never shop there. In cities such as Blantyre, where the informal food economy is ubiquitous within low-income neighbourhoods, it is important to highlight the diversity of informal sources. The qualitative research in Blantyre found a variety of types of informal food sources, based on such observable characteristics as the built structures; the type, quality, origin, and prices of food; the proximity to roads and modes of transportation; and, the availability of amenities such as piped water, toilets, and

shelter from the sun and rain. Vendors and customers identified other differentiating factors such as whether markets were administered by the City Assembly or a local or traditional authority; whether vendors paid a daily fee to operate; and, whether vendors were independent or sub-contracted to occupy the market for a wholesaler. These factors begin to describe the variability of the informal food economy, which in some cases provided affordable, accessible, and high-quality food and improved food access. In other cases, people were disadvantaged by inconvenient, unsafe, and expensive informal sources.

The diversity of informal food sources prompted the formulation of a longer list of food source types to summarise the findings of the participative mapping sessions (Fig. 9.1). Four of these sources were mentioned in seven of eight sessions, suggesting that these were the most widely used sources among participants (although not necessarily the most frequently used). Unofficial markets were completely informal in the sense that vendors did not pay fees to the City Assembly and the market structures were constructed and managed through informal or traditional governing structures. The three municipal markets (Blantyre, Limbe, and Ndirande) were the only ones formally recognised in the city's urban plan. They were relatively well built through public funds and offered some amenities. Most people said they shopped at unofficial markets because of the convenience, even though the price was often higher and the quality lower. By contrast, people would travel across town, walking an extra hour each way in some cases, to go to Limbe Market on a market day when cheap and high-quality food was plentiful. One group in the neighbourhood of Angelo Goveya emphasised the benefit to their food security that came from being able to walk to Limbe Market on a weekly basis (about 50 min walk), while also drawing on unofficial markets nearby for smaller daily purchases.

As this group lived in a newly constructed self-help housing project, most had come from informal settlements where they said it had been much more of a challenge to access affordable food. Someone in virtually every group named door-to-door vendors as a food source. Door-to-door vendors were expensive alternatives to going to the market, and yet sometimes it was necessary to pay a premium when there was no time to walk to the market. Small shops ('tuck' shops) addressed this same need for convenience at a higher price. The group in Misesa Village, a squatter settlement on Mount Soche, said they often wasted money on these more convenient sources because they lived so far from the nearest market (about 30 min walk each way). For the most part, economic marginalisation had caused them to live in these extra-legal settlements, where impoverishment was exacerbated by the physical inaccessibility of affordable food. The effect was magnified for women with small children, who often found it difficult to carry children up the steep slope or to leave them home alone for long enough to go to the market.

The link between mobility, gender, and food access was most apparent in the popularity of rural informal markets as a source of food. Six of the eight groups named one or more rural informal market as a place where they would go to buy

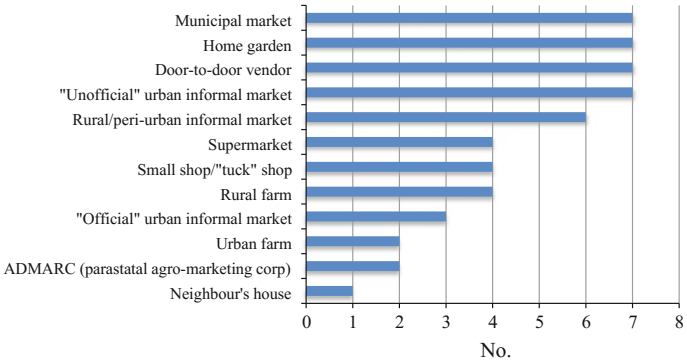

Fig. 9.1 Food sources in Blantyre and number of times named in participative mapping in Blantyre and mapping

food (Fig. 9.1). A group of mostly older women in Nkolokoti, an area that until recently had more rural than urban characteristics, listed several rural markets they would go to on a monthly basis to buy maize, groundnuts, millet, and sorghum more cheaply than in town. They would visit unofficial and official markets nearby on a daily basis to buy vegetables, dried fish, meat, and beans. The popularity of rural markets was again apparent in a subsequent participative mapping session in which most of the participants were women food vendors. They noted that they visited rural informal markets to obtain food for resale in town, with the added benefit that they could buy food there for household consumption at very low prices. The savings on the cost of food augmented the profits of their businesses. One participant said she would pay 360 Kwacha (approximately USD 2.40) in bus fare to travel to Mkando Market, 25 km away, where she could buy chicken for 300 Kwacha (approximately USD 2.00) that would cost 800 Kwacha (approximately USD 5.33) in Blantyre. Several others said they simply do not have the time or money to make such journeys. Although they were aware that they could save money by going to rural markets and buying food in bulk, they were living hand-to-mouth and never had adequate sums of cash for such ventures.

One of the most frequently mentioned rural markets was Lunzu Market, located about 15 km north of central Blantyre, and very close to South Lunzu Ward, where the AFSUN survey was conducted. Participants in three participative mapping sessions said they go to Lunzu Market at least once per month to buy food items such as groundnuts, millet, sorghum, and onions. This pattern of low-income urban residents buying food at Lunzu Market dates back decades to an era when urban formal food sources catered to Europeans and Asians (Chihana 1994). At that time, African urban residents procured most of their food from rural sources. Contemporary patterns of mobility between rural and urban spaces are thus a well-established and normal aspect of food consumption in Blantyre.

The popularity of Lunzu Market helps to contextualize the extremely high rate of patronage of informal food sources in the AFSUN Blantyre sample. In South

Lunzu, many households have good access to this popular and vibrant informal market, which is an integral part of the urban economic fabric and food system. Their proximity to Lunzu Market, and hence the reduced cost of mobility to access affordable food, might contribute to the greater degree of food security in the Blantyre sample, including among female-centred households. Given that physical inaccessibility of affordable food sources is less of an issue in South Lunzu, it would seem that other factors are contributing to the differences in levels of food security by household type in Blantyre.

9.5 Food Production, Gender and Mobilities

Food production by urban households is a longstanding practice whose appropriateness in the urban setting has been the subject of controversy among development professionals, urban planners, and politicians (Castillo 2003; Crush et al. 2011; Hovorka 2006). The AFSUN survey found that agricultural production by urban households was less important as a food source than previous research suggested. Three cities stood out as having exceptionally high rates of urban agriculture: Blantyre (64 % of households), Harare (60 %), and Maseru (47 %), whereas the majority of cities had 10 % or less of households growing food.

Blantyre's high rate of urban agriculture relative to other cities is partly a consequence of where the survey was conducted within the city (Mvula and Chiweza 2013). Blantyre's households were far more likely to rely on field crop cultivation as an additional livelihood strategy (62 %) than households in other cities and they did not dominate in any other category of food production. Whereas urban agriculture can refer to a diverse range of food production activities in and around cities, it is important to note that for the households sampled in South Lunzu, urban agriculture that contributed to household food security mostly consisted of field crop production. The field crop in question is most likely maize, the staple food in Malawi. The fact that so many households in South Lunzu were producing their own staple food, and that the survey took place in a good agricultural year shortly after the harvest, partly accounts for the higher rate of food security in Blantyre.

To the extent that maize production can help account for the higher level of food security in the Blantyre sample, it also helps to explain the differences in severe food insecurity status by household type (Table 9.1). In an economic context in which a majority of households partially rely on urban agriculture for their livelihoods, not being able to produce food can have dire consequences for a household's food security. Smallholder maize cultivation requires access to household labour, land, seeds, water and, to an increasing extent, fertiliser (Mkwambisi et al. 2011). Female-centred households generally have less access to labour because they typically have fewer adults. Women's land access is a complex issue, but even in matrilineal communities in southern Malawi unmarried women can be marginalised from communal and commercial land access for various social and economic reasons (Peters and Kambewa 2007).

Farming in Malawi is becoming increasingly expensive. In the context of population pressure and climate change, commercially available inputs are increasingly vital for smallholder agriculture to be viable (Dorward and Chirwa 2011). The cost of farming puts pressure on unmarried women's limited incomes, exacerbating the gender gap in household food security status. A recent study of urban agriculture in Blantyre found that female-centred urban farming households consistently had lower yields because they farmed smaller plots on average, had less cash to buy farming inputs, had less access to labour (household members and hired labour), and faced gender-specific challenges in accessing education about farming methods (Mkwambisi et al. 2011).

The participative mapping sessions in Blantyre revealed a strong emphasis on household food production as a food source. The basic question, "where do you obtain your food?" elicited references to home gardens in seven of eight sessions (Fig. 9.1). People said they grew leafy vegetables, tomatoes and maize in these gardens. They also had fruit trees on their compounds and raised chickens, rabbits and pigeons for food. In two sessions (Ndirande and Nkolokoti), participants had access to customary and public urban land on which they could farm maize on a larger scale, which was a boost to household food security. The group in Nkolokoti were mostly older women for whom access to land for cultivation near their homes made it less arduous and less costly than the alternatives of farming a rural plot, renting land in town, or earning enough money to rely on purchased maize. Several in-depth interviews, including an interview with a traditional authority (Group Village Headwoman), confirmed the continued practice of distributing urban farmland among members of traditional communities whose claims pre-date the designation of an urban area. This practice is related to the broader governance problem of de jure formal government and overlapping de facto traditional government structures at the local level (Cammack et al. 2009). It is probable that this opportunity for urban agriculture in Blantyre is unique among Southern African cities.

Many households without access to customary farmland in town were able to grow food in their rural home villages or to rent farmland relatively cheaply in the peri-urban areas around Blantyre. In four participative mapping sessions, rural farming was named as a source of food (Fig. 9.1). Distance was a crucial factor in the decision to go to the rural areas to farm. In the session in the formal housing area of Naperi, one woman said she goes to her home village near Bvumbwe (15 km away) several times per month to farm and to procure food to take back to town. Another participant said that she had been cultivating at her home village in Ntcheu District, about 100 km away, but that the cost of her own transportation to go to the farm, and the cost of paying to transport the maize, made it more expensive for her household to farm than to buy food in town. In several interviews, people pointed to the increasing cost of transportation and the amount of time needed for urban livelihood activities as reasons for choosing to rely on purchased food rather than producing their own food in rural areas. Since 2010, when the fieldwork was conducted, fuel has become extremely expensive, suggesting an indirect impact on urban food security through the rising price of transportation (Wroe 2012).

The AFSUN survey did not reveal where households were producing food, and questions about land tenure, productivity and proximity of farms remain unanswered by the survey data. Yet, it is clear from the inter-city diversity that the place where each survey was conducted was a crucial factor in whether or not households relied on food production for their food security. An important finding from the participative mapping sessions and interviews in Blantyre was that mobility and space were major considerations for households deciding whether to invest time and money into food production. This point shows the indirect effects of economic policies that lead to rising costs of transportation on urban households' food security. It also highlights the fact that money and income issues cannot be separated from food production even though food production can, under certain circumstances, mitigate the effects of low incomes on household food security status.

9.6 Informal Livelihoods, Income and Economic Access to Food

A final way in which gendered mobilities shape household food security is through income generation in the informal sector. It is well documented that women earn less money for similar work in Southern African cities, especially in the informal sector. The AFSUN survey found that overall, income was the factor most strongly associated with food security. Food is a major expense for low-income urban households of all types in all cities, but there was relatively little variation by household type within each city (Dodson et al. 2012). There was much greater variation by city than by household type. Households in Blantyre (46 %) were below the regional average (50 %) in terms of the proportion of household income spent on food, possibly reflecting the opportunities to buy food cheaply at informal markets and to reduce food budgets by producing some of their own food. Yet, although female-centred and nuclear households spend a similar proportion of their incomes on food, female-centred households on average had lower incomes from which to budget their food expenses and therefore spent less on food (Dodson et al. 2012). In all cities, lower income levels are a crucial factor for understanding why female-centred households have lower food security status.

The qualitative study of Blantyre highlighted the importance of gendered mobilities for understanding the different opportunities and constraints that men and women face in earning a living. The in-depth interviews aimed to reveal more about women's economic contributions to households and how these contributions were related to household food security status. Childcare was one factor curtailing women's mobility to engage in business activities. One roadside vendor in Nkolokoti said that, as a widow responsible for young children, she was limited to conducting business close to her home. Despite paying a daily fee to the City Assembly, she conducted her business in an unprotected outdoor location in all weathers, while vendors in the relatively formalised municipal markets paid the same fee and had amenities and many more customers. She said that the first

obstacle to selling at a busier market was money for transport to go to one of the municipal markets. Another major factor was that she was a single parent and had to stay close to her children during the day. The household was operating hand-to-mouth, such that when she sold something, even a few leaves of leafy vegetables for the equivalent of a few cents, she would send one of her older children to buy some maize and then start cooking it so they could have lunch. The responsibilities of being a mother and single parent kept her close to her home and directly compromised her ability to increase the profitability of her business. This woman's story serves to illustrate a constraint on mobility that pertains to single mothers of young children. In a city such as Blantyre, where there are no state social grants, this immobility can be detrimental to income-generating activities and hence household food security status (Miller et al. 2011).

At the other end of the spectrum was a woman trader in a nuclear household who travelled frequently to conduct various trading businesses throughout Malawi. Her male children were old enough to cook their own dinner and clean up if she spent the night away, and even though men rarely cook at home in Malawi, her husband would cook for himself when he was alone. Another advantage was that as the wife of a senior police officer, her family had been stationed in several parts of the country, giving her geographically-dispersed business contacts. The profits from her business, the money she saved on their food budget by buying directly from farmers on her business trips, and her husband's wage and housing allowance, meant that this household was very food secure. This interview showed the potential for greater mobility, directly contributing to greater household food security, when a man takes on some of the domestic workload (even to the minimal extent of cooking for himself when his wife is conducting business). Gendered mobility goes beyond issues of transportation and infrastructure; it strikes at the heart of the ideological problem that women are often tied to their homes by their domestic responsibilities and their households' food security status can thereby be reduced.

Findings from the qualitative study in Blantyre resonate with the broader literature on gender, livelihoods and mobility (Uteng and Cresswell 2008). Household food security in all types of households could be improved by facilitating women's ability to generate income through enhanced mobility within and beyond the city (Uteng 2011). The positive effects would be heightened for many female-centred households, as they typically rely on fewer income earners. These linkages observed in households in Blantyre raise compelling questions for further research on the gendered effects of daily mobilities on livelihoods and food security in other Southern African cities.

9.7 Conclusion

This chapter has demonstrated several ways in which gender is linked to food security in Southern African cities and how gendered mobilities are often implicated in these linkages. The AFSUN survey findings produced insights about urban

food security that invite theorisation about the socio-spatial dimensions of urban poverty in the region. The qualitative findings in Blantyre provide a more nuanced understanding which brings forward the everyday spaces, activities, and relationships that shape food access. The single city case study allows the particular opportunities and challenges that men and women in Blantyre face to become apparent in ways that are less clear from the household survey findings. Some of these opportunities and challenges are unique to Blantyre, but others will resonate with people's experiences in cities throughout the region and contribute to a broader understanding of the importance of mobilities for food access and food security. The three features of food access discussed in detail—access to affordable and reliable food sources, access to resources for food production and access to income-earning opportunities—reveal the gendered geographies at the heart of urban food security. Mobility is shown to be a useful framework for theorising the gendered dimensions of urban food security in Southern Africa, as well as for designing potential policy interventions to alleviate food insecurity. The case study of Blantyre presents a working model for future research questions linking gender and household food security in African cities.

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Chapter 10
Migration, Rural-Urban Linkages and Food Insecurity

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Abstract This chapter focuses specifically on the linkages between migration and food insecurity in a rapidly-growing city. Windhoek has experienced significant rural-urban migration in recent years, especially since Namibia's independence in 1990. Many migrants have settled in the northern and north-western areas of the city, primarily in the informal housing areas. Most of the migrant households are poor, food-insecure and female-centred. In an effort to mitigate their insecure food situation, they make use of various strategies including receiving food transfers, obtaining food from informal markets, and other informal methods.

Keywords Migration · Food insecurity · Urbanization · Poverty · Windhoek

10.1 Introduction

The reciprocal relationship between urban food security and migration remains a significant gap in the research literature (Crush 2013). Studies of the impact of migration on food security and vice versa have tended to focus almost exclusively on rural populations (Zezza et al. 2011), examining such issues as whether migrant remittances enhance food security (Comes et al. 2014; de Brauw 2011; Karamba et al. 2011), food insecurity leads to out-migration (McMichael 2014), and migration deprives the rural household of labour, lowers its agricultural productivity and

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undermines rural development (Lacroix 2011). In the urban setting, the definition of food security needs to be extended beyond production and supply to include food access, nutritional quality, and dietary diversity. In that context, there is an emerging literature which examines whether and how the act of migration between very different food environments impacts upon the food security of migrants.

Most of the studies to date focus on the dietary change that accompanies migration from the Global South to cities of the Global North. A number of biomedical researchers have looked at the changing diets and nutritional status of African migrants once they settle in cities of the North (Darmon and Khlat 2001; Delisle et al. 2009; Dharod et al. 2011; Gele and Mbalilaki 2013; Lindsay et al. 2012; Pereira et al. 2010). Riosmena et al. (2012) take the analysis of the relationship between South-North migration and food security a step further, arguing that Mexico-US migration is changing diets in Mexico itself and accelerating the country's growing obesity problem. Studies of the changing food security status of migrants in the cities of the South are much less common and are likely to constitute a major area of research in the future. Most of the research to date has focused on rural-urban migration and changing diets within the country (Bowen et al. 2011; Choudhary and Parthasarathy 2009; Tripathi and Srivastava 2011).

Thanks largely to the earlier work of Frayne (2004, 2005, 2007), urban food security and its links with migration, has attracted more attention in Namibia. Frayne (2007) demonstrates that migrants to the city of Windhoek from the rural north of the country remit income and goods to their rural base. At the same time, their food security in the city is buttressed by substantial informal flows of agricultural produce from the rural family. Similar patterns of rural-urban reciprocity have been observed in Kenya (Mberu et al. 2013; Owuor 2006, 2010). In a broader analysis of migration and rural-urban food transfers at the regional scale, Frayne (2010) uses comparative data from AFSUN's urban food security baseline survey and finds considerable inter-city variation in the volume and types of transfer and their importance to the food security of poor urban households.

This chapter revisits the situation in Windhoek to ascertain if there have been any changes in rural-urban food transfers since Frayne conducted his research and, if so, why. Using a more rigorous set of food security indicators, the paper also focuses on the levels of food insecurity amongst migrant households and their differences with non-migrant households. Furthermore, these indicators permit us to differentiate between different types of migrant household to demonstrate that levels of food insecurity can vary within a community of migrants. Prior to a discussion of the Windhoek survey data, however, it is important to provide a background overview of post-independence rapid urbanization and rural-urban migration in Namibia as a whole.

10.2 Rapid Urbanization in Namibia

Like many other African countries, Namibia is urbanizing at a rapid rate. The 2011 Census indicates that over 900,000 people (or 43 % of the national population) now live in urban areas (up from 33 % in 2001) (Government of Namibia 2012). The capital city of Windhoek is the major focus of urbanization, although all of the country's urban centres are increasing in size. Windhoek's urban and peri-urban population increased from 235,500 in 2001 to 340,900 in 2011 (an annual growth rate of 5 %). The city has 16 % of the national population (up from 14 % in 2001) and 36 % of the total urban population. The next four towns in the urban hierarchy are considerably smaller in size: Rundu (63,431), Walvis Bay (62,096), Swakopmund (44,725), and Oshakati (36,541). Windhoek is about the same size as the cumulative population of the next 10 largest urban centres in the country and continues to increase in primacy. The population of Windhoek is projected to reach half a million people by 2020 if the current growth rate is maintained (Windhoek Municipality 2010).

Large-scale rural-urban migration, especially from northern Namibia, is the major driver of contemporary urbanization (Pendleton and Frayne 1998). Prior to the 1990s, there were considerable obstacles to internal migration. During the decades of South African rule before 1990, stringent controls were placed on the urbanization of the black population (Pendleton 1996). In 1968, the total population of Windhoek was only 57,000 and whites out-numbered blacks. Apartheid controls were eased in the 1980s and rural-urban migration began to increase. In 1981, Windhoek had a population of 96,000, which had increased to 147,000 by the time of independence (Fig. 10.1). A 1991 survey estimated the population of the poorer northern and north-western areas of Windhoek to be about 91,000 (Pomuti and Tvedten 1998). By 1996, the number had grown to about 110,000. In 2011, the population in these areas had reached nearly 200,000 (Government of Namibia 2012).

Windhoek is the economic and political hub of Namibia, accounting for more than half of the country's manufacturing activity, over 80 % of its finance and business services, and two-thirds of its community and social services. The city has

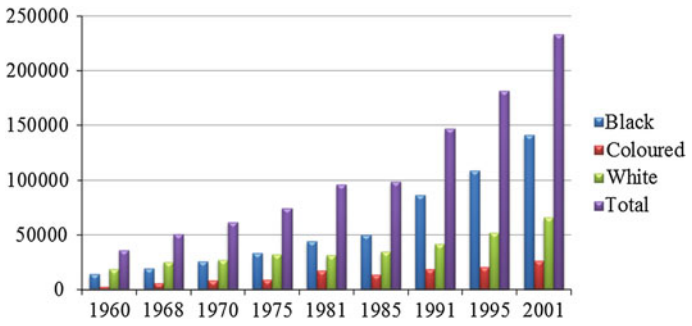

Fig. 10.1 Population growth of Windhoek

a distinctive spatial structure that reflects its colonial and apartheid history. There is a modern and thriving central business district (CBD) with light industrial areas to the north and south. In the centre of the CBD are government offices, courts, banks, the main post office, business centres, hotels, and new shopping malls and supermarkets; a blend of high- and low-rise modern buildings. To the east, south and west of the CBD are various suburbs with households in the middle and upper socio-economic range. But there is another side to this bustling city. In the northern and north-western part of city, over 60 % of Windhoek's population lives on 25 % of the land in crowded formal and informal settlements.

The rapid urbanization of Windhoek in the last 20 years has been accompanied by a major crisis of food insecurity for the new urban poor. However, most of the research on food insecurity in Namibia has tended to focus on the rural areas of the country. While poverty and urban livelihoods in Windhoek have been recurrent subjects of research over the years, food insecurity has been a neglected topic. In 2008–09, the African Food Security Urban Network (AFSUN) conducted a baseline survey to better understand the seriousness of the food security situation in Windhoek. This paper presents the findings of the research with a particular focus on the food security of the migrant households that make up the majority of the residents of Windhoek's poorer informal settlements. The findings of the survey are supplemented by first-hand testimony from qualitative interviews and focus groups conducted in 2010 by one of the authors (Nickanor) with residents of the informal settlements.

10.3 Migration to Windhoek

In both 2001 and 2011, about 60 % of the population of Windhoek were migrants (i.e. they were not born in the city). Survey and census data collected over the years reveal complex post-independence patterns of internal migration (Frayne and Pendleton 2001; Government of Namibia 2005, 2012; Pendleton 1996; Pendleton and Frayne 1998, 2007). Several major streams of migration to Windhoek can be identified. The main stream is internal migration (primarily rural-urban migration from northern Namibia). This stream made up 35 % of the total population of Windhoek in 2011 and 58 % of the migrant population. Owambo migrants from the four north-central regions (Ohangwena, Omusati, Oshana, Oshikoto) accounted for 49 % of the migrants, and migrants from the Caprivi, Kavango, and Kunene contributed another 10 % to the migrant population. Other internal migration streams to Windhoek are from central Namibia (17 % of migrants) and southern Namibia (11 % of migrants) (primarily urban-urban migration). International migrants accounted for about 14 % of Windhoek's migrant population and 12 % of its total population.

It is not difficult to understand why Namibians with skills or professional qualifications might migrate to obtain employment, to live in fully serviced housing in neighbourhoods with a high quality of life, and to enjoy the many amenities Windhoek offers to people who can afford them. Housing in Windhoek's more

affluent areas is luxurious to the point of being ostentatious. However, large numbers of people are also migrating to the areas where unemployment rates are the highest, poverty is widespread, and the quality of life is the worst.

The macro factors of poverty, environment, and political history define the context within which people make decisions about migration (Frayne and Pendleton 2001). Namibia's political history of colonial occupation and economic exploitation by both Germany and South Africa entrenched radical inequalities in regional development. The white commercial farming areas in the centre and south of the country were developed and supported by cheap government-sponsored loans and access to markets and towns. The rural communal areas remained undeveloped sources of cheap migrant labour. These regional inequalities persist despite efforts at rural development since independence. The rural communal areas lack income-producing activities, and cropping and livestock production methods are basic and small-scale.

The Namibian population has an estimated doubling time of about 20 years and is unevenly distributed as a result of regional inequalities in both environmental conditions and political history. Due to poor rainfall and low carrying capacity, the rural central areas of the country are widely recognized as marginal. The location of the central communal areas on the west, east, and south of the commercial farming area reflects a history of land disenfranchisement for white settler farmers (primarily Afrikaners and Germans). The Namibian Constitution does not allow for ancestral land claims although such claims are a frequent agenda item at land conferences because of population pressure on existing communal land areas. Drought is endemic to Namibia, and is one of the environmental factors that affect migration. Common coping responses to drought at the household level include migration of household members to urban areas and sending children to relatives in less affected areas.

The rural-urban migration experience is reflected in various terms and concepts found in Namibian languages and cultures. Among the Owambo, someone who has moved from a rural area and stays in town, and does not visit the rural area, is referred to as *Ombwiti* (they have lost their roots). People who are born in town and stay there are called *Ondakwatwa.* Someone who goes to town for the first time is called *Kashuku.* There is a saying in Oshiwambo that reflects the importance of maintaining rural ties when you move to town: *ou na okukala u na omutala kegumbo* (you should have a room at home). Coming to Windhoek or other towns in central Namibia to look for work is called *Uushimba* in Oshiwambo. However, the term does not apply to Ondangwa, Oshakati, Rundu, or Katima Mulilo, the towns in the north of the country. These places are not seen as "foreign" towns; they are considered local and are different sorts of places. This may be because the ethnic and socio-cultural make-up of such places is both familiar and homogeneous. Similar terms about the urban migration experience exist for people in the Kavango and Caprivi. However, the Herero, Damara, and Nama do not have terms like *Ombwiti,* which reflects their long experience with town life in Windhoek and central/southern Namibia.

The major reasons given by migrants for coming to Windhoek are jobs and money, rural poverty, family issues (such as a change of residence due to marriage

or a death in the family, or simply to move in with relatives), and education (Frayne 2007; Pendleton and Frayne 1998). Many migrants have multiple reasons for migration, reflecting the complex nature of their decision to move. Men and women migrate for the same reasons, but their relative importance differs; economics is more important to men and family/living conditions are more important to women. Of the adult female migrants in the northern and north-west areas of Windhoek, almost half have come in recent years, indicating a substantial increase in urban migration by women for economic reasons. To some extent, the increased migration of women, especially those moving independently from rural areas, reflects their desire for a lifestyle free of the male domination typical of rural life.

The northern (Moses//Garoëb and Tobias Hainyeko) and north-western (Samora Machel, Katutura East and Central, and Soweto) areas of Windhoek are important destinations for Owambo, Herero, Damara, and Nama migrants. The majority of people from the northern regions (the Owambo) settle in the north and north-western areas of the city (Tobias Hainyeko, Moses//Garoëb, and Samora Machel). People from the central regions divide among Khomasdal North, Samora Machel, and Central Katutura. Those from the southern regions head for Windhoek West and Khomasdal North. The established communities of people from each region have a cumulative effect as new migrants often stay with kin or friends prior to establishing their own independent households. This helps to explain why there are fewer people from the Caprivi and the Kavango in Windhoek even though the Kavango is about the same distance from Windhoek as the former Owamboland. However, this situation is changing with more tarred roads, more combi-taxis regularly travelling to Windhoek, and people from these areas establishing communities in the city.

There is considerable evidence that urbanization in Africa does not involve a one-time move from rural to urban areas. Many urban households maintain strong links with rural households in “home” communities. Studies of remittance behaviour in Southern Africa, including Namibia, show that urban households often send money and periodically send goods (including foodstuffs) to the rural households they maintain links with. Several studies have shown extensive links between urban and rural households in Windhoek and the north of the country. In 2000, Frayne interviewed 305 households in Katutura and found that 85 % of respondents were migrants to Windhoek (Frayne 2004). Only 2 % had no rural relatives. Just over 40 % visited their rural home several times per year and another 40 % once per year. Less than 10 % never visited. Only 37 % of migrants had sent money home in the previous year, a figure that had not increased in a decade.

10.4 Households of Migrants

The AFSUN Urban Food Security survey was conducted in Windhoek in late 2008. The fieldwork was implemented by the Central Consultancy Bureau (UCCB) of the University of Namibia. Households in four of the poorer areas of the city were

surveyed: Tobias Hainyeko (with a total population of 45,912), Moses//Garoëb (45,564), Samora Machel (50,110), and Khomasdal North (43,921). Within these four constituencies, 14 enumeration areas (PSUs) were selected and 32 households identified using a systematic random sampling technique. The selected households were located on maps, which were used by the fieldworkers to find their target households. A total of 448 household heads or their representatives were interviewed and information on 1848 people was collected. In early 2010, 52 in-depth interviews and 8 focus groups were conducted in the informal settlements. A list of 180 households that had been interviewed in 2008 was first drawn up. Fifty households were then purposefully sampled from the 180 and key informants were drawn from the selected households.

The census findings about the significance of migration to the demography of Windhoek were confirmed by the AFSUN survey. Only 30 % of the total household population had been born in Windhoek and most of these were children. Almost half of the household members were rural-urban migrants, primarily Owambo. About 10 % had moved to Windhoek from other urban areas. The surveyed households can be grouped into three categories: migrant households (all the members were born outside Windhoek), households with no migrants (in which everyone was born in the city), and mixed households with both migrant and non-migrant members. For the purposes of this analysis, migrant households are compared with the other two types combined.

The majority of new migrants to Windhoek settle in the city's rapidly growing and under-serviced informal settlements. Two-thirds of the migrant households in the survey lived in informal housing and only one-third in formal housing (Table 10.1). The situation was almost exactly the reverse with other kinds of households with 63 % in formal housing and 37 % in informal housing. Another striking contrast between migrant and other households is in their type. The greatest difference was in the relative importance of male-centred households: 34 % of migrant households and only 10 % of other households have a male head without a spouse or partner. This is consistent with Frayne's (2004) finding that single adult

Table 10.1 Migrant and other households in Windhoek

	Migrant households		Other households	
Type of housing				
Formal	70	32.7	141	62.7
Informal	144	67.3	84	37.3
Total	214	100.0	225	100
Type of household				
Female-centred	60	27.8	85	37.1
Male-centred	73	33.8	23	10.0
Nuclear	41	19.0	56	24.5
Extended	42	19.4	65	28.4
Total	216	100.0	229	100.0

male migrants in Windhoek often form ad hoc households, living under the same roof, eating from the same pot, and pooling income.

The distinctive nature of rural-urban migration in Namibia is reflected in the age structure of the migrant population (Fig. 10.2). Migration is clearly dominated by adults of working age. Almost 70 % of household heads are in the 20–44 age range, with the majority in their late thirties and early forties. While other household members tend to be a little younger on average, two-thirds are aged between 20 and 44. Within that band, migrants in their twenties dominate. The numbers of migrant children under the age of 15 and adults over the age of 60 are comparatively low. Children are not absent but they constitute only 13 % of total migrant household members (discounting heads of households). Those over 60 make up only 6 % of household heads and 1 % of other household members.

At the time of the survey, only half of the working-age adults in migrant households were in full-time employment (Table 10.2). Another 10 % had casual or part-time work. The unemployment rate was therefore either 37 % (counting all those without jobs) or 27 % (only counting those without jobs who were actively seeking employment). As one man observed:

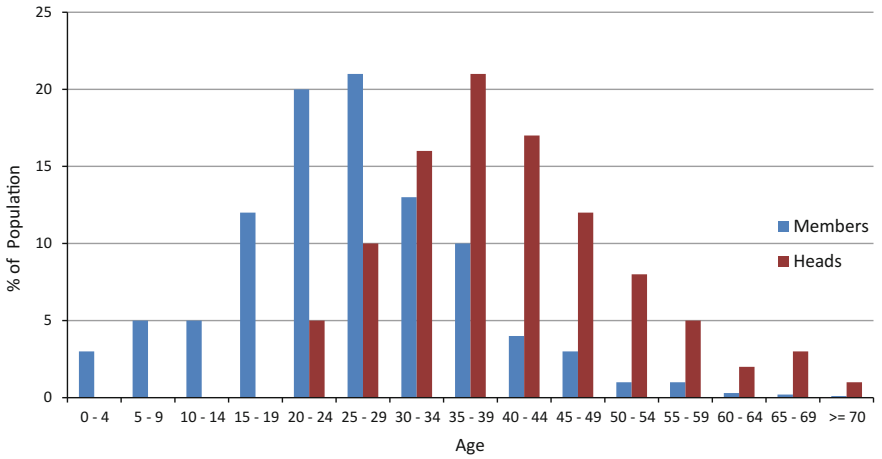

Fig. 10.2 Age distribution of migrant household members

Table 10.2 Employment status of migrant household members

	Female (%)	Male (%)	Total (%)
Working full-time	42.9	60.0	51.3
Working part-time/casual	12.2	8.4	10.3
Unemployed—looking for work	32.3	23.5	27.1
Unemployed—not looking	12.6	8.1	10.4
Total	468	455	923

> There are not many opportunities for us to find work here in the urban areas. You can observe the many young people that are moving to the urban areas with the hope of finding employment but either because they are not educated or lack skills are just roaming the streets. The situation is dire here, some also do not want to work and others have given up completely (Interview with 58 year old male, 16 February 2010).

Other, relatively minor, sources of household income include the informal economy, casual work and remittances (all 15 % of households), social grants (4 %), rentals (1 %), and sale of agricultural produce (1 %). In other words, wage employment is easily the most important source of income amongst Windhoek's migrant households. Average annual household income from employment amounted to NAD 47,000, compared to only NAD 10,000 from casual work, and NAD 9500 from informal activity. There was a marked gender difference in the employment profile with 60 % of males and only 43 % of females in full-time employment. Rates of unemployment were significantly higher amongst women than men.

10.5 Migration and Food Insecurity

Although four out of five migrant households obtain income through a household member in wage employment, wages are low and many live in a state of persistent poverty. Given that households in Windhoek purchase most of their food, this raises the question of whether income poverty translates into food insecurity. Household food insecurity was measured using the various international cross-cultural scales developed by the Food and Nutrition Technical Assistance Project (FANTA): the Household Food Insecurity Access Scale (HFIAS), the Household Food Insecurity Access Prevalence (HFIAP) indicator; and the Household Dietary Diversity Scale (HDDS).

The HFIAS average score for all surveyed households in Windhoek was 9.3. Only two of the 11 cities surveyed by AFSUN (Johannesburg and Blantyre) had lower (i.e. better) mean and median scores on the HFIAS. The urban poor of Windhoek therefore appear to be less food insecure than in many other cities of the region. However, there was a notable difference between the food HFIAS average score for migrant households (10.0) and other households (7.4), indicating that migrant households are less food secure than other households. This is confirmed by the distribution of households across the groups of HFIAS values. For example, 62 % of migrant households and 68 % of other households had scores of 10 or less. As Fig. 10.3 shows, the higher the HFIAS score, the greater the relative proportion of migrant households. The fact that around 25 % of migrant and 20 % of other households had scores above 16 indicates that food insecurity is not only a function of migrant status, however.

The differences between migrant and other households are narrower on the HFIAP classification (Fig. 10.4). Over 60 % of households of both types classified as severely food insecure (64 % migrant, 62 % other) and, at the other end of the

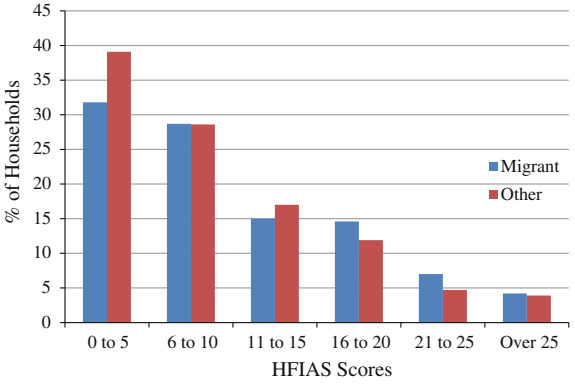

Fig. 10.3 HFIAS Scores of migrant and other households

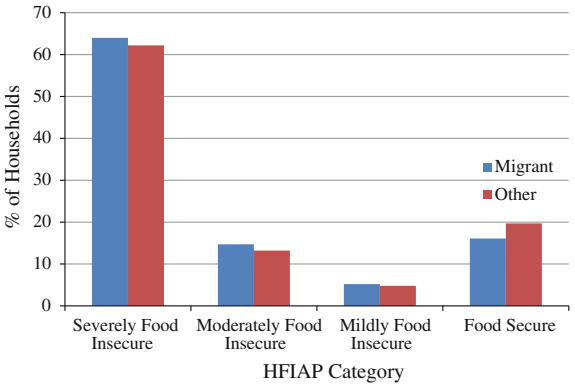

Fig. 10.4 HFIAP categories of migrant and other households

spectrum, only 4 % fewer migrant households were food secure (16 % migrant versus 20 % other). This suggests that migrant households are not significantly more food insecure than the other residents of Windhoek's poorer areas despite the fact that more of the latter live in formal housing and have better incomes. The explanation for this is rural-urban food transfers that close the gap between the two types of household (see below).

The overall HDDS (dietary diversity) score for Windhoek is 5.95 (out of a possible 12). Migrant households (at 5.46) have a less diverse diet than other households (at 7.00). The distribution around the mean score varied considerably at the extremes. As Fig. 10.5 shows, migrant households were disproportionately represented in the lower dietary diversity categories (50 % of migrant households had a score of 5 or less compared to only 34 % of other households) and under-represented in the higher dietary diversity categories (9 % vs. 22 % with scores of 9 or above). The lack of food and the monotony of the diet were a constant refrain in the qualitative interviews:

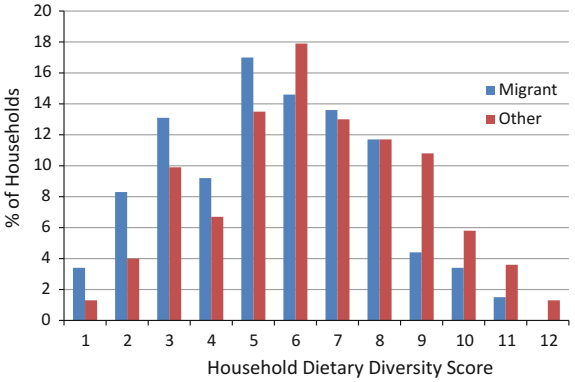

Fig. 10.5 Distribution of dietary diversity scores

> Even when there is something to eat, which in most cases is *mahangu* or maize porridge, your hunger is not satisfied. What is important is that one has taken in that little bit of food and that is how we live - *kamakela ka kasa* [proverb that even when there is insufficient food a person will not die.] We do not even own livestock in the rural village to supplement ourselves in the urban areas. We usually eat once per day. Here there is no-one who should eat more or less. If what is there is small, then everyone eats less. Every day we eat the same meal, pap, pap, we do not have a choice of what we want to eat, it is what we can afford. One has to live and pap takes away your hunger (Interview with 58 years old male, 16 February 2010).
>
> We share the food equally with my children, obviously they eat frequently. They get hungry often and it is worse when there is not even bread to give them. It's not as if we eat fancy food – it is mainly pap, pap from maize or *mahangu*. The children get tired of eating the same food – but where do I get the money to buy them nutritious food? One constantly worries about where to get the next meal – what will happen to the children if I don't find food? (Interview with 25 years old female, 17 February 2010).

10.6 Rural-Urban Migration and Informal Food Transfers

A number of studies have documented the existence of informal food chains linking rural and urban households through migration systems (Tacoli 2002). This phenomenon has been termed 'reciprocal urbanization' by Frayne (2010) as it involves a constant back and forth movement of people and goods, including foodstuffs, between urban and rural areas. Frayne (2004) earlier demonstrated the importance of informal food transfers in Windhoek where 62 % of poor urban households received food from rural relatives. Produce continues to move from the north of the country to Windhoek when urban residents visit the area and return with food or it is sent directly to the city through various informal channels. In many cases, reciprocal urbanization involves sending cash remittances to rural family members in the north and receiving agricultural produce in return:

> We receive food such as beans, maize, *mahangu* (millet) from our grandmother in the rural north during the rainy season and she sends these items twice a month and in return we send her money (Interview with 34 years old female, 16 February 2010).

Migrants in Windhoek are also sent food by rural relatives during periods of unemployment and while they search for work. Some respondents suggested that households without access to income depend on food from the countryside to avert hunger and starvation:

> We live in extreme poverty here, but I sometimes think it's much better than the rural areas. I just struggle to find work here and there for a day or two and it is with that money that I buy food. There are some relatives in the rural north who send us food and especially when harvests are good we receive a variety of food types apart from *mahangu* flour. We do not receive this food on a monthly basis – but when we receive it, it relieves me from going to the shops every time to buy food (Interview with 40 years old female, 18 February 2010).

> My family in the north sends us food from the north mainly *mahangu* flour, dried and fresh spinach. We receive *mahangu* flour about 40 kg every month; if they don't send we are going to starve with such a full house (Interview with 27 years old male, 18 February 2010).

> The food is sent to the (household) members in the urban areas, because some may not have jobs yet. There are other basics to pay for. Some are staying with children from the rural households, so we need to help each other. We do get food from our household in the rural north because in the rural north food is grown and not bought every day like here in the urban areas (Focus Group Participant, 25 February 2010).

Most of these quotations make reference to the fact that the flow of food is not consistent throughout the year. In the words of one focus group participant, "we do receive food from the rural north, but only when they had a good harvest." The quality of the harvest certainly determines how much produce is received in Windhoek in any given year:

> During and after harvesting most households receive *mahangu* flour from the rural north. It is not always but maybe once in two months and the quantity depends on how much they have in their granaries. With the flood these days we also receive fish in addition to the usual food. The food is send by members of our households in the north or parents or other relatives (Focus Group Participant, 25 February 2010).

While *mahangu* flour was mentioned by almost all the respondents, some receive a more diverse food basket:

> We do get food mainly *mahangu* flour, dried spinach (*omaanda*), beans, pumpkins, nuts and wild fruits (*eembe, eenyandi, eenduga*) from the north. Most of these food types are dried, in that way we can keep them longer. Other households may receive food from relatives in other urban areas but most of the food remitted is really from the rural north (Focus Group Participant, 25 February 2010).

> During the summer it is the best time regarding food security in many households because most receive a variety of fresh produce from the rural north such as pumpkins, beans, nuts, *mahangu* meal, fresh wild spinach, *omutete,* wild fruits such as *eembe* and *eenyandi* and even mopane worms (Focus Group Participant, 18 February 2010).

The AFSUN survey confirmed that cereals (primarily *mahangu*) are the most important type of food transferred from the rural areas (received by 38 % of migrant households in the previous year). The overall figures for other foodstuffs were much lower: fish (received by only 9 % of households), legumes (8 %), meat or poultry (7 %), and vegetables (5 %). Only 2 % had received any fruit in the previous year. In general, then, informal food transfers do not add significantly to the dietary diversity of the majority of households. Transfers of all foodstuffs are also relatively infrequent. None of the recipient households said they receive cereals more than once per month. About one-quarter got cereals at least once every two months and 57 % received them 3–6 times per year. The remaining 16 % received the transfers just once per year. The main exception to the pattern of infrequent transfers is meat and poultry (with nearly 80 % of recipient households getting them at least once every two months).

Interestingly, only 39 % of the surveyed households had received food from rural relatives in the previous year. Some respondents felt that food was only received by migrants who kept in close contact with their rural families:

> We sometimes receive food from the north, mainly *mahangu* flour, beans, pumpkins, nuts and other wild fruits. But not all the households receive that. Those who do are those who have maintained strong links with their rural households. Some or most female-headed households are on their own (Focus Group Participant, 25 February 2010).

Others pointed out that harvests in the north had been severely affected by extreme weather in recent years, leading to declining harvests and less food to send to the city:

> At times it's only when you go visit that you bring along food, people in the north are just struggling with the changes in the amount of rain received and the floods which destroyed the crops, one can no longer rely on that as a source (Focus Group Participant, 25 February 2010).

> One cannot completely rely on the food from the north, because those in the north also depend on it for survival and these days the rains and floods have affected the harvest so much that they rely on drought food until the next cycle again. The food from the north is send mainly by family members and relatives. Apart from *mahangu* flour which can be sent throughout the year some food types such as pumpkins, fresh wild spinach and sour milk are seasonal (Interview with 45 years old female, 22 February 2010).

> When we visit the north we bring back *mahangu* flour. They also send it in case I don't go – maybe four times per year but these days the harvest in the north is not that good due to recent floods in the year 2004, 2008, 2009 and 2010 (Interview with 38 years old female, 18 February 2010).

Some researchers have suggested that climate change may be a factor in agricultural decline and is likely to continue to have negative impacts into the future (Newsham and Thomas 2013).

Households that classified as food insecure on the HFIAP scale were more likely to receive food transfers than those who were not: for example, 37 % of food insecure households received transfers compared to just 6 % of food secure households. This suggests that food transfers per se were insufficient to guarantee

food security which is consistent with the fact that the critical determinant of food security is access to wage income. The disproportionate number of food insecure households amongst those receiving food suggests that these transfers are actually a response to food insecurity.

10.7 Conclusion

While the multitude of challenges facing such rapidly-growing cities of migrants (employment, housing, service provision, and transport infrastructure, for example) are well-recognized, food insecurity is not. International, continental, and national food security agendas (including in Namibia) have a decidedly rural bias with little attention given to the specific challenges of feeding the residents of African cities (Crush and Frayne 2011). Food *availability* is not a central issue in a city like Windhoek and is likely to become an even less important dimension of food insecurity as more supermarkets open and the city becomes more firmly integrated into modern global and regional food supply chains (Emongor and Kirsten 2009). The most important dimensions of food insecurity are the lack of food *access* and dietary diversity and these, in turn, depend on incomes and food pricing. In Windhoek, the poorest households are located in informal areas of the city. The majority of these households are comprised of migrants from the rural areas and experience chronic food insecurity. Windhoek has experienced significant rural-urban and urban-urban migration, especially since independence. People have migrated to the city en masse in search of a better life than they could ever hope for in the rural areas. But with declining and irregular informal rural-urban food transfers to supplement their diet, they are in an increasingly precarious situation.

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Chapter 11
Wild Food Consumption and Urban Food Security

Lauren Sneyd

Abstract Increased urbanization across the African continent is an important contributor to the expansion of local, urban wild food markets. Urbanization creates a new type of consumer who, unlike rural inhabitants, has to buy wild products rather than gather them. Wild foods are increasingly recognized for their contributions to dietary diversity and nutritional security in the urban centres of the Congo Basin and Cameroon. This chapter aims to contribute to an understanding of the linkages between wild foods and food security, drawing on the 2011 Cameroon Comprehensive Food Security and Vulnerability Analysis (CFSVA) baseline study, supplemented with interview and survey data gathered during fieldwork in Cameroon from 2010 to 2013. Geographically, the focus is on wild food consumption in Yaoundé, the capital city, and the southwest peri-urban region. It concludes that ongoing research needs to be carried out in urban areas on the accessibility of diet rich foods to better understand their contributions to food security, environmental sustainability, nutrition, and public health.

Keywords Cameroon · Yaoundé · Food security · Dietary diversity · Wild foods

11.1 Introduction

Increased urbanization across the African continent is an important contributor to the expansion of local, urban wild food markets. Urbanization creates a new type of consumer who, unlike rural inhabitants, has to buy wild products rather than gather them (Ndoye et al. 1997). Urban individuals and households are generally net food buyers who rely on income for their food security, spend a large proportion of households' budgets on food, and have little access to other safety nets like agriculture or land in times of crisis (Cohen and Garrett 2010; Crush and Frayne 2011; FAO 2012). Consequently, the purchase and consumption of wild foods in the

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urban environment is more about food choices, personal preferences and household budgets than the wild 'famine foods' touted in the literature (Sneyd 2013).

Wild foods are increasingly recognized for their contributions to dietary diversity and nutritional security (FAO 2013; Modi et al. 2006). The narrative driving analyses of wild food consumption across Africa situates them as a coping mechanism or adaptive strategy for increased household security when times are bad (Compton et al. 2010). This narrative depicts the gathering and consumption of wild foods as a reliable option when social or economic access to food at the market has been compromised either by environmental or income shocks. Such accounts of wild food seem more plausible in rural areas where there is greater access to, and reliance on, the natural environment for gathering wild foods (Gbetnkom 2008). In the urban centres of the Congo Basin and Cameroon, however, wild foods from the humid forest zone (HFZ) make a significant contribution to diets and to dietary diversity (Sneyd 2013, 2015). Focusing on the ways in which city dwellers engage in wild food consumption is therefore an important concern. Initiatives are underway in East Africa to make African leafy vegetables (ALV) more accessible to urban populations (Gotor and Irungu 2010). Lessons learned from this initiative could be useful in places where the environment and diet are welcoming of these foods (Gockowski et al. 2003; Kamga and Akyeampong 2013).

Urbanites in Cameroon continue to rely upon wild foods, or at least continue to hope to do so. Many spend more than 25 % of their food budgets on wild products. This chapter therefore seeks to answer a central research question: that is, what are the contributions of HFZ wild food products to food security in urban centres of Cameroon in the aftermath of the global food price crisis of 2007–8? In doing so, it aims to contribute to nascent conversations on the linkages between wild foods and food security in cities in the Congo Basin. The chapter draws on findings from the 2011 Cameroon Comprehensive Food Security and Vulnerability Analysis (CFSVA) baseline study, supplemented with interview and survey data gathered during fieldwork in Cameroon from 2010–2013. Geographically, the focus is on wild food consumption in Yaoundé, the capital city, and the Southwest peri-urban region.

11.2 Methodology

This study builds on findings from the 2011 Cameroon CFSVA of 6300 households from Cameroon's ten regions. In the CFSVA, households responded to questions about their food intake, sources of income, livelihoods and expenses, assets and various practices associated with strategies for survival (WFP and FAO 2011a, b). The CFSVA findings suggested that urban dwellers experience a greater level of food security than their rural counterparts. However, their situation is greatly impacted by rising food prices, as urban residents have to purchase the food they consume.

An additional survey was conducted to elicit responses from the participants on the types of foods they considered to be wild and how those foods featured in their daily diet. The research design also focused on the sellers and buyers of wild food products in urban areas. Within each city, markets were randomly selected based on criteria such as size, location, and days of operation and identification of wild food sellers. Geographic Information Systems (GIS) points were collected to map the locations of the markets in each city. Figure 11.1 charts the locations of eight markets and four restaurants in Yaoundé where wild foods are bought and sold. Figure 11.2 identifies nine markets in the Southwest region where wild foods are bought and sold. The circles on each map indicate the proximity of households to markets that sell forest foods.

Data were collected via participant observation and semi-structured interviews in English and French in both markets and households and in both the wet and dry seasons. Individuals were randomly selected in the market and asked to participate in the study. The households that were interviewed typically do their food shopping in the markets within a one to two kilometre radius of their home. In Yaoundé, 106

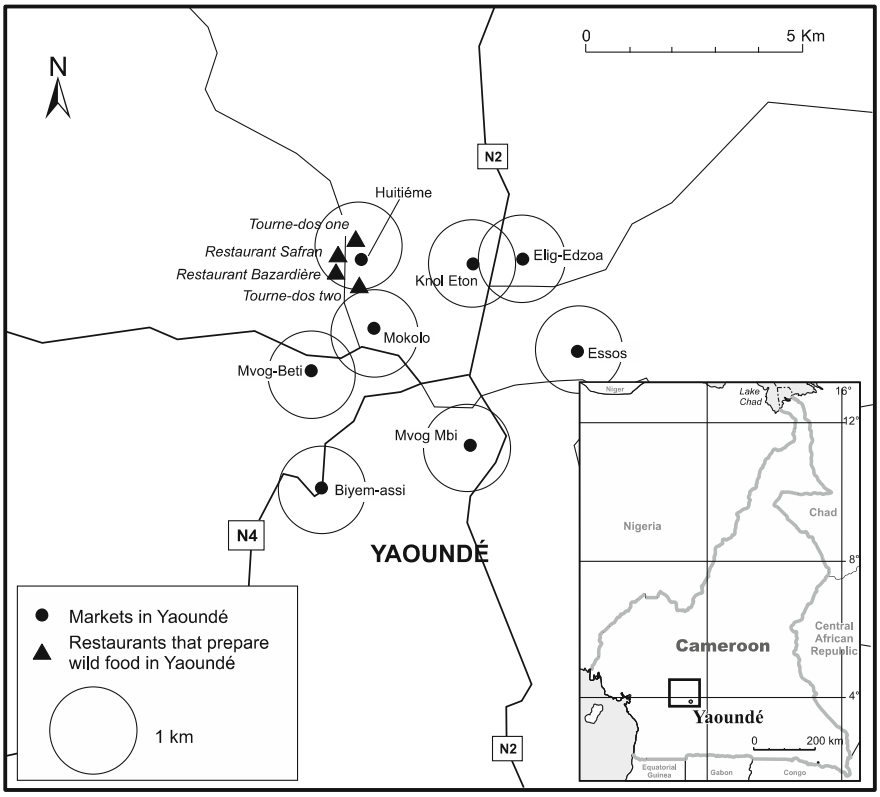

Fig. 11.1 Location of study markets and restaurants in Yaoundé

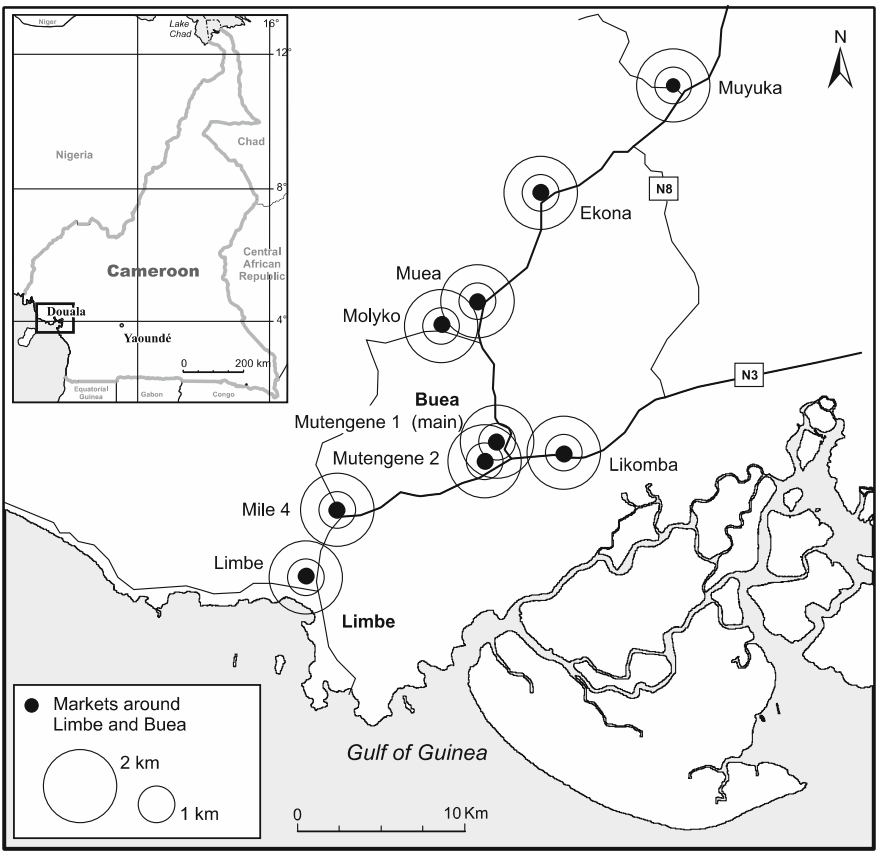

Fig. 11.2 Location of markets in the Southwest region

food traders and 127 households were interviewed. In the Southwest region 64 food traders and 70 households participated in the study. In total, interviews were conducted with 197 households, 170 food traders, and four women who run open-air restaurants, or 371 participants in total. When factoring in total household dependents and family members, the study included 2111 individuals. Particular attention was given to the types of wild foods consumed and the impact of food prices on household budgets.

Survey data, transcripts, and field notes from interviews and discussions were read and coded for emerging themes related to wild food consumption and relative levels of food security within and between households at different income levels. There was a particular focus on the perceived acceptability of these foods for meeting household needs. No claim is made that the data are representative of the wider population or quantitative rates of food insecurity in these cities. Instead, the data represents a snapshot into the lived and daily realities of food provisioning for urban residents.

11.3 Wild Food Availability

Cameroon is made up of over 250 ethnic groups and the cuisine differs not only by ethnic group, but also by region (Mbaku 2005). Cameroonian cuisine combines different regional staples (such as rice, yams, cocoyams, plantains, potatoes, cassava, maize, and millet) with vegetables, fruits, and animal and fish products into a soup or stew. The staples are usually roasted, boiled, fried, or pounded in a mortar. The most common are plantain, cassava, and cocoyam which, when pounded, take on a gelatinous consistency as the starch breaks down (McCann 2009). The resulting fufu accompanies one-pot dishes, such as ndole, eru or okok, achu vegetable, kwakoko with mbanga soup, and mbombo djobi (or mbongo tchobi) among other local meat and fish dishes, and are exceptionally popular (Ancho-Chi 2002; Mbaku 2005).

Wild foods are essential components of these dishes and regional cuisine. Most wild foods available in markets throughout the country originate from the forest zone (Sneyd 2015). In particular, (*Gnetum* spp.) when cooked as a dish, is not only high in iron and zinc, it is also a rich source of protein and essential lipids (Sharma et al. 2007). Green leafy vegetables are particularly important in the supply of iron and vitamin C, which may alleviate the high levels of anemia in Central Africa, which are exacerbated by the prevalence of malaria.

The data collected for the study showed that 66 wild foods were named and available in city markets in southern Cameroon (Table 11.1). These foods can be categorized into spices, condiments, proteins, aphrodisiacs, medicines, and vegetables. The supply-side of wild food hinges on a set of factors and production knowledge that influences availability including seasonality, weather, harvesting or gathering and, most important, access to the forest. The climate in Cameroon's forested southern region includes a clearly defined major dry season (December–May), followed by a short rainy season (May–June). The short dry season lasts from July–October followed by a high rainfall wet season (October–November). What is noteworthy about the availability of wild food products is the seasonality of particular foods and the identification of peak periods of abundance and scarcity.

The most common wild foods found in urban markets are the spices. These spices include various parts of a plant such as the fruits, the stone or pit of fruits, the bark, the blossoms and leaves, and bulbs. These parts are dried and often ground into a powder or a paste. While many edible wild plants and other food products are regularly included in local food purchases, wild spices make up a significant portion of the household food basket and are inextricably linked to the food culture. These spices are components of recipes that are a part of traditional meals and the daily diet.

When there is scarcity, food traders or buyam-sellam (in Pidgin) identified various reasons for low stocks of wild food in the market. As one observed, "it depends on the season. There are periods when there is little harvest from the forest. There could [also] be shortages because of the weather or a rise in prices." Urban residents say the forest is too far away so they do not go there as much as they did

Table 11.1 Wild foods available in Cameroonian cities

Wild food	Peak periods of abundance	Use and preparation
Eru/okok (*Gnetum africanum*)	All year, but more in the rainy season	Sliced thinly and cooked in a stew with waterleaf, cow skin, dried fish and crayfish and palm oil and eaten with cassava fufu
Bush mango (*Irvingia* spp.)	July and August and September and October	Fruit is popular for children; stone is dried and ground down and used as a soup thickener
African plums, safou (*Dacryodes edulis*)	April–October	Fruit is boiled or roasted before it is consumed
Kola (*Cola acuminata*; *Cola pachycarpa* K.; *Cola nitida*)	August–September	Chewed when drinking palm wine; stimulant
Njansang (*Ricinodendron heudoletii*)	May–September	Dried and prepared in a soup; can be substituted for groundnut in soups and stews
Bush onion or country onion (*Afrostyrax kamerunensis*/*Afrostyrax lepidophyllus*)		Used in soups and stews as a condiment or spice, especially in ekwang
Mbongo (*Aframomum citratum*)	May–September	Roasted until charred then ground and mixed with other spices usually for a fish soup (mbongo tchobi)
Rondelle (*Scorodophloeus zenkeri* Olom)	All year	Seeds and bark from the tree are eaten after simple drying. Pulped or ground, they have a flavour similar to garlic and are used as a spice in cooking
Alegata pepper (*Afromomum melegueta*)	n/a	Used in soups and stews and holds cultural significance to ward off evil spirits
Pebe [*Monodora myristica* (Graertm) Dunal African nutmeg]	n/a	Seeds from the tree are dried and sold whole or ground to be used in stews, soups, cakes and desserts
Quatre cote (*Tetrapleura tetraptera*)	n/a	Spice or stew
Caterpillars (*Rhynchophorus phoenicis*)	June–July	Roasted and or dried for soups and stews
Termites	March–September	Protein, dried and roasted
Mushrooms (several species)	Rainy season	Protein, prepared in a stew
Forest snails (several species)	Rainy season	Protein, prepared in stews and also boiled and roasted
Honey	All year	Medicine, food, gift
Bushmeat [various, including antelope, snake, cane rat (*Thryonomys*) and pangolin (*Manis tricuspis*)]	All year	Protein, prepared from fresh, roasted or dried to be used in stews

in the past to find food for their households and for sale. They also suggest that the farm is more reliable than the forest for food harvests because the forest is changing. Some buyam-sellam highlighted the difficulties in maintaining a reliable stock for the urban demand for forested foods. As one noted: "at times I hear that some people hide food to cause scarcity but this is difficult for perishable foods."

With large-scale logging, the growth in cities, deteriorating roads, and the depredations of officers from Ministère des Forêts et de la Faune (MINFOF) or the police, many wild food traders are finding it less profitable to travel to the forest to gather food for cities. Traders often complained that their biggest problem was threats of seizure of products by officers or the possibility of having to pay bribes to ensure the food arrives at the market. As one commented, "sometimes the buyam-sellam don't find the products in the forest and if they do the Forest and Fauna officers [can] stop or arrest the buyam-sellam on the road." The possibility of a shakedown is most often an opportunity for corrupt officers to 'chop' the earnings of gatherers and wholesalers, and is not necessarily related to the traders breaking any law.

11.4 Wild Food Accessibility

One respondent commented that it was "not easy for the poor man in the city to eat." His observation typifies the experience of many city residents. The majority of urban dwellers in Cameroon spend more than half of their income on food (from 50 to 75 %). This does not leave much room in the budget for other basic needs. As noted above, around a quarter of household food budgets on average is spent on wild foods. However, both overall food expenditures in the study areas and the amount spent specifically on wild food differ with income level (Fig. 11.3). Households in the highest income group spend 25 % of their income on food and 17.5 % on wild foods. By contrast, the figures for those in the lowest income group are 66 and 30 % respectively. The seasonal variations shown in Fig. 12.3 suggest that more money is spent overall on wild foods during the dry season than the wet season, although low income households spend less.

The market prices of wild foods are difficult to estimate or compare across product season and city. One reason is that the quantities on sale vary between buyam-sellam. In addition, prices and quantities are negotiated between the buyer and seller and can change markedly from one sale to the next. Table 11.2 provides some insight into wild food prices but is neither definitive nor exhaustive. There appears to be a slight price difference between cities, Yaoundé being cheaper than Buea and Limbe. Additionally, while prices do not change very much between seasons, the quantities obtained for a given price change dramatically. Traders claim that they sell more in the wet season than the dry season. In the dry season, noted one "there is competition, sales are declining, business is difficult" and "the clients complain about the financial crisis and they reduce the quantity and the frequency of purchases." While these reasons are probably all true, seasonal fluctuations in sales are linked to the physical availability of food.

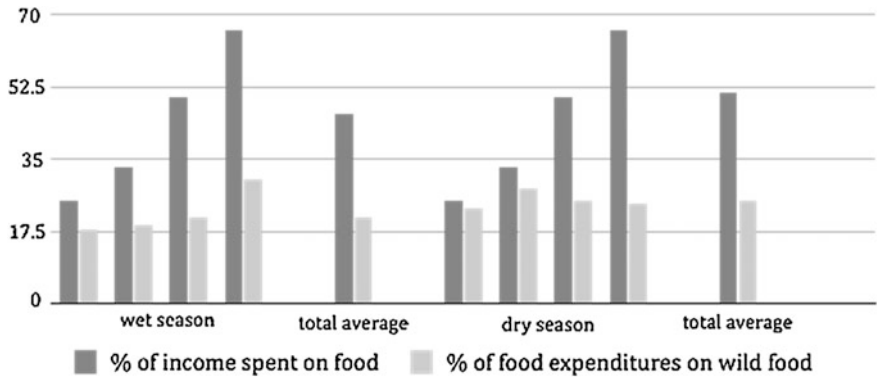

Fig. 11.3 Percentage of household food budget spent on wild food by income quartiles (high to low)

Table 11.2 Examples of wild food prices by city and season (1 FCFA = €0.0015 Euro)

Wet season price Yaoundé	Dry season price Yaoundé	Wet season price Buea and Limbe	Dry season price Buea and Limbe	Classification
Njansang/50–100 cup	Njansang/50 smallest cup	Njansang/250–400 cup	Njansang/350 glass	Spice
Bush mango/50 a cup	Bush mango/100 a cup	Bush mango/200–800 cup	Bush mango/500 glass	Dried fruit stone for thickening stew
Rondelle/50–100 cup	Rondelle/25 for two cloves (gousses)	n/a	n/a	Spice
Mbongo 50–100/cup	Mbongo/25 for 1–2 cloves	n/a	n/a	Spice
Okok/100 cup	Okok/50 smallest cup	Eru/1200 2 kg	Eru/1200 3 kg bundle	Green leafy vegetable
Termites/100 cup	Termites/25 the smallest box	n/a	n/a	Protein
Bush meat/5000 1 kg	Bush meat/7000 1 kg	Wild game/3000 2 kg	Wild game/3000 1 kg antelope	Protein
Snails/100–200 cup	Snails/75 for one	Snails/500 1/4 kg	Snails/700 1/4 kg	Protein

Purchasing and eating habits also change with the seasons and the availability and cost of foodstuffs. One respondent commented that "we adapt for each season. We eat what the vendors have that is least expensive and abundant in the market" and another that "during the dry season there are many shortages and we make do with what is least expensive. During the rainy seasons a lot of products are less

expensive and are varied." Food buyers are forced to change their food provisioning patterns, buying and eating less food during the dry season. One trader in Yaoundé remarked, "I think that they [my clients] eat less. They just look to eat, not to have a balanced diet." While consumers reduce the quantity and frequency of their purchases in the dry season, the buyam-sellam have already decreased the quantities they sell for a given price.

Food stability in the household is disrupted when there is scarcity or increased prices for wild food products. One response is to incorporate cheaper, often imported, foods. As one woman observed, "I could no longer eat a balanced diet. I will be forced to eat spaghettis [sic] and fried rice without my favourite condiments." Another woman claimed "if some foods become rare we eat something else, they are important but we can do without them." The ability to substitute foods and have flexible food options are a feature of urban diets, but the frequency in which this needs to happen does have an adverse effect on dietary diversity and health.

11.5 Coping Strategies

With regard to food consumption in the previous year, survey respondents were given various options from which to choose. Only 13 % responded that they always had enough to eat and the kinds of foods they wanted (Fig. 11.4). Another 43 % said they had enough to eat but not always the kinds of foods they want. Around one-third sometimes did not have enough to eat and 11 % that they often did not have enough to eat. There were clear differences in the responses in Yaoundé and Buea and Limbe. More respondents in the Buea and Limbe have enough food to eat, whether foods they wanted or did not want. A greater percentage of Yaoundé households do not have enough to eat, either occasionally (43 % vs. 9 %) or often (15 % vs. 11 %).

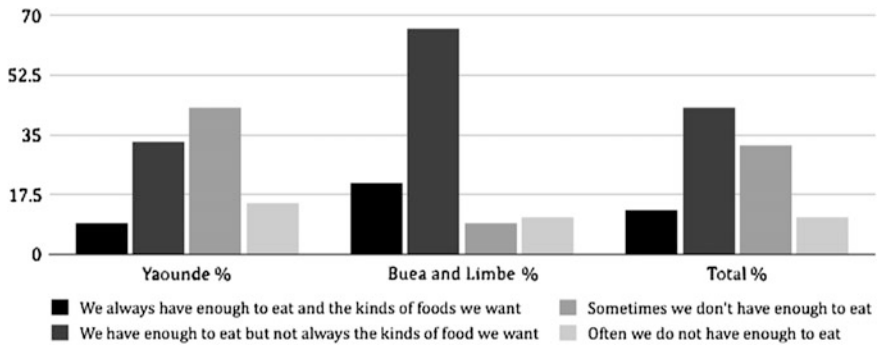

Fig. 11.4 Household food consumption in previous 12 months

Residents of Yaoundé, the French-speaking capital, may enjoy lower prices and greater access to foods than their Anglophone counterparts due to the so-called and well-documented "Anglophone Problem" (Ngenge 2003). Relatively lower levels of food access in this region can be attributed in part to the imposition and persistence of economic governance arrangements and investment decisions that continue to favour the Francophone regions of the country. While the country is formally bilingual, the informal reality is that "English speakers have long been second-class citizens" (Sneyd 2014, p. 37; Konings 2011; Takougang and Krieger 1998). An investigation into price comparisons (Table 11.2) between cities and seasons showed that the prices for wild foods used in preferred dishes were slightly higher in Anglophone Buea and Limbe than in Francophone Yaoundé.

When households do not have enough food or enough money to buy food, the most common responses include reducing portion sizes, eating only one or two meals a day, relying on cheaper foodstuffs such as fried rice, bread and braised fish, and borrowing money from relatives, savings groups or merchants. When food prices rise, women said they bought in smaller quantities, changed their menu, and prepared food every other day instead of every day. Without proper cold storage, however, this strategy is inherently hazardous. Those with dependents continue to focus on the preferences of children in the household. As one noted, "we still buy particularly what the children like." Another observed that "I review my budget by not buying certain foods, we buy what is most important and we complain to the vendors so that they explain the situation."

When food prices are high, rice, dried beans, pasta, banana, and tomato are the foods commonly purchased. When prices are low, more beef, pork, chicken, bar fish, meat (including bush meat), and plantain are consumed. Eating wild food has been described as the mechanism to stave off hunger resulting from food shortages (Corbett 1988). However, in cities where wild foods continue to be part of the routine cuisine, they can be substituted for less expensive foods with less cultural meaning and less satisfaction. This does not necessarily mean that wild foods are more expensive per se, but rather that they are components of a dish that may be more expensive to prepare than boiling water for rice and pasta and adding tomato and fish.

11.6 Food Adequacy

Food safety is a significant concern for many urban residents. One respondent in Yaoundé noted that "in the poissonneries the fish is not always fresh but the vendors do not shy away from selling it to the customers." The vendors themselves complain about perishability and that the food they sell rots quickly in the rainy season due to dampness, and dries out in the dry season under the sun. Customers are aware of these issues and identify particular markets as ones to avoid and certain products to avoid at various times of the year.

There is an informal 'rule' in the Cameroonian cities studied that "the less money you have, the more imported rice you eat." A study in 2004 (prior to the global food crisis of 2007–08) found that "imported products such as rice or wheat (were) generally more expensive than local products" (Ngoumou 2010, p. 189). These products depend more on formalized trade networks than the local products that are traded via traditional organizations and networks (Ngoumou 2010; Sneyd 2015). After the 2007–08 crisis and the social unrest that followed, the government imposed staple food price subsidies to reduce food price volatility and quell riots, and this subsidy scheme reduced the affordability of forest foods that were not targeted for subsidy. Through exclusively targeting staples, the price relief 'solution' ensured that nutritionally rich wild foods were subject to inflationary pressures and became relatively more expensive (Sneyd 2013). Since the crisis, women have faced a 'take it or leave it' choice of buying imported rice or nothing at all (Sneyd 2012). To put this in the simplest terms possible: the government controlled the prices of imported staples, while informal markets determined the prices of indigenous and traditional wild foods (Sneyd 2012, 2015).

The post-2008 'preference' of urban Cameroonians for 'quick' and 'easy' rice is rapidly changing diets. Now, imported rice is a daily staple because it is available cheaply. The import is milled white rice, which is devoid of the husk and bran, making it faster to cook but low in fibre and vitamins. Cheap rice has shifted the purchasing patterns of urban households away from traditional, local foods (such as cassava, cocoyam, plantain, local rice, and wild vegetables), which are nutritionally more beneficial. Most women interviewees said they served rice three to four times per week, while some even claimed they eat rice up to five times per week. The role of rice was seen as extremely important: "it allows me to make ends meet in difficult times." As another woman commented, rice serves "a big place in the household menu, because it is not very expensive, it is accessible and easy to cook, it is the most consumed product in our household."

The second informal 'rule' is that rice is normally not an accompaniment to dishes made with HFZ wild foods. Ethnic group and regional ties play a role in dish composition and accompaniments. Eru or okok (*Gnetum* spp.) is not served with rice but is accompanied by miondo, which is made from cassava/manioc, or fufu, which is also made from cassava. Fish mbongo goes with plantain. Njansang sauce with fish goes with plantain. Agricultural products such as groundnuts and chicken do go with rice but these dishes emerged from a different culinary history that is more similar to West Africa than Central Africa (McCann 2009). Cameroonians enjoy this diversity in their meals and the informal rule helps to ensure greater dietary diversity.

While the nutrition transition has been slower to emerge in Cameroon than other developing countries, evidence for the transition is beginning to mount (Steyn and Mchiza 2014). Cameroonians do enjoy dietary variety and the presence of foods from many regions and ethnic groups in the cities means that they come into contact with diverse flavours and culinary histories. However, access to the foods on which diversity depends is a daily obstacle and is driving the nutrition transition. As one woman commented, "most of the time we eat what we have, not what we want."

11.7 Conclusion

On his 2012 mission to Cameroon, Olivier De Schutter, the then UN Special Rapporteur on the Right to Food, concluded that the country had made little progress in eradicating poverty and hunger in the last ten years, despite the adoption of poverty reduction measures. He also found regional disparities to be particularly strong (De Schutter 2012). In his view, the sustainability of food chains and food choices has been greatly impacted by the government's inattention to agriculture and food after the oil boom in the 1980s. This inattention was compounded by a series of structural adjustment programmes beginning in 1997 and currency devaluation. Given his recommendations and the findings reported in this chapter, it seems appropriate to call for more explicit language in the National Poverty Reduction Strategy Paper (IMF 2010), Cameroon's Vision 2025, the Rural Sector Development Plan, and Cameroon's National Food Security Strategy regarding wild foods.

As the government considers eliminating consumer subsidies introduced during the global crisis, Cameroonian consumers face the prospect of higher or more volatile food prices. The elimination of subsidies could force more urban dwellers to pursue coping strategies that push them away from relying on the wild foods they would prefer to eat, and continue to facilitate a dietary transition away from a rich historic source of dietary adequacy and diversity. Alternatively, this could result in an unsustainable return to reliance on 'foods from the forest.' Regardless of the fallout from subsidy reforms, new and ongoing research needs to be carried out in urban areas on the accessibility of diet rich foods to better understand their contributions to food security, environmental sustainability, nutrition, and public health.

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Chapter 12
Urban Food Insecurity and Social Protection

Daniel Tevera and Nomcebo Simelane

Abstract This chapter aims to contribute to the urban food security debate by exploring the role of informal safety nets and formal food based social protection in addressing food insecurity challenges facing low income urban households in Manzini. The empirical data used in this paper came from two surveys: the first involved 500 households and was undertaken in three low income areas of Manzini. The second involved a series of in-depth interviews with senior staff at supermarkets and spaza shops. The results reveal that food security challenges are considerable in the low income areas of Manzini and that, at the same time, various forms of community and intra-household food sharing are an important food source for a minority of poor households in the city. In this regard, the national government needs to consider strengthening food-based social safety-net programmes that assist poor and vulnerable groups.

Keywords Urban food security · Social protection · Neighbourhood care points · Manzini · Swaziland

12.1 Introduction

Food security, which is the ability to secure an adequate daily supply of food that is affordable, nutritious, and hygienic, has become a chronic development problem in most urban areas of Southern Africa. According to Crush et al. (2011), household food security challenges in Southern Africa have intensified during the past decade due to a combination of factors that include increasing poverty, climate change,

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global food inflation, and the HIV and AIDS pandemic. Studies by the Swaziland Vulnerability Assessment Committee (Swazi VAC) found that urban food insecurity has become a major development problem in recent years due to climate change-induced food production shortages, increasing poverty, and social protection challenges (Government of Swaziland 2008). In urban areas, food insecurity revolves around access to cash for food which is tied directly to wages, prices, and safety nets. However, opinion is sharply divided on how to engage urban food insecurity challenges at the policy level. While food insecurity in African cities remains relatively invisible to policymakers, it is worth noting that many international organizations and governments are now looking at food-based social protection as a way of addressing poverty in general and food insecurity in particular (HLPE 2012).

This chapter aims to contribute to the emerging discussion on food security and social protection by interrogating the relationship between urban household food insecurity and food-based social protection in Manzini. Four questions frame the issues addressed in this chapter. First, what is the extent of food insecurity in Manzini? Second, to what extent are community food kitchens, shared meals with neighbours, and food provided by neighbours, alternative approaches to food provisioning for poor households in Manzini? Third, what is the overall coverage of food-based social protection programmes and to what extent do they address the food security challenges facing poor households in urban areas? Finally, the chapter draws various conclusions about policy approaches to deal with food insecurity challenges in urban areas.

12.2 Food Security in Swaziland: An Overview

About 26 % of Swaziland's population is urban with rural–urban migration contributing between 3 and 5 % to urban growth each year (CSO 2007). Almost two-thirds of the national population are below the poverty datum line for basic goods and services while 43 % live in extreme poverty, consume less than the required minimum in terms of caloric food energy, and subsist on less than one US dollar per day (Swazi VAC and UNWFP 2008; Tevera and Matondo 2010). Staple food production (especially of maize) has declining considerably in the last two decades and domestic production now falls far short of domestic consumption requirements. The area under maize decreased from 84,000 ha in 1990 to 52,000 ha in 2009, and the maize harvest fell from 88,000 to 62,000 tonnes over the same time period (Oseni and Masarirambi 2011, p. 389).

Several factors account for this situation including recurring droughts and floods and the loss of agricultural labour to HIV and AIDS and rural–urban migration (Edje 2010; Masuku and Sithole 2009; Oseni and Masarirambi 2011; Terry and Ryder 2009). Food prices rose sharply after 2005, pushing many urban households in Swaziland into food insecurity and greater dependence on food aid. For example, the price of cooking oil and rice increased by over 150 % between June 2007 and July 2009. Vulnerability assessments by the Famine Early Warning System estimate that between May 2008 and April 2009, the number of food insecure people

was 238,625 or roughly 25 % of the national population (Swazi VAC and UNWFP 2008). The urban poor, who spend over 60 % of their household income on food, have been particularly hard hit. The situation would have been far worse were it not for the fact that government controls the price of maize meal which remained relatively steady over the same period (Mabuza et al. 2009).

Manzini is a highly unequal city with a large migrant population (Tevera 2011). Urban poverty and food insecurity are also on the rise. The urban population of the city of Manzini is estimated at over 35,000, while Greater Manzini contains over 70,000 people, many of whom reside in unplanned settlements. During the past 20 years there has been a rapid growth of many unplanned settlements with low quality housing, poor sanitation and high levels of poverty (Sihlongonyane 2003; Tevera and Zamberia 2010; Tevera 2011). Data from the last two censuses (in 1997 and 2007) show that the percentage of female-centred households in urban areas of Swaziland continues to rise and the majority are poor. Most vulnerable and deprived households qualify for government's social protection grants provided by the Social Welfare Department (DSW), which falls directly under the Deputy Prime Minister's Office (DPMO 2011). Other organizations that administer social protection grants include the National Children's Coordinating Unit (NCCU) and the Alliance of Mayors Initiative for Community Action on HIV and AIDS at the Local Level (AMICAALL 2010, 2012).

12.3 Research Methodology

This chapter is based on findings from two surveys that were undertaken in December 2008 and November 2012 respectively. The first survey was conducted as part of the AFSUN regional study involving eleven cities in nine SADC countries. In this survey, three suburbs (Moneni, Standini, and Tincancweni) were selected on the basis of their low socio-economic status. Moneni (with a 2007 population of 3729 in 1071 households) is in the eastern part of the city, 4 km from the city centre; Tincancweni (with 1374 residents in 390 households) is a newer informal settlement south of the city centre; and, Standini (660 residents in 201 households) is an older suburb which has been impoverished for many years. Systematic sampling was used to select the 500 households that were interviewed (250 in Moneni, 150 in Ticancweni, and 100 in Standini). The second survey interviewed randomly selected supermarkets and spaza shops and recorded data on food items sold and food prices.

12.4 Levels of Food Security Amongst Poor Urban Households

The AFSUN household survey found that 42 % of total household expenditure by poor urban households in Manzini was on food purchases and that the levels of food insecurity were extremely high. The Household Food Insecurity Access Scale Score

(HFIAS) ranges from 0 (least insecure) to 27 (severely food insecure). The average HFIAS score for Manzini was 14.86, the highest score out of all eleven cities surveyed by AFSUN, comparable to Harare but significantly higher than similar cities such as Maseru (12.8), Gaborone (10.8), and Windhoek (9.3) (Tevera et al. 2012, p. 16).

The Household Food Insecurity Access Prevalence Scale (HFIAP) for Manzini city showed that most households were severely food insecure. A total of 79 % of surveyed households fell into the severely food insecure category and only 6 % classified as food secure (Fig. 12.1). The proportion of severely food insecure households was the highest in the region, even worse than Harare at 72 % (Tevera et al. 2012, p. 17). During the four weeks prior to the survey, 28 % of household heads and members had often or sometimes had to go to bed hungry because they did not have enough food; 41 % had often or sometimes gone a whole day and night without eating anything; and 24 % had often or sometimes eaten a cooked meal less than once per day. The few food secure households had three common attributes: a monthly income of at least SZL 1300 (about USD 165 at the time of the survey); multiple livelihood strategies to secure income and food; and, being part of a close extended family that provided informal safety nets.

The Household Dietary Diversity Score (HDDS) determines whether households are food secure based on the range of foods they had consumed in the previous 24 h. The HDDS ranges from 0 (least diverse, where none of the food groups are eaten) to 12 (most diverse, where all of the food groups are eaten). Most households had eaten cereals (96 %) and between 40 and 50 % had eaten vegetables and meat or poultry. Less than 20 % had eaten fruit, legumes, eggs, fish, or milk products. The computed HDDS of 4.09 (out of a possible 12) is very low and is indicative of the poor levels of diversity in the diets of the Manzini urban poor. Such low dietary

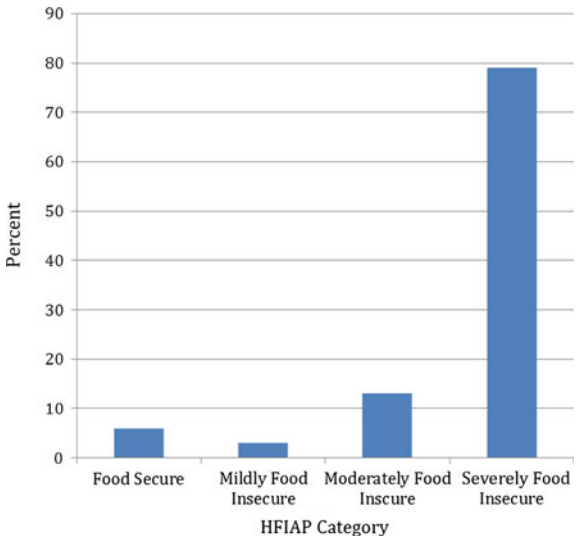

Fig. 12.1 Levels of household food insecurity in Manzini

diversity is likely to have negative implications for the health of household members. In addition, the Months of Adequate Household Food Provisioning (MAHFP) score of 5.87 shows that food insecurity in Manzini has a clear temporal dimension with households having only 5–6 months of adequate food provisioning per year (with April, May and December being the most food secure months.)

12.5 Profile of Food Insecure Households

The main variables used in building a profile of food insecure households in Manzini were household income, household structure, gender of household head, size of household, and the migrant status of the household. Food insecure households are certainly also the most poor. For example, 94 % of households with monthly incomes of less than SZL 600 per month were severely food insecure, compared with 66 % of households with monthly incomes exceeding SZL 1300. There were also variations in the levels of food insecurity by sex of the household head. For example, 82 % of female-centred households were severely food insecure, compared to 77 % for those headed by men.

The higher prevalence of severe food insecurity amongst female-centred households is directly related to their lower income-generating capacity. As many as 39 % of female-centred households earned less than SZL 600 per month, compared with only 23 % of male-centred households. On average, female-centred households were poorer than male-centred households (SZL 1071 vs. SZL 1603 per month). Women also have a harder time accessing formal credit than men and are forced to rely on informal lenders, increasing their economic vulnerability and food insecurity. These results support earlier findings which showed that households headed by women faced major food insecurity challenges (Swazi VAC and UNWFP 2008).

12.6 Food Sources in Manzini

An analysis of the major sources of foodstuffs shows that food purchase is the major means of access while own production is not important at all. The majority of surveyed households (90 %) do not engage in urban agriculture and none do so for sale. Unlike cities such as Harare and Lusaka, food insecurity challenges have not induced low-income households to engage in food production. An earlier survey found that only 20 % of urban households in Swaziland had a home garden, of which 82 % cultivated less than 0.5 acres on average (Swazi VAC and UNWFP 2008). Only 9 % of urban households in the Manzini District have a home garden, which is consistent with the findings of the AFSUN survey. Overall, 25 % of households said they cultivated “other land” apart from the home garden (20 % in the Manzini District) which is likely to be rural Swazi Nation Land held by the

household under customary tenure. A total of 35 % of the Manzini households in the AFSUN survey said they receive food from the rural areas, some of which is clearly grown on land "owned" by the household and farmed by relatives (see below). The reasons for the low rate of participation in urban agriculture are partly physical (residential plot sizes are extremely small in these areas) and partly institutional, as urban agriculture remains technically illegal despite its potential benefits.

The three main sources of food are supermarkets (patronised by 90 % of households), small outlets such as corner stores and take-aways (49 %), and the informal food economy (48 %). Supermarkets (primarily South African owned) are a reliable source of clean, quality food and, given the small size of Manzini, reasonably accessible. On the other hand, take-aways which generally sell cooked foods, such as rice and beef, or chicken stew, have limited variety and the lack of storage facilities (in all but the chain stores) means that food cannot be kept for long after it has been cooked. Informal vendors buy uncooked food from the main food market in central Manzini and from nearby farms. Groups of food vendors in Manzini are heterogeneous and include poor women selling small amounts of cooked food on the streets.

The fact that most households depend mainly on marketed foods means that food prices are key determinants of the state of food security. The Swazi VAC and UNWFP (2008) show that food prices affect households' access to food by enhancing or suppressing their buying capacity when prices are low or high respectively. There are two main reasons why low-income households prefer to buy food from distant supermarkets and not from spaza shops that tend to be ubiquitous in low-income residential areas. First, supermarkets generally sell higher quality food items at lower prices than the spaza shops. Second, most spaza shops are not connected to the electricity grid and hence do not normally stock food items that require refrigeration.

Table 12.1 presents data from the 2012 survey which compares the prices of various foodstuffs from large supermarkets and smaller informal food outlets (spaza shops). The picture is mixed. Some fresh produce is cheaper in supermarkets (bananas, onions, beans and potatoes) and some is cheaper in the spazas (tomatoes, oranges and apples). Since most of the surveyed households have low dietary diversity, the more pertinent comparison is between staples such as cereals and products such as meat and sugar. The most significant price difference is beef which is much more expensive in supermarkets (SZL 339.15 per 5 kg) compared to the spaza shops (SZL 250 per 5 kg), although the quality may well be lower in the latter. Cereals (mealie meal and rice) also tend to be slightly cheaper at the spaza shops. In other words, a simple price comparison does not shed much light on why households might prefer supermarkets to the informal food economy.

However, households can buy non-perishable staples in bulk at supermarkets which reduces their unit cost. Supermarkets therefore tend to be patronised less frequently (Table 12.2). Three quarters of the households who buy from supermarkets only do so once per month, most probably soon after payday so they can take advantage of the cost savings of buying staples in bulk. Another 20 % shop

Table 12.1 Comparison of food prices between supermarkets and spaza shops

Food group	Specific foods	Price (SZL) per 5 units (kgs, lbs, dozen)		Price difference (SZL)
		Supermarkets	Spazas	
Cereals	Mealie meal	41.00	38.67	2.33
	Rice	42.50	38.33	4.17
Vegetables	Tomato	69.60	60.00	9.60
	Onion	44.90	54.20	−9.30
Legumes	Beans	93.50	120.00	−26.50
Meat	Pork	249.50	250.00	−0.50
	Beef	339.15	250.00	89.15
Fruits	Oranges	32.75	28.00	4.75
	Apples	43.30	42.90	0.40
	Bananas	32.40	38.50	−6.10
Roots/tubers	Potatoes	34.65	39.30	−4.65
Oils/fats	Margarine	102.50	150.00	
Dairy	Milk	50.00	55.00	−5.00
	Sour milk	53.75	69.17	−15.42
Eggs		55.50	65.00	−9.50
Sugar		41.75	38.67	2.33

Source Fieldwork, November 2012

Table 12.2 Frequency of patronage of food outlets in Manzini

	Daily (5 days per week)	Weekly (at least once per week)	Monthly (at least once per month)	N
Supermarkets	6	20	74	450
Small shops/take-aways	25	49	13	265
Informal markets/street food	22	60	13	235

there once per week and only 6 % do so daily (at least 5 days per week). In stark contrast, other food outlets are only patronised on a monthly basis by 13 % of households. A quarter of households that patronise small informal outlets do so on a daily basis, as do 22 % of those who patronise the informal food economy. Nearly half of those who buy from small outlets, and as many as 60 % of those who utilise the informal economy, do so on a weekly basis. The frequent patronage of these sources (and spazas in particular) is undoubtedly related to the fact that, unlike supermarkets, they offer food on credit and in smaller quantities.

12.7 Safety Nets and Access to Food

Informal and reciprocal food exchanges offer a measure of security and occur through diverse forms of relationship including shared village or regional identity, friendships, kinship, and neighbourliness. These potential reciprocal arrangements include food remittances from rural areas and other cities, shared meals with neighbours, food from neighbours or friends, community food kitchens and borrowing of food. Stretched households with members in both urban and rural areas are the main recipients of food from rural areas. Many urban dwellers maintain links with the rural areas and these links can be important for urban households that are food insecure. Linkages are associated with having a home or family in the rural place of origin and these linkages provide support to migrants in times of chronic food shortages. As many as 35 % of the households had received food, especially cereals, vegetables, and food made from beans and nuts, from relatives and/or friends in the previous year but most of them noted that while the food was welcome, it was not critical to household survival.

Rates of inter-household food sharing are considerably lower in Manzini, however. The vast majority of surveyed households (over 80 %) do not engage in any form of inter-household food sharing and therefore cannot rely on such informal safety nets (Table 12.3). Borrowing food is the most important form of informal strategy (by 18 % of households), followed by donations of food by other households (12 %) and sharing meals (a mere 8 %). This suggests that informal safety nets cannot be relied upon in times of crisis or to ameliorate every day hunger.

In terms of more formal non-market food access, community food kitchens are used on a regular basis by a small number of households (around 16 %). However, food aid is virtually non-existent (with only 3 households in total receiving food this way). This is more surprising given the extent of food aid in Swaziland as a whole. According to Mabuza et al. (2009, p. 89), food aid in Swaziland includes maize grain, rice, beans, skim milk, and vegetable oil, the majority of which is imported and funded by the USA, the EU and Switzerland. In 2006, 250,000 households in the country received emergency food aid. These households were all in the rural areas of the country. In general, food aid tends to target those whose harvests have failed rather than those downstream (such as in the urban areas) whose need may be just as great.

Table 12.3 Frequency with which free food is normally obtained

Inter-household	No.	%
Remittances (food)	16	3.2
Shared meal with neighbours and/or other households	41	8.2
Food provided by neighbours and/or other households	60	12.1
Borrow food from others	88	17.8
Other		
Community food kitchen	81	16.5
Food aid	3	0.6

12.8 Food-Based Social Protection

In recent years the Government of Swaziland has attempted to address food insecurity challenges at the national level through three main social welfare programmes that fall under the office of the Deputy Prime Minister (DPMO): the Orphaned and Vulnerable Children (OVC) grant, Neighbourhood Care Points (NCPs), and Old Age and Public Assistance Grants. Although these programmes are national in scope, we need to ask if and how they have specifically attempted to mitigate food insecurity issues amongst urban vulnerable groups in areas such as Manzini.

The most vulnerable groups in Swaziland include orphaned and vulnerable children (OVCs), the elderly (especially those having OVCs under their care), the disabled, and the non-employed who have no alternative source of income or food. Schools are an essential part of social protection strategies especially concerning food insecurity. Through the schools' feeding scheme many children have benefitted from free meals provided at school. Almost a decade ago, slightly above one-third of both primary and secondary school children in the country were OVCs (Government of Swaziland 2005). As many as 65,707 primary and secondary school children in Swaziland received school meals in 2006 and this figure has increased with rising total enrolment in schools during the past five years. Also, the National Emergency Response Council on HIV/AIDS (NERCHA) shows that the orphans group, which is quite vulnerable to food insecurity, has benefitted from the school feeding schemes (NERCHA 2012).

While the OVC programme offers the country the opportunity for government to mitigate food insecurity challenges in both urban and rural areas, the programme does not specifically target children from food insecure households. The meals are accessed by all children in school. However, in official circles it is believed that schools form a reliable source of food for school-going children, especially those from food insecure households. In some instances, the school is the sole source of a balanced diet for children and hence the emphasis on its importance in addressing food insecurity. The meals served at many schools in Manzini consist of cereals, legumes, meat, roots, and tubers. Although most of the foods are served less than five times per week, cereals are served throughout the week with legumes and meats served interchangeably.

Amongst the social protection strategies in Swaziland is the establishment of Neighbourhood Care Points (NCPs). The NCP initiative began in 2001 when a few communities established NCPs in their localities in an effort to provide care and support for orphans and vulnerable children. In that same year, UNICEF began funding the NCPs programme and by 2006 the 438 NCPs distributed throughout the country were serving 33,000 OVC (UNICEF 2006). In the urban areas, NCPs are under the administration of the Alliance of Mayors Initiative for Community Action on HIV and AIDS at the Local Level (AMICAALL). In October 2012, the total number of children receiving social protection services from the NCPs in

Manzini city was 1883 (AMICAALL 2012). In addition to the free food given to children, NCPs provide some food to the elderly and HIV/AIDS patients taking antiretroviral drugs.

According to RHVP (2007a, b), the Old Age Grant (OAG) was introduced in April 2005 to cover vulnerable older persons (aged 60 years or more) who face challenges of poverty, neglect, abuse, and ill-health. The Public Assistance Grants (PAG) provide coverage to all vulnerable groups below the age of 60 who are not beneficiaries of any other grant or source of income (RHVP 2007b, p. 2). According to official pronouncements, through the grants of SZL 600 per quarter (or SZL 200/month), the Government of Swaziland is addressing the issue of food insecurity among the elderly urban population. The number of OAG beneficiaries increased from 28,000 in 2005/2006 to 49,218 in 2011 (DPMO 2011). According to RHVP (2007b), the OAG has helped improve the food security status of low income households with elderly members who are OAG beneficiaries. The RHVP (2007a) asserts that one of the most visible outcomes of vulnerability amongst the elderly is hunger and food insecurity, and receipt of Old Age grants seems to reduce hunger and food insecurity among elderly people through improved meal frequency, meal quality, and ability to purchase food.

12.9 Conclusion

Several findings emerge from this study of food security in Manzini. First, the majority of the city's urban poor are severely food insecure in terms of access (as measured by the HFIAP, HFIAS, MAHFP, and HDDS indicators). Second, access to food is being secured largely through commodity channels at a time when the purchasing power of the poor is shrinking. Third, informal social protection networks play a fairly limited role in helping the poor survive through 'care chains' that involve food. Only a small minority of households get food from food aid, remittances, urban agriculture, or neighbours.

Formal food based social protection, in the form of Orphaned and Vulnerable Children (OVC) grant, Neighbourhood Care Points (NCPs), Old Age and Public Assistance Grants (PAG) may have indirectly helped some urban households to be more food secure. There is certainly an official perception that social protection is a very important mechanism for addressing food insecurity amongst the low-income households in Manzini city. Yet, at current levels, it is certainly not having a major impact on household food insecurity. The one exception is the school feeding scheme which ensures that school-going children have at least one good meal per day at least three days per week. The impact of this food security strategy could not be assessed by a survey that focused only on the household as a unit and not on intra-household differences in food security between household members. Further research is therefore needed on the food insecurity of individual household members.

There is great potential for enhancing the effectiveness of government's food-based social protection programmes. The big challenge for the Swazi government and urban local authorities, however, is to find ways of creating space for the urban poor to improve their nutritional status through pro-poor planning processes that allow the urban poor to produce some of their food and to market it, while at the same time consolidating social safety networks. Lessons learned from elsewhere in Africa show that city councils and national governments need to support livelihood strategies pursued by the poor in order to help them to be more food secure. Also, there is need for citywide policies that aim to strengthen targeted safety-net mechanisms for urban households that are food insecure. For example, the pro-poor food security policy that targets school children in urban areas should be broadened so that all children who are food insecure are assisted, but this requires a better targeting policy that ensures that all children from food-insecure households benefit from the programme. At the same time, government should consider creating conditions that enable the informal food economy to flourish so that the poor can access cheaper and locally produced food.

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Chapter 13
Urban Policy Environments and Urban Food Security

Andrea M. Brown

Abstract In recognition of the challenges posed by Uganda's rapid urbanization, the national government has introduced a Uganda National Urban Policy (UNUP). The government has also proposed a 'stringent' new National Migration Policy. Up to now Uganda's policy environment has ignored the urban dimensions of poverty and the food insecurity that accompanies it. Migration, an important driver of both urban poverty and urban food insecurity, has been poorly understood and only international migration has been addressed. This chapter explores the urban policy environment and the multilevel governance policy process in Uganda, in order to understand not only how new policies are being shaped by the government's political priorities in the face of its weakening popular legitimacy and growing signs of urban discontent, but also what potential entry points exist to influence policy making in Uganda in ways that might better support the needs of the nation's growing numbers of urban food insecure, among them internally displaced Ugandans.

Keywords Uganda · Urban policy · Food security · Migration · Multilevel policy · Global governance

13.1 Introduction

Uganda, widely studied as a rural country, is urbanizing at a rapid rate. While its level of urbanization is still very low (16 %), by 2030 this is projected to reach 30 % with an urban population exceeding 20 million people (Cities Alliance 2010, p. 1). Uganda's total population today is 35 million. By 2060, it is projected to be more than 112 million. If current population growth and migration trends continue Uganda's urban population in 2060 will account for 60 % of this population

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(Kiggundu 2008) or 67 million people. Several trends are contributing to this rapid urbanization (Lwasa 2011; Mukwaya et al. 2011). There is accelerating migration from drought stricken and/or insecure rural areas in northern and north-eastern Uganda of temporary, cyclical and permanent migrants seeking greater security and economic opportunities. While some of these migrants are best understood as economic migrants, many conform to United Nations' criteria of Internally Displaced Persons (IDPs).

Many Ugandans from across the country leave rural areas as a consequence of land tenure insecurity and the increasingly limited economic possibilities for sustainable agricultural livelihoods in the face of population pressures. Smaller numbers of migrants move into Uganda's urban areas, mainly Kampala, from other nations: for example, those fleeing conflict and insecurity in the Democratic Republic of Congo, South Sudan, and Somalia. Still other individuals leave rural areas to hide in the anonymity of an urban setting in order to escape the law. Further, Uganda's fertility rate, 6.69, is the highest in the region and existing urban populations, particularly the poor, are growing in response. At the same time, historical patterns of older Ugandans returning to villages after retirement are declining, particularly among older women who often are responsible for the care of AIDS orphans (Nyanzi 2009, p. 469).

Although Uganda's urban population is considerably better off, measured by income, than the rural population, and more than 90 % of Uganda's poor are in rural areas (Mukwaya et al. 2011, p. 13), urban poverty is widespread, increasing, and severe. Urban income distribution is highly unequal and the majority of urban residents are impoverished. Poverty in an urban setting is a markedly different experience from that in rural areas. Although urban farming exists in Uganda, much of this is geared towards an export market in flowers, and urban agriculture is vulnerable to theft, and may be grown on lands with uncertain use-rights and which may also be toxic (Nabulo 2004). Expectations that urban agriculture would provide a significant avenue averting widespread urban food insecurity have not been met.

Urban food prices are high and access to regular income is necessary to secure sufficient food. Further, nutritional wellbeing relies on an array of inputs such as clean water, access to medical services, and a diverse diet, all of which are challenged by insecure incomes and residency in informal housing settlements. While urban populations have greater proximity to health, education and legal services than rural populations, accessing these is a challenge due to a variety of formal and informal barriers. Unemployment levels are high with Uganda's formal youth unemployment rate estimated at 83 % (World Bank 2007). Residents of high-density urban slums face further struggles connected to health, physical safety, and stigmatization (Swahn et al. 2012).

With this dramatic rise in both overall population growth and urban growth, Uganda is facing new political and economic challenges. Currently, 60 % of Kampala's residents live in slums, on land earmarked as central to the nation's economic expansion and development plans. In the slums, informality and insecurity in housing overlap with informal and insecure sectors of employment, service

provision, and legality. Uganda's infrastructure, income generating opportunities, and food production and distribution systems, are not equipped to respond to the needs of this growing population of poor urbanites. While the country is largely food-sufficient and is a major regional food exporter, food prices in urban areas are high and increasing (staple food prices have risen between 50 and 150 % in Kampala since 2008), leaving rising numbers of food insecure urban residents without the means to adequately produce or purchase food.

Understanding and planning for accelerating urbanization in Uganda requires attention to rural-urban linkages, population growth, land tenure, employment opportunities, internal and international migration patterns, and appropriate mechanisms to provide services and opportunities, and extend rights to the growing numbers of urban poor, themselves a diverse and stratified group. Policy able to adequately respond to urban poverty should ideally be what Wallace (2007) refers to as "whole systems," drawing on the cooperation of different branches and levels of government as well as community groups and other non-state actors at all stages of the policy process. In addition, global actors, and donors in particular, can play a role in facilitating this kind of cooperation, particularly in a context where the government has strong interests in resisting such policy, or is more generally lacking in capacity and political will.

Urbanization is occurring in a political environment marked by rising political opposition to President Museveni's government, marked by protests and riots in Kampala. Initially peaceful and focused on rising food and oil prices, protests were organized around the theme of 'walk to work' (because of the unaffordability of petrol). In April 2011, the violent response from police left five protesters dead (including a two-year old girl), hundreds injured, and over 700 jailed. The police response initially provoked riots and vandalism, but has proved to be an effective deterrent against widespread participation.

The tactic of scaring Ugandans "back to political detachment" (Gatsiounis 2011a) seems to be keeping protesters off the street. Museveni is increasingly out of touch with his former populist base. For example, he responded to concerns about rising food and oil prices with the comment: "What I call on the public to do is to use fuel sparingly. Don't drive to bars," and dismissed rising urban food prices by saying they were good for farmers (Gatsiounis 2011b). The dismissal of public concerns and the violent response to dissent have been widely publicized and discussed, as have the government's strategies to maintain power through fraudulent elections and increased media restrictions. One commentator has even suggested that "Museveni speaks just one language—defeating, hunting and crushing … instead of addressing the issues that concern real people" (Kavumba 2011).

Policy is also being used as a tool to protect the government's interests. While current urban policy responses are often interpreted as coercive, the goal of weakening existing and potential urban political opposition through more populist tactics of cooptation and distraction is present in new urban and migration policies. Despite their potential to do so, neither of these policies adequately responds to internal migration or urban food insecurity, both pressing urban concerns which contribute to and reflect widespread and growing urban poverty.

The Ugandan government's responses to urbanization have not only been marked by repression and intimidation. Uganda has two constituencies, domestic and international, and an economic development agenda explicitly modelled after Asian successes. Although aid reliance is falling and investors in the oil sector are increasingly important, traditional donors are still crucial and their focus on good governance, poverty reduction, and participatory frameworks cannot be simply disregarded. The state has made substantial gains with economic development since Museveni came to power and a development agenda continues.

The involvement of donors in Uganda's two policy responses to urban challenges (the National Urban Policy and Migration Policy) reveal an intricate strategy of combating urban opposition, an instrumental use of foreign aid, and pushing forward a development agenda centred on urban economic growth that is likely to increase urban inequality and worsen food security for the most vulnerable, including new migrants. The influence and pressure from below (the community-based organizations working with the urban poor) and from above (donor governments and institutions) have the potential to influence new policies, although this influence may be limited and require more pressure than is currently in evidence.

13.2 Uganda's National Urban Policy (UNUP): Competing Agendas

In recognition of the new challenges posed by growing urbanization in Uganda, the Ministry of Lands, Housing and Urban Development developed a national urban policy for Uganda (UNUP) supported by the World Bank and Cities Alliance, and in partnership with local stakeholders. The aspirations of this policy are broad; different stakeholders emphasize competing priorities which include rationalizing responsibilities among different governance bodies; promoting and supporting economic growth in urban areas; managing housing and urban services in newly urbanizing cities; and proactively addressing poverty needs in slums. The agenda thus ranges from management and efficiency goals linked to economic development (the goal that motivated this policy) to a poverty reduction response (first added on by the UNDP and then made a condition for donor support by the World Bank).

The initial impetus for this policy, a concern with management and efficiency, echoes the goals identified in Uganda's National Development Plan (NDP) (Republic of Uganda 2010a). The NDP is the successor to Poverty Reduction Strategy Papers in Uganda and serves as the nation's 'master policy.' All other policy is supposed to align with and support the NDP agenda. The NDP and the UNUP share a concern with the management, administration, and economic growth of urban areas, where slums, and by extension slum dwellers, are seen as a problem in need of a solution. This is consistent with recent interventions in Kampala. The Kampala Capital City Authority (KCCA), for example, has plans to destroy houses

in nine Kampala slums, compensating residents of legal structures only. The KCCA, unlike municipal governments in other Ugandan cities, has a mayor who is not elected but rather directly appointed by the President, and thus represents a more national than local level of government.

The UNUP was prepared in tandem with and as a part of a wider Uganda Urban Campaign, launched in 2010, to raise the profile of the government's attention to urban planning. The Urban Campaign, under the direction of the Ministry for Lands, Housing and Urban Development has four components in addition to formulating the UNUP. The Uganda National Urban Forum (UNUF) was created as a permanent body to represent and draw on the voices of a variety of stakeholders such as NGOs, CBOs, the academic community, the private sector, and different levels of government. This Forum is not operating optimally; meetings are not well attended by all stakeholders and there were no mechanisms for it to have any direct bearing on the final policy document as it is purely consultative.

Transforming the Settlements for the Urban Poor in Uganda (TSUPU) is a program "to align urban development efforts at the national government, local government and community levels and include the urban poor into the planning and decision-making processes" (Republic of Uganda 2010b). It has most relevance for emerging cities, rather than Kampala, which have different governance structure. TSUPU has pilots in five towns (Arua, Jinja, Kabale, Mbale, and Mbarara) with the plan of expanding into eight additional areas identified as rapidly-growing. This focus is a proactive attempt to manage growth while this is still possible. Partners involved include the Urban Authorities Association, municipal governments, Shack/Slum Dwellers International (SDI), ACTogether, the National Slum Dwellers Federation of Uganda, and students from Makerere University. The program is managed by Cities Alliance, SDI, and ACTogether, and its insights are brought to bear on the UNUP only through participation in the forum (UNUF).

ACTogether is the only Ugandan NGO involved in this process, and has only been in existence since 2006 with limited outreach. The myriad of NGOs and CBOs operating in Uganda's urban communities, with established trust and experience, are not involved. The central goals of TSUPU involve local urban management capacity building, initial planning for slum upgrading and supporting dialogue among stakeholders within these emerging cities. Strategies being used include microcredit, the Urban Sector Profiling Study (USPS) mapping and enumeration of slums (households and businesses), and assisting community groups in applying for upgrade grants and managing them.

For secondary cities this may have some positive outcomes for the urban poor, although the attention to 'profiling' may not be welcome by some groups, particularly international migrants and domestic groups who may fear police and the government from past experience—such as being forcibly relocated into 'protection camps' or being labelled as rebels in Northern Uganda. Nonetheless, it is in emerging urban centres where the potential impact of the UNUP is most promising, given the different governance structure and a stronger focus on planning for urbanization rather than dealing with pre-existing problems. This is the area where the poverty focus of policy development, most strongly promoted by international

donors, is evident. This is also the site where the greatest participation from urban poor communities has been facilitated.

The Urban Sector Profiling Study (USPS) will function as a housing sector assessment tool, to determine housing and service needs. The study is part of TSUPU's activities and is underway in the initial five cities. Like TSUPU, this Study does not involve Kampala. Groups of the urban poor, part of the Slum Dwellers Federation, organized with the assistance of SDI and ACTogether, gather the data and conduct the enumeration, which is then verified by local governments.

The Strategic Urban Development Plan (SUDP) will outline the specific courses of action to be taken over a 15 year period. This plan will comprise the concrete strategies to implement the UNUP and can be understood as part of the UNUP.

Funding is disbursed and donor oversight is managed by Cities Alliance, a global partnership based in Brussels, with a mandate of meeting the challenges of pro-poor policies and prosperous cities without slums. Cities Alliance has particular interest and expertise with participatory upgrade programs. Cities Alliance has no permanent presence in Uganda, but works through the South African Based network of urban poor federations, Slum/Shack Dwellers International (SDI), who in turn work closely with the Ugandan based NGO, ACTogether. SDI has organized many residents in secondary cities into the National Slum Dwellers Federation of Uganda. SDI and ACTogether are both represented on the Urban Forum executive and are the lead partners in TSUPU.

Each of these components—the policy (UNUP), forum (UNUF), program (TSUPU), study (USPS) and plan (SUDP)—are intended to support and complement one another, utilize participatory frameworks, and align with Uganda's NDP and commitment to the MDGs. Behind the scenes, private consultants are also involved in policy development, working directly with the Ministry and not as part of the broader participatory components.

The central focal points of the UNUP are twofold. Firstly, it seeks to reform the overlapping bureaucracies at different levels of government currently involved in urban administration in order to make urban governance more efficient and effective, both in terms of cost and performance. In light of growing concerns with urban sprawl, in particular of slum settlements, and the difficulties in managing land rights, service provision, and security concerns, this was the initial impetus to develop the UNUP, and is consistent with the NDP's rationale for developing the policy. This focus is also part of a larger government agenda of increasing urban manufacturing and industrialization in an organized and efficient manner. Urbanization is being promoted and embraced as part of Uganda's development, and in Kampala, in particular, extensive construction for industry is underway. Land without clear tenure and construction that does not meet code are being targeted for clearance to make way for economic development projects and housing for the middle and upper class.

Secondly, in line with the priorities of the Millennium Development Goals (MDGs), the international partners (the UNDP, the World Bank, Cities Alliance, and SDI) are promoting a policy focus that is pro-poor. While these two areas of focus are not necessarily incompatible, it is important to note that the first

administrative emphasis is best understood as one of control and management, reflecting challenges from the perspective of local and national governments, whereas this second focus is part of the wider global attention to poverty and the needs of marginalized citizens. There is little evidence that this second focus is embraced as part of the urban strategy in Kampala, although it is shared by the overlapping patchwork of local and internationally affiliated NGOs and CBOs working with Kampala's urban poor. These groups have direct and longstanding connections and trust with slum residents and have been clearly articulating the interconnectivity between urban poverty and food insecurity for years. Unfortunately, this important resource is not a part of the policy process. An indication of what this policy is likely to look like in practice can be found by examining recent trends in Uganda's governance, actual responses to urban challenges, and the longstanding practice of instrumentalism in dealing with both donors and domestic constituencies. An additional avenue to exploring how urban policy is developing is through examining the government's response to two large urban trends with political and economic significance: urban food security and urban migration.

13.3 Urban Food Security

The urban poor spend a large portion of their income on food; urban poverty rapidly translates into food insecurity (Maxwell 1999). Inadequate nutrition directly contributes to multiple health problems and reduced capabilities to move out of poverty. Numerous well-established NGOs, local and international, work in Uganda's urban slums and identify food security as the primary challenge facing the poor. Food security is not addressed in the UNUP, nor was it independently raised by any of the key participants in the policy design that were interviewed for this research.

Like other African nations, the Ugandan policy environment treats food security as an exclusively rural concern, linked with agricultural production. There is no attention to the urban sector in either Uganda's National Food and Nutrition Policy (UNFP) (Republic of Uganda 2003) or the Uganda Food and Nutrition Strategy and Investment Plan (Republic of Uganda 2005), the UNFP's 10 year strategy. This policy was developed and is under the administration of the Ministry for Agriculture and the Ministry of Health. It aligns its goals and strategies to support existing policies, in particular the PRSP, and contributes a Plan for the Modernisation of Agriculture (PMA), targeted at rural Ugandans. Uganda's agricultural sector is central for national food security and for rural and urban populations, but this is a very limited focus and misses many of the drivers of urban food insecurity.

Access to locally-produced food is an important component of urban food security and urban agriculture is a significant contributor to the welfare of some poor urban residents (Maxwell 1999). In Kampala's urban zones, it is estimated that the proportion of households engaged in urban agriculture is 26 % (Lee-Smith

2010, p. 483). Kampala's city council has a department of agriculture, which is unusual in African cities, and it is in support of regulating and even expanding this sector; for example, by reclassifying some zones to allow for farming. However, this department is poorly funded and has been unable to reach its preliminary objectives of conducting a citywide census on agriculture (Lee-Smith 2010, p. 485). New agricultural ordinances were introduced in 2006 to allow for regulation, but limitations on wetlands may have a negative impact on poorer agriculturalists (David et al. 2010, p. 98). Recent research on Uganda's urban agriculture policy environment points to the urgent need for policy and programme support related to marketing and food security safety net planning (David et al. 2010, p. 98). As important as urban agriculture is, it will never be a complete answer for the food insecure in urban areas, particularly as the emerging trend is for a concentration of ownership in urban agricultural enterprises, benefitting middle class landowners who draw on the pool of cheap urban casual labour. A more complete response will need to address the wider contexts of urban poverty and include social policy, at a minimum to help the most vulnerable populations, recognizing that food is a right.

Uganda is running a pilot project of conditional cash transfers, but again this project, initiated by donors, has been centred in rural areas where poverty is severe and particularly unresponsive to the pro-poor growth tools in the PRSPs. In Latin America, conditional cash transfers have been shown to be most effective in urban areas, but urban pilots have not yet been considered in Uganda. Effective conditional cash transfer programs rely on fairly developed services in education and health, which would need to be strengthened in Uganda for them to work well. Potentially, as investments are made to strengthen these services, cash transfer programs would help stimulate and support the urban poor. This would require a significant policy commitment towards developing social provisions in Uganda that does not exist at present and actually seems to be declining rather than increasing.

Policies addressing urban poverty and housing implemented in the past (for example, the 1986 National Human Settlement Policy, the 1992 National Shelter Strategy, and the 2005 National Housing Policy) have suffered from having low priority after their development and subsequent weak implementation; a slow approval processes; dependency on external support; and have only benefitted a small proportion of urban slum-dwellers (Republic of Uganda 2008, pp. 26–32). These problems are typical of similar programmes internationally, where the poorest are priced out of improved or new services and housing or else they are moved to areas far from employment opportunities and, as a consequence, return to slums. It is significant that the new UNUP fails to identify the problems with earlier approaches. There is a stated commitment to slum upgrading, rather than the construction of new low-income housing, but it is not clear how this will play out in practice given the uncertain tenure status of those in informal housing areas and the increased demand for land in urban centres for 'development.' Partners in the policy process, notably Cities Alliance, have considerable experience with upgrading strategies and are likely to offer sound advice in this regard. However, whether their expertise is brought to bear in Kampala is uncertain as Cities Alliance's

participation is largely being directed towards newly urbanizing areas, where slums are emergent rather than established.

Poverty, while frequently described in policy documents as multidimensional, is most often measured by income and, as such, some groups within the poor population are excluded from existing 'pro-poor' strategies (most often, women and migrants). While there has been a steady decrease in income poverty in Uganda, there is a lack of targeted attention to the fact that levels of malnutrition and caloric intake have not responded to the same degree, particularly in urban areas. The recommended daily caloric intake is 2300 per adult per day. Calorie-deficient households are more prevalent in urban areas, with 73 % calorie deficient as compared to 60 % of rural households (Mukwaya et al. 2011). In Uganda, "malnutrition is higher in urban areas, though the incidence of income poverty is generally higher in rural areas" (Republic of Uganda 2010c, p. 29).

13.4 Migration: Policy Environment and New Developments

At the same time as the Urban Policy was being developed, a less ambitious National Migration Policy (NMP) was proposed. Whereas the UNUP was developed over several years, supported with USD 450,000 from the World Bank and Gates Foundation, the NMP's development was announced with far less fanfare during the run-up to the last election. The Ministry of Internal Affairs is developing this policy alone and while its objectives have been made public, it will not involve community participation. This policy will replace the existing Uganda Citizenship and Immigration Control Act and is being funded by the United States. Unsurprisingly, a big component of this policy addresses terrorist threats.

Refugees are not officially allowed to live in Uganda's cities and so have no access to social services or receive humanitarian interventions (Clark-Kazak 2011, p. 59). The new policy does not recognize this as a problem, but instead will further stigmatize international migrants, particularly those labelled as "illegals", and intensify existing xenophobia. Press releases announcing the development of this policy were made during the election campaign and framed immigration as a problem, presenting migrants as threats to employment and security and as fraudulent investors. James Baba, Internal Affairs State Minister, summarized the government's policy goals: "The policy should enhance national and international security by keeping criminals, fake products, wrong persons and influences, such as homosexuality, out of Uganda" (Bekunda 2011).

Nor will this policy address IDPs from northern or north eastern Uganda, both areas where large numbers of displaced migrants seek refuge in cities, in large part because of government actions in these regions. As with refugees, individuals are not recognized as IDPs unless they are in a camp, despite far greater opportunities for employment in cities. The illegal status of international refugees prohibits these

populations from accessing health and education services for themselves and their families. Internal migrants who move to urban areas are viewed as economic migrants only and have no access to the variety of nationally and internationally provided services available to IDPs in camps (Refstie and Brun 2011). Between 300,000 and 600,000 migrants have moved to urban areas as a consequence of the war in the North. There has been less attention in the world media to IDPs from Karamoja in Uganda's north east. In 2006, roughly 2000 Karamajong, mostly women and children, fled to Kampala (Sundal 2010). This area of the country has suffered from recurrent droughts, floods and conflict between pastoralists and herders. Government disarmament was badly and unevenly implemented and left some groups even more vulnerable to attacks and raids. The women and children who fled to Kampala came from the Bokora group and meet the UN criterion for IDP status. Most of these migrants had no means to survive except to beg in the streets. In 2007, shortly before a visit from Queen Elizabeth, the Kampala City Council, forcibly collected Karamajong migrants off the streets, and trucked them back to Karamoja.

Research on both these groups shows that the distance of migration, combined with the insecurity in the destination region, ethnic discrimination in Kampala and language barriers, make these groups more food insecure than other migrants and economically worse off than before they migrated (Refstie et al. 2010; Sundal 2010). While male households are more likely to move as economic migrants, in areas of conflict, inside and outside Uganda, female household heads are more likely to move, contributing further to migrant populations' vulnerabilities and needs (Herrin et al. 2009). A National Migration Policy is a needed and welcome initiative in Uganda and its urban focus is warranted. However, this policy is unlikely to fill gaps in existing internal and international migration policy and is likely to be limited to addressing security concerns and serving political goals of fomenting division among the urban poor, targeting those who are most vulnerable and food insecure.

13.5 Policy as an Instrumental Strategy

Uganda is an important case to study policy innovations for two reasons. Firstly, they have a proven track record of policy capacity, most widely recognized with their effective response to HIV/AIDS in President Museveni's early years in office. Although sustaining this early effectiveness over time has been challenging, it does demonstrate "whole systems" policy capacity, where strong political will at the centre leads to widespread inclusion of international and domestic, public and private actors working together: i.e. the seldom realized ideal of multilevel governance. Uganda has shown that where there is political will at the centre, donor backing, and inclusive participation among stakeholders, strong policy capacity exists.

Secondly, Ugandan policy often serves as a model for other countries. This is again most evident with the HIV/AIDS response, but also with affirmative action and universal primary education policies. Uganda was the first nation to create a Poverty Reduction Strategy Plan and was a leader in adopting affirmative action for women in parliament. Perhaps the late development of a national urban strategy is due to its relatively late urbanization, but now that this has been identified as a priority, as well as attracting donor support in its development, it is likely to be influential beyond Uganda's borders. Uganda's National Migration Policy will also have implications in urban sectors and could potentially serve as a model elsewhere, particularly where there is a perceived terrorist threat.

But concerns exist regarding Uganda's capacity for implementing policy in need of extensive multilevel cooperation and skill. Public policy in Uganda is comparatively more effective than in most other sub-Saharan African nations, but its effectiveness has been overstated. Most observers now offer a more cautious and tempered assessment than a decade ago (Mwenda 2007; Robinson 2007; Tabaire 2007; Tripp 2010; Manyak and Katono 2011). The experience, institutions, skills, and resources necessary for effective policy are weak in nations like Uganda whose political past has been marked by conflict, authoritarianism, and single-party rule. There are additional external sources of weak policy capacity; for example, the involvement of the donor community in formulating policy may weaken mechanisms for ensuring accountability (Okuonzi and Macrae 1996). While recent emphasis on 'ownership' and participatory processes are important for addressing this problem, the coordination between donors and governments in establishing goals is far from clear.

Further, Uganda faces serious governance limitations which have become increasingly pronounced in the past decade. The last three rounds of national elections were marred by violence and intimidation. There is also widespread patronage-based corruption which has combined with an increasing use of state power to keep the ruling elite in place. The media is also subject to intimidation and harassment (Tabaire 2007). Political corruption is a serious concern with "widespread venality at all levels of government and administration" (Kannyo 2004, p. 136). As the state becomes increasingly centralized and prepares itself for new oil-related revenues, higher levels of corruption are likely.

In Uganda, there is a clear pattern where governance reforms and policies have an immediate degree of success, followed by a subsequent downturn or unravelling (Robinson 2007, p. 452). This has been the case with policies addressing HIV/AIDS, education, civil service reform, anti-corruption measures, and of course poverty alleviation. There are explanations specific to each policy or reform area for why they lost momentum or failed, but common to all are competition between agencies and ministries, pervasive neo-patrimonial politics, and a lack of accountability and follow up after the initial funding has been secured and the process initiated (Robinson 2007). In this instrumentalist context, social policy has little priority as these investments, particularly around chronic hunger, will not contribute to short-term political gain for President Museveni and the National Resistance Movement (NRM).

13.6 Conclusions

Uganda's shift from Poverty Eradication (with the 1997 Poverty Eradication Action Plan) to Poverty Reduction (through the PRSP process) to National Development, is a clear signal of what the government prioritizes and where it believes it can succeed. The NDP sees poverty reduction as a fairly straightforward by-product of economic development which will be led by a combination of rural agriculture, urban development and, of course, oil. But as inequality widens, corruption increases and legitimacy wanes, the urban also poses a threat to Museveni's power. In emerging urban areas, donor financed planning may lead to better housing and better communication between urban residents and local government. TSUPU is also working towards establishing practices of self-help and entrepreneurialism among the urban poor. Growing urban malnutrition is not on the political radar, however, excepting its political threat to the president.

The UNUP does not respond to food security or indeed poverty in any meaningful way. Despite a veneer of public consultation and participation, this policy allows the government to better track who lives in urban areas. Those who do not live in homes up to code (that is, most of Kampala), will continue to face the same vulnerabilities and threat of bulldozers. The Migration Policy will leave internally displaced populations insecure and open to the same kind of evictions and forced resettlements that have been ongoing. This policy is also part of a wider discourse targeting international migrants, many of them refugees, as terrorists, fraudulent investors and scapegoats for high unemployment. Pressure from donors and community stakeholders may nudge urban policy in a more progressive direction, but the current trend indicates these pressures are minimal.

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