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Urban food security in South Africa: Case study of Cape Town, Msunduzi and Johannesburg

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Abstract

South Africa's population is already more than 60% urbanised. Whereas food poverty has historically been associated with rural communities, this is no longer the case. With sustained urbanisation, the locus of poverty is now shifting from rural to urban areas in the country. In addition, the recent sharp rise in food prices, coupled with an economic downturn, all suggest that poor urban households are experiencing a widening food gap. However, there is little empirical evidence that quantifies the prevalence of food insecurity in the towns and cities of South Africa. In response to this paucity of data, the Urban Food Security Baseline Survey was undertaken by the African Food Security Urban Network (AFSUN) in late 2008, collecting data from approximately 6500 households and 28 500 individuals in eleven cities in nine Southern African Development Community (SADC) countries. Within the context of the broader survey data in Southern Africa, this paper focuses on the research outcomes for the three South African cities of Cape Town, Msunduzi and Johannesburg. The data support the assumption that urban poverty is associated with high levels of food insecurity at the household level, with 70% of poor urban households surveyed in South Africa reporting conditions of 'significant' and 'severe food insecurity'. These high levels of urban food insecurity are mirrored by the situation in the other cities surveyed in the region, suggesting that chronic food insecurity is pervasive in urban centres in Southern Africa. Dealing with urban food poverty will therefore be a major policy and development challenge to city and national governments in South Africa and across the region over the coming decades.

The contribution of AFSUN (www.afsun.org) city partners to the design and implementation of the survey in each of the 11 participating cities is gratefully acknowledged. The data entry and management was undertaken with great care and expertise by Christa Schier at the University of Namibia. Prof. Wade Pendleton (UCT) participated as a resource person on all aspects of the survey, including enumerator training in a number of cities. The Programme in Urban Food Security (PUFS) is funded by the Canadian International Development Agency (CIDA) through the University Partnerships in Cooperation and Development (UPCD) Programme. The support provided by the Development Bank of Southern Africa in the preparation of this paper is appreciated and acknowledged.

Introduction

The scale of demographic growth and urbanisation experienced in the Southern African Development Community (SADC) indicates that urban development challenges will intensify over the coming decades. This is equally true for South Africa, where 56.2% of the national population lived in cities in 2001 (Stats SA, 2006), with an expected urban population of approximately 70% in only 15 years from the present (figure 1, UN World Urbanisation Prospects, 2007). Consequently, urban food security is an emerging area of development concern, and it is fundamentally different from questions of food security within the rural and agricultural sectors. Yet little is known about the extent of food insecurity in the cities and towns of Southern Africa, making it difficult for development practitioners and policy makers to quantify the challenge and to proactively plan to reduce the food gap that exists in urban areas.

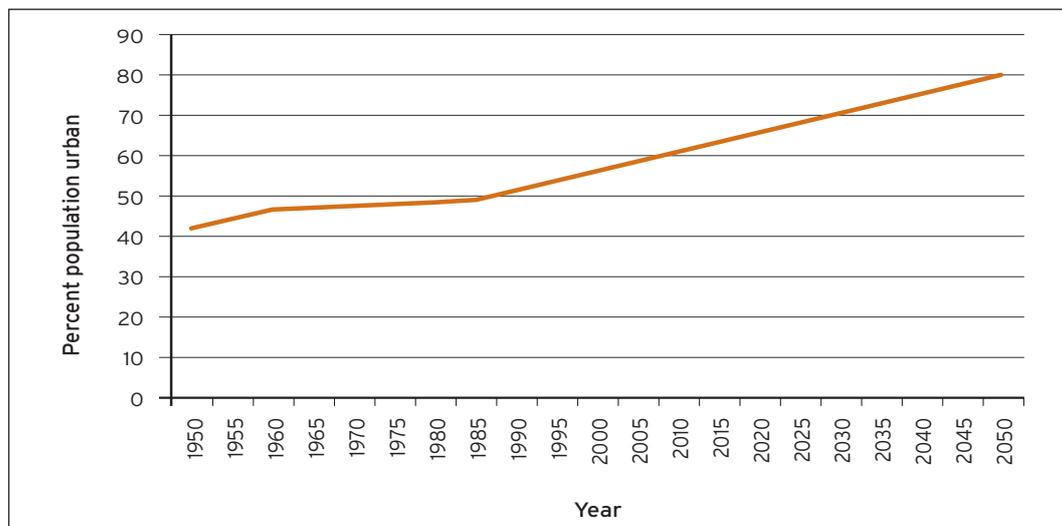


Figure 1: Urban residents as a percentage of the population in Southern Africa: 1990-2030

Source: UN World Urbanisation Prospects: 2007 Revision Population Database

Within the context of ongoing urbanisation, this paper raises some of the major policy issues for city and national levels of government posed by persistent household food insecurity in urban centres in South Africa. The focus is on the three cities of Cape Town, Msunduzi and Johannesburg, where levels of chronic food insecurity among poor urban households are alarmingly high. The Urban Food Security Baseline Survey (UFSBS)¹ conducted in late 2008 found that levels of food insecurity among the urban poor in these three cities averages 70%. By comparison, the regional average for the total of 11 cities surveyed in the SADC is 77%. It is noteworthy at the outset that levels of food insecurity for Johannesburg were considerably lower at 42%, with Cape Town and Msunduzi much higher at 80% and 87% respectively.

Who are the food insecure in South African cities? Why are levels of food insecurity so high and pervasive in the country's poorer urban communities? What are the implications of this situation for social and economic development? What kinds of policy questions do these findings raise for urban managers and for national government?

This paper interrogates the data collected in the UFSBS for these three cities in relation to these broad questions that are emerging around the issue of urban food (in) security, and suggests areas of purposeful focus for policy attention.

The paper first provides a brief discussion of the urbanisation and economic growth dynamics which frame the urban food security debate, and which demonstrate why food security will be increasingly important for South Africa in the coming decades. Following on from this is an outline

¹ The survey was conducted by the African Food Security Urban Network (AFSUN), managed by the Programme in Urban Food Security (PUFS) at the University of Cape Town.

of the methodology used by the survey in its data collection. The paper then turns to the analysis, highlighting key policy issues as they arise at both the city and national scales.

Urban food security in the context of urbanisation and the economy

The world's rural-urban tipping point was reached in 2007, marking the first time in the history of the planet that more people lived in urban centres than in rural areas. As the global population continues to grow towards a mid-century estimate of 9-10 billion (UN World Urbanisation Prospects, 2007), the majority of this demographic increase will be in cities; and 95% of that growth will be concentrated in the cities of the developing world (UN-HABITAT, 2007: 4). Research indicates that future urban growth will be most intense in Asia and Africa, and that these two regions will have the largest populations on the planet by 2030 – 2.66 billion and 748 million respectively (UN-HABITAT, 2007: viii). At twice the global average, the pace of urbanisation is already highest in Sub-Saharan Africa (SSA). The average rate of urban growth for SSA is close to 4% (UN World Urbanisation Prospects, 2007) and is expected to persist for decades to come. Although uneven between countries, as far back as 1995, more than 50% of Southern Africa's population was urban based, and it is expected that at current rates of urbanisation the population of the region will exceed 60% by 2015 (figure 2).

With urbanisation, the transfer of rural poverty to urban areas is rising globally. Ravallion (2007) reports that 'among those living on no more than \$1 a day, the proportion found in urban areas rose from 19% to 24% between 1993 and 2002.' Compounding the rising levels of urban poverty in the world is the fact that the cost of living in cities is some 30% higher than in rural areas, and with limited economic opportunities in much of SSA, the ability of poor urban citizens to climb out of poverty remains constrained.

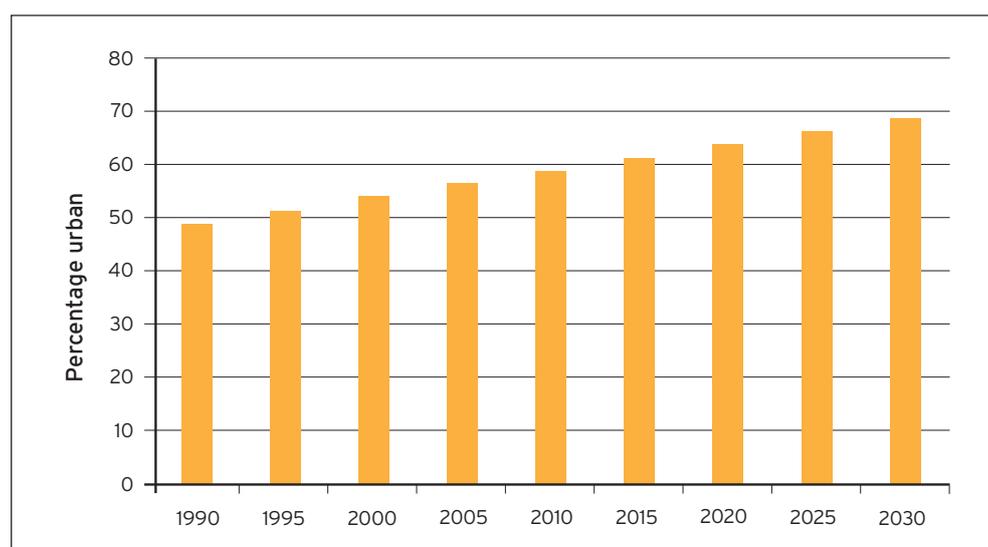


Figure 2: Urban residents as a percentage of the population in Southern Africa: 1990-2030

Source: UN World Urbanisation Prospects: 2007 Revision Population Database

Although economic development is uneven across countries in Southern Africa, urban poverty remains a chronic challenge to development, even in the more successful cases such as Namibia, Botswana and South Africa. For South Africa, national level data indicate that despite relatively high levels of recent economic growth, poverty incidence has not improved. Based on income/consumption expenditure surveys for the years 1993, 1995 and 2000, average monthly per capita values have declined in real terms (table 1). As a further indication of persistent poverty, the percentage of the population living in households with consumption or income per person below the poverty line (H%) has also increased. Finally, although the Gini index² has improved over this period, it has done so by only one point, indicating that economic inequality has remained significant and stagnant.

Table 1: Poverty indicators for South Africa: 1993-2000

Survey Year	Mean income/ expenditure (\$)	Poverty line(\$/ month)	H %	Gini Index (%)
1993	172	38	24	59
1995	158	38	21	57
2000	153	38	26	58

Source: PovcalNet, 2009

Although South Africa is in the process of establishing a national poverty line, what is clear from the ongoing discussion and analysis within government is that at least half of all South Africans live in absolute poverty (Stats SA and National Treasury, 2007). Using a food-energy requirement approach, the per capital lower bound poverty line is R322 and the upper bound line is R593, both at year 2000 prices. The most recent adjustment of the lower bound poverty line is for 2006, from R322 to R431. Using the 2000 figures, it is estimated that at the lower bound number, some 52.6% of the national population are below the poverty line; this proportion increases to 70.4% when the upper bound figure is used. Although these figures are only approximate and somewhat outdated, they do serve to quantify the general levels of poverty in the country. With the recent and ongoing global economic recession, job losses and increases in food prices, it may be reasonable to expect that the proportion of people living in poverty has increased; likewise, the Gini index may have increased.

Looking at the UFSBS (2008), income data in the three cities sampled are instructive in relation to poverty and the measures of food insecurity documented (table 2). For Cape Town, the median household income among households surveyed was R1600 per month. For Msunduzi this figure was R1000 and for Johannesburg R3500. Bearing in mind that these are 2008 figures, even using the now out of date adjusted 2006 lower bound per capital poverty line of R431, it is clear that with the qualified exception of households in Johannesburg, these respondents live in poor circumstances, well below even the 2000 poverty line. While households in Johannesburg report per capita monthly median incomes that are R444 above the 2006 lower bound poverty line, inflation will reduce this 'surplus' significantly, bringing even the relatively wealthier households in Johannesburg closer to the real lower bound poverty line.³

² Gini index is a measure of inequality between 0 (everyone has the same income) and 100 (richest person has all the income).

³ Data for Johannesburg are an aggregate of three areas sampled, including the inner city; the disaggregation of the data by area is likely to show significant variance in per capita incomes.

Table 2: Household incomes by city in relation to national poverty line

	Cape Town	Msunduzi	Johannesburg
Median household income (R)	1 600	1 000	3 500
Median household size	4	5	4
Per capita income (R)	400	200	875
Rand value below 2000 poverty line (R593)	31	231	-444

The survey aimed to capture the food security dynamics among the urban poor, and the data show that this has indeed been achieved. What is noteworthy, however, is that the overall levels of food insecurity recorded actually reflect the national levels of poverty (70%). suggesting that although unintentional, the survey may well be more representative of national food insecurity levels than anticipated (in other words, even though poor areas were selected, poverty is clearly a widespread phenomenon in South Africa).

In South Africa, the challenges of urbanisation are not only economic, but are also social and political. Providing the required levels of investment in education, health, safety and welfare to address current levels of poverty remains an ongoing challenge. The persistent shift to an urbanised population and the failure of the region's cities to be the engines of growth associated with urbanisation elsewhere mean that the urban question must establish itself firmly on the political and development agendas of national and urban governments, as well as the donor and international development communities. As an increasingly urbanised country, South Africa's core development challenge will be in the growing towns and cities of the country, marking a major shift away from past concepts of rural development as an engine for social and economic advancement. Agriculture will remain important to food security in the coming decades, but cities will have to also find ways to combat poverty and hunger that will not be limited to non-agricultural production. To tackle urban poverty levels already (conservatively) in excess of 50%, South Africa's cities will have to be part of a new approach to food production and access that includes the agricultural, processing, marketing, transportation, consumption and waste aspects of the food system. Sustainable social, economic and environmental development will only be possible if cities are fully integrated into the country's development and food security strategies, from household level upward. Cities are no longer there to be fed; cities must start feeding themselves. Until that time, how do poor urban households (now the majority in South Africa), survive these hardships associated with rapid urban growth and poor economic performance?

In summary, figure 3 provides a graphic view of the urban food challenge in South Africa. Endemic poverty is expanding as the country's population grows and the urbanisation process unfolds. Under current conditions, the ongoing failure of economic growth to lift the majority of people out of poverty is contributing directly to the inability of urban people to access sufficient food, resulting in chronic food insecurity. At the same time, this process of urbanisation is leading to significant urban sprawl, increasing the cost of living in the city, destroying valuable agricultural land and increasing

the demands for energy, water and food. The ecological footprint of South Africa's cities is already large and comparable to that of cities in other industrial countries, and which are also ecologically unsustainable. This cycle of poverty and unsustainable urban growth can be broken, and one way to do that is through an orchestrated effort from all levels of government that focuses on food as the major requirement for well-being and as the major driving force behind the re-engineering of cities into sustainable, inclusive and healthy environments.

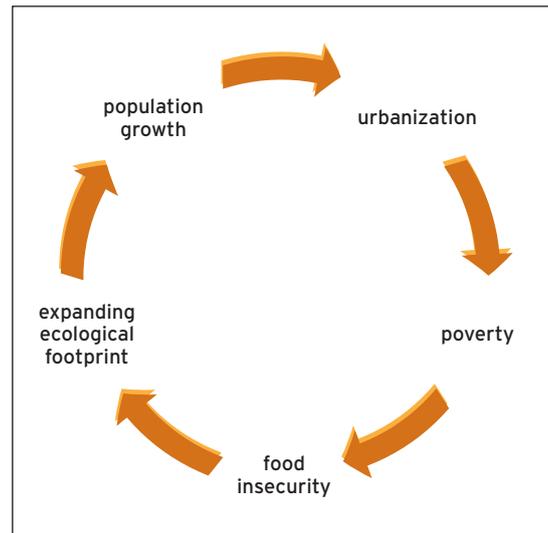


Figure 3: The urban food challenge in South Africa

Methodology

Summary of regional survey

In response to a paucity of data on urban food security in Southern Africa, the African Food Security Urban Network (AFSUN) undertook a baseline urban food security survey in late 2008 in eleven cities in nine countries in Southern Africa. The cities included Windhoek, Gaborone, Maseru, Manzini, Maputo, Blantyre, Lusaka, Harare, Cape Town, Msunduzi (Durban Metro) and Johannesburg. The network will use the findings from this regional study to enhance the data available on urban food security within each of the eleven participating studies, while also providing an empirical basis on which to understand the extent and dynamics of food security in the regional more generally. The key objectives of the standardised questionnaire survey were:

- to measure the levels of food security amongst poor urban households
- to understand the sources of food and related (in)security for urban households
- to measure the relationship between chronic illness (with a focus on AIDS) on urban household food security
- to capture the role of migration and urbanisation in the experience of food security amongst urban households

The samples in each city were drawn from areas identified as 'poor' within the context of the specific city and country, using a randomised selection process. The survey collected data at both the household and individual levels, with a total of 6 452 households and 28 722 individuals comprising the sample (table 3).

Table 3: Household demographics

	Windhoek	Gaborone	Maseru	Manzini	Maputo	Blantyre	Lusaka	Harare	Cape Town	Msunduzi	Johannesburg
Total number of households sampled	N=448	N=399	N=802	N=500	N=397	N=432	N=400	N=462	N=1 060	N=556	N=996
Total sample population	1 848	1 237	3 248	2 112	2 737	2 230	1 978	2 572	4 177	2 871	3 762
Average HH size	4.1	3.1	4.0	4.2	6.9	5.2	4.9	5.6	3.9	5.2	3.8
Median HH size	4	3	4	4	7	5	5	5	4	5	4
Smallest HH size	1	1	1	1	1	1	1	1	1	1	1
Largest HH size	12	10	15	20	17	13	16	16	19	21	12

Characteristics of the sample for Cape Town, Msunduzi and Johannesburg

The aim was for each city to sample from a range of urban typologies typical of the specific city, reflecting the diversity of poorer areas in which people live. Cape Town drew a sample of 1060 households from the three areas of Ocean View, Philippi and Khayelitsha. Msunduzi's total sample was 556 households. Johannesburg selected a combined total of 996 households from the inner city, Alexandra and Orange Farm.

In terms of sex ratios, the sample approximates the national average for the 15-64 year-old cohort of 0.95 males/females, indicating good randomisation in the sampling and selection process. The age distribution of the sample also matched the national population profile, with 31% of the sample in the 0-14 year-old cohort compared with 32.1% for South Africa, and 66% of the sample in the 15-64 year-old cohort, compared with 63% for South Africa.

With regard to occupation, the sample follows the regional trend. Approximately 35% of the respondents in the three cities of Cape Town, Msunduzi and Johannesburg are working, with another 53% either looking for work or occupied as a student. The sample has two concentrations in education: 29% having completed some primary schooling (12% completed primary schooling), and 28% having completed some high schooling (17% having completed high school).

Analysis and discussion of urban food security in Cape Town, Msunduzi and Johannesburg

Conceptual framework

Wayne Roberts of the Toronto Food Policy Council asks why it is ‘that so few people make the connection to the obvious: that a city is what it eats?’ (Roberts, 2001, 4). Roberts goes on to say that ‘more than with any other of our biological needs, the choices we make around food affect the shape, style, pulse, smell, look, feel, health, economy, street life and infrastructure of the city’ (2001, 4). This view reflects the complexity inherent in food systems, providing a useful starting point for unpacking the dimensions of urban food security in South Africa, and in particular in relation to the UFSBS data collected for Cape Town, Msunduzi and Johannesburg.

There are a number of ways in which a city might be defined by what it eats (or does not eat). With reference to figure 4 below, while supply is generally adequate at the city level in South Africa, citizens do not have equal or universal access to sufficient food. Likewise, food that is consumed is often highly processed and devoid of good nutrition. If, rather than eating a calorific inappropriate and nutrient deficient diet, the ‘city was able to eat well’, citizens would move from the current state of chronic food and nutrition insecurity to a state of satisfaction and health. A move towards local food production would help to promote livelihoods within the city, and to reduce environmentally costly food imports, while starting to close carbon-nutrient cycles, so helping to promote a more sustainable city for all. An increase in local food production necessitates the development and support of local level, neighbourhood-accessible marketing systems to distribute produce throughout the city, to wealthy and poor alike. Using food production is therefore one important way of improving economic conditions for the city’s poor. In order to realise these goals of creating a healthy, vibrant and prosperous city around the basic need of food requires an enabling and supportive environment – food (in all its complexity) must be fully integrated into the planning and management systems of the city, further enabled and supported by provincial and national level line ministries. The analysis of the findings of the UFSBS and the discussion that follows use this framework to tease out the major food security dynamics and policy questions that arise.



Figure 4: Conceptualising the ‘city is what it eats’

Access to food: satisfied city

Access is fundamental to the pursuit of food security in any context, and no less so in the cities of South Africa. In this section, the extent of food insecurity is considered, as well as the variety of sources of food that the urban poor use to provision their households.

Quantifying urban food insecurity

Perhaps the most striking finding of the survey is the extent to which those urban households sampled are chronically food insecure. For Cape Town, 80% of the households were food insecure.⁴ The situation is even more severe for Msunduzi, where 87% reported being food insecure. For Johannesburg the figure is the lowest, at 42%. The average for the three cities is 70%, compared to the regional average of 77% for the total of 11 cities surveyed (figure 5).

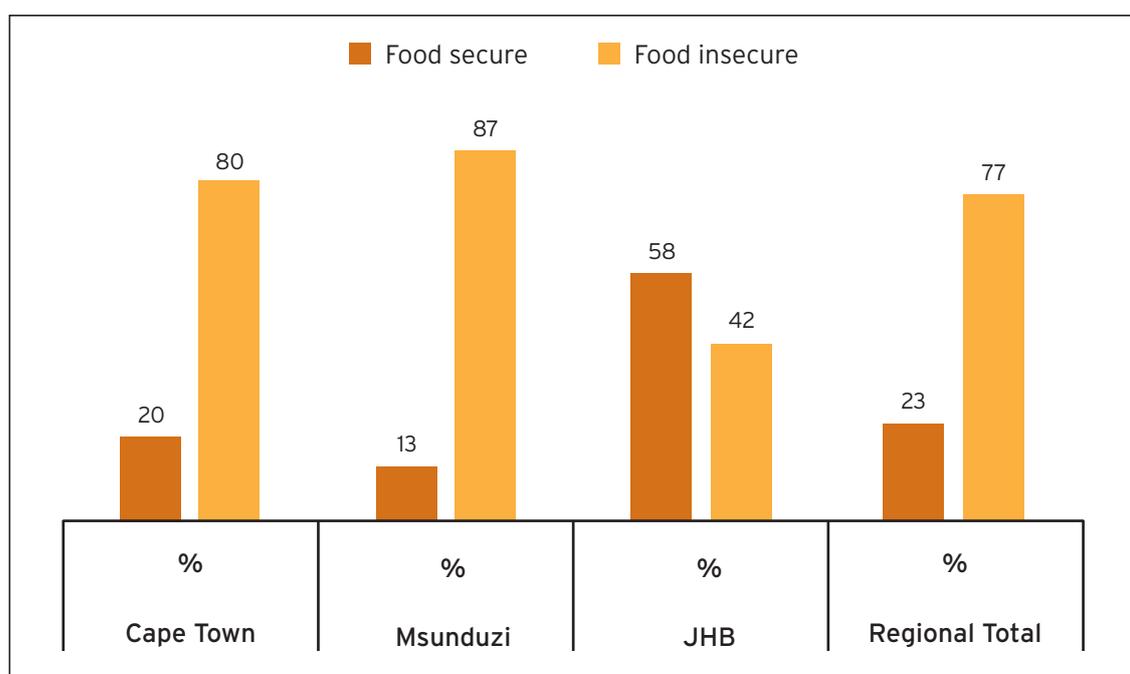


Figure 5: Levels of household food insecurity

⁴ The survey captures four categories of food secure access. These are 'food secure', 'mildly food insecure', 'moderately food insecure' and 'severely food insecure'. For ease of reporting, food secure and mildly food secure categories have been recoded as 'food secure', and moderately and severely food secure categories have been recoded as 'food insecure'. Households that are moderately food insecure went without food 3 to 10 times in the last 4 weeks; households that are severely food insecure went without food more than 10 times in the last 4 weeks.

Poverty and food security

There is a direct relationship between poverty and food security. The Lived Poverty Index (LPI) is a reliable, self-reported measure of deprivation. When the food securing status of the sample is cross-tabulated with the LPI, it is clear that food insecurity is a reasonable proxy measure for poverty (figure 6).

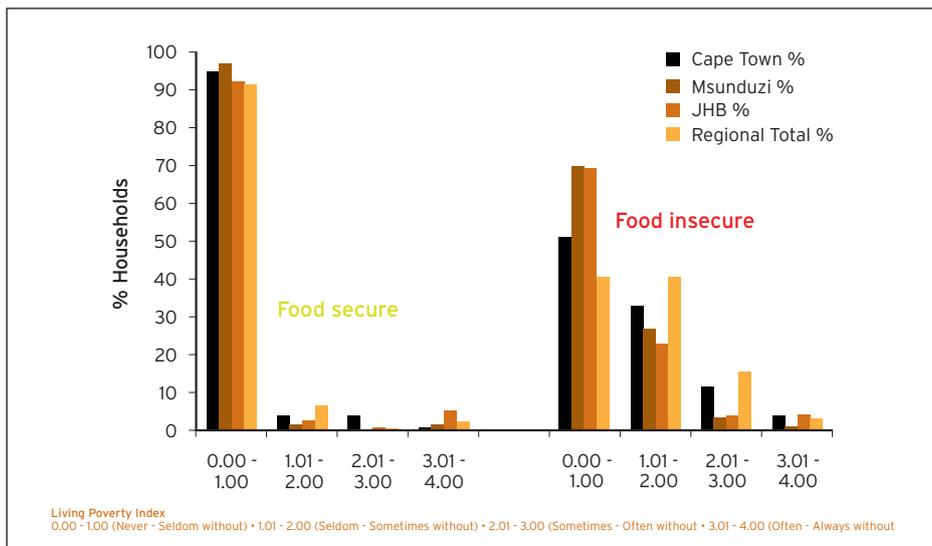


Figure 6: Lived poverty index by food security status

Similarly, income and food security are positively correlated. Income terciles have been computed against food security status, and the data show that those households with the lowest incomes experience the greatest levels of food insecurity (figure 7). Although income levels for each city vary, by using the three income categories (low, medium, high income), this variance is accounted for, thus allowing good inter-city comparability. The pattern is strong: food security increases with a rise in household income across all types of households (table 4).

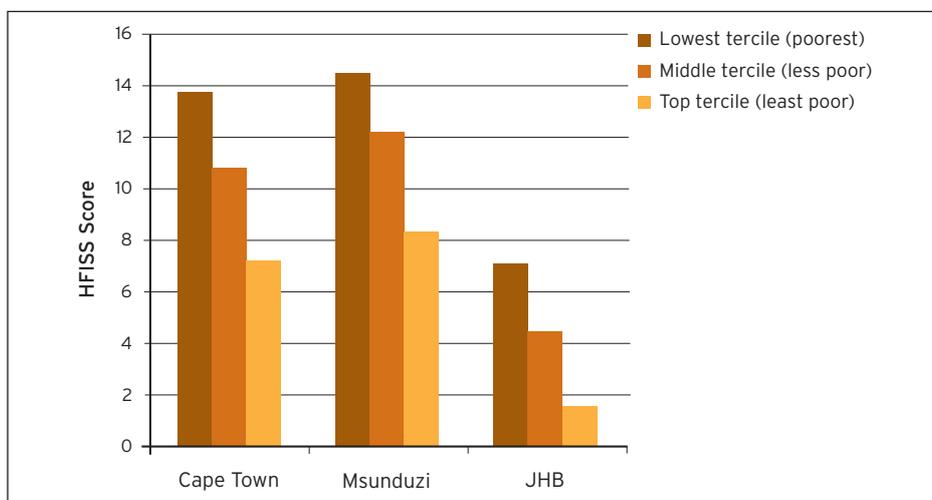


Figure 7: Income terciles by household food insecurity access scale score (0=food secure)

Table 4: Household structure by household food insecurity access scale by income terciles

			Food secure %	Food insecure %	Total %
Total for 3 Cities	Female centered	Low income	16.6	83.4	100.0
		Middle income	26.8	73.2	100.0
		High income	46.4	53.6	100.0
	Male centered	Low income	16.5	83.5	100.0
		Middle income	36.1	63.9	100.0
		High income	53.7	46.3	100.0
	Nuclear	Low income	19.9	80.1	100.0
		Middle income	26.2	73.8	100.0
		High income	52.5	47.5	100.0
	Extended	Low income	23.1	76.9	100.0
		Middle income	27.3	72.7	100.0
		High income	49.4	50.6	100.0
Total			32.6	67.4	100.0

An interesting characteristic of South African cities is the formal/informal housing dichotomy. Housing is a visual expression of this, and the survey collected data in areas of both formal and informal housing. The comparisons in relation to food security are revealing. If housing is a marker of wealth (or the lack of it), one would expect there to be a correlation between housing type and food security. The data clearly demonstrate this relationship, with a statistically significant difference in food security status among the seven housing types included in the survey ($p < .0001$). Of those households that are food secure, 84% are living in houses, town houses and flats, compared to only 12% that live in traditional dwellings and informal conditions. In contrast, the proportion living in traditional dwellings and informal conditions that are food insecure rises from 12% to 32%. The most disadvantaged are therefore households living in informal conditions (table 5).

Table 5: Household type by household food insecurity access scale

Housing type	Food secure (%)	Food insecure (%)
House	52	43
Town house	3	4
Flat	29	15
Traditional dwelling	2	6
Room in house/ backyard/ flat	5	4
Squatter hut/ shack	10	26
Other	1	2
Total	100	100

The analysis thus far demonstrates the strong link between poverty and food insecurity, by a number of measures. What are the implications of these findings? In the first instance, the scale of the food challenge cannot be underestimated: to be clear, *only one in five households among the urban poor are*

food secure across the three cities. Second, under current urban conditions, access to food is directly related to income. It is therefore no coincidence that Johannesburg has the lowest levels of food insecurity as it is here that incomes are the highest.

Gender and food security

Although poverty has been established as the most important predictor of food insecurity, hunger in South African cities (as elsewhere) has a definite gender dimension to it. At the regional level, nuclear households are the most secure and female centered households the most food insecure. Similarly, for the three cities under consideration, the data demonstrate that overall, female centred households feature as the most food insecure, with 72% of all female centred households food insecure (table 6). The results for Johannesburg are less gendered than for Cape Town, where 83% of all female centred households are food insecure, and for Msunduzi, where 90% of all female centred households are food insecure. This finding is consistent with the broader literature on gender, poverty and food security, which holds that women are the most vulnerable in society and also the most food insecure.

Table 6: Food security status by household structure and city

		Food secure %	Food insecure %	Total %
Cape Town	Female centered	18	83	100
	Male centered	24	76	100
	Nuclear	18	82	100
	Extended	30	70	100
	Total	20	80	100
Msunduzi	Female centered	10	90	100
	Male centered	15	85	100
	Nuclear	19	81	100
	Extended	16	84	100
	Total	13	87	100
Johannesburg	Female centered	58	42	100
	Male centered	53	47	100
	Nuclear	60	40	100
	Extended	55	46	100
	Total	58	42	100
Total	Female centered	28	72	100
	Male centered	36	64	100
	Nuclear	36	64	100
	Extended	37	63	100
	Total	33	67	100

Impact of food prices

Part of the poverty-food insecurity story unfolding is the role of food prices. For the period October 2007 to October 2008, at 16.7%, food inflation outstripped overall inflation which was 12.1% in South Africa (NAMC, 2008). The prices of staples and meat have increased substantially in the past year. As an indication of what this means for poor households, it is estimated that for the period April 2007 to October 2008, the poorest households in South Africa would have had to raise their incomes by a minimum of 22% to maintain the same food basket (NAMC, 2008, 14). To put this into the perspective of this study, this increase is equivalent to an additional income of R1 187, which is greater than the median household income recorded for Msunduzi, and only R413 less than the median household income for Cape Town.

It is therefore not surprising that when asked about the impact on food availability as a consequence of recent food price increases, 79% of households in the region reported going without food in the second half of 2008 *as a direct outcome* of food price increases. These increases negatively impacted 83% and 86% of households surveyed in Cape Town and Msunduzi respectively (figure 8). While price rises had the least impact on households' food security in Johannesburg because of higher average incomes, more than half of the sample reported a negative impact on their food consumption (54%), which is still very high. When considering those households that reported going without food every day as a result of price rises, differences between the cities were reduced (11%, 22% and 9% in Cape Town, Msunduzi and Johannesburg respectively, reflecting the poorest households in these cities).

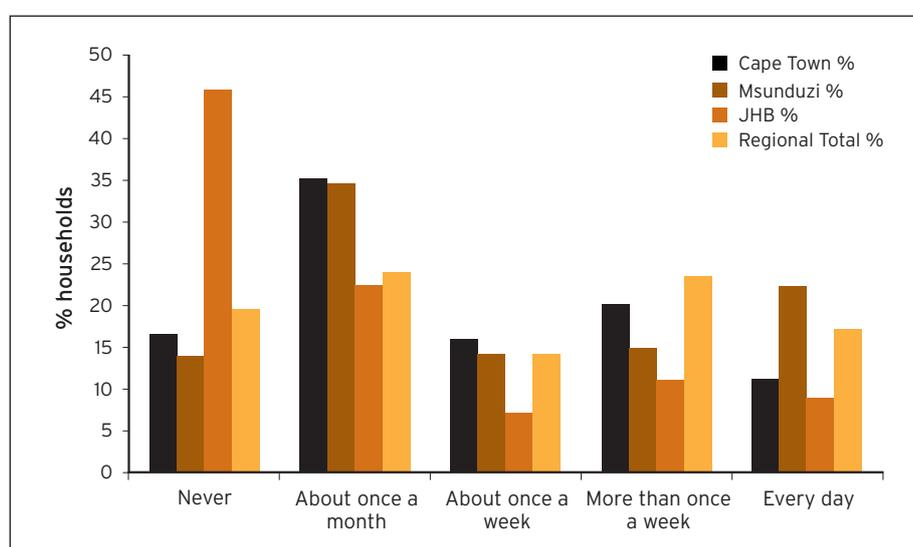


Figure 8: Frequency of households going without food in the past six months due to food price changes

Economic perceptions

While poverty may in some instances be relative, in this survey the evidence suggests that in relation to both income and food security, poverty is absolute and pervasive. In addition, respondents' own experiences of poverty reflect this emerging reality. When asked to compare their household's economic conditions today to one year ago, almost two-thirds (63%) felt that they were worse off than in the past; only 5% said that their economic situation was better than it had been (figure 9). As discussed earlier in the paper, these perceptions are borne out by reality: the percentage of households living below the poverty line increased (for 1993-2000). The recent rise in food prices and inflation suggest that this trend has continued for the period 2001-2008.

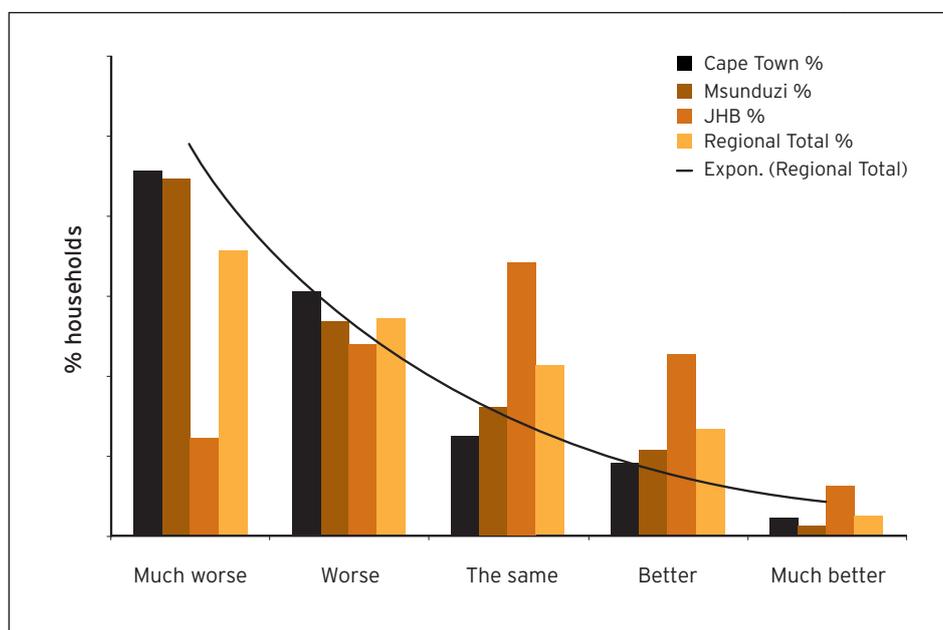


Figure 9: Perceptions of economic conditions compared to one year ago

Policy issues in relation to access

The primary issue from a policy perspective must be the high levels of chronic food insecurity. The explanation for this lies firmly in the attendant high levels of poverty that characterise the urban population. Compounding these challenges, the urban poor face high overall inflation and disproportionately high food inflation, within the context of a shrinking economy and recession. Moreover, women are clearly the most vulnerable to food insecurity, reflecting an inequitable society.

While positive, *equitable* economic growth is necessary to reduce poverty and thereby reduce the food gap for poor urban households, social welfare provides a specific poor-oriented mechanism to relieve chronic hunger. The data indicate that 30% of households surveyed receive income from

social grants (figure 10). Although this is already substantial, it is likely that there are people in these cities who qualify for social grants of one kind or another, but are not accessing them for a variety of reasons. Therefore, one way to increase income and therefore access to food is to take steps to improve the take-up rate of grants within society. Specific food grants can also be considered as a means of improving food security among poor households, either through cash or voucher systems (for example, the means tested food voucher system in the USA). Food aid remains almost non-existent in these cities to date.

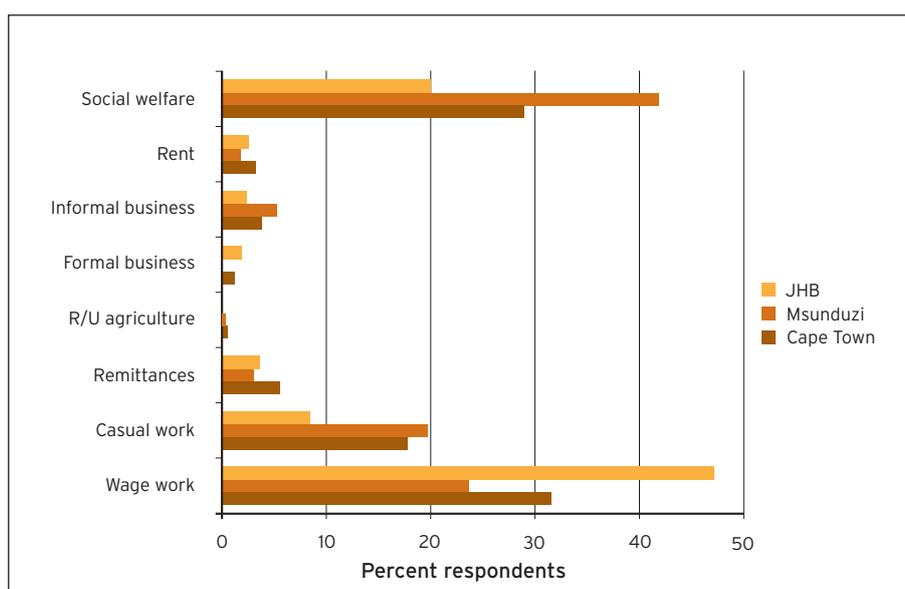


Figure 10: Sources of income

Two further options could be explored to support greater access to food. The first is self-production, for own consumption and/or for sale. Urban agriculture has long been discussed as a food security strategy for the poor, and as a way to help move the city towards a more equitable and sustainable food provisioning system. Cape Town has an urban food security strategy in place, and the City of Johannesburg is supportive of urban gardening too. However, until urban agriculture is mainstreamed into the urban planning and national development policies of South Africa, the activity will remain ad hoc and the full potential of this sector for real economic and social development will not be realised. Drawing poor people into productive agriculture in cities requires institutional and financial support. The section on local production, which appears later in this paper, provides a case study to highlight the potential of urban agriculture in relation to food security.

The second option relates to the role of community service organisations (CSOs) in providing relief through improved access and support to poor urban households. When considering the kinds of food related activities that CSOs could support, these may include food aid, community food kitchens, crèches, home-based care, and small-scale food growing (figure 11). When these sources of food are considered in relation to all other sources, the survey indicates that they are the least important for

households. Yet, with appropriate support, CSOs have the potential to play a much more substantial role in poverty alleviation, and specifically in food provisioning, than is currently the case. It is noteworthy that in all cities, informal coping strategies are used by households to access food are very substantial, though these needs could be better provided by CSOs. Until resource constraints are sed for CSOs, their role is likely to remain limited.⁵

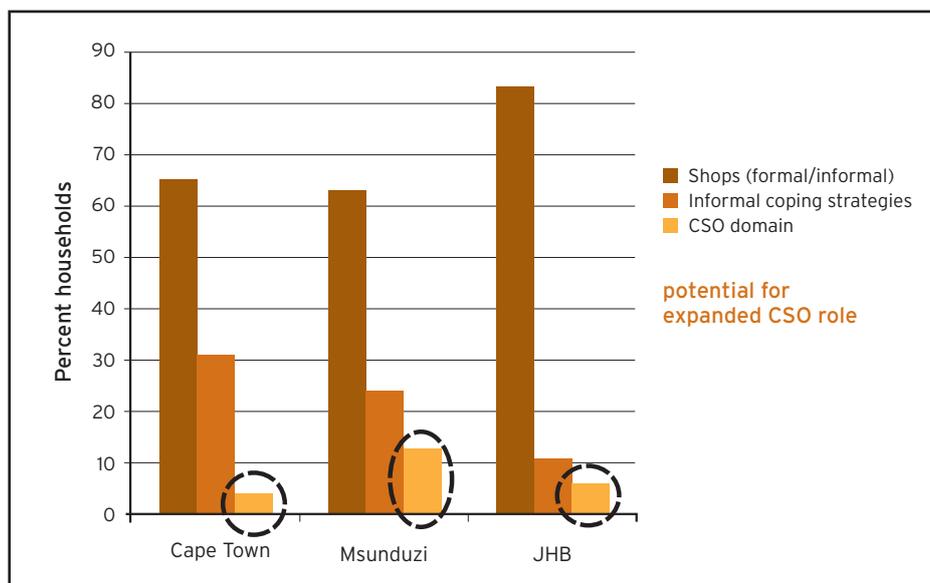


Figure 11: Source of food: expanded role of CSOs?

Dietary diversity: healthy city

In addition to sufficient calories, dietary diversity is necessary to ensure adequate nutrition. The survey data show that dietary diversity remains inadequate for most households in the study. The higher score of 8 (out of a maximum of 12) for Johannesburg is probably a reflection of higher incomes (figure 12). When the non-nutritive food items are removed from the dietary intake of the sample, the dietary diversity score drops to 4, 2 and 5 for Cape Town, Msunduzi and Johannesburg respectively. These scores indicate inadequate diversity and therefore inadequate nutrition among the respondents in all three cities.

Where people access food also has a direct relation to the levels of dietary diversity as well as the extent to which healthy food is accessed and consumed. For this survey, the major sources of food were supermarkets, small shops/restaurants and informal markets/street foods (figure 13). However, the frequency with which people used these major sources varied significantly, with supermarkets being the least used and small and informal shops being most frequently used. In addition, there are substantial numbers of people who rely to some extent on informal coping strategies to acquire food, often getting too little and with limited diversity from these sources (which include borrowing, sharing meals with neighbours and growing food).

⁵ For examples of effective CSOs in food redistribution, refer to the section in this paper on local markets: productive city.

Although typically associated with wealth, a trend in urban areas in South Africa is the rise of obesity and related malnutrition among the poor. The survey found that about 10% of people surveyed had one or more chronic diseases associated with a modern, urban lifestyle (table 7). Many of these diseases are not related to calorie deficiency, but rather to a lack of dietary diversity, overweight and obesity, and a sedentary lifestyle. These figures are underreported in the survey, and are shown to be much higher in the general population using objective biomedical measures (Steyn, 2006). Levels of overweight and obesity in South Africa are 29% for males and 56% for females, with black urban women having the highest levels of all groups (Goedecke, et al., 2006).

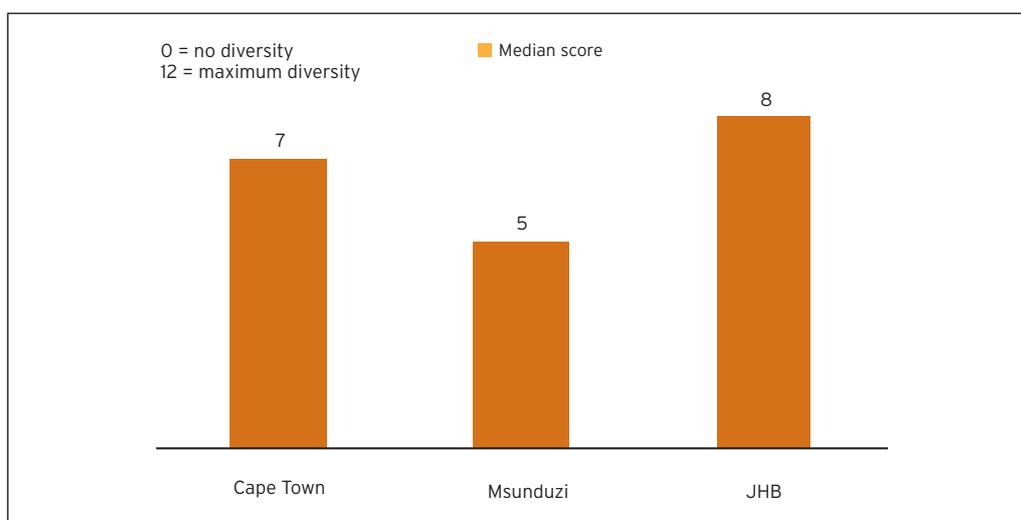


Figure 12: Household dietary diversity score

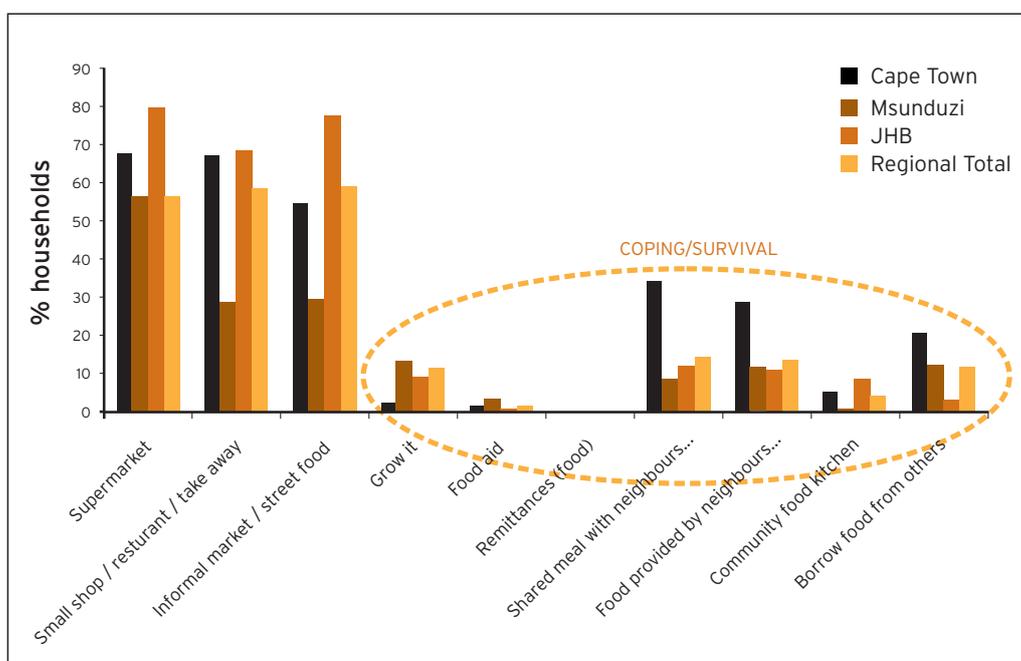


Figure 13: Source of food

The data from the survey also show that mortality and morbidity rates are affected by food security status. The total for all-cause morbidity and mortality reported for the regional sample among *food secure* households was 34%, whereas rates among *food insecure* households was higher at 57% (table 8). Figure 14 below shows this correlation graphically for the three South African cities, indicating the clear relationship between food security and health.

Table 7: Modern lifestyle diseases (self-reported)

Disease	Cape Town %	Msunduzi %	JHB %	Total %
Diabetes	4	3	3	2
Asthma	4	3	2	2
Hypertension and stroke	4	2	2	3
Heart problems	1	1	1	1
Arthritis	2	4	2	2
Chronic disease total	14	14	11	10

Table 8: All-cause morbidity and mortality by household food security status

		Cape Town %	Msunduzi %	Johannesburg %	Regional total %
Food secure	Illness	21	22	17	27
	Death	5	9	8	7
Food insecure	Illness	35	46	24	46
	Death	7	18	9	11

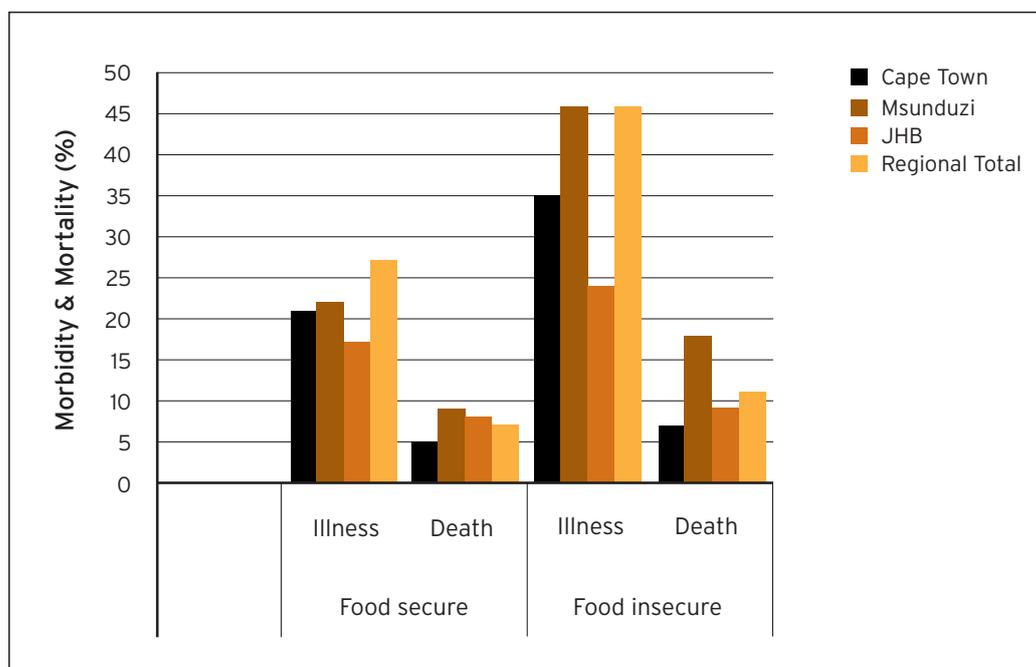


Figure 14: All-cause morbidity and mortality by household food security status

Dietary sufficiency and diversity are also associated with communicable diseases, of which TB and HIV/AIDS are important in South Africa. The UNAIDS/WHO (2009) figures estimate that at the end of 2007, there were 5.7 million people living with HIV in the country, including 3.2 million women and 280,000 children (ages 0-14). Of these, the greater number live in urban areas. Furthermore, there were approximately 2.8 million people infected with TB in South Africa (Department of Health, 2007). The links between poverty, AIDS and food and nutrition security are now well established. Ongoing research by the International Food Policy Research Institute (IFPRI) demonstrates the complexity of both biological and socio-economic factors in relation to HIV and AIDS, and the direct role that food poverty plays both in respect of risky behaviour and physiological susceptibility to the virus (Gillespie and Kadiyala, 2005; Gillespie 2006). As one of many overlapping stressors related to poverty, AIDS affects households further in a number of ways, which include reducing income through unemployment, increasing time spent by care-givers away from economically productive work, and increasing dependency ratios within households, all of which have a negative impact on the ability of households to secure sufficient food for their needs. Having AIDS also increases calorific and nutritional requirements, as does ARV treatment, placing additional burdens on household members responsible for meeting food needs (De Waal and Whiteside, 2003).

This negative relationship between food security and AIDS is evident in the survey data. Although significantly under-reported by respondents in the survey compared to national statistics, AIDS and TB both show a direct and troubling association with food insecurity (figure 15).

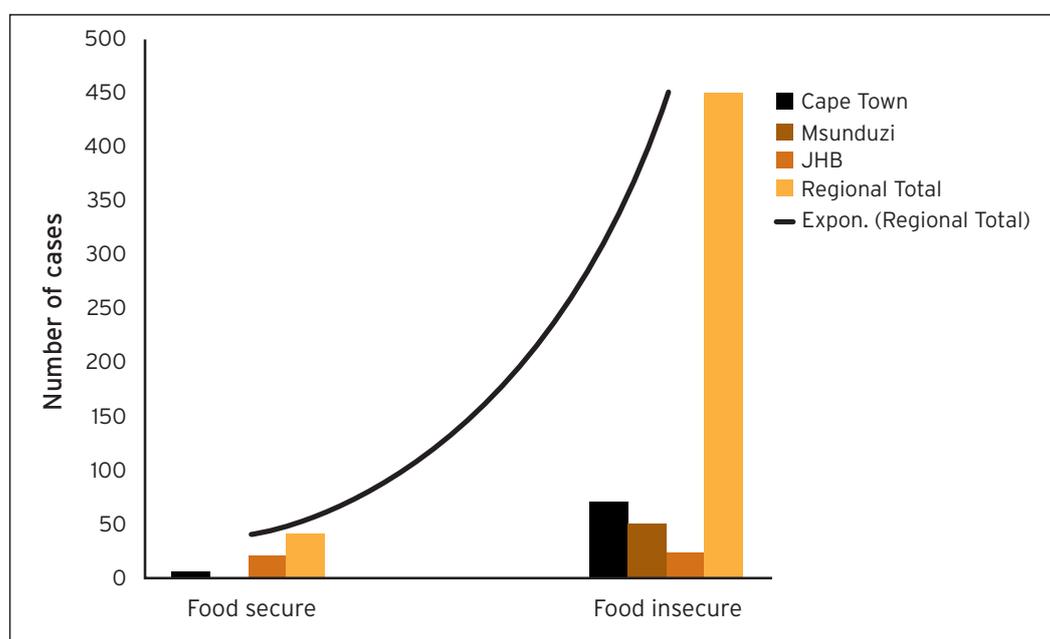


Figure 15: Self-reported cases of TB and AIDS morbidity and mortality by food security status in households

The link between poverty, food security and informal housing, which is so characteristic of South African cities, was discussed above in the section on access to food. Similarly, the national data on HIV for South Africa show that housing informality is an important characteristic of prevalence, with the highest rates being recorded in the informal urban areas of the country (figure 16). This appears to be the consequence of a number of poverty related factors, including overcrowding, poor access to medical facilities, high levels of mobility, risky poverty-induced behaviour, and substance abuse (Smith, 2007). In addition to the lack of access to medical facilities, it is plausible that generally poor levels of physical and social infrastructure in informal areas would also contribute directly to poor levels of social, psychological, emotional and physical health, thus increasing susceptibility to HIV and other diseases. Given that the survey data show that the highest levels of food insecurity are in informal urban areas, the link between food insecurity and HIV and AIDS is once again highlighted.

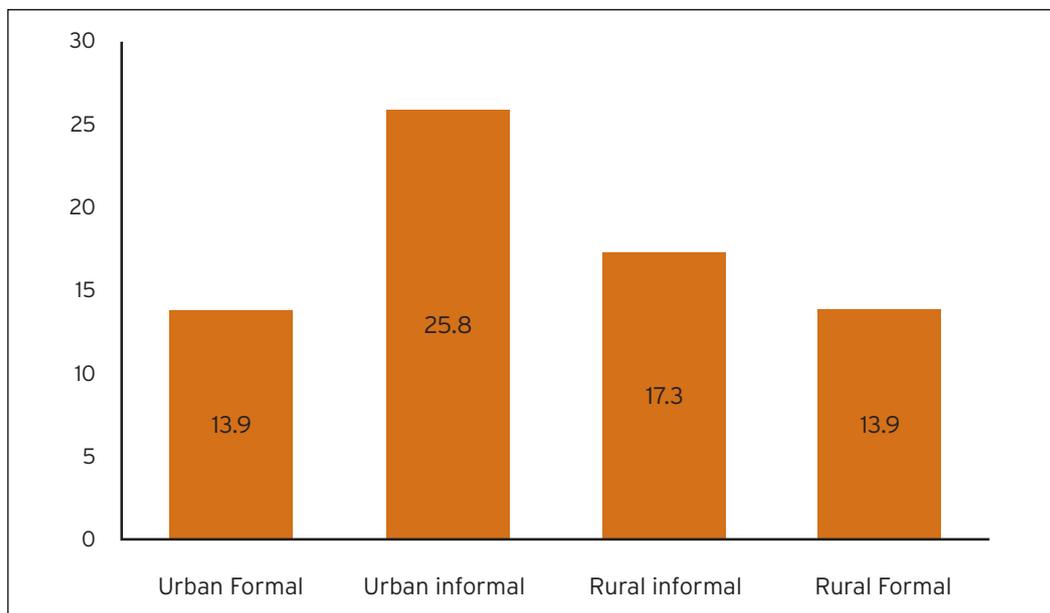


Figure 16: HIV prevalence rates by housing status (formal vs. informal)

Source: 2005 HSRC/Nelson Mandela Foundation HIV/AIDS Study, pg. 40, in Smith, 2007

Policy issues in relation to dietary diversity

Urban South Africans are no longer as healthy as their rural counterparts, and are increasingly suffering from a range of diet and lifestyle related diseases. Even though underreported compared to the national averages, chronic diseases are characteristic of the households in this survey. Dietary diversity is also poor, suggesting poor levels of nutrition. In this case, what the 'city eats' is not healthy, nor are the outcomes healthy.

Opportunities exist for policy interventions on a number of fronts. The first relates to increasing access to better quality and variety of food (in relation to the discussion on access above). The second relates to education, both in schools and communities. (This is another area where CSOs may be able to play

an important role). The third relates to food providers/retailers and the kinds of food that they sell. For example, this survey shows that street foods and informal shops are a major source of food for the urban poor; yet many vendors and small shops sell highly processed, low quality foods (generally with high levels of artificial ingredients and highly toxic trans fats) which are known to be linked to most of the chronic lifestyle diseases, and which do not contribute to good quality dietary diversity. The combination of education, legislation on food quality standards (as opposed to hygiene standards) which is especially important in relation to what gets sold/provided to children, and incentives to businesses to provide more nourishing foods can all contribute to healthier people in our cities.

The association between informal housing and disease, in particular communicable disease, raises important policy questions. Healthy cities are generally well serviced cities, and the improvement of infrastructure is therefore a key development priority in this regard. Government is focused on providing formal housing, yet the housing type itself may be of less significance than the lack of good social and physical infrastructure, both of which are central to health.

From an AIDS (and TB) perspective, the link between food security and the disease is undeniable. Food quality and diversity are key to reducing the impacts of malnutrition on people living with AIDS. Together with social grants, community gardens provide one direct way of improving food and nutrition security. Initiatives already under way in South African cities, can serve as models for what might be possible more widely in the country. (See next section on local production for further discussion on urban agriculture).⁶

Local production: Sustainable city

As argued earlier in this paper, the environment is central to the food question in South Africa's cities (and elsewhere). Ecological resources are the foundation of food production, and yet the industrial model of agriculture currently in use undermines that very foundation. The demand for ecological resources is also rising in response to persistent urbanisation, placing an ever greater burden on the environment. Managing this burden through a food security lens necessarily connects rural and urban systems, and also helps to focus production, waste management and environmental stewardship at the local level of the city and its neighbourhoods. In so doing, the ecological footprint of South Africa's growing cities can be better controlled and managed, while food-system related economic development can bring much needed opportunities to poor urban households. However, the survey demonstrates that very little food production is currently taking place at the household level, and that the potential for the country's cities to feed themselves remains untapped.

On average, only 5% of households in the three cities of Cape Town (1%), Msunduzi (11%) and Johannesburg (3%) grow food. Although the numbers are very small, the fact is that of those who

⁶ Examples include: the Siyakhana Food Garden Project (SFGP, www.siyakhana.org) which is a permaculture project located in the inner city of Johannesburg; Food and Trees for Africa (www.trees.co.za) which is a social enterprise addressing greening, climate change action, food security, sustainable water and soil use and management, with a strong focus on environmental and global warming education and awareness; and Abalimi Bezekhaya, an urban agriculture and environmental action association operating in the socio-economically neglected townships of Khayelitsha, Nyanga and surrounding areas on the Cape Flats near Cape Town (www.abalimi.org.za).

do engage in urban agriculture as a source of food, 31% are totally dependent on what they produce. This indicates that urban agriculture may be a last resort for poor households, rather than a choice. This is also supported by the recurring observation that income, social security and informal social networks (safety nets) are the main determinants of food security.

In the case of these three cities in South Africa, it is what the city does *not* eat that defines it as an unsustainable city unable to feed many of its citizens. In looking for ways to turn this scenario around, the case study that follows provides insight into the potential of urban agriculture as a way of achieving a more productive, pro-poor and sustainable urban future.

Case study 1: The city of Cape Town's urban agriculture policy

Overview

The urban agriculture policy for the City of Cape Town, 2007, was approved by Council in December 2006. The stated purpose of the policy is to develop 'an integrated and holistic approach for the effective and meaningful development of urban agriculture in the City of Cape Town and to create an enabling environment wherein public, private and civil society agents can work collectively to create more real and sustainable opportunities for local area economic development' (CoCT, 2007). The city's vision for urban agriculture is a prosperous and growing urban agricultural sector supported by the following strategic goals:

- to enable the poorest of the poor to utilise urban agriculture as an element of their survival strategy (household food security)
- to enable people to create commercially sustainable economic opportunities through urban agriculture (jobs and income)
- to enable previously disadvantaged people to participate in the land redistribution for agricultural development programme (redress imbalances)
- to facilitate human resources development (technical, business and social skills training)

The city aims to follow a dual approach to urban agriculture. On the one hand, it proposes focusing on achieving household food security (poverty alleviation and improved nutrition) and on the other, the creation of income (economic development) (CoCT, 2007).

The stated aim of the policy is: To develop an integrated and holistic approach for the effective and meaningful development of urban agriculture in the City of Cape Town. It [the policy] will be utilised as a guiding tool by all role-players to align and synergise efforts to maximise the positive impact of urban agriculture in the city. This policy seeks to create an enabling environment wherein public, private and civil society agents can work collectively to create more real and sustainable opportunities for local area economic development. Ultimately, this policy will give formal recognition and status to urban agriculture in the City of Cape Town (CoCT, 2007).

The strategy further defines urban agriculture as being: The production, processing, marketing and distribution of crops and animals and products ...in an urban environment using resources available in that urban area for the benefit largely of residents from that area (CoCT, 2007).

Critique of the policy

This definition ignores the non-food products generated from agriculture and does not sufficiently emphasise the use and re-use of human and material resources, products and services found in and around that urban area, nor does it suitably consider the supply of human and material resources, products and services. These omissions form the basis for a critique of the City of Cape Town urban agriculture policy. There is a need for interventions that go beyond urban greening, second economy economic interventions and food security. It is essential that urban agriculture become a core thrust within the planning and development of the city. Urban agriculture needs to be diverse, innovative, and relevant, and at the same time, needs to span economic sectors within the city. The policy's primary focus is to address household food security and support economic activity. The policy does list a number of strategic imperatives such as including urban agriculture in land use management and physical planning, creating links with other strategies, the establishment of urban consultative forums, building strategic partnerships and possibly most important, the release of municipal land for urban agriculture purposes (CoCT, 2007).

The key question here, however, is how the City of Cape Town's new Urban Agriculture Unit will be adequately empowered to achieve these strategic objectives and how it will be able to intervene in critical areas such as planning, if it is located within the Department of Economic and Human Development. The Urban Agriculture Unit is a critical component of the urban agriculture policy and needs to be set up as a matter of urgency.

It is critical that the unit be given the mandate to facilitate the creation of the required enabling environment, linking other role players and facilitating the rollout of urban agriculture within the city. By elevating the status of the unit, it would then be in a position to play the necessary facilitation role that would allow for other aspects, such as waste recycling, sewerage re-use, facilitating distribution and coordination of materials, inputs and services to be included in the programme.

In urban contexts internationally, other bodies have been effective in addressing urban food issues. For example, structures such as urban food policy councils have been formed to help guide government decisions on food. These councils are informal coalitions of local politicians, hunger activists, environmentalists, sustainable agriculture advocates, and community development groups which allow food policy decisions to reflect a broad range of interests and to tap possible synergies (Pothukuchi and Kaufman, 1999, Hamilton, 2002). Food policy councils are critical as they bring public and non-governmental agencies into the debate. In most cases, as has transpired with Cape Town, the policy is formulated before citizens' groups that can liaise with government and officials on the matter are set up. These kinds of urban food policy councils are a critical component of urban agriculture within the city, coordinating the necessary partnerships and facilitating the integration

of a variety of perspectives and skills into the process. The Cape Town Urban Agriculture Unit has the potential to perform this kind of role.

Achieving broad sustainability goals will involve creating space for diverse voices, perspectives and a multiplicity of options, and actors. The future sustainability oriented challenges of climate change, peak oil, mass urbanisation and the proliferation of slums, increased inequality, ecological services degradation and food scarcity emphasise the fact that alternative solutions to agriculture and food supply within the city need to be identified, and solutions need to be found soon. These solutions need to be packaged into an overarching urban agriculture strategy for the city. The current policy does not address this.

A core principle of urban agriculture is that communities identify what their specific needs may be. This should evolve as part of a process that maps the food status of the various regions of the city, identifies potential solutions that are specific to the various regions, and identifies the community structures that could best be activated to support the development process. The city and the identified structures then need to work collaboratively to map out a path that is agreed, supported and sustainable. Only once these needs have been identified would the City of Cape Town be in a position to respond to the realities of each situation. Experiences of existing groups that have successfully worked to build social capital over time should be drawn on to support this process and to provide much needed insight into the strategies required. Small community based interventions, as evidenced in many cities around the world, such as Havana (Funes, et al, 2002), Addis Ababa and Harare (Mougeot, 2005) have been able to address livelihood and nutritional needs, while providing communities with the necessary resilience to sustain themselves and contribute in a positive manner to the city. This contrasts with large macro projects, such as the creation over 1,000 food gardens within a limited period of time.

International experience has shown that through a top-down approach, the development of social capital and the ability to meet food and nutritional security needs is often isolated from community ownership and transferred to officials and political figures, which ultimately require large capital funds to ensure sustainability. The City of Cape Town needs to guard against a situation where the community is denied ownership of the process. Girardet, et al (1999) argue that the interrelated nature of food, agriculture, health and ecology calls for an integrated approach to urban agriculture and propose the formation of a municipal working group that can deal with food issues from a total system perspective, allowing for interventions that cross specific functions and needs within the city. While this intention is articulated in Cape Town's urban agriculture policy, it is as yet unclear how this would be achieved.

An analysis of a number of initiatives in several cities regarding the integration of urban agriculture in urban planning and programmes (Dubbeling et al., 2001) suggests that these experiences, although developed separately, follow a similar logic and methodological process which includes:

- creation of an enabling institutional policy framework
- diagnosis and prioritisation

- elaboration of action plans
- implementation and monitoring
- institutionalisation/upscaling

These experiences also suggest that critical opportunities for creating linkages between urban agriculture and urban policies include:

- integration in urban land use planning
- inclusion of agriculture in urban food security policies
- integration of agriculture in the urban environmental policies
- integration of agriculture in urban health policies

By viewing the environment through the lens of food and nutritional security – rather than industrial economic agriculture in which food is a market commodity only – this analytical position facilitates a move towards sustainable agriculture and broader sustainability practices. The Cape Town urban agriculture policy recognises the centrality of creating linkages between urban agriculture and urban policies, but does not explicitly do this. The policy therefore may limit the essential and potential role that urban agriculture can play in supporting the citizens of Cape Town.

Policy issues in relation to local production

Local production is required to achieve ecologically and socially sustainable cities in South Africa. Unless the urban poor and the commercial operators are directly involved in producing food within and around cities, neither the goal of food security nor of sustainable development will be achieved. From a policy perspective, this requires an entire reorientation of the food system in relation to urban planning and social and economic development, at all levels of government. While this may seem an impractical statement, mainstreaming urban agriculture into the fabric of how the city feeds itself may provide a very powerful stimulus to civil society, including the private sector, to respond with a vigour and vitality not yet seen in South African cities.

Full cost accounting throughout the food value chain has the potential to reform the food system from within. While government must drive the policies and programmes that shape the food system, such environmentally and socially appropriate policies will catalyse the private sector to actively reform the way in which cities are provisioned. With the right incentives, local food production and related economic development can take place, and this focus can help to move cities towards truly sustainable objectives.

Local markets: Productive city

Markets are important to the food economy of any city. With the rise of a global food system over the past half century, markets have tended to become fewer and more centralised, at the expense of small, local operations (Atkins and Bowler, 2001). Simultaneously, large retail outlets have come

to dominate the urban food landscape; the result in South Africa is a dichotomy between the large food retailers and the very small, often informal traders. Little exists in between these two extremes, both economically and geographically. Yet the ability of a city to feed itself depends on a vibrant local scale market system, as demonstrated throughout history (Steel, 2008). The systematic closure of small scale food producers, processors and retailers in urban centres often in response to large, car dependent supermarkets, follows the decline in healthy food and the marginalisation of the poor in relation to food. Expensive transport and limited access to both distribution markets and to retail outlets (such as supermarkets) results in the urban poor having to rely on often expensive and nutritionally inadequate sources of local food. For poorer urban entrepreneurs, the opportunities to get food at wholesale prices from centralised markets, and to compete with the large retailers, are restricted, reducing their business reach and income potential.

The survey data show that households obtain food from a wide variety of sources (table 9). For the three cities in South Africa, the main sources are supermarkets (30%), small shops, restaurants and takeaways (20%), as well as informal and street food (20%). In contrast, only 5% grow their own food, while 25% of households obtain food from sources that may be described as 'coping strategies' (food aid, remittances (food), shared meal with neighbours and/or other households, food provided by neighbours and/or other households, community food kitchen, and borrow food from others). It could be argued that the limited urban agriculture as a source of food is likely to be a survival strategy too; this would bring the total number of households obtaining food from sources that are typically associated with high levels of food insecurity to 30%, as high as supermarkets.

Table 9: Source from which household normally obtains its food

Source of food	Cape Town %	Msunduzi %	JHB %	Regional total %
Supermarket	26	34	30	25
Small shop/ restaurant/ take away	21	14	25	21
Informal market/ street food	18	15	27	22
Grow it	1	11	3	7
Food aid	1	2	1	1
Remittances (food)	2	2	1	3
Shared meal with neighbours and/or other households	12	6	4	7
Food provided by neighbours and/or other households	9	7	4	7
Community food kitchen	2	0	3	1
Borrow food from others	8	8	2	7
Other source	0	0	0	1
Don't know	0	0	0	0
Total	100	100	100	100

This dichotomy between formal and informal sources is more revealing when the frequency of sources is considered. When asked which sources of food households use at least five times a week to get their food, supermarkets only account for 5%; whereas 38% of households obtain food from small shops and informal/street sources (figure 17). If growing one’s own food is grouped with the remaining sources of food given in figure 17, this basket of coping strategies (7%) exceeds the use of supermarkets by households. At a general level these observations might in part be explained by the likelihood that individual supermarket purchases may be larger than purchases made using other sources, although the levels of poverty of households in the sample counters this argument to some extent. Nonetheless, the high incidence of using ad hoc sources of food on a regular, almost daily, basis is consistent with limited food income and speaks to the question of urban food poverty. As a further illustration of these dynamics, the case study below looks in detail at the food provisioning situation in Cape Town, in relation to the survey findings.

Case study 2: Food sources and food security in Cape Town

Of the 1,060 households sampled in three poor areas of Cape Town, 80% were either severely or moderately food insecure. 71% of sampled households indicated that in the previous 12 months there had been at least one month where there had not been enough food to meet the household’s needs. And yet, in urban areas food insecurity is not driven by an absolute lack of food being available, but instead by problems of access. This case study therefore focuses on the role of different food sources in the city.

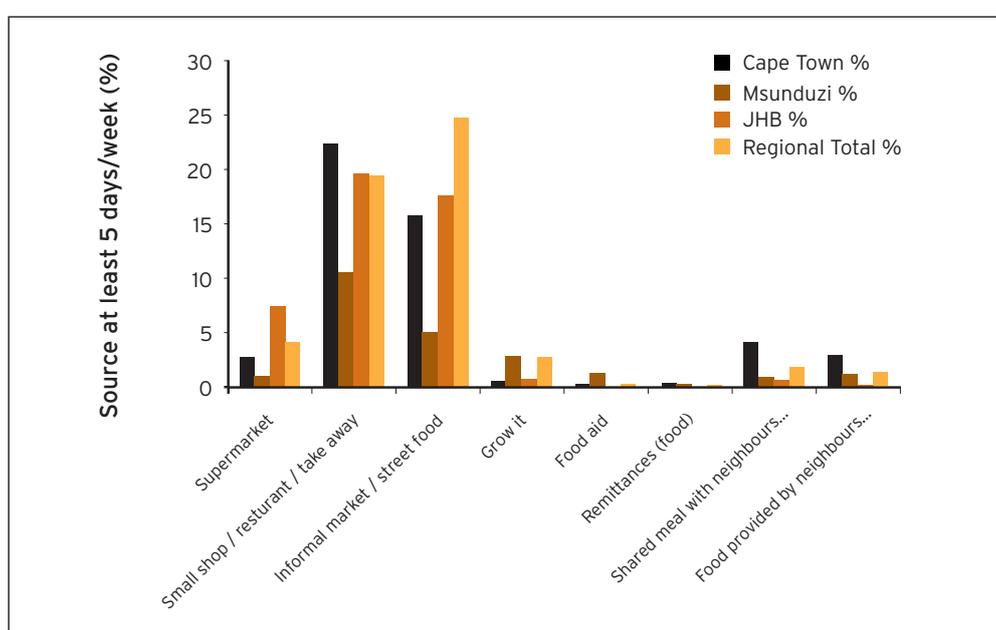


Figure 17: Sources of food used by households at least five times per week

Much of the literature suggests that urban poverty is manifestly different and potentially worse in urban areas than rural areas, given the dependence of urban dwellers on a cash economy. While this is an important observation, the data from the PUFSS survey in Cape Town suggests that the range of methods by which the urban poor access food is far more diverse, drawing on formal and informal food systems and social networks.

Research was conducted in three sites in Cape Town: Ocean View, Ward 35 (Brown's Farm, Philippi) and Ward 95 (Enkanini and Kuyasa, Khayelitsha). These sites were chosen to capture the range of food sources available to urban residents. Ocean View's population has strong links to local fisheries and so we hoped to be able to understand the role of fisheries in food security. Ward 35 is located near to the Philippi horticultural area and was selected so that we could add to the debate on the potential role of urban agriculture as a source of food for the urban poor. Ward 95 is located on the periphery of the city and is populated largely by recent migrants to the city. We selected this site to understand the role of rural-urban linkages in urban food security.

Despite these distinctive features which shaped site selection, the findings actually showed little local variation. The proportion of reported monthly income spent on food and groceries ranged from 28.4% in Ocean View to 25.9% in Ward 95. More households in Philippi received food transfers from rural areas than Khayelitsha. More households in Ocean View stated an income from urban agriculture than in Philippi. All sites demonstrated a high dependency on state grants. The ratio of participants claiming grants to those earning wages was 1:14 (down to 1:1.03 in the Khayelitsha site). Households may include both wage workers and grant claimants. Female headed households and female centred households are over-represented in terms of grant claimants. Over 47% of all sampled households were female headed, but 58.1% of all grant holding households were female headed. Likewise, female centred households constituted 42.3% of all sampled households and 52.4% of all grant-receiving households. Sites appear to have more similarities than differences in terms of food sources, which perhaps speaks to the dominance of a particular model of experience of the urban among poor residents of South African cities.

There are three main clusters of food sources in Cape Town: purchase of food, receipt of food through formal social safety nets, and receipt of food through social networks. A small proportion (less than 5%) of the sample population obtained any of their food by growing it. The dominant source of food for all sites was formal and informal shops. Close to 94% of all sampled households shopped at supermarkets at least once a year, 75% at small shops, restaurants or takeaway outlets at least once a year and a further 65.6% at informal markets or street food sellers. As figure 18 illustrates, although more people purchase food at supermarkets than any other source, the daily and weekly purchases are more likely to be made at small shops or informal markets. The decision to shop locally within the informal sector is shaped by transport costs, a lack of money to make bulk purchases and (anecdotally) safety of routes near supermarkets. This decision has important consequences for food security as it increases the per-unit costs of foodstuffs, generally reduces access to high quality foods and may increase health risks from unsanitary conditions of food preparation and storage.

A large proportion of the sample population acquired food from neighbours and other households through sharing meals (44.5% in the last year), eating food provided by others (34.1%) and borrowing food (29.2%). A smaller amount received food as remittances (5.5% in the last year). As figure 18 illustrates, those households sourcing food in this manner tend to receive it from these sources at least once a month. These figures point to the existence of strong social networks in poor areas in Cape Town. However, the figures also suggest that many of the urban poor are unable to access enough food through the market (despite the contribution of grants to household income) and have to depend on informal networks. This sharing and borrowing masks the extent of food insecurity among the urban poor and obscures the failings of urban food systems.

While dependence on social networks characterised households in the sample areas, a very small proportion accessed food through formal safety nets. Just 5.9% were using community food kitchens per year and 2.6% were accessing food aid. In the context of the current food security levels within the city, the minimal role of formal social safety nets in household food security is problematic. The data on food sources of the urban poor in Cape Town suggest the need for changes in how the markets operate, urban spatial planning, the state and civil society. The question is what forms should these interventions take and how can they be linked. For example, should the state and civil society focus more directly on providing food-related safety nets? How can state and civil society connect to improve food security for the urban poor? Given the dependence on informal food markets, how can these markets be made to work for the urban poor? The complexities of urban food sources suggest a need for city-wide food security strategies to be developed which address availability, access, utilisation and sustainability.

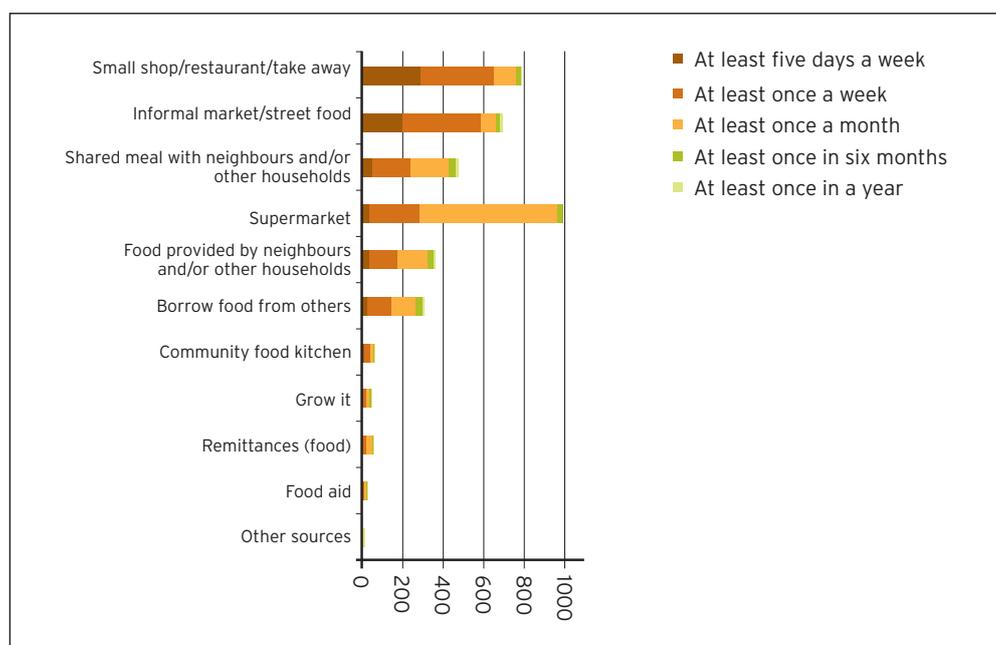


Figure 18: Sources of food in Cape Town

Policy issues in relation to local markets

Markets underpin the ability of a city to eat well. Historically, where food has been produced in and near the city, markets have flourished, and are necessary in the infrastructure needed to move South African cities towards more sustainable local production. As indicated by the survey data on the food sources of the urban poor in South Africa, there is a need for changes in the current food marketing system. From the perspective of the suppliers, small scale, local area markets can help to provide much needed outlets for local level production. The potential of intra-urban and peripheral food production cannot be properly realised unless there are local, accessible markets for produce. Linking the fresh produce suppliers to the consumer through a network of neighbourhood markets has the potential to provide viable alternatives to street and informal food sources. These markets may provide an important bridge between the supermarket functions on the one hand and the informal systems on the other, creating outlets that are accessible to the poor and that offer healthy whole food alternatives to the current food items typically sold in small and informal shops.

Given the dependence on informal food markets, a key policy opportunity is to explore ways in which these markets can be made to work for the urban poor, and more broadly within the city in line with sustainability objectives. In addition, many households receive income used for food through state welfare programmes and through informal social networks. Improving the efficiency of the state welfare system, ensuring that all eligible people are registered and get grants they are entitled to, and supporting CSOs involved in providing food-related support, are all opportunities for enhancing food security in relation to markets.

While the government may play an important role, the private sector – whether small or large scale business – is key to developing a vibrant, inclusive and complex food marketing system in South Africa. One instructive community-oriented approach to linking large retailers with needy people is the newly established non-profit organisation called Feedback Food Redistribution.⁷ Its core purpose is to provide practical and effective food recovery and distribution solutions for the benefit of impoverished communities. Every day, Feedback trucks collect thousands of kilograms of good quality food from the larger retail companies. The food is then redistributed to very carefully assessed CSOs that care for vulnerable children, the elderly and ill in the most destitute communities in South Africa. Feedback currently has operations in Cape Town, Johannesburg, Durban and Pietermaritzburg. Feedback does not feed individuals, but provides a service to these organisations whose goal it is to give individuals a hand up – not a handout. Feedback is committed to community development in South Africa through the redistribution of excess food. The organisation meets beneficiaries' urgent food needs while encouraging them to become self-sufficient in food provision. This is done through a process which includes nutrition workshops and the introduction of independent food sources such as vegetable gardens.

7 www.feedback.org.za

Another example of an innovative approach is the South African Food Bank (SAFB) network.⁸ As it grows, the network hopes to support approximately 80 000 local charitable agencies operating more than 35 000 programmes including food pantries, soup kitchens, emergency shelters, after-school programmes, community kitchens and other similar initiatives. Each year, the SAFB network aims to provide food assistance to the millions of low-income hungry people in South Africa, including millions of children and senior citizens.

Supportive planning: democratic city

The analysis and discussion thus far has highlighted the poverty dimension of urban food insecurity. Increased income directly reduces the household food gap, and after wages, government grants (social security) is the second most important source of income. Informal social networks, underpinned by social capital, provide a critical source of food security for poor urban households. Although supermarkets are an important source of food, the most frequently used food sources are small shops, takeaway outlets and informal/street vendors, with coping strategies (such as borrowing and eating at neighbours) playing a significant role in the daily food provisioning methods of poor urban households. Finally, health is directly linked to food security status, both in relation to the chronic lifestyle diseases and communicable diseases such as AIDS and TB.

If these are the problems that the urban poor face in South Africa, how can cities and government approach development from a 'pro-food' direction? As a starting point, it is helpful to view chronic urban food insecurity as a *food system* challenge. Food insecurity in South Africa's cities is an outcome of the way in which society provisions food which generally excludes the poor, both at the production and the consumption ends of the continuum, at great cost to society as a whole. For urban food insecurity to be meaningfully addressed, the way business is currently done has to change. The poor (and others) will have to become central to the provisioning of food, not only for themselves but also for the city as a whole. Local provision for local consumption is an approach that promises to address food and income poverty through niche economic opportunities across the production and retail value chains and to also mitigate the broader dynamics of unsustainable urban growth and attendant ecological damage. Food is therefore central to poverty alleviation and to longer term sustainable urban systems. Urban farmers (in fact all farmers) must become well paid, respected and valued members of our emerging society.

The final goal for any city should be a food security strategy that tackles both poverty reduction and ecological sustainability as an integrated set of policies and programmes. In order to provide some direction to this proposition, the remainder of this paper outlines some of the key aspects that might be usefully developed further for incorporation into such a food security strategy. Specifically, this framework draws on the needs identified by the UFSBS and the responses to similar challenges in other cities.⁹

⁸ www.sa-foodbank.org

⁹ City of Toronto and London (UK).

The core components of a food security strategy are represented in figure 19, which indicates the major dimensions that need to be addressed to tackle urban food security. This conceptual approach embodies the notion of turning the 'vicious' cycle of poverty, hunger, urbanisation and ecological damage (see earlier figure 3: The Urban Food Challenge in South Africa) into a 'virtuous' cycle of renewal and regeneration around an urban-focused food system. As has been emphasised throughout the discussion, food security is determined by, and is an outcome of, activities at all scales, from global right down to cities and neighbourhoods. There is therefore no one 'silver bullet' to addressing urban food insecurity.

Although there is overlap (due to the interconnectedness of urban systems), the main elements of an integrated food security strategy are as follows:

- *Reduction of fossil fuels:* By moving to a more localised production, processing and consumption food system, the high financial and environmental costs of fossil fuels in the current food systems will be significantly reduced. Incentives for existing business and farmers to localise all aspects of the food chain and for new farmers to enter the system can be devised and implemented. Carbon taxes on food processing and transportation will have a direct impact on this aspect of food production, and will drive local development. Similarly, full ecological accounting for all aspects of the value chain has the potential to radically alter the food system toward more local, inclusive and sustainable practices.

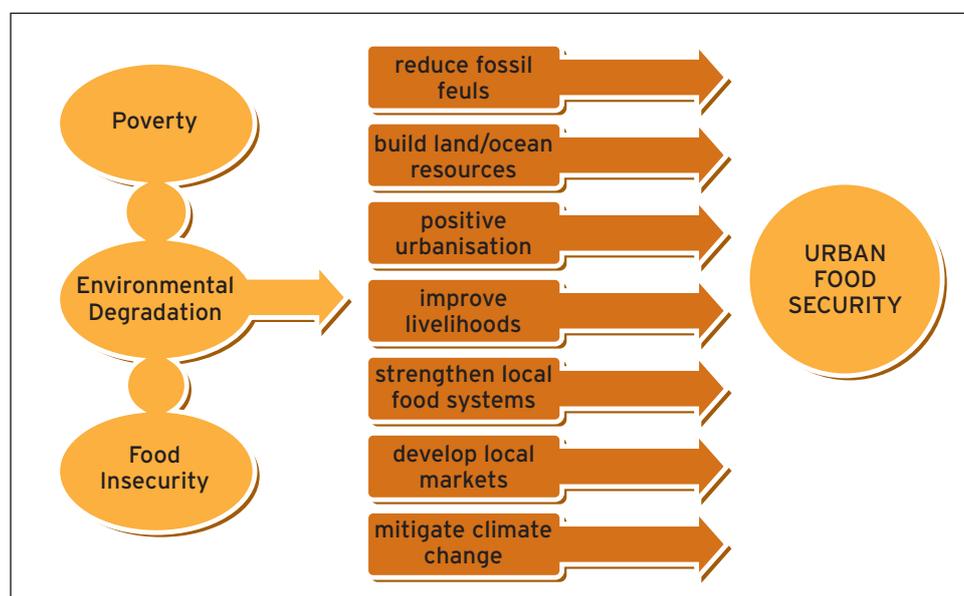


Figure 19: Entry points to action – breaking the poverty-food insecurity cycle

- *Build land and ocean resources:* Industrial agricultural systems are responsible for significant damage to the ecological resource base, including land, hydrological systems and oceans. Research and development will continue to provide more conservative and less destructive technologies that,

with the correct incentives, can reduce these destructive outcomes. However, the real promise of healing the land (and oceans) lies in sustainable agricultural systems, where ecological resources are not only maintained, but are also built. Sustainable agriculture can also restore previously damaged land and other productive food resources, including the oceans.

More specifically, sustainable agricultural practices are well suited to local, small scale urban and peri-urban farming. Integrating whole system, restorative ecological practices into the city as part of the urban infrastructure is one powerful tool available to help reduce the negative impacts of industrial agriculture through increased local self-reliance and to foster urban scale sustainability. The greening of the city through sustainable food production can and should provide the platform from which restorative processes can be supported. Achieving this vision requires an integrated resource management strategy that links all aspects of the food cycle. This means that waste is viewed and used as a resource in food production which is the foundation of a nutrient-positive cycle of production-waste-production that fosters the development of the ecological infrastructure of the city. Building productive resources this way is not only sensible from an environmentally sustainable development perspective, but also encourages and opens up a range of economic opportunities for all levels of participants across the city, adding to the prosperity of the society.

- *Positive urbanisation:* Linked to the need to build productive resources is the guiding role of urban planning within a context of rapid urbanisation. There are two important elements to this: the need to intensify urban functions and to preserve valuable agricultural land. Urban intensification – as part of a smart growth vision – can make use of planning principles and systems that promote pedestrian-oriented urban systems, maximising multiple land uses, non-motorised and better public transportation systems and renewable energy. Focusing on the creation of liveable neighbourhoods includes the production of food and the systems and infrastructure to market that produce at the local level. Part of good urban planning is the use of informed boundary limits and of agricultural land protection. Peripheral agricultural land that is of high productive value should be identified and protected from urban development. Over time, the city will grow and that land will be subsumed within the urban boundary, but it will not have been lost to concrete. Similarly, land suitable for agriculture within the existing urban fabric requires auditing and active development for local scale food production.

Housing and food security are directly related in a number of ways. Houses are often used for businesses, and with appropriate planning can become part of the food system, from waste processing through to production and marketing. This has implications for the way in which housing and neighbourhoods are conceptualised and developed. Doing so from a food system perspective may change the way housing is delivered, with alternative designs that provide environments that promote and support local food production. Informal areas have the lowest levels of food security in South Africa's cities, and while improving infrastructure in these areas is a challenge, it is also an opportunity to upgrade areas with food security as a guiding design and development principle.

South Africa's integrated development plans (IDPs) are already in place and therefore may provide a suitable framework through which positive food-oriented planning can be developed and implemented. However, food security cannot simply be added on to existing IDPs, but to be effective will require mainstreaming in all aspects of the plans, and will need to be linked into provincial and national government processes.

- *Improve livelihoods:* Pro-poor economic growth is central to reducing food insecurity in South Africa's cities. Local food production systems and food value chains provide opportunities to improve the economic, health and ecological circumstances of urbanites. Focusing development efforts on devising and promoting closed nutrient and energy agricultural systems (sustainable agriculture) would have significant multiplier effects in all sectors in the city. Entry to such a system would be possible for even the smallest entrepreneur, and can also provide opportunities for larger scale, commercial producers (for example, those that would supply high end food retailers from within the city and/or its periphery). Expanding local production, processing, marketing, retail and waste/input in the urban food system will increase local level self-reliance, and reduce the net vulnerability of the system, and in particular the exposure of the poor to macro price shocks as recently experienced.
- *Strengthen local food systems:* This aspect of a food security strategy is cross-cutting and all elements of the strategy both inform and are informed by a focus on local food systems. Urban agriculture, and food production in the immediate region of the city, together create a local food system. Using a local systems approach, and based on an audit of a city's internal and bioregional resources, decisions can be made regarding capacity of the agricultural system to meet local food needs. In this way, the agricultural resources available to a city and its hinterland can be conceptualised as a 'foodshed'. Within this foodshed, a number of approaches to initiate and develop local food systems exists, including community supported agriculture, community gardens, markets, farm to school programmes and a variety of value-added activities (AFT, 2008).
- *Develop local markets:* No locally-oriented food system can operate without local markets. Access to centralised food markets (such as supermarkets) requires access to motorised transport, so disadvantaging the poor to the greatest extent. Pro-poor food policy must therefore seek to promote local markets in all areas of the city. Supporting existing small formal and informal markets is one strategy worth considering. Local area food production goes hand in hand with the development of local area markets, and thus works synergistically with all aspects of the urban food system.
- *Mitigate climate change:* Climate change not only threatens to disrupt agricultural production, but evidence suggests that increases in climate and weather related urban disasters can negatively impact food security. Many low income families rely on home-based activities for income, and the damage and/or destruction of homes can remove the very foundation of that household's economy, with long term consequences. Focusing on developing a local, sustainable food system

will make inroads to protecting local areas from flooding and post-event vulnerability. Reducing the ecological footprint of cities through localising food systems will also make significant contributions to larger environmental and climate change dynamics. Part of the smart growth approach is to reduce a city's reliance on carbon energy, and to replace this with renewable, non-polluting sources.¹⁰ Similarly, there are emerging debates on how to bring about a transition of cities to a non-waste state.

Institutional buy-in and support at the city level is required for any such food security system to be both developed and implemented. Within the context of this survey, the Msunduzi Municipality expects to use its innovative approach to integrated urban management and development to mainstream food security. The following case study provides insights into how this might be done, and potential lessons for other cities in South Africa.

Case study 3: Instituting a stronger food security focus in local government policy and planning: A role for innovation and partnership in Msunduzi Municipality, KwaZulu-Natal

Context

While urban food security is emerging as arguably one of the most significant humanitarian challenges in this century (Atkinson, 1995), 'food insecurity in African cities is relatively invisible to policymakers' (Maxwell, 1999: 26) with the result that the seriousness of the food problem among the poor is minimised. These observations are borne out from the results of the eleven-city survey within SADC into food security and HIV and AIDs by the PUFs undertaken in the last half of 2008. If one looks at Pietermaritzburg within the Msunduzi Municipality, KwaZulu-Natal, for example, the level of food insecurity among a survey of 548 households from formal and informal low cost housing areas in the city is 87% for those who can be classed as either moderately or severely food insecure (Fincham, et al., 2009). Food insecurity data were derived from recall over the last month and the last week before the survey regarding food availability and food consumed, and against a definition of insecurity, which means that people live with hunger and the constant fear of starvation. The seriousness of this situation is given added impetus when one realises that 'approximately 14 million South Africans are vulnerable to food insecurity. Among these, women, children and the elderly are particularly vulnerable' and furthermore, 'One in four children under the age of six years (some 1.5 million) are stunted due to chronic malnutrition. Deficiencies in micro-nutrients such as vitamin A and iron are also widespread and have negative consequences for children's growth and development.'

If one were to examine local government policy that touches directly on food security and insecurity, there is likely to be no direct food policy legislation. Rather, the issue of food security is subsumed under the rubric of the IDPs in areas such as food gardens, which are implicitly targeting food insecurity in urban areas, and poverty alleviation strategies which include pensions, child and disability grants. The Msunduzi IDP bears this out.

¹⁰ <http://postcarboncities.net/>

It is also important to acknowledge that food insecurity is influenced by a complex matrix of factors, such as household composition, education, income availability and health status. From previous work in the city (Fincham and Zulu, 2008) and the PUFSS survey, one is confronted with a situation of widespread income inelasticity among poor households, where less than 50% of household incomes come from the 'traditional' family unit, namely a male and female partnership. A disconcerting factor is the large proportion of households that rely on pensions, child grants and child labour as their main source of income. Out of 456 households that supplied information in the 2008 PUFSS survey, the average household income was marginally over R2 000, with a median, or most often occurring, household income of R1310. These figures should be viewed against the minimum living level wage supplied by the Bureau of Market Research (van Aardt and Coetzee, 2008) of R1781. Table 10 sheds further light on the income earning situation, where household members earning income from various sources are listed.

Table 10: Categories of household income, Msunduzi

Household income categories	Number of income earners	% of earners
Wage work	212	24
Casual	177	20
Informal business	47	5
Pensions disability allowance grants	364	41
Other sources	95	10
Total	895	100

Source: Msunduzi PUFSS survey, 2008

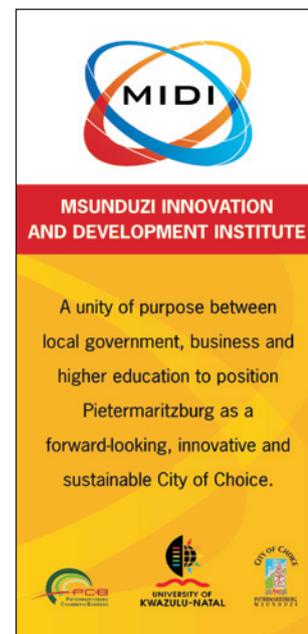
Furthermore, an interrogation of environmental health concerns highlights problems of poor waste management, poor catchment management and contamination of water sources which re-enforce the plight of poor households (figure 20). The conclusion one draws is that poor households in the Msunduzi Municipality are suffering from serious food insecurity, the causes of which include limited strategies for income earning as well as a range of environmental and health issues. Of most concern is that households surveyed generally perceived the situation as becoming worse: 77% of the 551 households surveyed felt that economic conditions were either much worse or worse than a year previous to the survey.

Creating meaningful partnerships: the Msunduzi Innovation and Development Institute

The establishment of Msunduzi Innovation and Development Institute (MIDI) has potentially opened an alliance between local government, business and the University of KwaZulu Natal to collaborate on a range of activities that should enhance the development of the city. A series of key initiatives has been established within MIDI to achieve this vision. The State of the City project is one such initiative. The project is premised on the understanding that the Msunduzi Municipality offers a rich opportunity for advancing our understanding of urban quality of life within an ecosystems context. Its purpose is to develop a framework for research and knowledge generation that supports collective action

and governance. The project is now consulting and bringing together relevant experts to develop and conceptualise the establishment of an urban observatory (UO), which will function as a hub for the State of the City initiative. As the UO develops, so it will articulate and test a comprehensive set of indicators, initially in the areas of environment and health in relation to food security.

It is necessary to mention that a UO is a sub-set of the Global Urban Observatory network, established in the late 1990s by the United Nations Commission on Human Settlements, which wanted a means to monitor and evaluate global urban conditions and trends (Maharufa Hossain, World Urban Forum III). The central thesis was to assist city partners to use urban data in participatory decision-making processes, in our case at local, provincial and national levels. In short, a key aim is to establish a city's urban information management system.



Adding value

The partnership with PUFs, MIDI and a range of local, provincial, national and international role players will be assisting the work towards the MIDI UO. The prognosis is that food security and the baseline work that has been done through PUFs will deepen our understanding of poverty and how food security can play a more central role in making a difference to the urban poor through its articulation in policy and planning.

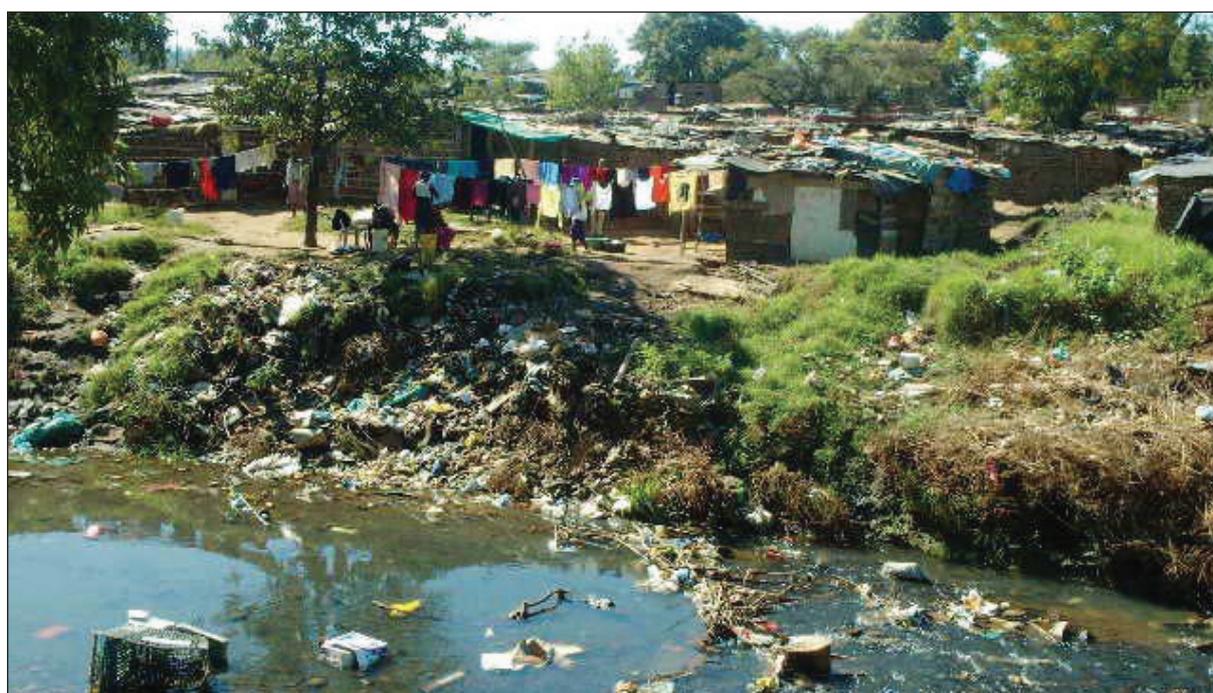


Figure 20: Jika Joe Settlement, Msunduzi Municipality

Communities such as Jika Joe lack the necessary infrastructure that allows them to move away from contamination of surrounding parts of the catchment and rivers on which they locate.

Conclusion

In the final analysis, monitoring and evaluation should provide the impetus to generate new knowledge that will ensure the basis for improved policy and policy implementation. The danger, however, is that indicators used to generate that knowledge become ends in themselves. Importantly, the monitoring and evaluation will determine what we have achieved as a result of using the indicators in a holistic information management system that will count. It is also critical that the focus is not limited to the local level. While this is the critical imperative of the local UO, there must be recognition of more broad based initiatives that will inform the local just as the local must inform other scales of analysis. The work of the indicator reference group of the South African Cities Network (Cleobury, 2008) and that undertaken by government (Republic of South Africa, 2008) and other urban observatories, such as the Cape Town and Gauteng ones, will form important benchmarks.

Summary and conclusions

Urban food security is multifaceted and complex. It is made even more so by the fact that cities contribute disproportionately to the use of environmental resources, and that most cities' ecological footprints exceed the resources available to support them indefinitely under current systems of production and consumption. The urban poor are disproportionately impacted by economic and environmental factors, often have the quietest political voice, and as a consequence bear the greatest burdens. As Maxwell (1999) has noted, food insecurity remains largely invisible to the politicians because it affects the poor who are also politically invisible. This may have been true in South Africa until recently, when the coincidence between the global rise in food prices, the economic slowdown and the high profile global climate change agenda has meant that the poor are no longer silent on matters of food security.

With nearly two-thirds of South Africa's population now living in cities, persistent urbanisation and as much as half the urban population living in poverty, government, urban managers and civil society face a significant challenge ahead in relation to improving food security for the poor while also addressing the currently unsustainable functioning and growth trajectory of the country's resource hungry cities. While this is a daunting challenge, it is also a major opportunity. Tackling ecological sustainability from the food security vantage point provides a direct and tangible approach to creating wealthier, healthier and less environmentally consumptive cities.

In conclusion, the discussion and analysis make clear the following important points in relation to urban food insecurity:

- Urban food insecurity was politically invisible until 2008. This has now changed globally and in South Africa, and the voice of the poor – the most directly and materially affected – is no longer silent. This momentum provides a political justification and a social imperative for action.

- Urban food insecurity is experienced at the levels of the household and the individual. While aggregate food supplies may be sufficient at the metropolitan scale, access to that food is highly inequitable in South African cities, with many households chronically hungry.
- Poverty and urban food insecurity are directly related. Urban food security is therefore first and foremost a development challenge.
- Local food provisioning (and local food systems) has the potential to simultaneously provide a strategic role in the social and economic development of the urban poor and to steer cities towards a more ecologically sustainable future.
- Local, provincial and national governments all have important lead roles to play in reshaping a socially, economically and environmentally just urban food system, in which the private sector can respond and flourish.

In his epic analysis of the world's food system, *The End of Food*, author Paul Roberts (2008) makes it clear that the situation society finds itself in is not a random outcome of events, but an ongoing, active and conscious creation in which we all participate. Likewise, we have the potential to change our vision towards creating an alternative, food secure future. In Robert's own words, 'Hunger has always been an invitation to make a better world, and it remains so.'

References

- Atkins, P.J. and Bowler, I.R. 2001. *Food in Society, Economy, Culture, Geography*. London: Arnold Publishers.
- Atkinson, S.J. 1995. Approaches and actors in urban food security in developing countries. *Habitat International*. 19:2, 151-163.
- American Farmland Trust (AFT). 2008. Sustaining agriculture in urbanising counties. Available at <http://www.farmland.org/resources/reports/Sustaining-Agriculture-in-Urbanizing-Counties/default.asp>
- City of Cape Town, 2007. City of Cape Town Socio-Economic Profile Report (PGWC). Available at: [http://www.capetown.gov.za/en/stats/CityReports/Documents/Population%20Profiles/City_of_Cape_Town_Socio-Economic_Profile_-_Report_\(PGWC\)_181220069025_359.pdf](http://www.capetown.gov.za/en/stats/CityReports/Documents/Population%20Profiles/City_of_Cape_Town_Socio-Economic_Profile_-_Report_(PGWC)_181220069025_359.pdf) [21 September 2008]
- City of Cape Town, 2007. Urban Agriculture Policy for the City of Cape Town. 07/12/2006 C 27/12/06. Research online at: http://www.capetown.gov.za/en/ehd/Documents/EHD_-Urban_Agricultural_Policy_2007_8102007113120_.pdf
- Cleobury, J (ed.) 2008. *Inclusive cities*. South African Cities Network, Johannesburg.
- De Waal, Alex and Alan Whiteside. 2003. "New Variant Famine": AIDS and Food Crisis in Southern Africa, *The Lancet*, October, 362: 1234-37.
- Department of Health, 2007. WHO Report on TB in South Africa. Republic of South Africa.
- Dubbeling M., Prain, G., Warnaars M. and Zschocke, T. (eds), 2001. *Feeding Cities in Anglophone Africa with urban agriculture. Concepts, tools and case studies for practitioners, planners and policy makers*. CD-ROM. International Potato Center-Urban Harvest, Lima, Peru.

- Fincham, R and Zulu, P. 2008. A Socio-Economic Profile of the Ash Road Settlement to assist in the Implementation of a Poverty Alleviation Programme and its initial Monitoring and Evaluation. Report to the Provincial Department of Transport and the Msunduzi Municipality. April, 31 pp.
- Fincham, R, Hill, T. and Green, M. 2009. Urban food security baseline survey 2008: report for the Durban-Pietermaritzburg functional region. Presentation to the Urban food security baseline household survey workshop, Johannesburg, February.
- Food Security Working Group (Agricultural Policy Unit) 1997. Food security policy for South Africa. A working document, Pretoria.
- Funes, F., Garcia, L., Bourque, M., Perez, N. and Rosset, P. 2002., Sustainable Agriculture and Resistance: Transforming Food Production in Cuba, Food First Books, Oakland, CA.
- Gillespie, Stuart. 2006 (ed.). AIDS, Poverty, and Hunger: Challenges and Responses. Washington, D.C.: International Food Policy Research Institute (IFPRI).
- Gillespie, Stuart and Kadiyala, Suneetha. 2005. HIV/AIDS and food and nutrition security: from evidence to action. (Food policy review 7) Washington, D.C.: International Food Policy Research Institute (IFPRI).
- Girardet, et al. 1999. Urban agriculture and sustainable cities. In: Bakker Nico, Marielle Dubbeling, Sabine Guendel, Ulrich Sabel-Koschella and Henk de Zeeuw Growing Cities, Growing Food : Urban Agriculture on the Policy Agenda: A Reader on Urban Agriculture: pp43-66.
- Goedecke, Julia. H., Courtney L. Jennings and Estelle V. Lambert. 2006. Obesity in South Africa. In Krisela Steyn, Jean Fourie and Norman Temple (eds). Chronic Diseases of Lifestyle in South Africa: 1995-2005. Technical Report. Cape Town: South African Medical Research Council, 2006.
- Maxwell, D. 1999. Urban Food Security in Sub-Saharan Africa. In Koc, M., R. MacRae, L. Mougeot and J. Welsh, (eds.). *For Hunger-Proof Cities: Sustainable Urban Food Systems*. Ottawa: International Development Research Centre (IDRC); Toronto: Ryerson Polytechnic University, Centre for Studies in Food Security.
- Mougeot, L. (ed) 2005. Agropolis: The Social, Political and Environmental Dimensions of Urban Agriculture; IDRC, London: Earthscan.
- National Agricultural Marketing Council (NAMC). 2008. Food Price Monitor, November.
- Pothukuchi, K. and Kaufman, J. 1999. Placing the Food System on the Urban Agenda: The Role of Municipal Institutions in Food Systems Planning: Agriculture and Human Values, vol. 16 (1999), pp. 213–24; in FAO, Feeding Asian Cities, Proceedings of the Regional Seminar, Food Supply and Distribution to Cities Programme, Bangkok, Thailand, 27–30 November 2000.
- PovCalNet. 2009. Online Poverty Analysis Tool. World Bank. <http://web.worldbank.org/>
- Ravallion, Martin. 2007. Urban Poverty. Finance and Development. September 2007, Volume 44, Number 3.
- Republic of South Africa 2008. Development indicators. Office of the Presidency, Pretoria.
- Roberts, Paul. 2008. The End of Food: The Coming Crisis in the World Food Industry. Bloomsbury Publishing: London.
- Stats SA and National Treasury. 2007. A National Poverty Line for South Africa. <http://www.treasury.gov.za/publications/other/povertyline/Treasury/StatsSApovertylinediscussionpaper.pdf>
- Steel, Carolyn. 2008. Hungry City: How Food Shapes Our Lives. Chatto and Windus: London.

- Steyn, Nelia. 2006. Nutrition and Chronic Diseases of Lifestyle in South Africa. In Krisela Steyn, Jean Fourie and Norman Temple (eds). 2006. Chronic Diseases of Lifestyle in South Africa: 1995-2005. Technical Report. Cape Town: South African Medical Research Council, 2006.
- UNESA. 2007. Population Division of the Department of Economic and Social Affairs of the United Nations Secretariat. World Population Prospects: The 2006 Revision and World Urbanization Prospects: The 2007 Revision. Available from <http://esa.un.org>
- UN-HABITAT. 2007. State of the World's Cities Report 2006/2007. Nairobi: UN Centre for Human Settlements.
- Van Aardt, C. J. and M.C. Coetzee. 2008. Personal income by province, population group, sex, age and income group, 2007 and 2008. Bureau of Market Research, UNISA.

Note: This table below should go on the last page of each of the 'food' papers

Papers on food security commissioned by the DBSA, 2009

Seeding change: A proposal for renewal in the South African food system	Paper compiled by: Milla McLachlan and Janine Thorne, based on papers prepared by members of the Food Security Research Initiative: Jane Battersby-Lennard, Scott Drimie, Robert Fincham, Bruce Frayne, James Garrett, Ralph Hamann, Gareth Haysom, Tarak Kate, Johan van Rooyen and Nick Vink.
Urban Food Security in South Africa: Case study of Johannesburg, Cape Town and Msunduzi	Paper prepared by: Jane Battersby-Lennard (University of Cape Town), Robert Fincham (University of KwaZulu-Natal), Bruce Frayne (University of Cape Town and Queen's University (Canada)) and Gareth Haysom (University of Stellenbosch)
The economic performance of agriculture in South Africa since 1994: Implications for food security	Paper prepared by: Nick Vink and Johan van Rooyen, (Department of Agricultural Economics, University of Stellenbosch)
Aligning and transforming institutions to safeguard food security in South Africa: concepts and critique	Paper prepared by: Scott Drimie and James Garrett (CGIAR)
Food security in South Africa: Alternative agricultural options – towards agro-ecological sustainable production and access	Paper prepared by: Candice Kelly (Sustainable Agriculture Programme, Sustainability Institute), Tarak Kate (Dharamitra), Gareth Haysom (Sustainability Institute)
The role of business and cross-sector collaboration in food security in South Africa: Notes on an action-research project	Paper prepared by: Ralph Hamann (UCT GSB), Stephanie Giamporcaro (Dept of Economics, UCT), Schirin Yachkaschi (Environmental Evaluation Unit, UCT) and David Johnston (York University).