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Exploring Statistics South Africa's national household surveys as sources of information about household-level food security

M Aliber¹

Abstract

This article seeks to contribute to an understanding of household-level food security in South Africa using publicly available household survey data from Statistics South Africa. The two datasets that are used in particular are the General Household Survey, an annual household survey that began in 2002, and the Income and Expenditure Survey of 2005/06. Because these surveys are not designed for the analysis of household-level food security, it is not possible to do the kind of detailed analysis made possible by purpose-designed surveys. However these datasets have some value in respect of understanding food security, namely: large sample sizes; the depth of complementary types of information that assist in contextualising the experience of food insecurity and, in the case of the General Household Survey, regularity. Among the findings are a decline in the experience of hunger during the period 2002–2007, and significantly lower food expenditure per capita in rural areas, suggesting a greater extent of 'self-provisioning' than is commonly assumed.

Keywords: Food security; household survey; hunger; food expenditure; Statistics South Africa

1. Introduction

This article seeks to contribute to an understanding of household-level food security in South Africa using publicly available household survey data from Statistics South Africa (Stats SA). The two datasets that are used in particular are the General Household Survey (GHS), which is an annual household survey that began in 2002, and the Income and Expenditure Survey (IES), which is conducted every five years. Only data from the most recent IES (2005/06) is considered here. Because these instruments are not designed for the analysis of household-level food security, they do not allow for the detailed understanding and analysis possible from purpose-designed surveys such as the National Food Consumption Survey and the Demographic and Health Survey. However, Stats SA's household surveys do have some value

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with respect to understanding food security, namely: large sample sizes; the depth of complementary types of information (e.g. on employment status) that help place household-level food security in context; and, in the case of the GHS, regularity and a partial rotating panel design. The general premise of this exercise is that all pertinent information should be brought to bear to improve our collective understanding of an issue as critical as household-level food security.

Section 2 presents findings derived from the GHS, with the general focus being on depicting trends in the (subjective) experience of 'hunger', and probing what type of household is most likely to experience hunger. Section 3 then presents findings derived from the IES 2005/06, focusing on food expenditure shares, food expenditure per capita, and food basket composition.

2. The General Household Survey and hunger

Stats SA's GHS is the country's main general-purpose annual national household survey. It resumes the function that was earlier fulfilled by Stats SA's October Household Survey (OHS), which ran from 1994 to 1999. The GHS began in 2002 with a sample of 26 000 households. The sample size of the 2007 GHS was about 29 000.

The key questions in the GHS relevant to this discussion are:

- "In the past 12 months, did any child in this household go hungry because there wasn't enough food?"
- "In the past 12 months, did any adult in this household go hungry because there wasn't enough food?"

This analysis comprises the following: i) trends in the experience of hunger over time; ii) distinguishing features of households that experience hunger, with a focus on those who reported experiencing hunger in the 2007 GHS; and iii) a comparison of data from GHS 2006 and GHS 2007 to try to understand what might have accounted for transitions into and out of hunger between those years.

The OHS only asked this kind of question in respect of children ("In the past year, was there ever a time when you could not afford to feed the children in the household?"). Moreover, the GHS and OHS offered different sets of possible responses: for the OHS, the respondent was limited to saying 'yes' or 'no', while in the GHS, the options were more numerous, i.e. 'never', 'seldom', 'sometimes', 'often' and 'always'. (Both surveys also allowed for 'not applicable' in the case of households with no children.)

Although these subjective, vague questions have limitations in respect of understanding changes over time in the extent of hunger – and indeed of food insecurity – experienced by households, they provide a useful window into these topics. This is not to suggest that the absence of hunger equates to being food-secure. Rather the author considers this indication of hunger to be a rough proxy for food insecurity.²

2.1 Trends in the experience of hunger

Figure 1 traces the incidence of child hunger from 1994 to 2007, with a gap for the years 1999 through 2001 owing to the absence of a comparable survey for 2000 and 2001, and of a comparable question in the 1999 OHS. In order to do the comparison, a way had to be found of mapping the yes/no answer options in the OHS onto the always/often/sometimes/seldom/never options in the GHS. The answers 'never' or 'seldom' in the GHS were taken to be the same as the answer 'no' in the OHS. The answers 'always', 'often', or 'sometimes' in the GHS were taken to mean the same as 'yes' in the OHS. The graph shows that for the period 1994 to 1998, there was an increase in the share of children-inclusive households whose children experienced hunger but, for the period 2002 to 2007, there was a striking decrease. Although it is not clear precisely what these subjective, vague indications of hunger *mean*, if we assume that the meaning reflects something consistent over time, then there has been a significant improvement. The trend echoes post-2001 trends in poverty reduction detected in the work of Van der Berg (2006).

² From food consumption surveys and other sources, we know that the incidence of malnutrition is significantly higher than the self-reporting of hunger; see e.g. Jacobs, this volume. The percentage of those who describe themselves as hungry is probably of less significance than changes in this figure over time, or comparisons of such percentages between different sub-populations.

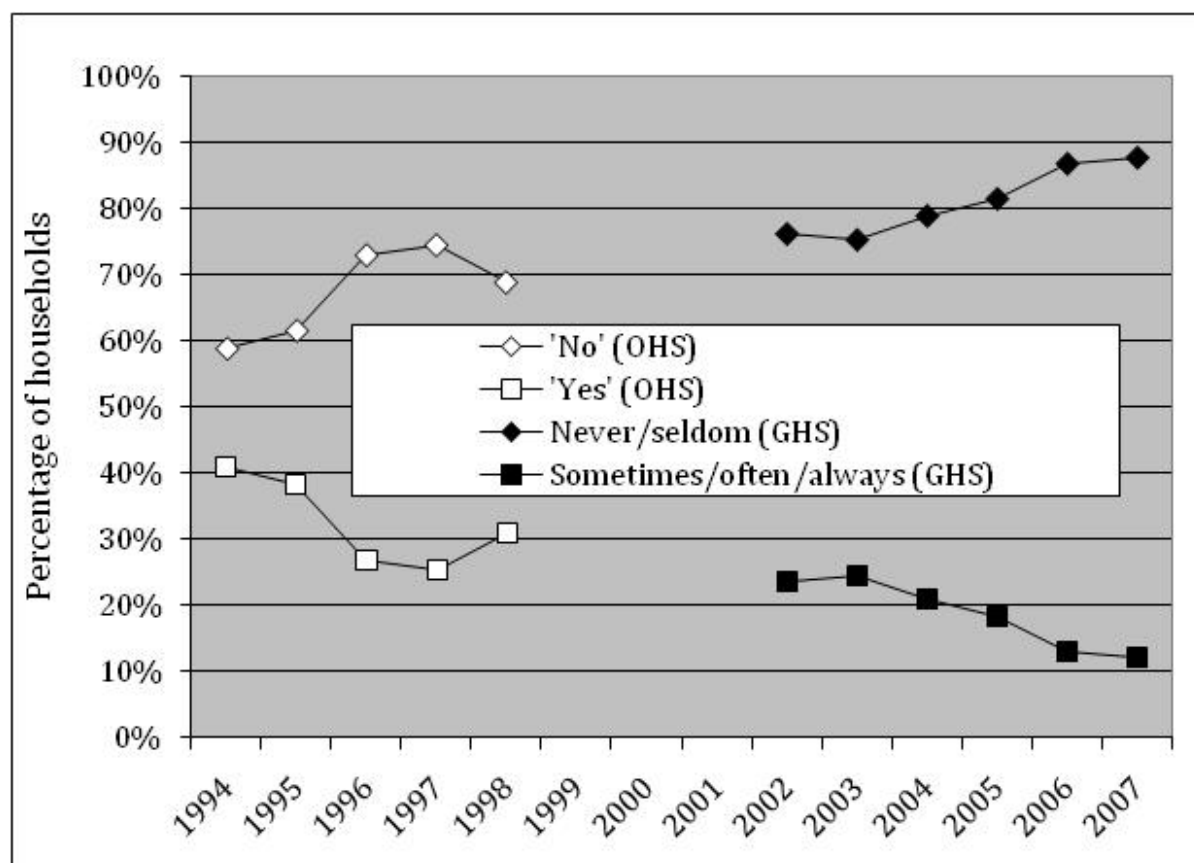


Figure 1: Children experiencing/not experiencing hunger 1994-1998; 2002-2007

Source: OHS 1994-1998 (Stats SA, 1995-1999) and GHS 2002-2007 (Stats SA, 2003-2008a)

Figures 2 and 3 provide more detail for the 2002 to 2007 period by tracing changes in respect of all of the response categories provided in the GHS. Figure 2 displays the results of the GHS question 'In the past 12 months, did any child (17 years or younger) in this household go hungry because there wasn't enough food?'

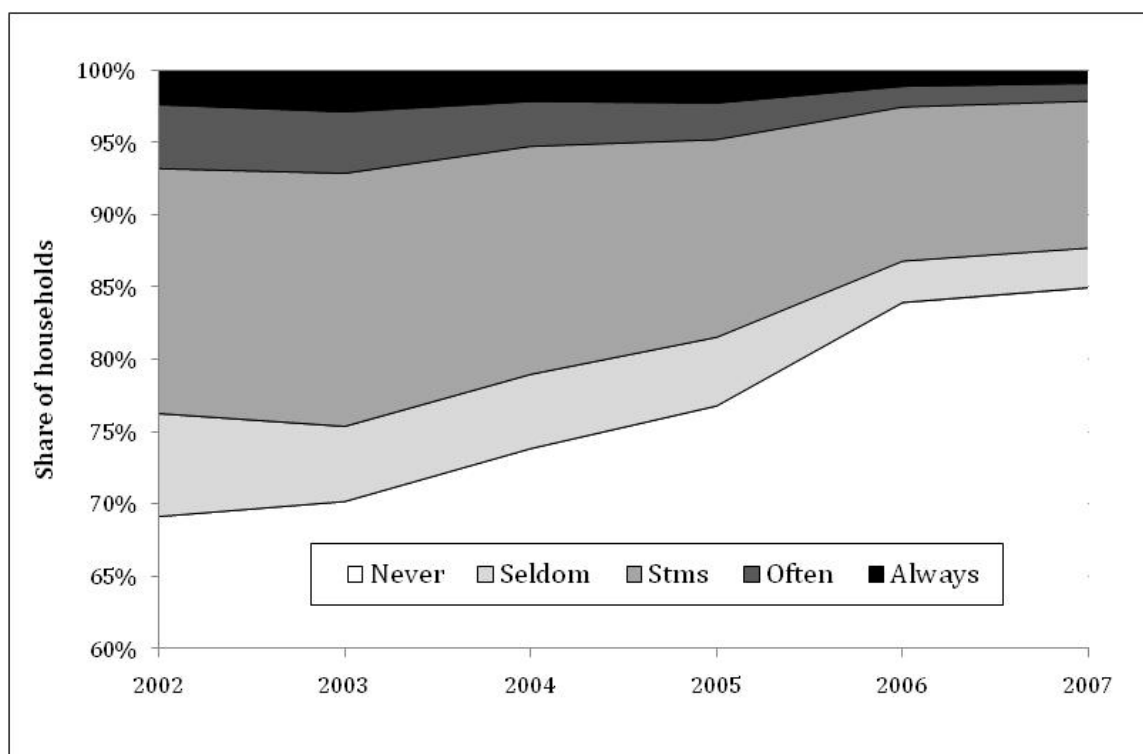


Figure 2: Children going hungry/not going hungry 2002-2007

Source: GHS 2007 (Stats SA, 2008a)

Figure 3 displays the results of the GHS question 'In the past 12 months, did any adult (18 years or older) go hungry because there wasn't enough food?'

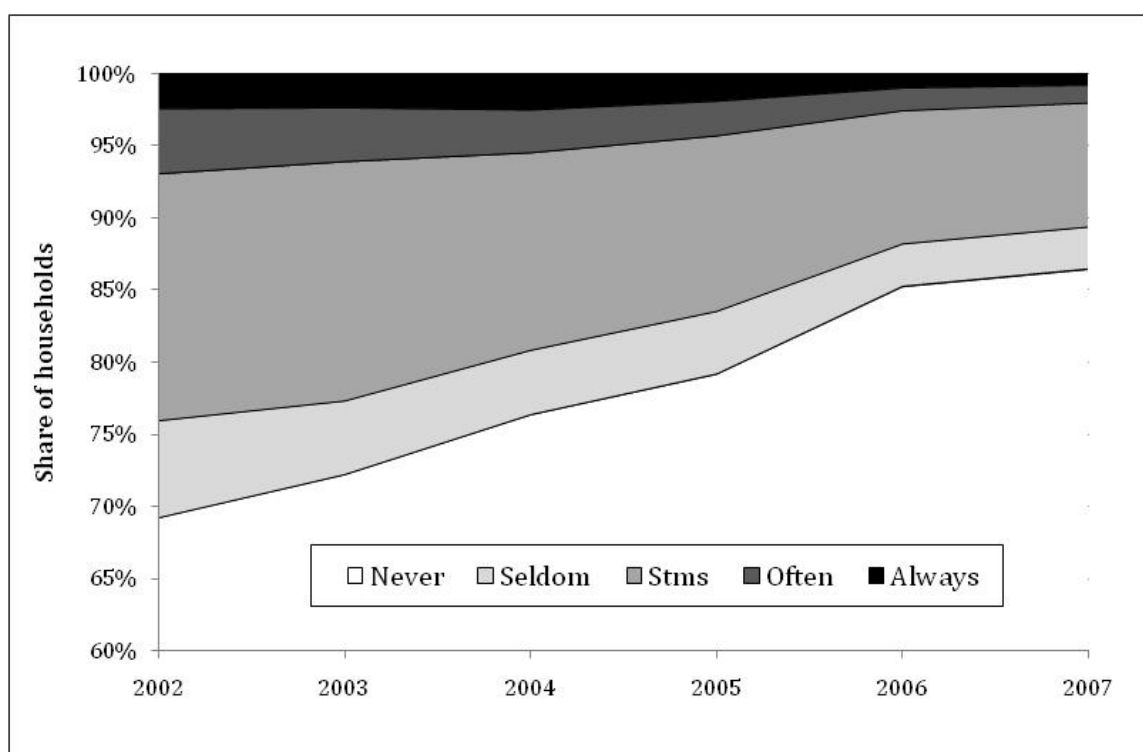


Figure 3: Adults going hungry/not going hungry 2002-2007

Source: GHS 2007 (Stats SA, 2008a)

The statistics reveal a similar pattern. Over the period 2002–2007, all four ‘intensities’ of hunger appear to be shrinking simultaneously, more or less by the same proportion. However, by the same token, even while the share (and number) of households who experience hunger ‘often’ or ‘always’ is declining, hunger appears to be enduring. From a policy perspective, understanding what has been going well is critical to pinpointing what must be done in order to both secure the gains made so far, and advance them further.

2.2 A profile of households experiencing hunger

Finding out more about who these people are, particularly those who experience hunger ‘often’ or ‘always’, will enable their circumstances to be better understood. This will, in turn, increase the likelihood of specifically targeted interventions being planned and implemented.

Figures 4 and 5 map the level of hunger within district and metropolitan (metro) municipalities. Here the focus is on households in which *either* children *or* adults experienced hunger ‘often’ or ‘always’ in the previous 12 months, using data from the 2007 GHS. Figure 4 shows the percentage of households in each district experiencing hunger, whereas Figure 5 shows what share of all hungry households nationally are located in which district/metro municipalities.

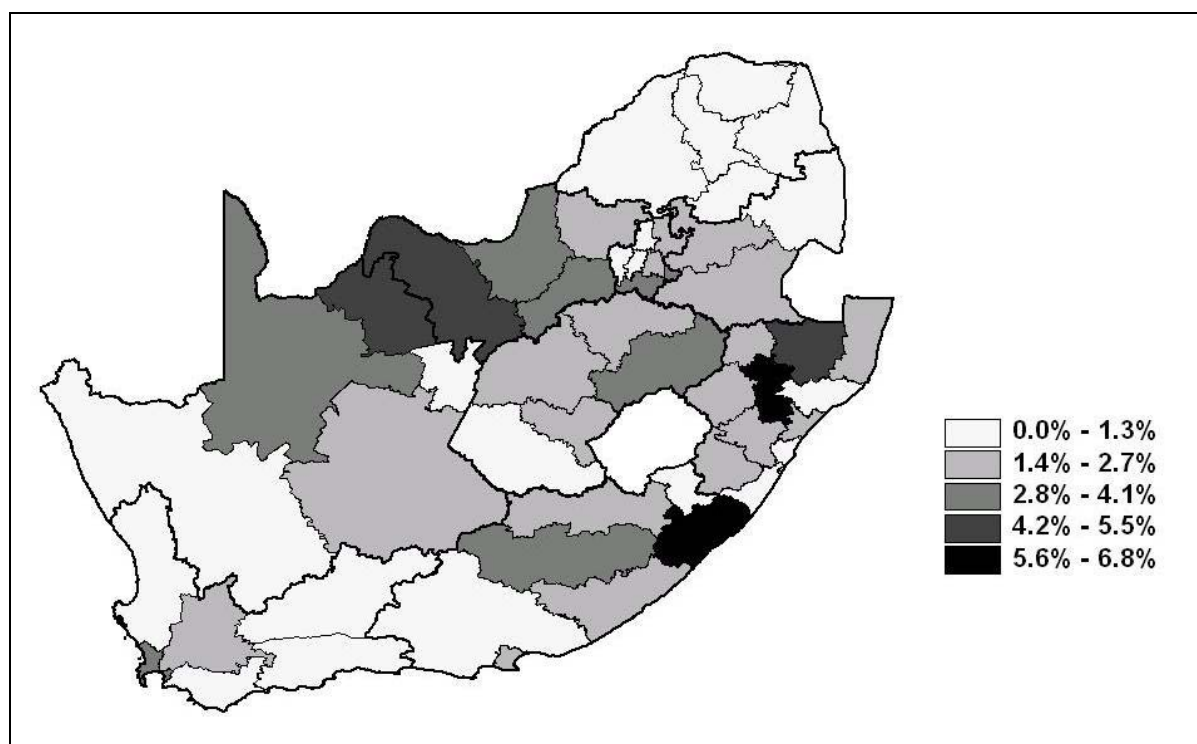


Figure 4: Proportion of households within district/metropolitan municipalities which experience hunger ‘often’ or ‘always’, 2007

Source: GHS 2007 (Stats SA, 2008a)

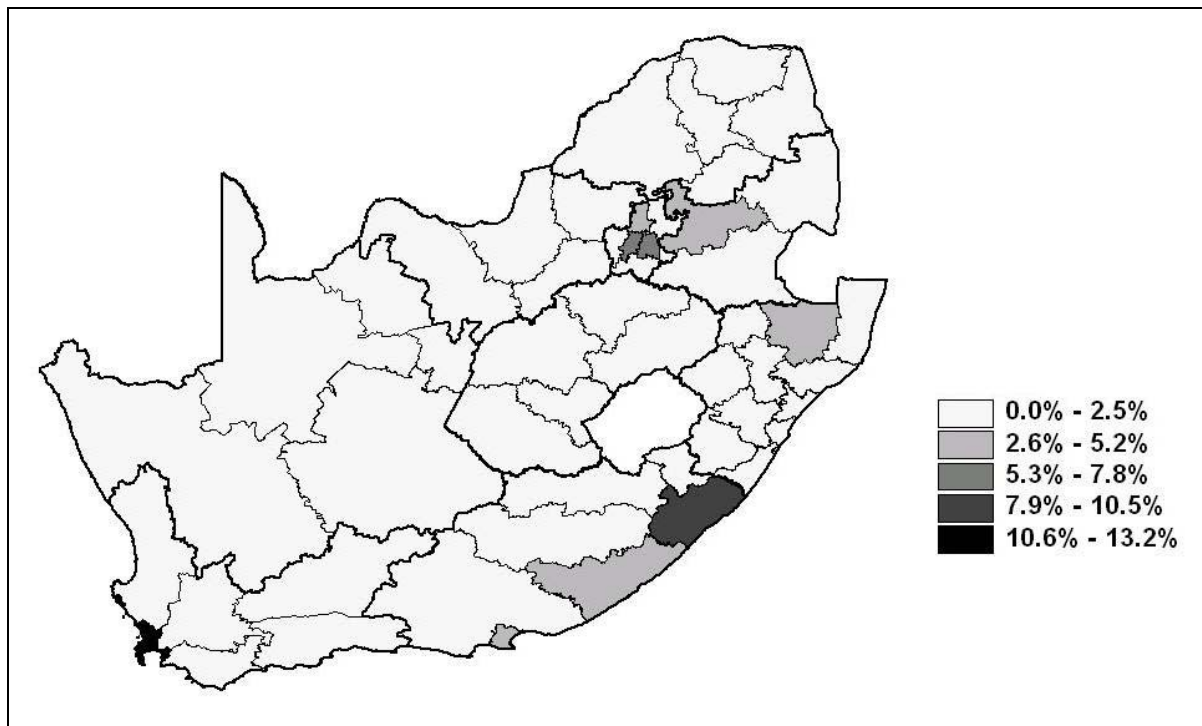


Figure 5: District/metro municipality share of all households which experience hunger 'often' or 'always', 2007

Source: GHS 2007 (Stats SA, 2008a)

Figure 4 reveals that serious hunger is spatially widespread, and that it occurs in both rural and metro districts. The two districts with the highest percentage of households experiencing hunger 'often' or 'always' are Umzinyathi in KwaZulu-Natal (6.5% of the national total) and OR Tambo in Eastern Cape (6.8% of the national total). The 2006 and 2005 data indicate that the districts most negatively affected hunger have been Zululand in KwaZulu-Natal and Bophirima in North West. However, patterns of hunger do not change dramatically from year to year, apart for the general improvement observed over the past several years.

Figure 5 shows that, notwithstanding the fact that many districts have relatively high proportions of households experiencing hunger, a large share of all the country's hungry households are concentrated in a few districts, i.e. those with high overall populations. Only four districts collectively accounted for 36% of all seriously hungry households, namely Cape Town, Ekurhuleni, Johannesburg, and OR Tambo.

Noting the extent of serious hunger in the metro areas, the implication might be that a disproportionate share of households which experience hunger 'often' or 'always' are found in informal settlements. This assumption was tested using information from the 'dwelling type' question included in the GHS, on the grounds that residing in an 'informal dwelling/shack' (not in

someone else's backyard) is a reasonably good proxy for residing in an informal settlement. Table 1 summarises the results, distinguishing between metro and non-metro districts. In metro areas, the assumption appears to be valid, because 28% of all seriously hungry households live in informal dwellings, whereas informal dwellings account for only 13% of all households residing in metro municipalities. However, this is not to say that most metro households which experienced serious hunger are found in informal settlements; evidently a larger number reside in free-standing formal housing.

Table 1: Types of main dwellings of seriously hungry households in metro and non-metro areas

Type of main dwelling	Metro	Non-metro
Dwelling/house or brick structure on a separate stand or yard or on farm	39.5%	41.8%
Traditional dwelling/hut/structure made of traditional materials	2.1%	36.0%
Flat or apartment in a block of flats	7.1%	0.9%
Town/cluster/semi-detached house (simplex, duplex or triplex)	7.2%	0.5%
Unit in retirement village	0.0%	0.1%
Dwelling/house/flat/room in backyard	1.2%	2.2%
Informal dwelling/shack in backyard	11.3%	2.8%
Informal dwelling/shack not in backyard	27.8%	13.1%
Room/flatlet on a property or a larger dwelling/servant quarters/granny flat	1.1%	1.2%
Caravan/tent	0.0%	0.3%
Other	2.6%	1.0%
Total	100.0%	100.0%

Source: GHS 2007 (Stats SA, 2008a)

In terms of basic household characteristics, households experiencing serious hunger are equally likely to be headed by men as women, both within metros and non-metros (see Tables 2a and 2b). However, within metros, women who head hungry households are significantly older on average than women heading non-hungry households, as well as than men heading hungry or non-hungry households. Their households also tend to be larger. Men who head hungry households in metros, by contrast, tend to be younger than men heading non-hungry households. Within non-metro areas, these contrasts generally do not seem to apply, except that women-headed hungry households tend to be larger than non-hungry households headed by women.

Table 2a: Characteristics of households experiencing serious hunger and not, metros

Household experiences hunger 'often' or 'always'	Gender of household head	Average age of household head	Average household size	Estimated number of households
No	Male-headed	47.6	3.3	3,618,872
No	Female-headed	49.1	3.4	1,519,292
Yes	Male-headed	42.9	3.7	46,459
Yes	Female-headed	70.6	5.0	44,526

Source: GHS 2007 (Stats SA, 2008a)

Table 2b: Characteristics of households experiencing serious hunger and not, non-metros

Household experiences hunger 'often' or 'always'	Gender of household head	Average age of household head	Average household size	Estimated number of households
No	Male-headed	48.6	3.6	4,520,627
No	Female-headed	51.5	4.1	3,336,523
Yes	Male-headed	46.5	3.8	84,759
Yes	Female-headed	49.7	4.8	87,595

Source: GHS 2007 (Stats SA, 2008a)

A key question which arises is whether seriously hungry households are eligible for social grants that they are not receiving. Although any grant application would be subject to an individual eligibility assessment, the statistics provide an indicative picture of potential grant eligibility in terms of age (for old age pensions and child support grants) and disability (for disability grants).

Of all households experiencing hunger 'often' or 'always', 51% are not receiving grants for which they would appear to be eligible. Of these, about two-thirds do receive some grants, but in principle are eligible to receive more than they do. The other third are not receiving any grants at all, despite apparent eligibility for at least one. The inference government could succeed in reducing hunger by half if the remaining population who are eligible for a social grant were reached.

2.3 Transition analysis 2006–2007

GHS 2006 and GHS 2007 have in common over 22 000 respondent households. These 'common' households comprise a panel dataset which can be used to better understand the circumstances surrounding the experience of hunger by recording changes over time. For purposes of the calculations below, the weights from the 2007 GHS were used. The results would not have differed much had the GHS 2006 weights been used.

We explore the proportions of households experiencing transitions into and out of hunger and different categories of hunger, based on whether any adults in respondent households had experienced hunger in the previous 12 months. Table 3a adds 'often' and 'always' into one category of response, and puts 'seldom and sometimes' together in another. The first observation is that, although 2.6% of households experienced adult hunger 'often' or 'always' in 2006, and 2.2% did so in 2007, only 0.2% of households experienced adult hunger 'often' or 'always' in *both* 2006 *and* 2007. In other words, the experience of severe hunger appears to be largely transitory. This is both positive and negative. On the one hand, it suggests that the number of households who *consistently* experience severe hunger is smaller than Figures 2 and 3 imply. On the other hand, the number of households who experience severe hunger now and then (and for periods of as long as a year) is obviously correspondingly higher. They are by definition 'food insecure', given that the concept of household-level food security requires consistently adequate access to enough food.

A second observation is that transitions into and out of severe hunger (the 'often' or 'always' category) is from a state of non-hunger, not from an intermediate state. Of the households which described themselves as hungry 'often' or 'always' in 2007, more than twice as many described themselves as 'never' experiencing hunger in 2006 (1.4%) as had described themselves as experiencing hunger 'seldom' or 'sometimes' in that year (0.6%). Similarly, of those who described themselves as hungry 'often' or 'always' in 2006, twice as many described themselves as not hungry the following year (1.6%) than as 'seldom' or 'sometimes' hungry (0.8%).

Thirdly, there are relatively large numbers/proportions of households which pass into and out of less severe hunger from a state of non-hunger. Thus 8.5% of all respondent households described themselves as 'never' hungry in 2006, but 'sometimes' or 'seldom' hungry in 2007; and similarly 9.1% of all respondent households described themselves as 'never' hungry in 2007, but a year earlier had indicated that they were hungry 'sometimes' or 'seldom'.

Taken together, these observations imply that the risk of experiencing hunger is greater than one might suppose if looking only at cross-sectional or non-panel time series data. Whether the extent of churning into and out of states of hunger is an indication of vulnerability or adaptability is largely a matter of perspective, but clearly there are elements of both.

Table 3a: Transition matrix of households in which adults did or did not experience hunger, version 1

		2007			
		Often/ Always	Seldom/ Sometimes	Never	Total
2006	Often/always	0.2%	0.8%	1.6%	2.6%
	Seldom/ Sometimes	0.6%	3.2%	9.1%	12.9%
	Never	1.4%	8.5%	74.6%	84.5%
	Total	2.2%	12.4%	85.4%	100.0%

Source: GHS 2006 and 2007 (Stats SA, 2007; 2008a)

Table 3b presents a simplified transition matrix that has only two categories, namely the experience of hunger: 1) 'seldom', 'sometimes', often' or 'always'; and 2) 'never'. About 1 in 20 household experienced hunger of some intensity in both years, whereas roughly one in five experienced hunger in one or the other year, but not both.

Table 3b: Transition matrix of households in which adults did or did not experience hunger, version 2

		2007		
		Seldom/ sometimes/ often/always	Never	Total
2006	Seldom/sometimes/often/always	4.8%	10.8%	15.5%
	Never	9.9%	74.6%	84.5%
	Total	14.6%	85.4%	100.0%

Source: GHS 2006 and 2007 (Stats SA, 2007; 2008a)

The next part of the analysis is to identify household correlates of transitions in and out of hunger, using the categories used in Table 3b, but considering a household to be hungry when its adults and/or children were hungry.

Each quadrant in Table 4 contains seven statistics:

- '% of panel sample' – the share of the panel sample that accrues to that quadrant.
- '% Δ children' – the average percentage change of the number of children in the households represented in that quadrant.
- '% Δ over 60s' – the average percentage change of the number of adults 60 years or older in the households represented in that quadrant.
- '% Δ employed adults per HH' – the average percentage change in the number of adults per households regarded as employed, using the GHS' 'official employment status' derived variable.

- ‘% Δ grants per capita’ – the average percentage change in the total household grant income per capita among the households represented in that quadrant.
- ‘Ave real food exp per capita ’06’ – the average monthly expenditure on food per capita in 2006 among households represented in that quadrant.
- ‘% Δ real food exp per capita’ – the average percentage change in the food expenditure per capita among households represented in that quadrant, where the figures are adjusted for the 10.4% food price inflation that took place between 2006 and 2007.

Table 4: Transition matrix of households in which either children or adults did or did not experience hunger

		2007	
		Seldom/sometimes/ often/always	Never
2006	Seldom/ sometimes/ often/ always	% of panel sample = 4.9%	% of panel sample = 10.8%
		% Δ children = -5.0%	% Δ children = -1.0%
		% Δ over 60s = +1.9%	% Δ over 60s = +0.6%
		% Δ employed adults per HH = +8.8%	% Δ employed adults per HH = +23.0%
		% Δ grants per capita = +9.5%	% Δ grants per capita = +12.7%
		Ave real food exp per capita 2006 = R117	Ave real food exp per capita 2006 = R139
	Never	% Δ real food exp per capita = +2.3%	% Δ real food exp per capita = +15.4%
		% of panel sample = 9.9%	% of panel sample = 74.4%
		% Δ children = +12.7%	% Δ children = +0.9%
		% Δ over 60s = -1.8%	% Δ over 60s = +1.4%
		% Δ employed adults per HH = -3.1%	% Δ employed adults per HH = +4.4%
		% Δ grants per capita = +2.6%	% Δ grants per capita = +7.9%
		Ave real food exp per capita ’06 = R155	Ave real food exp per capita ’06 = R256
		% Δ real food exp per capita = -7.6%	% Δ real food exp per capita = -0.5%

Source: GHS 2006 and 2007 (Stats SA, 2007; 2008a)

Looking at those households which did not experience hunger in 2006 but were hungry in 2007 (bottom left quadrant), what other changes might be associated with that deterioration? These changes include: a startling increase in the average number of children per household, a decline in the average number of elderly, a decrease in the average number of adults in employment per household; an increase in grant income per capita, and a significant decline in food expenditure per capita. The decline in per capita food expenditure is obviously the proximate cause of this group going from a state of non-hunger to hunger. However, this variable is taken here as a proxy for household income and, very likely, in itself it is the result of a loss of employment. Indeed, whereas in 2006, 44% of the households in this group indicated salaries or wages as their main source of income, the figure for 2007 was 37% (not shown). The fact that per capita grant income increased for this

group suggests that at least there is some compensating support available to many households belonging to this group, although it is clearly not enough. Interpreting the reasons for the dramatic percentage increase in the number of children for this group would require further work, but the cause could be a combination of children being born (with significant additional economic stress), and children being adopted, for example orphans re-locating from poorer households within an extended family network.

Looking at the group which experienced hunger in 2006 but not in 2007 (upper right quadrant), there are changes either in the other direction, or of a different character. For one, rather than an increase in the number of children, there is a modest decline; rather than a modest decrease in the average number of adults in employment per household, there is a significant increase; rather than a modest increase in social grant receipts per capita, there is a very large increase; and lastly there is a sizable real increase in food expenditure per capita. Obviously the increase in the grant receipts per capita can only be contributing positively to the ability to purchase food, but it is also significant that for this group, between 2006 and 2007, the share of households identifying grants as the main source of income *declined* from 37% to 30%, while those respondents who identified salaries or wages as the main source of income *increased* from 40% to 51% (not shown). In other words, grants might offer a significant safety net, but gaining a foothold into the job market is a more significant boost to poor households.

A few passing observations about households which stayed hungry (top left quadrant) or which did not go hungry in either year (bottom right):

- The relative magnitudes of the average per capita food expenditure make sense, in that those households which stayed hungry had the lowest per capita food expenditure in 2006, with little change in 2007; while those which did not go hungry in either year had the highest per capita food expenditure, though this deteriorated slightly in 2007 (possibly due to higher real food prices).
- Households which were hungry in both periods tend to 'lose children', that is, the average number of children declines by more than can be explained by children who were 17 in 2006 having turned 18 when the 2007 survey was done. If the reason for this is death, this suggests a close and frightening relationship between hunger, poverty and ill-health. Some of these children may have been sent off to live with better-off relatives.
- A fair share of additional grant income appears to have been captured by those who were hungry in neither period. This is not to suggest that they were undeserving, but it perhaps does underline the importance of

targeting those who are eligible but not receiving grants. Having said that, those who experienced hunger in both periods did enjoy a significant increase in grant income per capita.

3. The Income and Expenditure Survey (IES) and food expenditure patterns

The Income and Expenditure Survey of 2005/06 captures a detailed breakdown of household expenditure for a national sample of about 21 000 households.³ This discussion focuses on three issues: i) expenditure on food relative to total expenditure and relative to household size; ii) the composition of food expenditure by main categories of food products; and iii) the possible use of the IES to develop a measure of dietary diversity. Where relevant, households are disaggregated by expenditure categories, as well as by whether they dwell in urban or rural areas.

3.1 Food expenditure shares and expenditure per capita

Figure 6 below depicts the almost-universal relationship known as Engel's Law, whereby the share of total expenditure that goes to food is lower the better-off the household (see line with square markers), thus for the poorest decile (Decile 1), the average share of total expenditure devoted to food is about 37%, while for Decile 10 (highest income as indicated by total household expenditure) the share is only 7%. However, the figure also shows that food expenditure is still larger in absolute terms for well-off households compared to poor households (see line with triangular markers), as measured here by total food expenditure per 'adult equivalent' (ADEQ).⁴

³ Stats SA previously conducted the IES in 1995 and 2000, but these surveys are not considered here.

⁴ ADEQ is calculated here following local convention, i.e. children below 18 are accorded half the weight of adults, and an exponent of less than 1 is used to capture economies of scale associated with larger households, i.e. $ADEQ = (adults + 0.5 * children)^{0.9}$. Adult equivalent is employed rather than, say, household size, because it recognises that having a large number of children has different implications for a household's food needs than having a large number of adults.

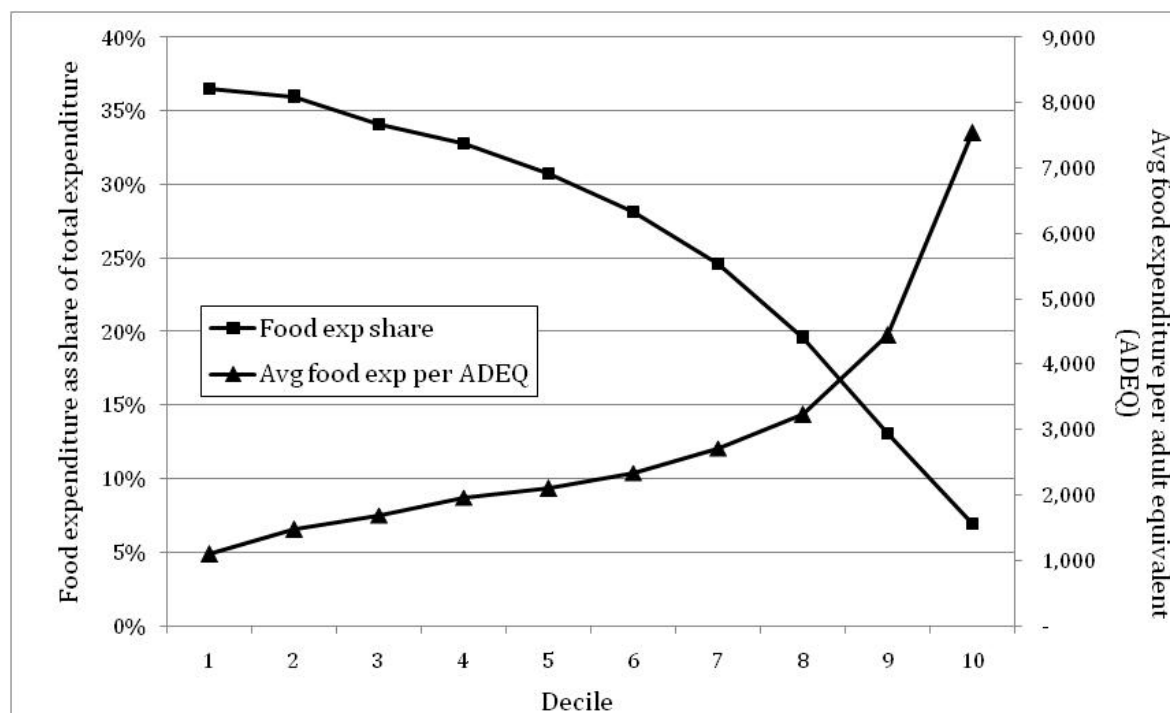


Figure 6: Food expenditure share and food expenditure per adult equivalent

Source: IES 2005/06 (Stats SA, 2008b)

Returning to the proportion of income devoted to food expenditure for the poorest decile, is 37% high? It is high, but not as high as according to the IES of 2000.⁵ Also notable is the fact that if Decile 1 is divided into two parts according to total household expenditure, i.e. into 'Icosa-ciles' 1 and 2, the finding is that the food expenditure share is the same on average for both, i.e. 37%, so the relatively modest food expenditure share for the poorest is not due to the level of aggregation chosen here, although this is not to say that Decile 1 is homogeneous.

Figure 7 distinguishes between urban and rural households.⁶ Focusing first on the food expenditure share curves (solid square markers and lines for urban, hollow square markers and dashed lines for rural), the striking pattern is that, for all but the poorest and wealthiest deciles, rural households tend to devote

⁵ The figure of 37% is so low that some observers are calling into question the reliability of IES 2005/06. According to the 2000 IES, the lowest two deciles spent 44% to 45% on food. The difference could reflect a problem with one of the other surveys; it could also reflect improvements in the food security status of the poor, which is supported through other evidence, including that what is presented in Section 2 of this paper. The figure from GHS 2007, which asks for about food expenditure and other expenditure at a very aggregated level (and for which reason it cannot be regarded as reliable, especially in terms of the capture of lumpy expenditures), is about 51%.

⁶ According to the IES 'metafile' (Stats SA, 2008b): "Urban refers to formal cities and towns characterised by higher population densities, high levels of economic activity and high levels of infrastructure, such as formal settlements, metropolitan areas, informal settlements and high-wall settlements. Rural refers to farms and traditional areas characterised by low population densities, low levels of economic activity and low levels of infrastructure, such as commercial farms and tribal areas."

a larger share of total expenditure to food purchases. One possible interpretation is that rural households tend to pay higher prices,⁷ thus in order to acquire a comparable food basket, they must simply spend more. However, looking at the curves that capture average expenditure per adult equivalent (solid triangular markers and lines for urban households, hollow triangular markers and dashed lines for rural households), it seems that, for each and every decile, rural households spend *less* than their urban counterparts. This appears to relate in part to the fact that rural households tend to be larger. However, the question remains why rural households actually spend *less*. One possible explanation is own production, which tends to be more common among rural households. In principle, the IES was meant to capture information about own production, meaning that it would note the extent of household production of crops, vegetables, meat, etc., derive an imputed value for these, and then add this imputed value to household 'expenditure' on these items. In reality, however, the IES captures too little 'own production' information to be considered credible.⁸ Thus the value of own production is effectively missing from the IES, possibly accounting for the gap between the per capita food expenditure curves.

⁷ At any rate this is a common claim, see e.g. Palmer and Sender (2006). It is also documented for certain foods, generally excluding fresh meat and vegetables; see e.g. NAMC and DoA (2008:43).

⁸ From the IES, it would appear that fewer than 3% of households reported any consumption of food they produced themselves, whereas from the Labour Force Survey (LFS), on average about 16% to 20% of households engage in agriculture at some level in any given year. For these data to be regarded as consistent, the assumption would have to be made that the vast majority of those involved in agriculture fail to consume anything from their farming. This is unlikely given that, of those households who report to the LFS that they practice agriculture, most do so for the main purpose of food production for own consumption.

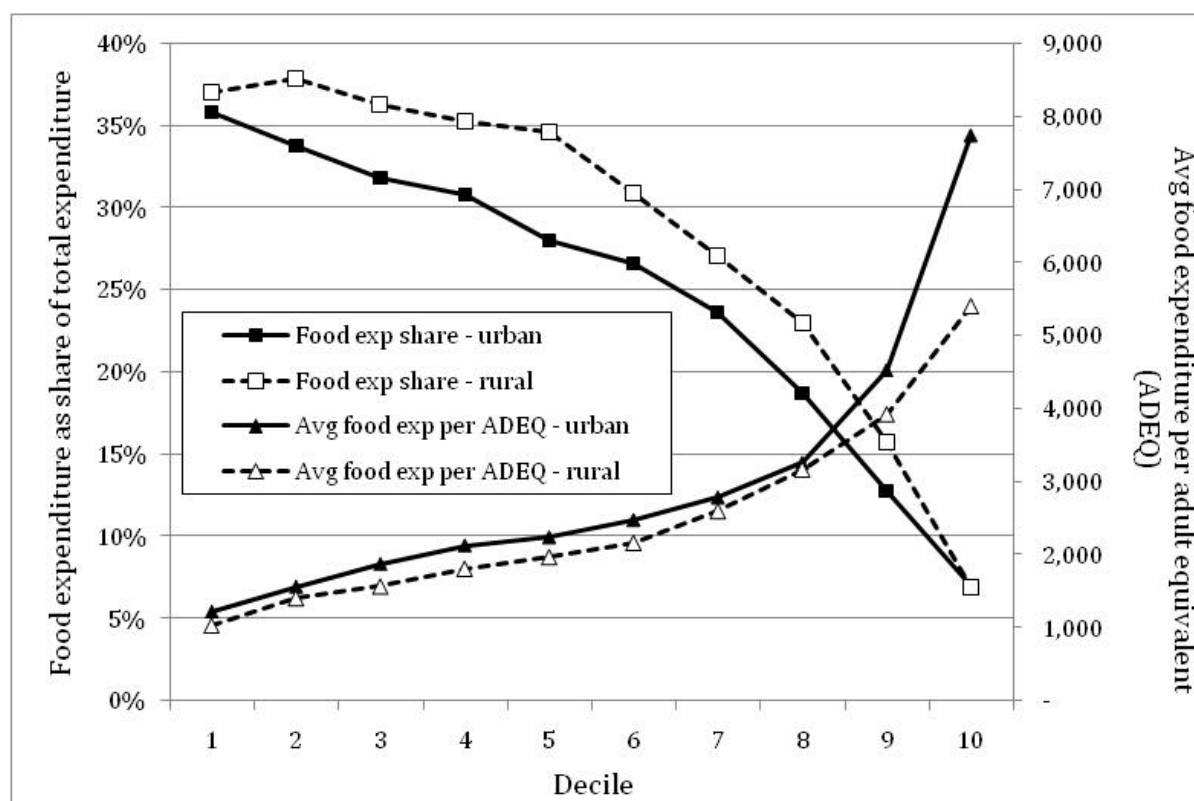


Figure 7: Food expenditure share and food expenditure per adult equivalent, urban versus rural

Source: IES 2005/06 (Stats SA, 2008b)

One possible explanation of the gap is that it reflects relatively pervasive malnutrition among rural households, but the fact that the gap between rural and urban households' per capita food expenditure holds for higher deciles suggests that this is not a satisfactory explanation. In a sense, then, the figure above represents an approach similar to that of Palmer and Sender (2006), who suggest that the best way to appreciate the significance of production for own consumption is to measure the difference in per capita expenditure between farming and non-farming households. However, given that the IES of 2005/06 was particularly inadequate in distinguishing farming from non-farming households, the distinction between rural and urban households serves as a sort of proxy. Therefore, self-provisioning through small-scale agriculture would appear to account for most or all of the gap observed in food expenditure per capita between rural and urban households. Among the poorest half of households (i.e. those for whom monthly household income is less than R2 000), rural households spend about 15% less on food per capita than their urban counterparts. If this is ascribed to small-scale agricultural production, it has a gross imputed value of about R2 billion per year. Given that this emanates from less than half of rural black households (i.e. those involved in farming, as inferred from the Labour Force Survey; see e.g. Aliber and Hart, this volume), this is significant.

Figure 8 describes differences in food expenditure per capita in selected provinces. The focus falls here on the first five deciles in order to make the situation in poor households more visible. The differences in fact are rather stark, with the general pattern being that the more urban provinces such as Gauteng and Western Cape have higher per capita food expenditures per decile relative to more rural provinces such as Limpopo and Eastern Cape.⁹

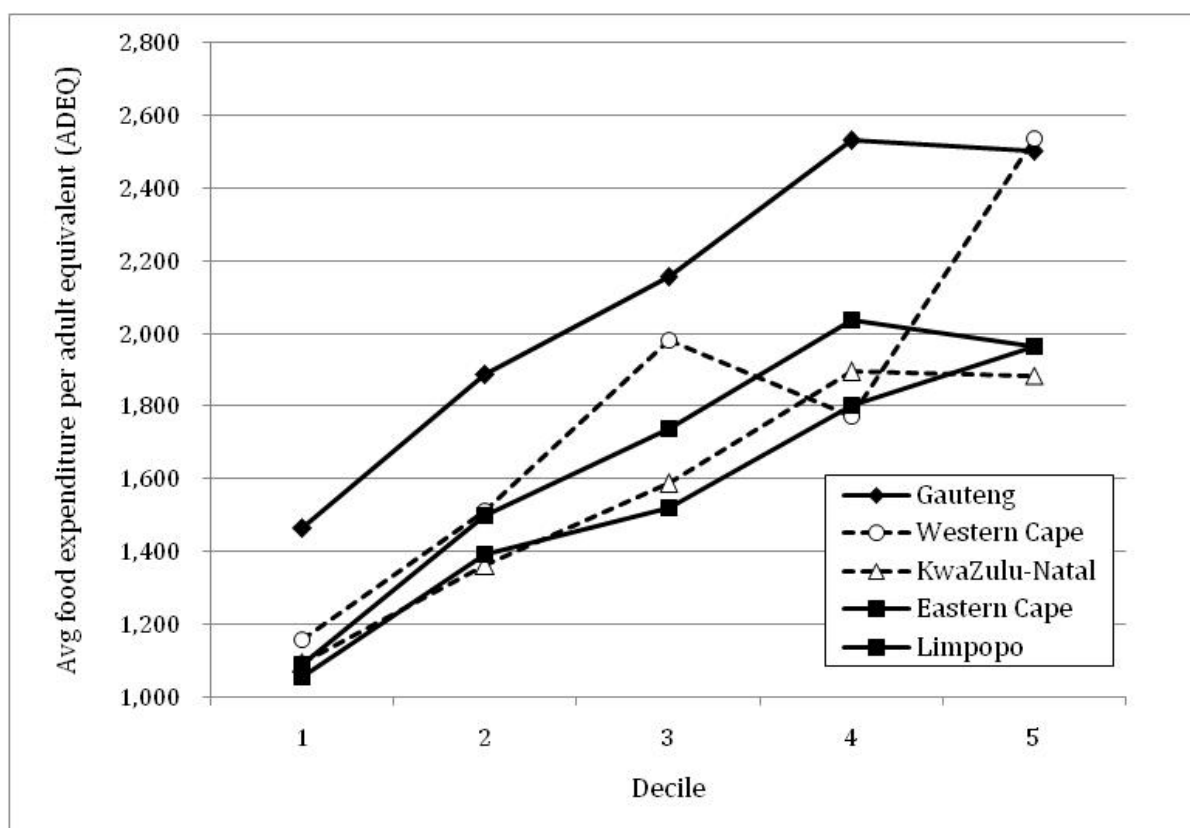


Figure 8: Food expenditure per adult equivalent for deciles 1-5, selected provinces

Source: IES 2005/06 (Stats SA, 2008b)

3.2 Composition of the food basket

Still using the IES, the share of expenditure on food accruing to selected food categories in households is considered,¹⁰ again distinguishing between urban (solid lines) and rural (dashed lines). Figure 9 shows that rural households devote a significantly larger share of their food budgets to grain products than urban households, while for fruit and vegetables their expenditure share is modestly higher. However, for meat and fish, the situation is the reverse, except for the better-off deciles. Rural households also tend to spend a lower share on animal products such as dairy and eggs. Particularly for grain

⁹ The author offers no explanation for the anomalously low value for Western Cape in Decile 4.

¹⁰ Note that the figures do not include all the food categories for ease of presentation.

products and for meat and fish, the differences between urban and rural households are so great as to require explanation. Tentatively, this pattern could be explained by the fact that, in recent decades, arable land resources in former homeland areas have been extensively under-utilised, effectively allowing more space for livestock.¹¹ Had this not been the case, the difference between urban and rural households might be reversed.

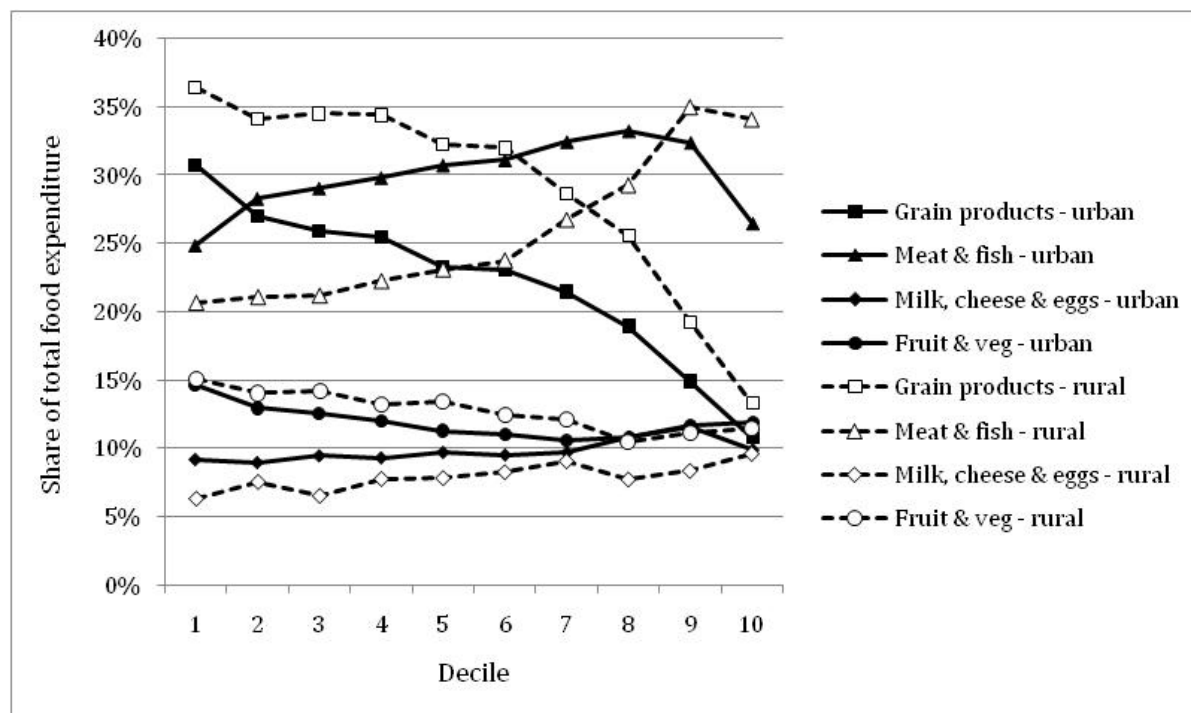


Figure 9: Share of food expenditure for main food product categories, urban and rural

Source: IES 2005/06 (Stats SA, 2008b)

Finally, Figure 10 examines the same issue, but from the perspective of absolute expenditure per adult equivalent. The picture is similar to that in Figure 10, in that rural households spend more per capita than urban households on grain products, but less on meat and fish, and animal products. Another, complementary, explanation is that to the extent some rural households are net suppliers of meat. Because much of this meat tends to be marketed locally through informal abattoirs, rural dwellers might have access to meat at lower prices than would be available from formal retail outlets 'in town'.¹²

¹¹ Hard information about the decline in arable land use in homeland areas is lacking, but the general trend is well established. For an especially interesting case study, see Thomson (1996), as well as the follow-up by Crookes and Lyne (2003).

¹² According to estimates by Germishuis (2003), over the period 2001 through 2004, 'non-commercial production' of beef accounted for about 21% of all beef produced in South Africa. Eloff (n.d.) estimates that about 17% of all broilers are produced in the 'informal sector'. By contrast, judging by the production estimates of the Crop Estimates Committee (various dates), over the past eight years 'developing farmers' have accounted for only about 2% to 4% of the national maize production. Furthermore, Van Zyl et al. (2008:1) estimate that, in

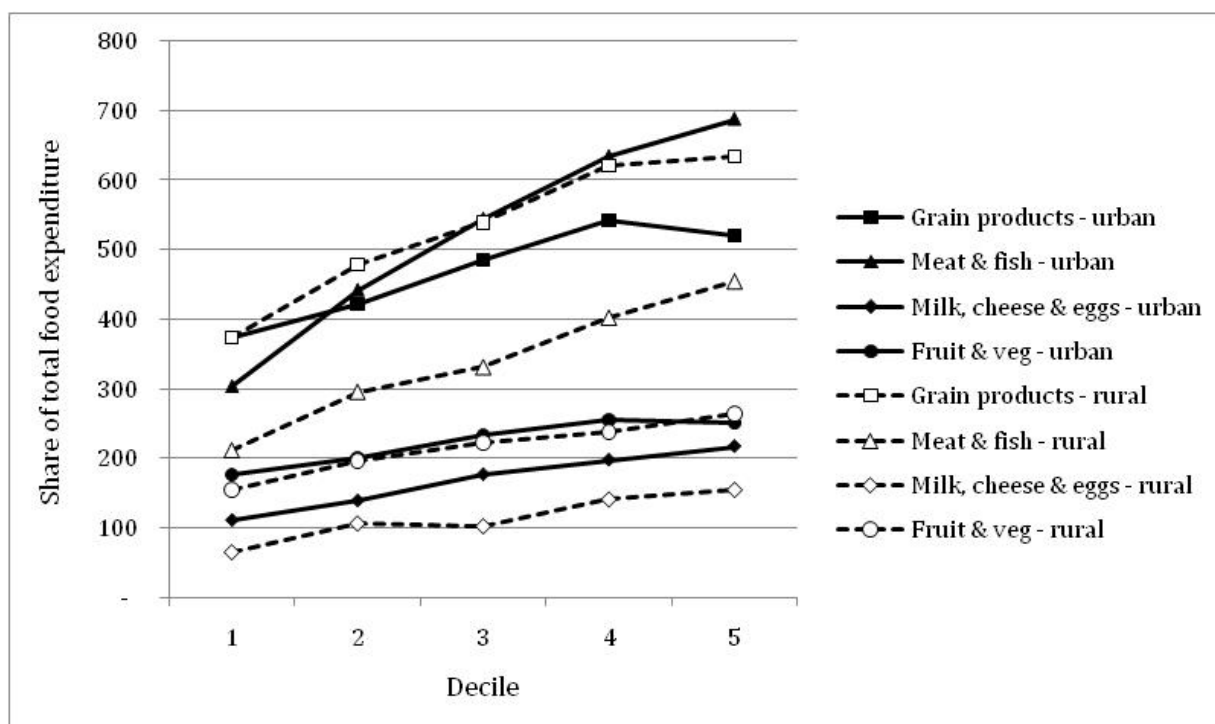


Figure 10: Average expenditure per adult equivalent for main food product categories, urban and rural

Source: IES 2005/06 (Stats SA, 2008b)

3.3 Using the IES to measure dietary diversity

Speaking generally, the more diverse a diet the healthier it is (Hoddinott & Yohannes, 2002). Of course this is not always the case, for instance in that a diet might become more diverse by means of incorporating more unhealthy foods. Moreover, from a methodological perspective, the failure of the IES 2005/06 to capture own production means that, especially for rural households, the IES can only provide an incomplete measure of dietary diversity. Nonetheless, it is possible that the IES can provide measures of dietary diversity that can assist in understanding the pattern of deprivation.

For purposes of this exercise, dietary diversity was measured in terms of the number of different 'food groups' on which a household spent at least some money, where these refer to the 12 main groups into which the IES categorises food. Averages of numbers of different food groups were taken over

South Africa, "approximately 45% of livestock is marketed through informal channels". As for the existence of informal abattoirs, NAMC (2003:57) notes that "...the abolition of the controlled areas in 1990, led to a shift in livestock slaughter patterns – from the consumer centres to the areas of production (the rural areas). This resulted in a huge increase in the erection of small and medium abattoirs in the production areas. Some of the 'informal' abattoirs compete on an unequal footing with registered abattoirs where stringent health and hygiene requirements have to be met." The NAMC report further also notes that, "Slaughtering in the informal sector of the red meat industry could amount to an additional 20 to 30 per cent of the official recorded slaughter figures" (NAMC, 2003:53).

households, whether by income group, location, etc.¹³ Figure 11 shows the average number of food groups purchased by icosacile, and distinguishing between rural and urban households. In conformity with expectations, there is a clear relationship between economic status and dietary diversity, with poorer households enjoying far less diverse diets than their better-off counterparts. The distance between the poorest and second poorest icosacile is especially striking. One implication is that, although the lower expenditure groups do not differ from one another dramatically in terms of food expenditure shares, the IES does pick up significant differences in the diversity of their diets, and by implication of the quality of those diets.

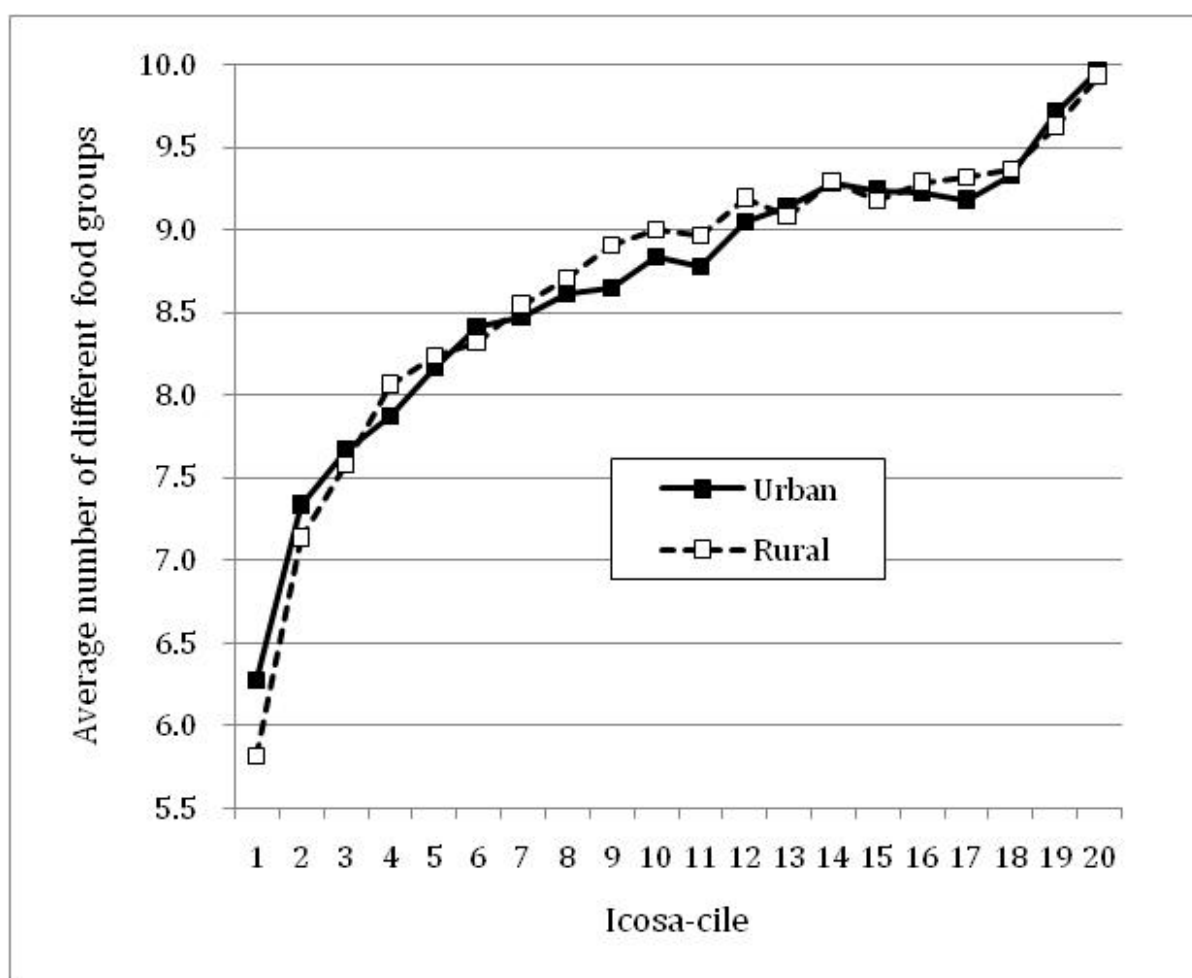


Figure 11: Dietary diversity by food groups, by icosacile and urban versus rural

Source: IES 2005/06 (Stats SA, 2008b)

¹³ The dietary diversity measure recommended by the USAID-funded Food and Nutrition Technical Assistance Project (FANTA), is also based on 12 main food groups. However, these are not precisely the same as those used in IES 2005/06. The bigger difference, is that FANTA recommends that the information should be collected from individuals or households based on their consumption over the previous 24 hours, whereas the household respondents for the IES 2005/06 were asked to compile a continuous diary of expenditure over an entire month (see Swindale & Bilinsky, 2006).

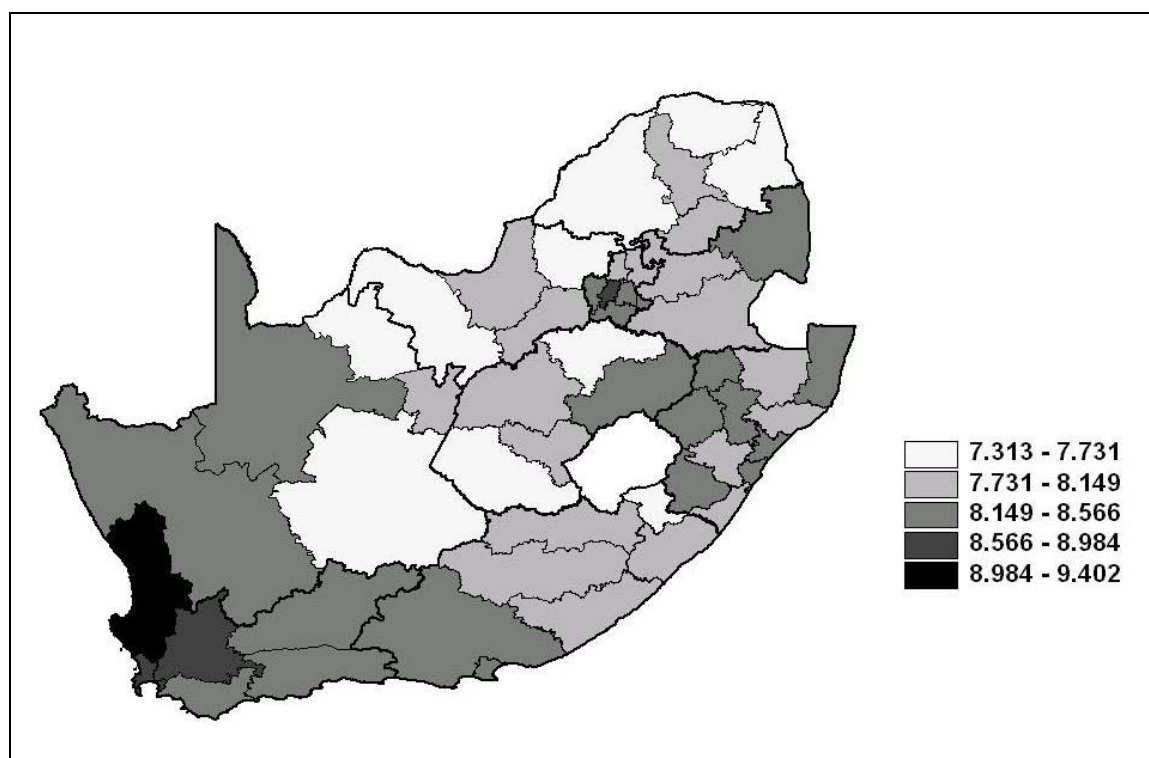


Figure 12: Dietary diversity by food groups per district municipality (poorest five deciles only)

Source: IES 2005/06 (Stats SA, 2008b)

Figure 12 maps average dietary diversity by district municipality, focusing on the lowest five deciles.¹⁴ The map is a bit surprising in comparison to some of those shown above (e.g. Figures 4 and 5) as to the distribution of hunger, in that some of the districts in which the diversity score is high (i.e. 'good') also experience hunger to a relatively high degree. Indeed, the correlation coefficient between the percentage of a district's households that experience hunger, and the dietary diversity score per district, is only about -0.13, which indicates that the two are only loosely associated. This reinforces the conclusion of other studies that household-level food security comprises distinct dimensions, such as frequency of having 'enough food', and the nutritional quality of the diet.

4. Conclusions

This article has explored the contribution of the GHS and IES to our understanding of household-level food security. While a careful comparison of these sources of information to others is pursued elsewhere (e.g. Labadarios *et al.*, forthcoming), these household datasets have value for this purpose. For one, the GHS reveals an extraordinarily hopeful trend – the experience of

¹⁴ IES 2005/06 does not include a district field; however, the district code appears to comprise the second and third digits of the household unique identifier.

hunger has declined over the period 2002 through 2007, and lays the basis for probing where the experience of hunger remains most problematic.¹⁵ In the absence of an instrument with the GHS's regularity, this trend would not have been observed, and in the absence of the GHS's panel aspect, one particular line of inquiry would have been unavailable. One practical implication of the findings from the GHS is that it provides some basis for targeting future food security or poverty reduction interventions, both in terms of type of household and geographically, i.e. because a high proportion of seriously hungry households reside in a relatively small number of municipalities. Perhaps most significantly, more than half of seriously hungry households appear to be eligible for social grants that they do not receive.

The IES 2005/06 contributes to an understanding of household-level food security in different but complementary ways, most significantly by providing measures of the extent to which the poor spend their income on food. An interesting and perhaps contestable finding from the IES is that the poorest decile of households devote only about 37% of their total expenditure to food purchases. This appears quite low, but it is also worthwhile to point out that food price inflation has been particularly rapid in the years following the IES 2005/06, suggesting the *current* food expenditure share is probably higher. Another interesting feature of the IES is the perspective it provides on differences between urban and rural households, in particular the fact that poor rural households spend about 15% less per household member than their urban counterparts. In the absence of an alternative plausible explanation, the author ascribes this gap to unrecorded own production. The differences between urban and rural food expenditure patterns can also be traced to particular food types. One surprising finding in this regard is that rural households spend a larger share of their food budget on grain products and a lower share on meat.

One practical implication of this paper is that, particularly in respect of the GHS, there might be a rationale for expanding the two existing hunger questions to create a modest 'food security' module which probes issues of food security are probed and therefore take advantage of GHS's size and regularity.

¹⁵ *In principle, data from two widely spaced points in time can accomplish the same thing, but in a non-technical sense the inference of change is more certain when more frequent data are available for clear observation of the pathway of change over time.*

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