Household Food Insecurity, Rapid Food Price Inflation and the Economic Downturn

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Extended Abstract

Research context

The combined impacts of two intersecting livelihood shocks- rapid food price inflation and the economic downturn- affected virtually all South Africans in 2008. Evidence of sharply rising food prices- particularly retail prices of staple grains & cereals, most vegetables and meats- had become visible already towards the end of 2007[1]. More recent statistics highlight that soaring food price inflation persisted throughout 2008 and only started slowing or flattening out towards the middle of 2009. What this means is that although farm-gate and producer prices for most agro-foods might have moderated or even fallen, retail prices that average consumers (particulate the poor) had to pay steadily climbed upwards. The food price crisis raised the cost of foods and, consequently, made it increasingly difficult for low-income households to afford their pre-crisis food baskets.

Findings from the 2008 round of the GHS, a large nationally representative survey conducted annually by the official statistical agency, show an unsurprising rise in household experiences of hunger in the order of 2-3 percentage points. A slightly revised and perhaps more meaningful question was asked in the 2009 GHS and it shows another 5 percentage points increase in household experiences of food insecurity. Surveys conducted over the 2006-2008 period captured the early onset of economic downturn and the peak of the food price crisis. The 2009 survey picks up information when the recession was evidently at its lowest point, but with an ongoing contraction in employment. In fact, there was a dramatic rise job losses recorded even as the recovery got underway.

Research question and purpose

In this context, this paper investigates the following question: How did the upsurge in food price inflation in 2007-2009 and the 2008-2009 economic down affect experiences of household hunger according to recent General Household Surveys? It offers a high level overview of how the most recent food price crisis and global economic downturn with specific emphasis on the food security status of low-income households. It concentrates on female-headed households because official statistics reveal that they are more vulnerable and at risk due to their lower socio-economic status. While adult women constitute around 55% of the South African adult population, women reportedly head roughly 2 in every 5 of the country's households. In fact, the average female-headed household tends to be larger than its male-headed counterpart, is more likely to be caring for one or more children and dependent on social assistance and remittance incomes. An in-depth exploration of these datasets and comparing its findings to similar household cohorts for the 2006 and 2007

[1] The effects on food insecure and vulnerable families proved to be devastating as manifested in the alarming expansion in the numbers of hungry people globally and large-scale food riots mainly but not exclusively in developing countries.

rounds of the GHS show that female-headed households suffered more than male-headed households.

Data sources & analysis

To explore the main questions, this study draws on 3 main official sources of data: Statistics South Africa's detailed data on Consumer Price Index, quarterly growth rate in gross domestic product and the General Household Survey (2006-2009). We specified the timeframes for each dataset in order for them to overlap with the both the food price crisis and the global economic downturn. Two features of the CPI data are critical for this study: indexes can be decomposed for different items which enable us to compare the food-CPI to the general-CPI; and indexes are available for different regions which allow us to compare rural and urban CPI trends. The quarterly GDP growth rate is crucial to gain a sense of the depth and duration of the downturn- to check movements in quarters of economic growth. We exploit the detailed household information in 3 annual GHS, which is a representative sample of roughly 30,000 households, to explain how the food security status of household cohorts changed from 2006 through 2009.

Preliminary findings

We investigate 3 determinants of household food security status: location (geography and dwelling type), main household income sources and adult equivalent expenditure patterns (including food spending) to demonstrate this result. Although the country has experienced two waves of food price inflation within the last decade, the knock-on effects on household hunger show remarkable differences. During the first wave, 2002-2003, despite the sharp rises in food prices, households did not report any substantial expansion in child and adult hunger. On the contrary, the proportion of households without hungry children and adults constantly expanded until 2007, roughly the start of the second wave. What our analysis points to that the economic downturn in addition to the food price crisis explain the expansion in numbers and shares of food insecure households.

In terms of location, women-headed households living in traditional huts in predominantly rural provinces of Eastern Cape and KwaZulu-Natal experienced the sharpest rise in hunger. Furthermore, women headed households in squatter settlements in Gauteng and backyard shacks in Western Cape also reported more hungry adults and children.

Income enables a household to buy food which naturally gives it a critical role in determining quantity (volume) and quality (diverse types) of foods purchased and consumed. The levels of household income directly bear on household food security status. But income sources- particularly salaries and wages, remittances and social grants- also matter because this reveals information about the stability and sustainability of types of incomes flowing into the household. What the available data for 2006-2008 suggest is that all 3 major sources of primary household income have cushioned household level impacts of the intersecting crises. These certainly helped to pull some female-headed households out of serious hunger. Focusing on 2007-2008, however, whilst remittances and social grants accounted for falls household experiences of moderate hunger, a higher proportion of households dependent on salaries and wages reported increasing experiences of moderate hunger.

During the year preceding the crises, spending on food increased across female-headed households reporting never, moderately and seriously hungry adults. However, the expenditure shares were falling, and this is usually perceived as a sign of rising levels of household welfare. Focusing on the first year of the crises, the complete opposite picture emerges: female-headed households substantially raised the amount of money spend on food. At the same time, the share of food expenditure in their total spending basket dramatically increased. This suggests that households were switching larger portions of their total household spending towards food- signaling a coping strategy to counter a severe livelihood shock. The policy implication is that gender-based targeting in food security policies must incorporate these additional determinants if they are to effectively and sustainably address transitory food insecurity induced by similar livelihood shocks.

HOUSEHOLD FOOD INSECURITY, RAPID FOOD PRICE INFLATION AND THE ECONOMIC DOWNTURN

1. Introduction

The combined impacts of two intersecting livelihood shocks- rapid food price inflation and the economic downturn- affected virtually all South Africans in 2008. Evidence of sharply rising food prices- particularly retail prices of staple grains & cereals, most vegetables and meats- had become visible already towards the end of 2007[2]. More recent statistics highlight that soaring food price inflation persisted throughout 2008 and only started slowing or flattening out towards the middle of 2009. What this means is that although farm-gate and producer prices for most agro-foods might have moderated or even fallen, retail prices that average consumers (particulate the poor) had to pay steadily climbed upwards. The food price crisis raised the cost of foods and, consequently, made it increasingly difficult for low-income households to afford their pre-crisis food baskets. South African policy makers and regulatory agencies responded to the domestic food price crisis through several interventions. The Competition Commission, for instance, launched a series of investigations into the driving forces behind what it perceived to be the growing gap between primary producer (farm-level) prices and retail prices of basic foods (such bread and milk). Moreover, at the time when poor families were battling to counter further slides in their living standards flowing from the food price crisis, the global economic downturn gave an added blow to their livelihoods- especially through job losses.

The purpose of this paper is to offer a high level overview of how the most recent food price crisis and global economic downturn might have affected the food security status of low-income households. It concentrates on female-headed households because official statistics reveal that they are more vulnerable and at risk due to their lower socio-economic status. While adult women constitute around 55% of the South African adult population, women reportedly head roughly 2 in every 5 of the country's households. In fact, the average female-headed household tends to be larger than its male-headed counterpart, is more likely to be caring for one or more children and dependent on social assistance and remittance incomes.

The paper begins with the context of the crises, drawing on official data to gain insight into the severity of food price inflation and the depth and duration of the economic downturn. It gives a sense of the start and end dates of each crisis by plotting relevant indicators on the same time axis. Keeping the time intervals of the crises firmly in view, the rest of the paper concentrates on the food security status of female-headed households, tracking annual changes of key variables- location, main household income source and average household expenditures- from 2006 to 2008.

[2] The effects on food insecure and vulnerable families proved to be devastating as manifested in the alarming expansion in the numbers of hungry people globally and large-scale food riots mainly but not exclusively in developing countries.

2. Context: Food Inflation and Economic Downturn

For a considerable period between late-2007 and mid-2009 high food prices overlapped with the severe contraction in macroeconomic growth rates- both induced by external economic events. Figure 1 shows movements in these indicators over the same time intervals. It brings together information about trends in the economy-wide price level, food prices and quarterly economic growth rates from January 2001 to December 2009. The food price indexes in the figure refer to average retail prices in primary (major metropolitan cities) and secondary urban areas[3]. StatsSA no longer releases separate food prices indexes for rural locations and income/expenditure quintiles in urban and rural locations- the rural CPI in the new series does not distinguish between goods and services with and without food prices. The revised CPI series follows a new methodology to collect prices and reweighed (rebased) different consumer items in the CPI basket. Measured along the vertical axis on the right is the growth rate in the value-added gross domestic product for each quarter. It covers every quarter from March 2001 until December 2009, all measured at constant 2005 prices.

South Africa experienced 2 major waves of rapid food price inflation in the last decade, according to the information in figure 1. The first wave occurred in 2002-2003 whilst the second wave, the focus of the present study, started towards the end of 2007 and persisted until mid-2009.

[3] The consumer price index is based on 2 pieces of information: prices of goods and services as well as the respective weights of these items in some representative consumption basket. Firstly, StatsSA collects monthly retail prices for a basket goods and services purchased by the urban South Africans. Secondly, the weights to measure the share of different groups of items in the basket are derived from the 5-yearly income and expenditure surveys. The most recent IES was conducted in 2005/06 and the findings for the 2010/11 survey are only expected in early 2011.

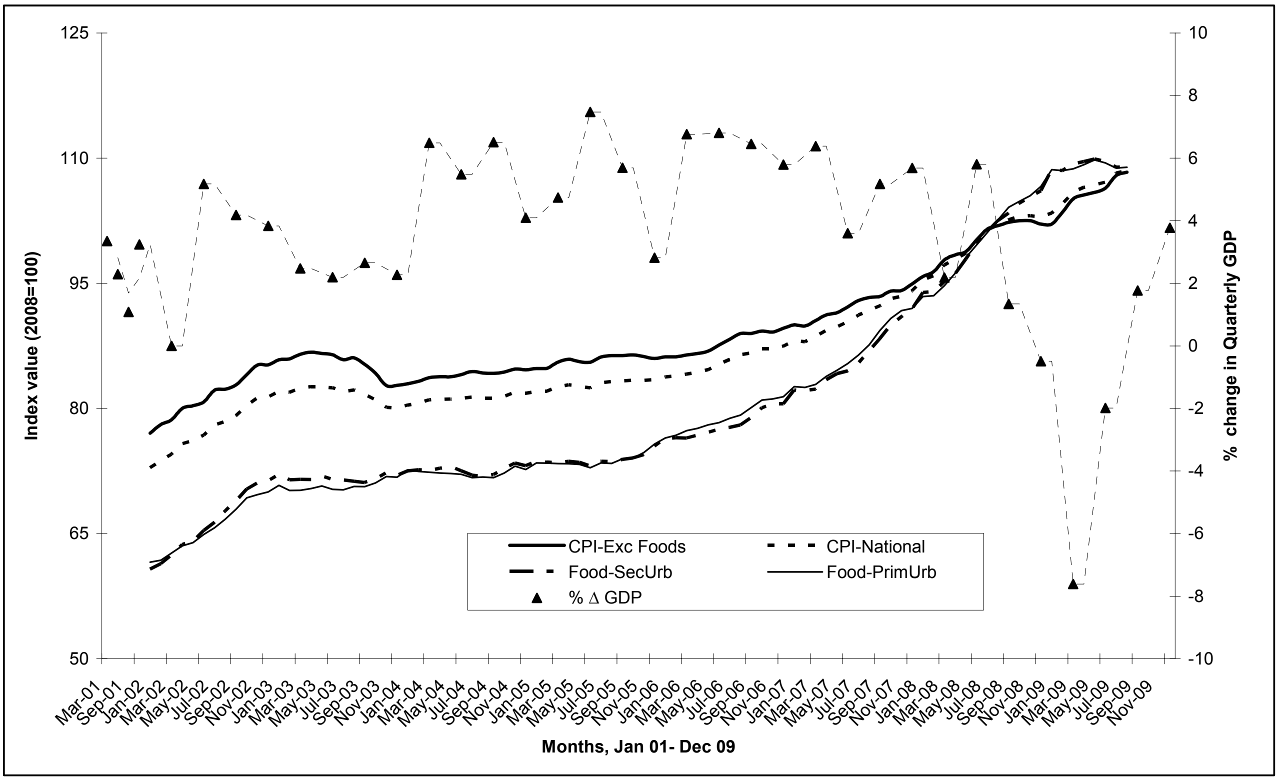

Figure 1: Trends in quarterly economic growth rates and selective price indexes, January 2001- December 2009
Source: StatsSA (various years) interactive electronic data

The evidence based on monthly CPI trends in figure 1 is general, but paints a fairly compelling picture that food price inflation was accelerating much faster than the general inflation rate from late 2007 onwards. However, it does not isolate food items or groups behind the food price index movements. One alternative way to shed light on this underlying/subtle storyline in figure 1 might be to examine price movements of individual food items or food groups. Table 1 summarises the percentage changes in average retail prices of major food groups for 2007 and 2008- measured over a calendar year as well as the last six months of each year (July- December) to detect any variation in the speed of price changes. Aside from fruits in 2008, the average retail prices for all other food groups increased over each full calendar year. Average fruit prices at the retail level started moderating towards the latter part 2007, were sharply lower in 2008 but then increased during the last six months perhaps due to the seasonal nature of fruit farming. The percentage increases in average fresh meat prices at the retail level have been slower. However, what is clear is that the most sustained and relatively higher average food group price increases were concentrated around staple grains (especially wheat products) and vegetables. (In the Appendix we compare prices of commonly consumed items across rural and urban areas, based on NAMC data. On average, retail prices for the selected food items in rural areas were not only higher than in urban areas, but increased slightly faster than in 2008.)

Table 1: Percentage change in average retail prices for selected food groups, 2007-2008

Food product group	2007		2008	
	July-Dec	Jan-Dec	July-Dec	Jan-Dec
Wheat	9.19	21.95	1.24	30.41
Maize	-1.13	23.87	17.74	16.7
Fresh vegetables	9.61	26.17	14.01	11.78
Processed Vegetables	2.03	2.03	0.44	14.91
Fresh meat	8.53	12.5	5.23	6.44
Processed Meat	-2.14	7.47	8.06	16.03
Fruit	16.99	21.14	11.38	-8.24

Source: NAMC (2007, 2008) Food Cost Reviews

3. Snapshot of Household hunger trends

The GHS asks the following 2 household level questions to find out about experiences of hunger among adults and children, respectively, in a sampled household.

- "In the past 12 months, did any adult (18 years and older) in this household go hungry because there wasn't enough food?"

- "In the past 12 months, did any child (17 years or younger) in this household go hungry because there wasn't enough food"

The questions are subjective in the sense that they ask the respondent to rank perceptions of hunger within the household according to the following scale: *Never, Seldom, Sometimes, Often and Always*. These frequency scales vaguely measure how many times in the past year any adult or child members of the household went hungry. This set of questions has been repeated in every GHS from 2002 until 2008, thus allowing for some continuity in the analysis at least across these annual surveys[4]. A household without a child, naturally, did not answer the 'child hunger' question. In 2008, for instance, the GHS reported that roughly 34% of households had no child member. Approximately 1.7% of households, on the other hand, reported no adult to be living there.

Hunger is commonly associated with extreme cases of food shortages- a lengthy period of insufficient or zero food intake that often results in reduced activity levels or severe illness. As a consequence, respondents are likely to differ in how they interpret these questions and both questions remain suspect to unpredictable levels of under and over-reporting of individual or household food insecurity status- an outcome which hinges on the perceptions of one respondent. To give a more balanced account of this phenomenon, we need detailed anthropometric and activity level information for each household member- as documented

[4] Over the following two survey years, in 2009 and 2010, this part of the survey questionnaire was completely revised in an effort to better understand household food security status. The revised section now directly couples the lack of access to enough food in the household to insufficient income to purchase food. Furthermore, the revisions included an expanded hunger scale question, but dropped any explicit distinctions of food security experiences of adults from children in the same household.

in the 2005 National Food Consumption Survey (Labadarios et al, 2005). The concern here is that it might be relatively easier to distinguish a non-hungry person from a hungry person than it might be to meaningfully derive the severity or depth of hunger exclusively from a single 5-scale frequency question. What, for instance, does it mean to be "always hungry in 12 months"? How realistic and informative is such a question? There is only a very slim chance for a respondent to accurately categorize the 'degrees of hunger' for each household member and the guidelines to fieldworkers do not explain what type of assistance respondents received during the interview to improve the precision of their responses. One is therefore tempted to compare 'never hungry' to those respondents who answered 'seldom-to-always', an approach which suppresses any nuanced trends in order to gain a more meaningful storyline. Another informative way to group the responses and reduce the loss of richness in information might be to use the following three categories: 'never', 'seldom/sometimes' and 'often/always'.

The two hunger-scale questions capture perceptions in a responding household (or some of its members) through one respondent rather than for each household member. What this means is that information about hunger refers to the share or proportion of households who report a perceived experience of hunger rather than numbers of hungry children or adults. In this section we use information from 2002 through 2008 to illustrate patterns in household hunger based on the 2 hunger-scale questions.

3.1. More Hungry Households after intersecting crises

Figures 2 and 3 below display information for households reporting experiences of hunger among children and adults for the period 2002-2008- with an adjusted scale on the left-hand axis to improve readability of the observed patterns. What both figures illustrate is that up to 2007, there has been a sustained rise in the proportion/share of households who 'never' experienced hunger in the reference year. For example, whereas in 2004, around 74% of the households reported that children 'never' went hungry in the household, by 2007 this share of households had climbed to 85%. The expanding shaded area in the bottom part of figures 2 and 3 display this remarkable improvement in household food security status based on the GHS hunger scales. During the same period, the grouped category, 'seldom-to-always' hungry, shows an overall fall with only 15% of households reporting children experiencing some form of hunger around 2007- down from 25% in 2004. Upon closer inspection of the severity of hunger bands, households with hungry children have evidently shifted either into lower levels of severity (or moderate hunger) or into the 'never hungry' category. It is not possible to clearly explain this mobility into and out of distinct hunger bands based on available data[5]. In figure 3, which shows information for households reporting hunger among adults, a similar pattern is observed as in the case of children experiencing hunger in a household. Tables in the appendix provide a detailed breakdown of hunger in the respective households for the years 2002 to 2008.

[5] Aliber (2009) exploited the small rotating panel of households sampled in the GHS every year to give some sense of movements into and out of the reported experiences of hunger.

Our main interest is to present a snapshot of year-on-year shifts in reported household hunger centered on 2007 to gain some insights into how the food price crisis and global economic downturn might have influenced experiences of hunger. From 2002 until 2007, as mentioned above, we see almost perfectly overlapping patterns between households that reported experiences of hunger among adults and children, respectively. What if any changes occurred in household hunger after 2007? By 2008, the proportion/share of households in which adults or children never went hungry had begun to decline. At the national level, this amounted to a fall of 2-3 points, with a much larger drop expected for lower-income households. Figures 2 and 3 point toward an increasing share of households falling into 'seldom/sometimes' hungry but slight reductions for those trapped in the extreme 'often/always' categories. The implication is that the shocks probably pushed households into moderate rather than serious hunger.

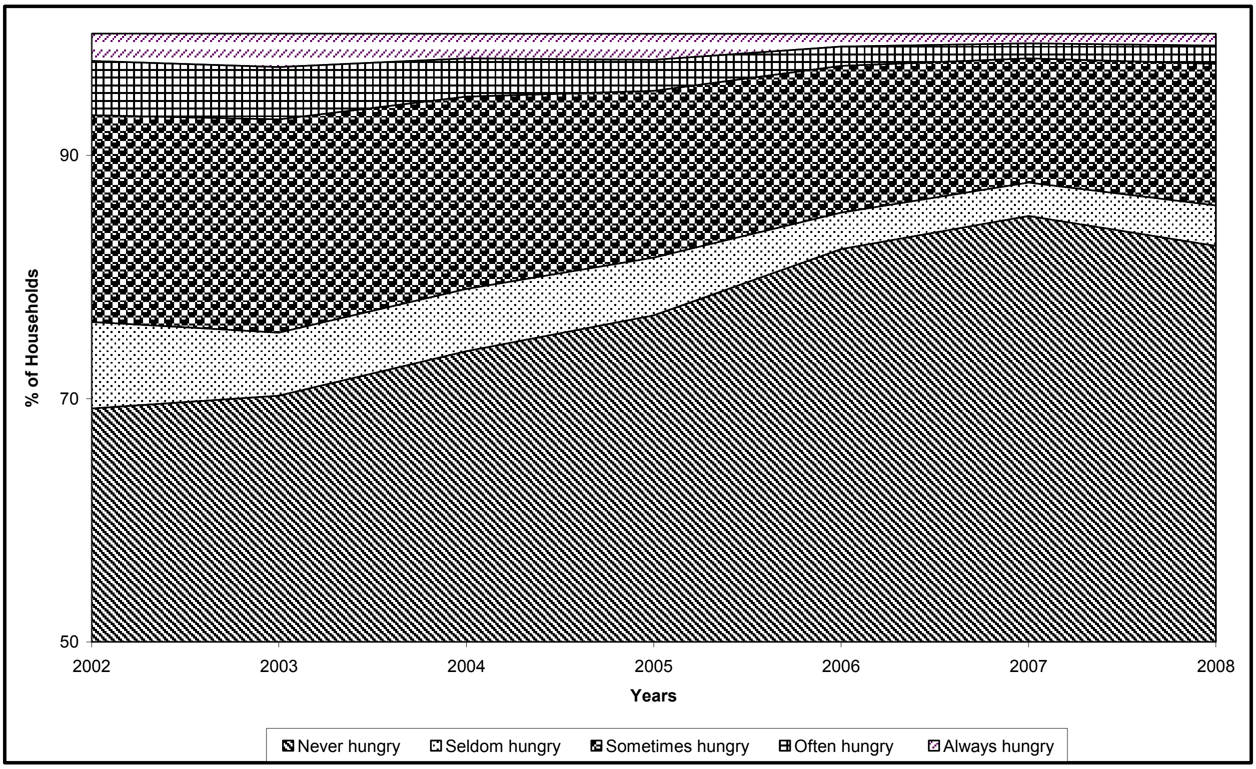

Figure 2: Share of household reporting hunger among children, 2002-2008
Source: StatsSA, 2002-2008, GHS

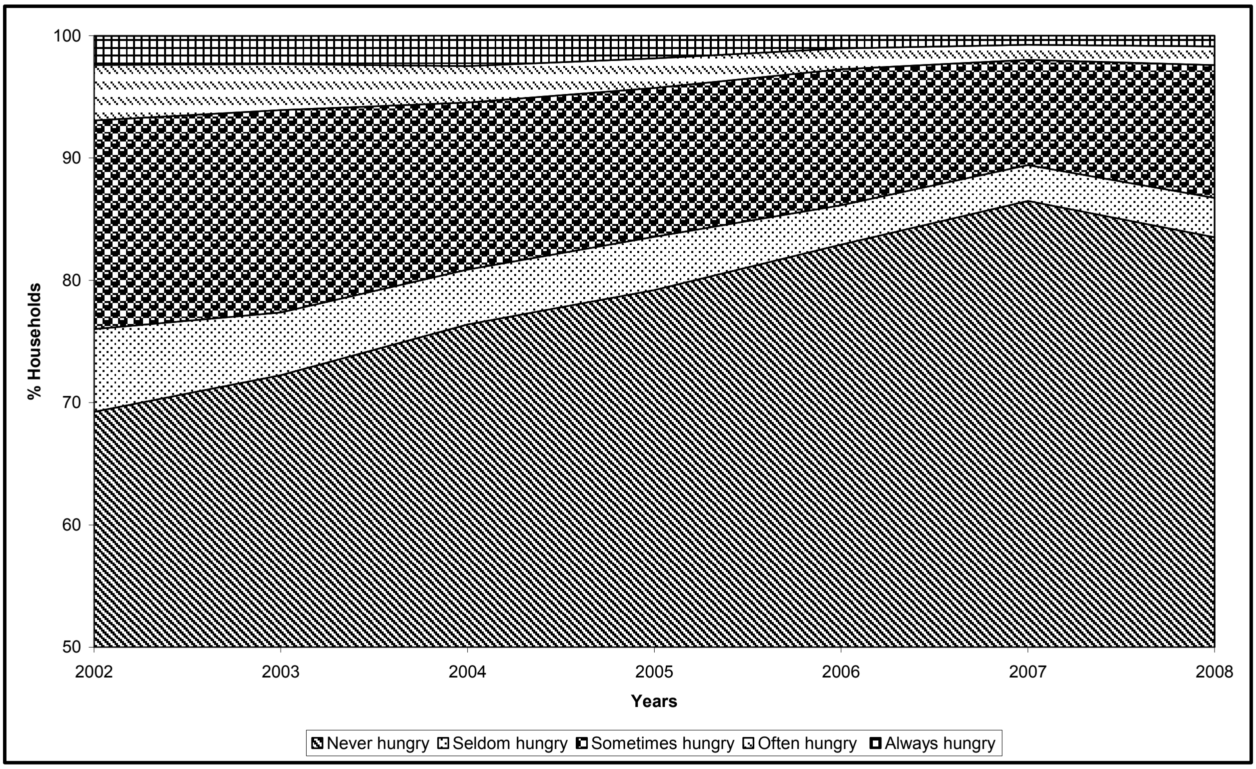

Figure 3: Share of household reporting hunger among adults, 2002-2008
Source: StatsSA, 2002-2008, GHS

3.2. Uneven provincial spread of household hunger

Where people live is closely associated with their food security status. Numerous studies have demonstrated that location affects the food security status of households (NAMC 2009, Aliber 2009, Jacobs 2009, Oldewage-Theron et al 2006). There is great unevenness in the patterns of household hunger across space and time, but locations with fewer economic opportunities, weak social protection and (solidarity) networks have higher degrees of food insecurity. The NAMC (2009), for instance, reports evidence to show that on average food prices in rural areas are higher than in urban areas, thus raising the relative and absolute cost of living in rural areas (see tables in the appendix). Findings from studies by Aliber (2009) and Jacobs (2009), that compare which rural and urban households might be able to afford similar food baskets, found household food insecurity to be higher in rural areas primarily because it costs substantially more to access food in rural localities. Aliber (2009) went further by examining the spatial distribution of hunger across urban and rural municipal districts, including chief metropolitan hubs. He found substantial evidence of hunger in urban informal settlements over the years when official data allowed for this low level of disaggregated spatial analysis.

Given the important role location plays in determining household food security status, it is worth looking at variations in reported incidents of hunger based on available spatial information. Figures 4 and 5 compare the proportions of '*never hungry*' households across various provinces- still keeping households reporting hungry children and adults apart. With few exceptions, at the provincial level, we also observe that a constantly rising share of households with children and adults never going hungry. Over this period, in both figures, Western Cape and Gauteng are the exceptional provinces where the shares of households without hungry children or adults consistently range above 80%.

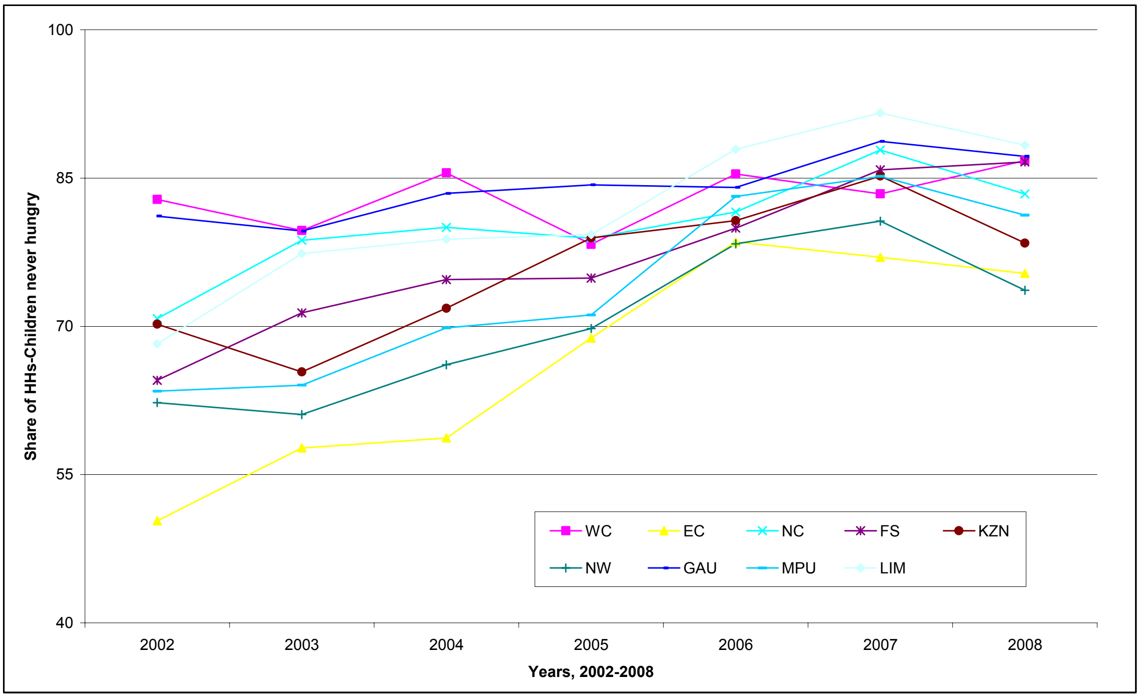

Figure 4: Share of households reporting that children never went hungry in past 12 months, by province 2002-2008
Source: StatsSA, 2002-2008, GHS

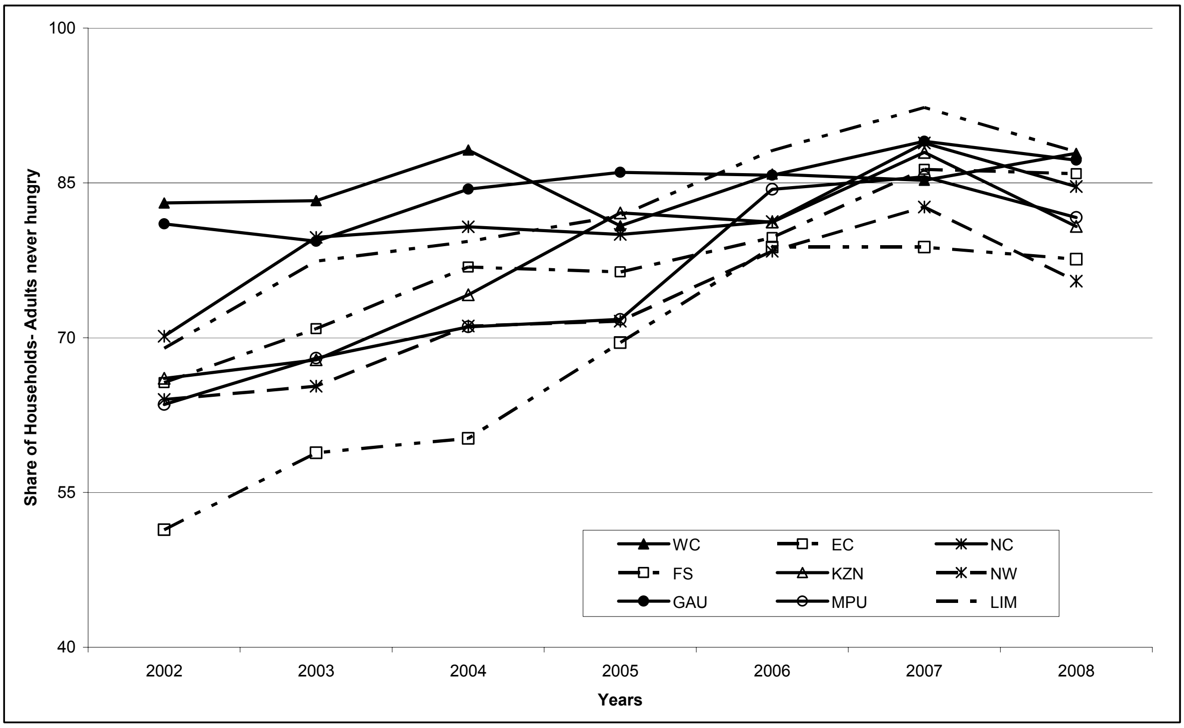

Figure 5: Share of households reporting that adults never went hungry in past 12 months, by province 2002-2008
Source: StatsSA, 2002-2008, GHS

4. Female-headed households and hunger

To contextualize our analysis of experiences of hunger in female-headed households in the wake of the recent food inflation crisis and the economic downturn, we compare in table 2 experiences of adult hunger reported by male and female headed households- comprising 61% and 39% of slightly more than 13 million households, respectively. We first describe the distribution of households across the 3 provinces hosting the majority of households by the gender of the household head. In 2008, the top 3 provinces with the largest numbers of female-headed households were, in descending order: KwaZulu-Natal (~1 million households), Gauteng (~900,000) and Eastern Cape (~800,000). We calculated a similar ranking for male-headed households: Gauteng (~2.3 million), KwaZulu-Natal (~1.4 million) and Western Cape (~990,000). Overall, there are fewer female headed households and it is therefore expected that estimates based on headcounts might not be very informative in terms of the severity or depth of hunger. To steer clear of the potential misrepresentation as a result of this under-representation of women as household heads, we place stronger emphasis on the proportion or share of households reporting experiences of hunger.

Reported experiences of hunger, based on the gender of household heads, display considerable variation according to table 2. On average, female-headed households are less likely than male-headed households to 'never' experience adult hunger: 80% of female headed households reported that no adult went hungry in the year prior to the survey compared to 85% of male-headed households. A coarse interpretation of this finding suggests that roughly 20% of female-headed households reported that adults in the family experienced hunger in the last year compared to 15% for male-headed households- if we ignore the severity of hunger. Provinces with the highest shares of female-headed households without adult hunger were Limpopo (88%) followed by Western Cape (85%); whilst for male-headed households, Western Cape and Gauteng dominated with about 89%. The fact that Limpopo, a largely rural province, ranks among predominantly urbanized provinces with comparatively lower levels of hungry adult households underscores the need to investigate why some female-headed rural households might be food secure while others are not. It is interesting to note that substantial shares of female-headed households in Western Cape and Gauteng reported moderate and serious hunger among adults, albeit not as severe as in mainly rural provinces. Turning to experiences of moderately and seriously hungry adults in various provinces, there appears to be marginal differences between male and female headed households across the following provinces: North West, Eastern Cape and KwaZulu-Natal.

Table 2: Numbers and shares of male and female headed households reporting adults hungry by Province, 2008

Province	N Households	Never Hungry		Seldom/Sometimes Hungry		Often/Always Hungry	
	Share (row)	Male head	Female head	Male head	Female head	Male head	Female head
WC	N	885,187	398,627	87,508	57,458	21,277	13,622
	%	*89.06*	*84.87*	*8.8*	*12.23*	*2.14*	*2.9*
EC	N	721,405	601,956	154,854	180,217	21,987	24,225
	%	*80.31*	*74.65*	*17.24*	*22.35*	*2.45*	*3.01*
NC	N	159,570	89,200	22,459	16,947	4,191	1,623
	%	*85.69*	*82.77*	*12.06*	*15.73*	*2.25*	*1.51*
FS	N	422,311	285,630	50,246	50,718	8,868	6,638
	%	*87.72*	*83.28*	*10.43*	*14.78*	*1.85*	*1.93*
KZN	N	1,139,706	839,133	184,597	220,539	28,639	35,019
	%	*84.24*	*76.65*	*13.64*	*20.15*	*2.12*	*3.2*
NW	N	503,150	231,385	115,603	74,822	24,058	24,807
	%	*78.27*	*69.9*	*17.99*	*22.6*	*3.74*	*7.5*
GAU	N	2,021,476	768,765	216,391	131,301	38,849	24,501
	%	*88.79*	*83.15*	*9.51*	*14.2*	*1.71*	*2.65*
MPU	N	432,484	309,250	80,247	65,196	10,829	9,462
	%	*82.6*	*80.55*	*15.33*	*16.98*	*2.07*	*2.46*
LIM	N	543,604	598,520	66,944	72,732	8,065	8,519
	%	*87.87*	*88.05*	*10.82*	*10.7*	*1.30*	*1.25*
Total	N	6,828,893	4,122,466	978,849	869,930	166,763	148,416
	%	*85.63*	*80.19*	*12.28*	*16.92*	*2.09*	*2.88*

Source: StatsSA, 2008 GHS

As mentioned above, the uneven spatial distribution of household food insecurity is well-known. However, the 2008 GHS does not allow us to distinguish rural from urban food insecure households or the extent of hunger in metros from non-metros. One variable which partially helps to gain a more nuanced view about the distribution of household hunger across provinces is the "dwelling type" variable. It isolates at least 4 major dwelling types: formal brick structures (mainly in urban metros), traditional huts (main in rural areas), informal backyard shacks (urban metros) and squatter-camp shacks (mainly urban metros). In 2008, according to data reported in table A7 in the appendix, at least three out of every 4 households lived in formal brick structures, with the largest numbers of households living in this dwelling type concentrated in Gauteng, KwaZulu-Natal and Western Cape. Eastern Cape and KwaZulu-Natal accounted for the largest numbers and shares of households living in traditional huts, whilst Gauteng stands far above other provinces in terms of the numbers of shack-dwelling households.

The information reported in table 3 aims to track changes in the numbers and proportion of female headed households in which adults never experienced hunger. In line with the time intervals reported above, we concentrate on changes from 2006 to 2008 to detect the likely impacts of the two intersecting crises on household hunger by dwelling type. The overall share of female-household without hungry adults increased from 2006 to 2007. But for the 2007-2008 period, this overall share declined by approximately 3 percentage points- with falls in proportions reported across all dwelling types and largely reversing the gains of the year before the crises. Worse affected were female-headed households in traditional huts and informal backyard shacks, reporting increased shared of 5% and 7% respectively, yet their numbers remained relatively small compared to persistent incidents of adult hunger reported in squatter camp shacks.

Table 3: Female-headed households reporting adults never hungry by dwelling, 2006-2008

Major Dwelling Type		**2006**	**2007**	**2008**	***%Δ 2006-2007***	***%Δ 2007-2008***
Formal brick structures	N	2,643,121	2,766,871	2,977,695	123,750	210,824
	%	*84.2*	*86.02*	*83.29*	*1.82*	*-2.73*
Traditional huts	N	566,390	542,208	524,571	-24,182	-17,637
	%	*76.93*	*74.47*	*69.05*	*-2.46*	*-5.42*
Informal backyard shacks	N	135,283	142,322	134,356	7,039	-7,966
	%	*71.15*	*80.94*	*74.17*	*9.79*	*-6.77*
Informal squatter camps	N	266,857	273,759	246,289	6,902	-27,470
	%	*72.86*	*69.43*	*68.59*	*-3.43*	*-0.84*
Total	N	3,611,651	3,725,160	3,882,911	113,509	157,751
	%	*81.5*	*82.51*	*79.65*	*1.01*	***-2.86***

Source: StatsSA (various years) GHS

4.1. Income sources matter

Although the GHS does not provide detailed information about the amount of household income, it does identify the main source of household income. To contextualize the change in the proportion of female-headed households who reported experiences of adult hunger from 2006 to 2008, we first present the general picture in 2008 for all households in table 2. As to be expected, hunger tends be concentrated in households without income (or who reported zero income during the month prior to the survey). These households actually reported the lowest proportion of 'never hungry' (66%) and the largest share (~10%) of seriously hungry households. Households primarily dependent on salaries and wages, or labour market participation, reported the highest share of 'never' hungry adults (88%). A higher proportion of households dependent on social grants experienced no adult hunger (82%), compared to a slightly lower proportion of those dependent on remittances (79%). A larger share of remittance dependent households reported moderate and serious hunger among adults relative to those receiving social grants.

Table 4: Households reporting experiences of hunger among adults by household income source, GHS2008

Household main income source	Never hungry	Seldom hungry	Sometimes hungry	Often hungry	Always hungry
Zero/No Income	66.33	3.91	19.93	6.09	3.73
Salaries wages	88.28	2.78	7.64	0.98	0.32
Remittances	77.22	3.22	15.75	1.87	1.95
Pensions & Social Grants	75.35	4.4	16.13	2.52	1.61
Farm Income	78.98	1.13	18.2	0	1.7
Other Non-Farm Income	81.58	2.22	13.78	1.41	1.01
Total	*83.51*	*3.21*	*10.87*	*1.54*	*0.87*

Source: StatsSA, 2009, GHS

Against the backdrop of the information on experiences of adult hunger for all households in 2008, the next two tables reflect on changes in moderate (seldom/sometimes) and extreme (often/always) hunger among adults for female-headed households based on the principal source of household. Due to small and therefore less meaningful information for zero income household and those primarily dependent on farm and other non-farm incomes, tables 5 and 6 report on the 3 dominant forms of main household income: salaries and wages, remittances and social grants. The year before crises, meaning 2006-2007, the numbers and proportion of female-headed households with adults reporting moderately hungry adults continued to fall across all major income sources. At the start of the crisis, however, a substantial rise in the adult hunger among female-headed households takes place-with large increases among both female-headed households mainly relying on labour market incomes and those dependent on social grant transfers.

Table 5: Female-headed households reporting adults *seldom/sometimes hungry* by main household income source, 2006-2008

Main income source		2006	2007	2008	%Δ 2006-2007	%Δ 2007-2008
Salaries & wages	N (Households)	208,380	191,205	310,283	-17,175	119,078
	%	*10.42*	*8.74*	*13.02*	*-1.68*	*4.28*
Remittances	N (Households)	123,885	123,539	122,747	-346	-792
	%	*16.79*	*16.86*	*16.97*	*0.07*	*0.11*
Pensions & Social Grants	N (Households)	337,547	330,910	382,167	-6,637	51,257
	%	*19.29*	*19.86*	*21.34*	*0.57*	*1.48*
Total	N (Households)	714,408	698,185	868,827	-16,223	170,642
	%	*15.01*	*14.36*	*16.94*	*-0.65*	***2.58***

Source: StatsSA, various years, GHS

Table 6: Female-headed households reporting adults *always/often hungry* by main household income source, 2006-2008

Main income source		2006	2007	2008	%∆ 2006-2007	%∆ 2007-2008
Salaries wages	N (households)	25,635	28,372	35,755	2,737	7,383
	%	*1.28*	*1.3*	*1.5*	*0.02*	*0.2*
Remittances	N (households)	27,711	28,764	25,441	1,053	-3,323
	%	*3.76*	*3.92*	*3.51*	*0.16*	*-0.41*
Pensions & Social Grants	N (households)	84,725	61,035	74,751	-23,690	13,716
	%	*4.85*	*3.67*	*4.17*	*-1.18*	*0.5*
Total	N (households)	154,973	128,406	148,022	-26,567	19,616
	%	*3.26*	*2.64*	*2.89*	*-0.62*	*0.25*

Source: StatsSA, various years, GHS

4.2. Household food expenditure shares

The relationship between hunger and expenditure on food is a topic of ongoing research interest and a major policy concern. Expenditure information provides some insights into household well-being and coping strategies when they are faced with livelihood shocks. In the context of the food price crisis and the global economic downturn, it is reasonable to expect a household would adjust its expenditure patterns- including the volumes and varieties of foods consumed. Continuing with our focus on adult hunger in female headed households, we now explore how this experience is related to movements in household expenditures- bearing in mind that female-headed households, on average, have more members, especially children.

Given the general purpose nature of the GHS, it does not ask in-depth questions about expenditure on each food item in the same way as the less frequently conducted Income and Expenditure Surveys (IES). Instead the GHS asks households for information about the total expenditure on broadly defined groups of goods and services in the *month before* the survey. In table 7 below, we report this information for all households in 2008. The average monthly food spending per household in 2008 (weighed by adult equivalent scales) was in the order of R374 and this amounted to 50% of total household spending. These averages hide uneven food spending levels and shares across the reported experiences of adult hunger per household. Whilst seriously hungry household reported the lowest absolute amount of monthly spending on food per adult equivalent (R136), these households also reported the highest share of food spending (67%) in the overall household spending basket. The evidence reported in table 7 clearly illustrates this typical Engel curve phenomenon on food expenditure.

Table 7: Average ADEQ expenditure per month for all households reporting adults hungry, 2008

	Never hungry	Seldom hungry	Sometimes hungry	Often hungry	Always hungry	*Average/ HH*
Food spending per ADEQ	410.83	216.47	183.77	167.99	136.18	373.57
Household spending per ADEQ	1224.14	492.83	377.66	363.89	222.46	1086.67
Average household spending	2749.97	1250.49	1020.34	922.56	693.13	2467.74
Average household food spending	952.87	569.95	499.57	441.97	417.13	878.35
Food expenditure share (%)	48.8%	57.1%	60.1%	58.4%	67.2%	50.6%

Source: StatsSA, 2008, GHS

What happened in the expenditure patterns among female-headed households across the years under investigation? Although table 7 does not track changes in expenditure over time, but across different degrees of adult hunger, it is interesting to note that female-headed households consistently spent less than the average household on food and total household expenditure (per adult equivalent). During the year preceding the crises, spending on food increased across female-headed households reporting never, moderately and seriously hungry adults. However, the expenditure shares were falling, and this is usually perceived as a sign of rising levels of household welfare. Focusing on the first year of the crises, the complete opposite picture emerges: female-headed households substantially raised the amount of money spend on food. At the same time, the share of food expenditure in their total spending basket dramatically increased. This suggests that households were switching larger portions of their total household spending towards food- signaling a coping strategy to counter a severe livelihood shock.

Table 8: Female-headed household total and food spending information (ADEQ) based on reported adult hunger, 2006-2008

	Adults never hungry				
	2006	**2007**	**2008**	***Δ 2006-2007***	***Δ 2007-2008***
Food spending per ADEQ	234.22	256.80	330.36	22.58	73.56
Household spending per ADEQ	619.99	711.22	900.86	91.23	189.65
Average household spending	1274.64	1503.83	1892.27	229.20	388.43
Average household food spending	514.93	581.83	736.42	66.90	154.59
Food expenditure share (%)	*53.7%*	*50.3%*	*53.2%*	*-3.3%*	*2.9%*
	Adults seldom/sometimes hungry (moderately)				
	2006	**2007**	**2008**	***Δ 2006-2007***	***Δ 2007-2008***
Food spending per ADEQ	138.07	152.30	177.28	14.23	24.98
Household spending per ADEQ	282.18	345.98	342.39	63.80	-3.59
Average household spending	724.65	870.64	973.24	146.00	102.60
Average household food spending	360.33	395.73	506.12	35.40	110.39
Food expenditure share (%)	*58.9%*	*57.0%*	*61.0%*	*-1.9%*	*3.9%*
	Adults often/always hungry (seriously)				
	2006	**2007**	**2008**	***Δ 2006-2007***	***Δ 2007-2008***
Food spending per ADEQ	105.10	102.94	131.41	-2.16	28.47
Household spending per ADEQ	183.60	201.00	252.71	17.40	51.71
Average household spending	533.34	622.13	756.74	88.79	134.61
Average household food spending	296.41	312.01	408.52	15.60	96.51
Food expenditure share (%)	*64.0%*	*61.4%*	*61.8%*	*-2.6%*	*0.4%*

Source: StatsSA, various years, GHS

5. Concluding summary

In the last decade, South Africans experienced 2 waves of rapid food price inflation. However, each shock varied in terms of its duration and the knock-on effects on household hunger evidently differed. Official data suggest that during the first wave, 2002-2003, despite the sharp rises in food prices, households did not report any substantial expansion in child and adult hunger. On the contrary, the proportion of households without hungry children and adults constantly expanded until 2007, roughly the start of the second wave.

This paper has demonstrated that the knock-on effects of the global food price crisis and the economic downturn contributed to a slight rise in the proportion/share of hungry South African households between 2007 and 2008. Within a year, capturing the early onset of the crisis, the share of hungry families had risen by 2-3 percentage points. However, a larger share of households evidently reported moderate hunger (measured through the share of households reporting seldom/sometimes hungry) compared to those reporting serious hunger (often/always).

Female-headed households, despite being a less than 40% of South African households, experienced a disproportionately greater impact of the two interacting crises.

In terms of location, women-headed households living in traditional huts in predominantly rural provinces of Eastern Cape and KwaZulu-Natal experienced the sharpest rise in hunger. Furthermore, women headed households in squatter settlements in Gauteng and backyard shacks in Western Cape also reported more hungry adults and children.

Income enables a household to buy food which naturally gives it a critical role in determining quantity (volume) and quality (diverse types) of foods purchased and consumed. The levels of household income directly bear on household food security status. But income sources- particularly salaries and wages, remittances and social grants- also matter because this reveals information about the stability and sustainability of types of incomes flowing into the household. What the available data for 2006-2008 suggest is that all 3 major sources of primary household income have cushioned household level impacts of the intersecting crises. These certainly helped to pull some female-headed households out of serious hunger. Focusing on 2007-2008, however, whilst remittances and social grants accounted for falls household experiences of moderate hunger, a higher proportion of households dependent on salaries and wages reported increasing experiences of moderate hunger.

Appendix: Additional Detailed Data

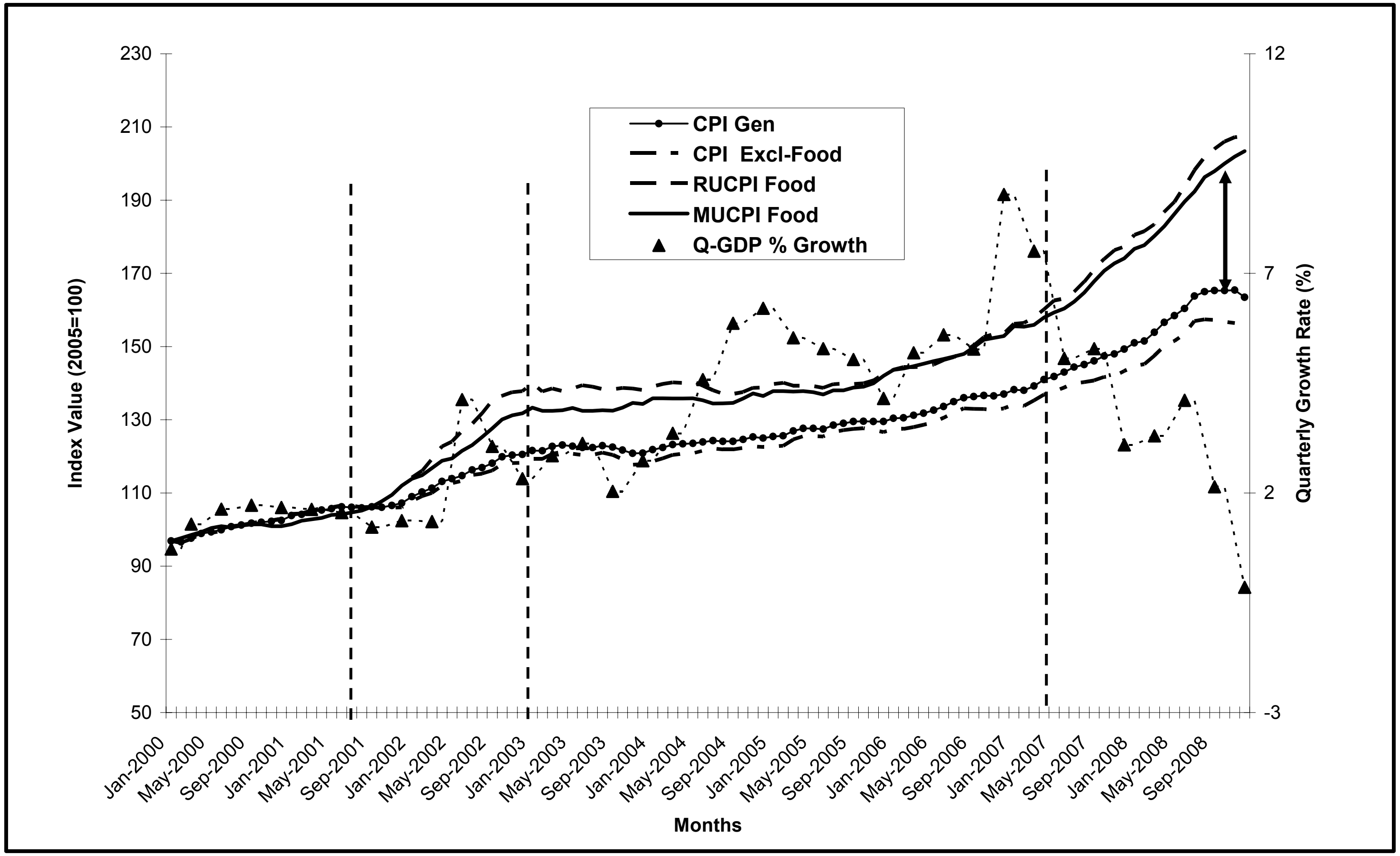

Figure A1: Trends in quarterly economic growth rates and selective price indexes, January 2000- December 2008 (Old CPI series)
Source:StatsSA (2009), online electronic database

Table A1: Urban and Rural prices and differences, 2007

Food items	Size	Urban food price (Rand)			Rural food price (Rand)			Price difference (price/unit)		
		Jan-07	Jul-07	Dec-07	Jan-07	Jul-07	Dec-07	Jan-07	Jul-07	Dec-07
Loaf of Brown bread	700g	4.59	4.96	5.27	4.62	4.82	5.25	0.03	-0.14	-0.02
Loaf of White bread	700g	4.98	5.43	5.85	5.1	5.39	5.88	0.12	-0.04	0.03
Maize meal	5kg	17.39	20.68	20.47	21.4	24.36	24.68	4.01	3.68	4.21
Margarine	500g	7.69	8.15	9.03	8.01	8.56	9.63	0.32	0.41	0.6
Sunflower oil	750ml	7.65	8.21	11.32	8.38	8.82	10.28	0.73	0.61	-1.04
Full cream long life milk	1L	6.51	7.54	8.21	6.85	8.22	8.92	0.34	0.68	0.71
Pilchards in tomato sauce	425g	7.62	8.31	8.42	8.91	9.64	10.14	1.29	1.33	1.72
White sugar	2.5kg	14.38	14.3	14.8	16.28	16.51	18.5	1.9	2.21	3.7
Peanut butter	410g	10.19	11.1	11.87	11.22	11.91	12.6	1.03	0.81	0.73
Total								***9.77***	***9.55***	***10.64***

Source: NAMC (2008)

Table A2: Urban and Rural prices and differences, 2008

Food items	Size	Urban food price (Rand)			Rural food price (Rand)			Price difference (price/unit)		
		Jan-08	Jul-08	Dec-08	Jan-08	Jul-08	Dec-08	Jan-08	Jul-08	Dec-08
Full cream long life milk	1L	9.41	9.62	9.39	8.79	8.31	7.48	0.62	1.31	1.91
Instant Coffee	250g	15.61	17.82	21.33	13.89	16.81	19.15	1.72	1.01	2.18
Loaf of Brown bread	700g	5.38	6.64	6.86	5.35	6.86	7.07	0.03	-0.22	-0.21
Loaf of White bread	700g	6.05	7.45	7.61	5.89	7.58	7.86	0.16	-0.13	-0.25
Maize meal	5kg	24.83	26.03	28.27	19.32	19.17	22.52	5.51	6.86	5.75
Margarine	500g	9.12	11.95	13.56	9.29	12.29	14.44	-0.17	-0.34	-0.88
Peanut butter	410g	12.65	14.26	15.35	11.32	13.38	14.92	1.33	0.88	0.43
Rice	2kg	15.85	21.49	28.14	13.4	21	25.67	2.45	0.49	2.47
Sunflower oil	750ml	11.26	16.29	16.17	12.7	16.35	14.77	-1.44	-0.06	1.4
White sugar	2.5kg	17.48	17.85	19.28	14.79	15.74	16.4	2.69	2.11	2.88
Total								***12.9***	***11.91***	***15.68***

Source: NAMC (2009)

Table A3: Share of households reporting experiences of hunger among children, 2002-2008

Hunger scale	2002	2003	2004	2005	2006	2007	2008
Never hungry	69.2	70.24	73.9	76.85	82.3	85.02	82.57
Seldom hungry	7.12	5.19	5.13	4.75	2.99	2.75	3.32
Sometimes hungry	16.98	17.54	15.81	13.71	12.06	10.21	11.64
Often hungry	4.47	4.3	3.14	2.56	1.6	1.24	1.5
Always hungry	2.24	2.74	2.02	2.13	1.05	0.78	0.97

Source: StatsSA, GHS, 2002-2008

Table A4: Share of households reporting hunger among adults, 2002-2008

Hunger scale	2002	2003	2004	2005	2006	2007	2008
Never hungry	69.25	72.24	76.39	79.2	82.91	86.48	83.52
Seldom hungry	6.75	5.13	4.48	4.36	3.22	2.93	3.22
Sometimes hungry	17.07	16.55	13.67	12.16	11.12	8.61	10.85
Often hungry	4.54	3.75	2.99	2.42	1.7	1.24	1.54
Always hungry	2.38	2.32	2.47	1.86	1.06	0.74	0.87

Source: StatsSA, GHS, 2002-2008

Table A5: Share of households reported children never went hungry in past 12 months, by province 2002-2008

Province	2002	2003	2004	2005	2006	2007	2008
WC	82.83	79.7	85.52	78.29	85.41	83.4	86.77
EC	50.33	57.7	58.7	68.82	78.54	76.99	75.36
NC	70.78	78.71	80.02	78.91	81.57	87.83	83.39
FS	64.54	71.36	74.72	74.88	79.94	85.83	86.62
KZN	70.21	65.38	71.83	78.96	80.7	85.21	78.43
NW	62.28	61.07	66.11	69.78	78.34	80.63	73.65
GAU	81.15	79.63	83.44	84.32	84.04	88.7	87.19
MPU	63.44	64.04	69.84	71.14	83.13	85.16	81.24
LIM	68.22	77.36	78.82	79.29	87.91	91.58	88.33
Total	69.2	70.24	73.9	76.85	82.3	85.02	82.57

Source: StatsSA, GHS, 2002-2008

Table A6: Share of households reporting adults never went hungry in past 12 months, by province 2002-2008

Province	2002	2003	2004	2005	2006	2007	2008
WC	83.05	83.28	88.18	80.84	85.86	85.26	87.86
EC	51.37	58.84	60.24	69.51	78.78	78.77	77.6
NC	70.15	79.72	80.75	80	81.26	88.87	84.65
FS	65.64	70.86	76.84	76.38	79.7	86.32	85.9
KZN	66.05	67.85	74.15	82.08	81.19	87.96	80.78
NW	64	65.3	71.12	71.6	78.38	82.65	75.48
GAU	81.02	79.35	84.39	86.03	85.75	89.04	87.2
MPU	63.52	68.02	71.05	71.77	84.38	85.6	81.66
LIM	68.96	77.42	79.33	81.83	88.12	92.3	88
Total	69.25	72.24	76.39	79.2	82.91	86.48	83.52

Source: StatsSA, GHS, 2002-2008

Households reporting experiences of hunger among children by household income source, GHS2008

household incomes	never hun	seldom hu	sometimes	often hun	always hu	Total
no income	70.42	8.68	6.96	10.3	3.64	100
Salaries wages	88.42	3.16	7.1	1.07	0.26	100
Remittances	82.2	2.13	13.17	1.25	1.25	100
Pension SocGrants	76.99	4.66	14.9	2.14	1.31	100
Farm Income	88.89	1.76	9.35	0	0	100
Oth non-farm inc	89.7	1.98	6.64	0	1.69	100
Total	84.68	3.49	9.61	1.51	0.7	100

Female-headed households reporting experiences of hunger among children by household income source, GHS2008

household incomes	never hun	seldom hu	sometimes	often hun	always hu	Total
no income	62.55	18.63	3.42	15.39	0	100
Salaries wages	88.44	4.01	5.73	1.82	0	100
Remittances	86.88	2.77	10.35	0	0	100
Pension SocGrants	81.51	1.9	12.16	2.41	2.01	100
Farm Income	83.33	0	16.67	0	0	100
Oth non-farm inc	88.75	8.98	2.27	0	0	100
Total	85.38	3.48	8.55	1.94	0.65	100

Table A7: Distribution of 4 major dwelling types for each household by province, 2006 & 2008

Province		Formal brick structures		Traditional huts		Backyard shacks		Shacks in squatter camps		Total	Total
		2006	2008	2006	2008	2006	2008	2006	2008	2006	2008
WC	N	967,300	1,162,991	126	3,447	104,517	138,576	148,086	138,576	1,220,029	1,419,899
	%	*79.29*	*81.91*	*0.01*	*0.24*	*8.57*	*9.76*	*12.14*	*9.76*		
EC	N	940,597	1,018,092	550,787	526,706	23,359	100,000	104,105	100,000	1,618,848	1,670,197
	%	*58.1*	*60.96*	*34.02*	*31.54*	*1.44*	*5.99*	*6.43*	*5.99*		
NC	N	198,957	245,507	3,851	17,252	7,317	19,725	20,123	19,725	230,248	288,334
	%	*86.41*	*85.15*	*1.67*	*5.98*	*3.18*	*6.84*	*8.74*	*6.84*		
FS	N	588,045	657,650	32,533	28,364	48,166	87,079	106,145	87,079	774,889	817,478
	%	*75.89*	*80.45*	*4.2*	*3.47*	*6.22*	*10.65*	*13.7*	*10.65*		
KZN	N	1,571,364	1,552,097	587,753	658,979	92,868	146,765	135,182	146,765	2,387,167	2,409,207
	%	*65.83*	*64.42*	*24.62*	*27.35*	*3.89*	*6.09*	*5.66*	*6.09*		
NW	N	720,428	670,630	25,716	29,788	58,259	149,810	153,376	149,810	957,779	932,504
	%	*75.22*	*71.92*	*2.68*	*3.19*	*6.08*	*16.07*	*16.01*	*16.07*		
GAU	N	1,787,952	2,288,444	6,105	4,483	332,730	319,563	392,291	319,563	2,519,078	2,956,043
	%	*70.98*	*77.42*	*0.24*	*0.15*	*13.21*	*10.81*	*15.57*	*10.81*		
MPU	N	597,679	732,983	53,065	59,286	36,138	67,070	54,593	67,070	741,475	895,891
	%	*80.61*	*81.82*	*7.16*	*6.62*	*4.87*	*7.49*	*7.36*	*7.49*		
LIM	N	1,122,505	1,116,389	115,123	89,633	40,637	54,914	19,725	54,914	1,297,990	1,281,323
	%	*86.48*	*87.13*	*8.87*	*7*	*3.13*	*4.29*	*1.52*	*4.29*		
Total	N	8,494,827	9,444,783	1,375,059	1,417,938	743,991	1,083,502	1,133,626	1,083,502	11,747,503	12,670,876
	%	*72.31*	*74.54*	*11.71*	*11.19*	*6.33*	*8.55*	*9.65*	*8.55*		

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