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- ☐ **Peer reviewed**
- ☐ **Non-peer reviewed**

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This paper aims to provide a synopsis of available national datasets which may contribute to our better understanding of how food security is conceptualized, defined and assessed within the context of South Africa. More specifically, this paper aims to show that a number of such data sets using different parameters have been used to

inform policy and strategies aimed at addressing food insecurity in the country. Methodologically, the paper follows a technical approach by presenting the various surveys mostly in a tabular format highlighting for example the key focus areas/indicators, target audiences, sample sizes, survey time intervals, primary sampling units, and employing Of particular note is that each of these datasets addresses food insecurity in a way that reflects the survey-specific terms of reference of a given national survey and has its own unique methodological approach with varying strengths and weaknesses. In addition, each of these datasets measures different dimensions of food insecurity (FI). By the very nature of the various surveys included in this review- National Food Consumption Surveys (NFCS), Food Insecurity and Vulnerability Information Management System (FIVIMS), General Household Survey (GHS), Income and Expenditure Survey (IES), Labour Force Survey (LFS), Community Surveys and the national HIV/AIDS surveys – the findings from these datasets differ. Comparing such findings, therefore, presents its own challenges and requires due care when attempting to define the prevalence of food insecurity in the country. Based on the technical differences and/or similarities and the key findings, the paper draws conclusions and makes recommendations on the need for a more 'focused and integrated approach' to measure food insecurity. Finally, and despite the potential for the better utilization of the existing datasets, this review argues in favour of a more food security-specific national survey approach.

Client report - Conf.

2008/09

Tania Fraser /Hsrc
2009/05/18 08:37 AM

To Hanlie Rossinger/Hsrc@HSRC
cc
bcc
Subject **New client report for 2008/09-FS - KS**

Dear Hanlie,

A new client report, still confidential - to be included in council report

Tania Fraser
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Outpt tmplte_FS The Assessment of Food Security in SA_Labadarios.doc


KS FS paper as at 22 March 2009.doc

5815

Added

THE ASSESSMENT OF FOOD INSECURITY IN SOUTH AFRICA

Demetre LABADARIOS
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Gina WEIR-SMITH

March 2011

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Human Sciences
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centre for poverty employment and growth

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Acknowledgements, style: acknowledgements heading

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Abstract

This paper aims to provide a synopsis of available national datasets which may contribute to our better understanding of how food security is conceptualized, defined and assessed within the context of South Africa. More specifically, this paper aims to show that a number of such data sets using different parameters have been used to inform policy and strategies aimed at addressing food insecurity in the country. Methodologically, the paper follows a technical approach by presenting the various surveys mostly in a tabular format highlighting for example the key focus areas/indicators, target audiences, sample sizes, survey time intervals, primary sampling units, and employing Of particular note is that each of these datasets addresses food insecurity in a way that reflects the survey-specific terms of reference of a given national survey and has its own unique methodological approach with varying strengths and weaknesses. In addition, each of these datasets measures different dimensions of food insecurity (FI). By the very nature of the various surveys included in this review- National Food Consumption Surveys (NFCS), Food Insecurity and Vulnerability Information Management System (FIVIMS), General Household Survey (GHS), Income and Expenditure Survey (IES), Labour Force Survey (LFS), Community Surveys and the national HIV/AIDS surveys – the findings from these datasets differ. Comparing such findings, therefore, presents its own challenges and requires due care when attempting to define the prevalence of food insecurity in the country. Based on the technical differences and/or similarities and the key findings, the paper draws conclusions and makes recommendations on the need for a more 'focused and integrated approach' to measure food insecurity. Finally, and despite the potential for the better utilization of the existing datasets, this review argues in favour of a more food security-specific national survey approach.

1. Introduction and background

This paper is part of a broader project which focuses on food insecurity in South Africa. More specifically, this paper is one in a series of papers by the Centre for Poverty, Employment and Growth.

Food insecurity is becoming even more difficult to achieve and maintain than in the past in view of the many consequences of the ongoing global credit crisis which continues to affect oil and food prices through farm credits. Food insecurity further threatens the lives of people living in a country undergoing demographic, epidemiological and nutrition transition such as South Africa. In this regard, urgency and priority has to be focused on the proper definition and measure of the term "food insecurity" in the South African context.

Food insecurity can be categorized as either chronic or transitory. In its chronic category, it translates into a high degree of vulnerability, such that it is associated with the consumption of an inadequate nutrient poor diet, ill health, restricted development as well as increased infant mortality (in severe and extreme cases). Consequently, the effects of poor health among poorer people manifest in various ways, and within households are often associated with diminished ability to obtain work and to generate income.[1] Indeed, in South Africa food insecurity may be implicated by unemployment and lack of income.

Internationally, researchers have undertaken to define food security as the ability of people to secure adequate food. More specifically food security has been defined as the access by all people at all times to enough food for active, healthy life.[2] Food security has also been shown to include: i) the availability of nutritional adequate and safe food, as well as ii) an assured ability to acquire acceptable food in a socially acceptable way (e.g. without resorting to emergency food supplies, scavenging, stealing or other such coping strategies). In contrast, food insecurity has been shown to imply a limited access to food, as well as a limited ability to secure adequate food.[3]

Because food insecurity manifests itself in several pathways it may then be regarded as a multi-dimensional phenomenon (a phenomenon involving the availability, accessibility and utilization of food). Further, food insecurity may occur at three different levels, namely: i) at the national, ii) regional, iii) community, and iv) household levels[1]. In this regard, it is more likely that food insecurity may have several determinants / causal factors (that are further graded according to the level at which they influence food security - as the immediate or the underlying causal factors).

Food insecurity causal factors (Figure 1) and the levels at which these causal factors occur include i) the economy or the level of income of the country, community or individuals (considered as the immediate causal factor) and ii) the biology (age, gender, ethnicity / culture) of individuals (also known as the non-modifiable causal factors) as well as the job availability defined as the employment status, education level, socio-demography and political environments (also known as the modifiable causal factors). These causal factors further translate to indicators, which are widely used by researchers / epidemiologists to determine the food security status of the nation, the community and that of the individuals.

[1] This paper will define the national, community and household.

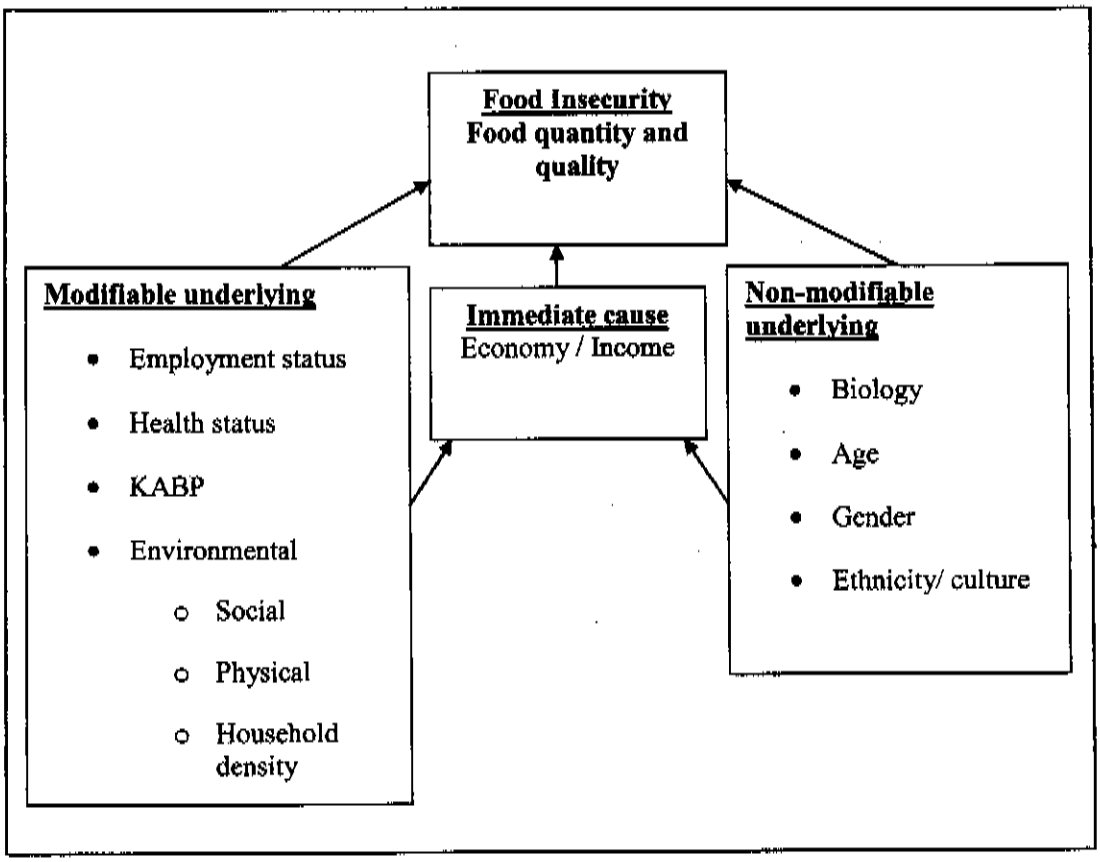

Figure 1: Causal factors of food insecurity HRSC (2009)[2]

2. Definitions of Food Security

2.1 Food security at national level

National food security is internationally **defined** as the condition whereby the nation is able to manufacture, import, retain and sustain food needed to support its nation with minimum per capita nutritional standards. There are **two major indicators** that are used to define the food status of the nation: i) the measure of projected food supplies (calculated as domestic production (Gross Domestic Products, GDP, that also include farming, plus commercial imports minus non-food uses) as well as ii) the measure of the nutrition food supply (which is measured using the difference between projected food supplies and the amount of food needed to support the nation with minimal pay) (FAO, 2003).

[2] KAPB (Health Knowledge, Attitudes, Practices and Beliefs)

These indicators are further influenced by a number of indicators such as: the climate (water deficit in particular); land degradation and desertification (may be caused by intensive farming); land deals (whereby rich countries may buy several hectares of land from the developing countries); World Bank economic status – measured by using Gini Coefficient (that mainly influence the oil prices and imported goods); as well as the human development index (HDI, which measures the human capital through a measure of education and life-expectancy)

2.2 Food security at community level

Community food security is internationally **defined** as a condition whereby the residents in the community can obtain safe, culturally acceptable, nutritionally adequate diet through a sustainable food system that maximizes community reliance and social justice. There are **several indicators** researchers use to examine the community food security status. Amongst these indicators, the **most important** are: i) the location of the community (urban or rural, closer or away from the basic services, used to procure food and access health services), ii) the culture / social norms, health knowledge, attitudes, beliefs, practices, the resources of the community as well as iii) the income and education level of the community. These indicators further determine the ways the community will procure, manufacture (e.g. will choose to farm or not), and the type of food items that will be acceptable for consumption within the community.

2.3 Food security at household level

Household food security is internationally **defined** as the availability of food in one's home and one has access to it. A household is considered food secure when its members do not live in hunger or fear of starvation. The food security of each household may be divided into four ranges that are characterized as: i) high food security (described as the household having access to adequate food constantly without difficulties or anxiety); ii) marginal food security (defined as the household having difficulties at times or anxiety to access adequate food, but the quality, variety, and quantity of their food intake is not substantially reduced); iii) Low food security (the quality, variety, of the person's food intake is reduced, but the quantity of food intake and normal eating patterns are not substantially disrupted); and iv) Very low food security (the quantity of food intake and normal eating patterns are disrupted at certain times of the year, due to the household lacking money and other resources of food).[4]

The household's food security is determined by a **number of indicators** such as the household location (urban or rural community), the household density (measured by the number of people living and sleeping in the same household for more than 5 days in a week), and the economic income status of the household (the source of income, health status of the household occupants, food production or employment status of the breadwinner or breadwinners). These indicators are further influenced by other indicators such as, the distance of the household to the basic services, whether the house is in a formal or informal settlement, the health and education status of the breadwinner(s) within the family, as well as the presence of one or both parents within the household.

Furthermore, Radimer et al. (1990) listed four constructs that were given by individuals of their experiences of food insecurity at household level (Table 1).[5] These constructs were specifically 1) the quantitative aspect of having enough or sufficient food; 2) the qualitative aspect concerning the types and diversity of food; 3) a psychological aspect: food insecurity accompanied by feelings of deprivation or restricted choice for individuals, and by anxiety about the amount and types of food on-hand in the household stores, and 4) a social or normative aspect: an individual evaluates his or her own food

situation in terms of generally accepted social norms, such as eating three meals a day, or being able to purchase foods without having to beg, rely on charity, scrounge or steal food.

Table 1 – Essential components of a measure of food insecurity at the individual and household levels

Component	Individual level	Household level
1. Quantity	Energy sufficiency of intake	Repleteness of household stores
2. Quality	Nutrient adequacy of intake	Quality and safety of on-hand food
3. Psychological acceptability	Feelings of deprivation or restricted choice	Anxiety about food supplies
4. Social acceptability	Normal meal patterns	Conventional sources of food

Adapted from Radimer et al. (1990)

3. Food security within South Africa

South Africa presents a unique and important case for research on food security. It is well documented that before 1994 the majority of South Africans (black African, Coloured and Indian people) were denied political rights and excluded from participating in the economic mainstream, resulting in extreme social inequalities. [6]These inequalities generated by the apartheid system were intense and led to gross human rights violations as well as wide spread social and economic deprivation including poverty.

The advent of democracy in 1994 was associated with major political and economic policy shifts. On the political front South Africa laid the foundations for the design and implementation of policies conducive to democratic consolidation, competitive multi-party engagement, and citizen participation. The framework for political representation is laid out in the founding provisions of the Constitution in Chapter 1.[3] Furthermore, South Africa is an upper-middle income country. Its economy includes a modern financial and industrial sector supported by a well-developed infrastructure, which operates alongside a subsistence informal sector. In the 2009 budget as in the case of previous years a large part of the nation's resources through the budgets of national, provincial and local governments have been allocated to the creation of jobs, the delivery of services, enhancing the productive capacity of the economy, and aiding the poor.[4]

[3] Republic of South Africa. (1996) 'The Constitution of the Republic of South Africa.

[4] Budget Speech 2009, Minister of Finance, Trevor A Manuel, 11 February 2009, www.treasury.gov.za

In spite of the political and economic advances since 1994, South Africa continues to be plagued by poverty, unemployment and, more recently, by steep food and fuel prices, high-energy tariffs and increasing interest rates. These adverse conditions have placed severe pressure on ordinary South Africans already struggling to meet their basic household needs. Indeed, the recent South African literature have highlighted that, despite the recent data confirming the national economic growth (increased real per capita income that as shown by the Income and Expenditure Surveys in 2000 and 2005/6), large discrepancies in income between different ethnic groups of South Africans are still prevalent (May, 2004; Human Sciences Research Council, HSRC, 2003). For instance, 57% of South Africans still live below the poverty index line (meaning that they spend some days in the week without food, Human Sciences Research Council, HSRC, 2008). Moreover, the majority of these individuals are less education and remain disadvantaged with respect to their living conditions and overall wellbeing.[7] [The majority of these disadvantaged individuals are black or of mixed ancestry, reside in informal settlements, and are food insecure.[8,9] These individuals also are also predisposed to a higher risk for both under- and over-nutrition (Labadarios et al., 1999, 2005/8). However, on the other hand, the majority of South African white communities still enjoy a better socio-economic status and are also more likely to have secure food banks in their households than black South African communities. [10] Irrespective of the fact that socioeconomic disparities in South Africa may play a role in the prevalence of food security, the interaction effects between social class and other factors, such as the individual's culture and attitudes, may also play a role in the development of food insecurity [Labadarios et al. (2005)]. In this regard, it may be important to use a more dynamic way of defining and measuring food insecurity in the country, moving away from the linear model that associates food insecurity to be a consequence of an individual's income only.

4. Methodological aspects of national surveys assessing Food security in South Africa

Against this background, various South African researchers have used or applied different methodologies that included comprehensive and more dynamic designs to define and measure food insecurity. In their methodologies, they have carefully selected a number of indicators to evaluate food security based on the purpose of their respective surveys (primarily national and one regional survey). This section therefore seeks to review these methodologies, in effort to summarise the different indicators used which form part of the three different dimensions of food insecurity (availability, accessibility and utilization). The approach adopted is to review firstly national surveys which used more "direct measures" of food insecurity [the National Food Consumption Survey (NFCS, 1999); National Food Consumption Survey: Fortification Baseline-I (NFCS:FB-I, 2005), the Food Insecurity and Vulnerability Information Management System (FIVIMS), and the South African Social Attitudes Survey (SASAS)] followed by national surveys which used more "indirect measures" of food insecurity [the General Household Survey (GHS), Income and Expenditure Survey (IES), Labour Force Survey (LFS), Community Surveys and the national HIV/AIDS survey. It should be noted that the GHS, IES, LFS, and the Community Surveys were implement by Statistics South Africa and form an integral part of informing the South African government's policy formulation processes. It should also be born in mind that there are other datasets at regional, local or community level that may be important in examining food insecurity at the regional level in the country but such studies fall outside the scope of the current review.

4.1 NFCS 1999, NFCS-FB-I, 2005 and SASAS 2008

The first NFCS survey was implemented in 1999 and segments thereof (food procurement, household inventory and hunger) was repeated in the NFCS-FB-I in 2005 and in the Human Science Research Council's (HSRC) SASAS (hunger only) survey in 2008. These surveys in their respective designs measured hunger [Hunger Scale derived from the Community Childhood Hunger Identification Project (CHHIP)], socio-economic variables, dietary intake, anthropometry and selected micronutrient status in their respective (Tables 2a, 2b and 2c).

The NFCS, 1999 was conducted on 2894 children (1-9 years of age) had a nationally representative sample with provincial representation and oversampled (25%) for low socio-economic areas in the country using the Census 1996 data. The sample for the NFCS-FB-1 in 2005 had a similar design, used the Census 2001 data for sampling, consisted of 226 enumerator areas and focused on both children and women of reproductive age.

The SASAS survey, annually implemented by the HSRC, consisted of a sample of 3500 adults and was selected from HSRC's Master Sample. The Master Sample consisted of 1000 census enumerator areas (EAs) based on the Census 2001 data. The 1000 EAs were photographed from the air and maps were produced for all of these areas. These maps were then loaded onto a Geographical Information Systems (GIS) package and each of the EAs was divided into a series of visiting points. These visiting points were then numbered using a serpentine (snake movement) method. The master sample was created in such a way that it made provision for 11 clusters per EA. The topics covered in the questionnaires (Questionnaires 1 and 2) include attitudes towards democracy and governance, poverty and social identity. In order to be able to accommodate a wider variety of topics in the survey, two versions of the principal survey instrument are administered simultaneously. In addition to the standard set of demographic and background variables, the two versions of the questionnaire contain a harmonized Core Module that remain relatively constant from round to round. The aim of this substantive SASAS core is to monitor change and continuity in a variety of socio-economic and socio-political and socio-demographic variables. The rotating element of the survey consists of at least 40 percent of the total items included in each of the two questionnaires, comprising two or more topic-specific modules in each round of interviewing. The Hunger Scale Module formed part of SASAS Questionnaire 2 (Appendix A) and was administered to 3500 respondents.

All three surveys used trained fieldworkers to implement the respective surveys and included different indicators on the underlying causal food insecurity factors (Figure 1) using validated questionnaires.

Table 2a – Key methodological details of the National Food Consumption Surveys (1999)

Aims

The aim of this survey was to collect baseline information on the food consumption patterns in children for the formulation of appropriate policy guidelines for food fortification, as well as for the development of appropriate nutrition education material for children in South Africa.

Primary Objectives

To determine usual food consumption of children aged 1 – 9 years (12 – 108 months) in South Africa
To assess the usual nutrient intake of children aged 1 - 9 years in South Africa
To identify factors impacting on food consumption
To determine anthropometric status
To determine the prevalence of hunger

Secondary Objectives

Using the baseline data obtained from the primary objectives, propose and/or recommend:

Appropriate food vehicle(s) for fortification
Appropriate material for nutrition education

Design	Population size and sampling (N= 2894 meeting inclusion criteria)	Instruments	Indicators/Variables related to food insecurity
A cross-sectional survey of a nationally representative sample with provincial representation of children aged 1 – 9 years in South Africa using the 1996 Census data	All the children aged 1 - 9 years in South Africa Oversampled by 50% (25% for low socioeconomic status and 25% for subjects being away from home) In total the study consisted of 156 enumerator areas (EAs), 82-urban and 74 non-urban	The Sociodemographic Questionnaire (S-DQ) The 24-Hour Recall Questionnaire (24-H-RQ) The Quantitative Food Frequency Questionnaire (QFFQ) The Food Procurement and Household Food Inventory Questionnaire (FPHIQ) The Hunger Scale Questionnaire (HSQ) Anthropometry (Weight, Height)	Socio-demography Body composition Dietary/nutrient intake Food procurement Household inventory Household level insecurity Individual level insecurity Child hunger

Source: Derived from the NFCS 1999 and KS at HSRC

Table 2b – Key methodological details of the National Food Consumption Survey-Fortified Based (NFCS:FB-1, 2005)

Aim

The aim of this National Food Consumption Survey – Fortification Baseline (NFCS:FB-I) was to define the anthropometric, iron, iodine, zinc, folate and vitamin A status of children aged 1 - 9 years and women of reproductive age in South Africa as well as the knowledge, attitude and practices with regard to food fortification and fortified food products.

Objectives

Determine in children aged 1 – 9 years and women of reproductive age (16-35 years) in South Africa, the:

Anthropometric status.

Vitamin A and iron (children 1 – 9 years old).

Zinc status (children 3 – 9 years old).

Iodine status (children 5 – 9 years old).

Vitamin A, iron, iodine and folate status (women 16 – 35 years of age).

Prevalence of the use of food products fortified with vitamin A thiamin, riboflavin, niacin, folic acid, iron and zinc at the household level, on the basis of detecting vitamin A in maize.

Prevalence of the use of iodized salt at the household level.

Prevalence of the presence of vitamin A in fortified maize.

Knowledge, attitude and practices regarding the use of fortified products as well as awareness of and access to such food products.

The prevalence of hunger

Secondary Objectives

Using the baseline data obtained from the primary objectives, propose and/recommend:

Appropriate nutrition education messages and / or concepts

Table 2b (continue) – Key methodological details of the National Food Consumption Survey-Fortified Based (NFCS:FB-1, 2005)

Design	Population size and sampling $N = 2469$ households with a child and a woman meeting inclusion criteria	Instruments	Indicators/ Variables related to food insecurity
Cross-sectional survey of nationally representative sample of children 1-9 years in South Africa using the 2001 Census data	1-9 year olds and their mothers within the reproductive age (16-35 year olds) Oversampling by 25% subjects being away from home In total the study consisted of 226 enumerator areas (EAs), 107-urban and formal, 23- urban and informal, 15- rural and formal and 81 tribal	Socio-demographic questionnaire Knowledge Attitudes and Beliefs (KAB) regarding food fortification Food procurement HH Inventory The Hunger Scale Questionnaire (HSQ) Anthropometry (height and weight)	Socio-demography KAB Food procurement Household inventory Household level insecurity Individual level insecurity Child hunger

Source: Derived from NFCS:FB-1, 2005 and KS at HSRC

Table 2c – Key methodological details of the South African Social Attitude Surveys (2008)

Aims

To collect information on people's attitudes, beliefs and behaviour patterns in all nine provinces across South Africa. More specifically, SASAS aim to monitor change and continuity in a variety of socio-economic, socio-political and socio-demographic variables.

Design	Population size and sampling (N= 3500 adults meeting inclusion criteria)	Instruments	Indicators/ Variables related to food insecurity
National representative household survey	The sample consisted of 7000 (3500 for questionnaire 1 and 3500 for questionnaire 2) adults aged 16 and older (with no upper age limit), regardless of their nationality or citizenship, in households geographically spread across the country's nine provinces.	Questionnaires covered: Attitudes towards democracy and governance Poverty Social identity Perceptions crime Race relations Questionnaire 2 covered: Socio-demographic variables including The Hunger Scale Questionnaire (HSQ)	Household level insecurity Individual level insecurity Child hunger Psychological factors / anxiety (Appendix A for the Hunger Scale)

Source: KS at HSRC:

4.1.1 Understanding the definition of hunger

Hunger has an impact on health and family planning, human suffering and behaviour, environment, economic growth and politics. The phenomenon loosely labeled as *hunger* in the 1980's is now being referred to as food security or food insecurity. Food security is defined as access by all people at all times to enough food for an active life and as a minimum includes the following:

- the ready availability of nutritionally adequate and safe foods; and
- the assured ability to acquire personally acceptable foods in a socially acceptable way.

A questionnaire-based measure was used to determine domestic hunger similar to the one that has been used in the Community Childhood Hunger Identification Project (CCHIP). This measure (CCHIP hunger index) defines hunger as the mental and physical condition that comes from not eating enough food, due to insufficient family, community and economic resources. This definition of hunger offered by CCHIP, as well the measurement thereof, focuses on food insufficiency and insecurity due to constrained resources. The validation findings of the CCHIP hunger index reported in the literature have shown it to meet internal and external criteria within a theoretical model of domestic hunger. The CCHIP hunger index measured by an additive scale can therefore be regarded as sufficiently sensitive to identify chronic or sub-clinical undernutrition among families, at least as it relates to poor families in the United States of America[7].

The CCHIP hunger index (Table 3) is composed of eight questions that investigate whether adults and/or children are affected in the household (HH) by food insecurity, food shortages, perceived food insufficiency or altered food intake due to constraints on resources. In addition, for each aspect of hunger [i.e. in all eight main questions (Q) of the questionnaire], two sub-questions were asked to determine the extent of such food insecurity over a period of 30 days. These questions determine the temporal severity [Q n(a)] and periodicity [Q n(b)].

For example:

Question 1: Does your household ever run out of money?

(a) In the past 30 days?

(b) 5 or more days in the past 30 days

Table 3 Hunger questions and their interpretation (bold italics) in the CCHIP hunger index[7]

Question no	Phrased question (Area of investigation)
1	Does your household ever run out of money to buy food? ***(HH level insecurity: Food uncertainty)***
2	Do you ever rely on a limited number of foods to feed your children because you are running out of money to buy food for a meal? ***(HH level insecurity: Qualitative component)***
3	Do you ever cut the size of meals or skip meals because there is not enough money for food? ***(Individual level insecurity: Quantitative component)***
4	Do you ever eat less than you should because there is not enough money for food? ***(Individual level insecurity: Quantitative component)***
5	Do your children ever eat less than you feel they should because there is not enough money? ***(Child hunger: Quantitative component)***
6	Do your children ever say they are hungry because there is not enough food in the house? ***(Child hunger: Quantitative component)***
7	Do you ever cut the size of your children's meals or do they ever skip meals because there is not enough money to buy food? ***(Child hunger: Quantitative component)***
8	Do any of your children ever go to bed because there is not enough money to buy food? ***(Child hunger: Quantitative component)***

A negative response (No) to all eight questions in the questionnaire was assumed to mean a "food secure" HH.

A score of one to four i.e. 1-4 affirmative/positive answers (Yes) out of a maximum of eight (the eight questions in the questionnaire) indicated that the family was at "risk of hunger", because it showed at least one sign of a food shortage problem.

A score of five or more, i.e. five affirmative/positive (Yes) responses out of a maximum of eight (the eight questions in the questionnaire), indicated a food shortage problem affecting everyone in the HH. This score indicated that:

five or more different signs of hunger were present in the HH; and

at least one of these signs of hunger directly affected the children in the HH[7].

These families could be considered as "hungry".

4.2 The FIVIMS Livelihood Survey 2006

The Livelihood Survey took place in 2006 and focused on interviewing households in the Greater Sekhukhune area. The sample frame had the following characteristics:

- A once-off cross sectional (rather than a tracking) survey was used for the livelihood survey;
- The target population was all adults 18 years and older;
- The sampling frame used was the census enumeration area (EA) boundaries from the 2001 census linked with demographic estimates from 2005;
- The primary sampling unit (PSU) was the enumeration area from the 2001 census;
- The secondary sampling unit (SSU) was the household and the ultimate sampling unit (USU) was an adult 18 years or older;
- The Measure of Size (MOS) was estimated number of households in the EA;
- The reporting domain was the whole of Sekhukhune;
- No explicit stratification was initially used. The ordered implicit stratification was municipality code, geography type and sub place code. In total 75 PSU's (i.e. EA's) were drawn. Sample allocation used was probability proportional to size (pps) and eight visiting points (i.e. SSU) were selected per PSU;
- Sample size was 500 households for the main survey and 50 households for the verification survey.

A total of 65 enumeration areas (EAs) were selected from the different settlement types (i.e. commercial farms, tribal settlement, urban settlement) within the five local municipalities (Table 4). Because of the large numbers of people living in the rural tribal areas most of the EAs were selected from these settlements (53 EAs). In comparison, only 10 EA's were selected from the commercial farming areas and only one EA selected from the few urban areas found within Sekhukhune (HSRC, 2007). The final realised sample was 499 households.

Table 4 – Number of EAs (PSUs) selected by municipalities and area type

Design	Population size and sampling N = 500 households	Indicators/ Variables related to food insecurity
Fetakgomo Municipality	Tribal Settlement	5
	Sub-Total	5
Greater Groblersdal Municipality	Farm	3
	Tribal Settlement	15
	Sub-Total	18
Greater Marble Hall Local Municipality	Farm	4
	Tribal Settlement	5
	Urban Settlement	1
	Sub-Total	11
Greater Tubatse Municipality	Farm	2
	Tribal Settlement	14
	Vacant	1
	Sub-Total	16
Makhudutamaga Municipality	Tribal Settlement	16
	Vacant	1

Source: HSRC 2007:

Table 4 (continue) – Number of EAs (PSUs) selected by municipalities and area type

Design	Population size and sampling $N = 500$ households	Indicators/ Variables related to food insecurity
	Sub-Total	16
	Grand Total	65

Source: HSRC 2007:

4.2.2 Questionnaire

The livelihood questionnaire of 2006 asked extensive questions about food consumption, food production, food availability and anthropometric status of children in the household (Table 5). Specific measures of food security included (HSRC, 2007):

- Household dietary diversity score (HDSS), which was used as a proxy measure of the socio-economic level of the household; an increase in the average number of different food groups consumed provide a quantifiable measure of improved household food access. [11]
- Months of inadequate household food provision, which collected information for the last 12 months and recorded the months during which the household experienced a lack of food such that one or more members of the household had to go hungry. This indicator showed seasonality of household food access. [12]
- The Household Food Insecurity Access Scale (HFIAS), which was used to assess the prevalence of household food security and to detect changes in the household food insecurity situation of a population over time. [13]

Table 5 – Questions on food security in the FIVIMS Livelihood survey

Question no.	Question posed	Sub-question	Response options
1.8a	Does person (primary school learners) get free food from a school-feeding scheme		1 = Yes, usually 2 = Yes, sometimes 3 = No, never 4 = Don't know
4.1 Household Food Insecurity Access Scale (HFIAS)	For each of the following questions, consider what has happened in the past 30 days.		
	A. Did you worry that your household would not have enough food?		1 = Never 2 = Rarely 3 = Sometimes 4 = Often
	B. Were you or any household member not able to eat the kinds of food you preferred because of a lack of money?		
	C. Did you or any household member eat just a few kinds of food day-after-day owing to a lack of money?		
	D. Did you or any other household member eat food that you preferred not to eat because of a lack of money to obtain other types of food?		
	E. Did you or any household member eat a smaller meal than you felt you needed because there was not enough food?		
	F. Did you or any other household member eat fewer meals in a day because there was not enough food?		
	G. Was there ever no food at all in your household because there was not money to get more?		
	H. Did you or any household member go to sleep at night hungry because		

	there was not enough food? I. Did you or any household member go a whole day without eating anything because there was no food?		
4.2	Did the members of your household…		
	A) Children < 5 years B) School children C) Adults D) Elderly	1 Eat breakfast yesterday? 2 Eat lunch yesterday? 3 Eat supper yesterday?	1 = Yes 2 = No 3 = Don't know
4.3	In which of the last 12 months did you experience a lack of food or money such that one or more members of your household had to go hungry?	August September October November December January February March April May June July	1 = Yes 2 = No

Quest. no.	Question posed	Sub-question	Response options
4.4	The types of foods that you or anyone else in your household ate yesterday or over the last 7 days during the day and night? • Did you or any one else in the household eat ..... yesterday? • During the past seven days, how many days did you or anyone in your household eat .....? • What is the main source of food eaten for each food group?	A = Maize or maize products B = Other cereals C = Roots and tubers D = Vitamin A-rich fruit & vegetables E = Other vegetables F = Other fruit G = Meat , poultry & fish H = Eggs I = Legumes, nuts & seeds J = Dairy K = Oils and fat L = Sugars M = Beverages	Source: 1 = Purchase 2 = Own production 3 = Hunting 4 = Gathering 5 = Gift 6 = Exchange 7 = Barter 8 = Food aid
4.5	Where do you usually buy food for your household?		1 = Small trading store situated less than 1 km from home 2 = Small trading store situated more than 1 km from home 3 = Supermarket in town 4 = Informal market at taxi rank 5 = Other, specify

Source: HSRC 2007.

The questions in Section 4 of the questionnaire dealt with a number of food security issues including whether children were part of a feeding scheme at school, regularity of having food in the house, recent specific meals, months during which hunger was experienced, types of food eaten and how it was obtained, usual place of obtaining food.

4.3 South African General Household Surveys

The General Household Survey (GHS) is an annual survey conducted by Statistics SA since 2002 (Table 6). The Government of South Africa identified the need to monitor levels of development in South Africa as well as the performance of programmes and projects on a regular basis, which led to the development of the GHS.

4.3.1 Research Design

The main aim of the General Household Survey (GHS, 2007) was to measure various areas of South African households' living conditions together with the quality of service delivery in key services sectors (StatsSA, 2008) on an annual basis. The survey looked at a number of key areas, including, education, health, employment, housing, household accesses to services and tourism (Appendix B for definitions and further detail).

4.3.2 Sampling Design

The sample design was based on a Master Sample designed in 2003, for household sample surveys such as the Labour Force Survey, Income and Expenditure Survey and General Household Survey. The survey employed a 2-stage stratified area probability sample design. In the first stage, Primary sampling units (PSUs) were randomly selected using Probability Proportional to Size (PPS) techniques. In the second stage, sampling Dwelling units (DUs) were randomly selected as Secondary Sampling Units (SSU). Enumeration Areas as delineated for the Census 2001 formed the basis of the PSUs. The sample of approximately 3000 PSUs were selected and included 34 092 households of which 29 311 were successfully interviewed. Strict procedures were followed in order to best select a nationally representative sample of households in South Africa, including, statistical calculations to allocate sample sizes to strata, weighting (the same procedure since 2002) and the mid year estimates were adjusted to give population estimates for July 2007.

4.3.3 The GHS questionnaire

The questionnaire was administered in the form of face-to-face interviews four weeks after households were visited and informed about the survey as part of a publicity campaign. A total of 784 enumerators and 260 supervisors participated in the conduction of the survey across all nine provinces in South Africa. Additionally 46 quality assurors monitored and ensured that the questionnaires were of a high quality. National training of those involved, took place over 4 days, while provincial training was conducted in 40 localities over 5 days.

The questionnaire which included 169 questions and covered five key areas and included sections on:

> ***Education*** (e.g. percentage of people attending an educational institute, Percentage not attending, percentage not attending for financial reasons, teenage girls, those older than 20 years, percentage with no formal education, percentage with Grade 12)

Health (Medical aid coverage, percentage of those injured/ill and consulted a health worker, percentage of those who had not contacted a health worker) and ***Disability*** (percentage of total population)

Employed persons (aged 15 – 65 years, Source of financial support for those not employed, e.g. grants and pension)

Housing (housing types and ownership) and ***Household access to services and facilities*** (sources of energy, sanitation and refuse removal, water access and use, household assets, food adequacy, social assistance and security services

Non-remunerated trips undertaken by the household (number of trips taken, time spent on these trips)

(Appendix B).

Table 6: General Household Survey (2007)

Aim / Objectives

To measure multiple facets of the living conditions of South African households and the quality of service delivery in a number of key service sectors.

The GHS covers 6 areas:

- Education
- Health
- Work and unemployment activities
- Housing
- Household Access
- Non-remunerated trips taken by the household

Design	Time interval	Population size and sampling	Instruments	Indicators/ Variables related to food insecurity
Multi stage stratified random sampling (of dwelling units), using probability proportional to size principles. First level stratification was based on province (9 provinces) Second level stratification was based on district council (53 dsitricts) Face-face-interviews took place four weeks after sampled dwellings were visited for the first time to inform household members about the survey.	annually	The target population of the survey : All private households in all nine provinces as well as residents in workers' hostels A total of 34 902 sampled households were visited nationally of which 29 311 (84.0%) were successfully interviewed	The General Household Survey Questionnaire	Demographic Information (name, sex, population group, etc.) Biographical information (education, health, disability, welfare) Activities related to work and unemployment Non-remunerated trips undertaken in the 12 months prior to the survey Household information (type of dwelling, ownership of dwelling and other assets, electricity, water and sanitation, environmental issues, services, transport, expenditure etc.) All the above sections comprehensively cover living conditions & service delivery.

Source: Statistic South Africa

4.4 South African Community Survey (2007)

The community survey is a multi-sectoral (consists of different management structures) survey undertaken as a nationally representative survey that was carried out by Stats SA in February 2007 (Table 7). This survey was very unique and important as it showed that the SA population increased from the census data produced in 2001 (44.8 million) by 8.2% (i.e. SA pop in 2007= 48.5 million). The key focus to this survey were the distribution of education level of the population aged ≥20 years; Household assets in working order (such as the radio, TV, computer, refrigerator; household use of electricity, household access to pipe water; as well as the type of toilet facility was recorded. The procedure used in selecting the HH was rigorous, thus minimizing miscalculation of households.

Table 7: Community Survey (2007)

Aim
To provide demographic and socio-economic data of the SA community according to municipal level
Objectives
• Provide data at lower geographic levels • Build human management and logistic capacity for census 2011 • Establish primary base for mid-year population project

Design	**Time interval**	**Population size and sampling**	**Instruments**	**Indicators/ Variables related to food insecurity**
Large-scale survey De jure and de facto approach	First of its kind apart from the census generated data in 2001. it also took cognisance of the challenges experienced in 2001	274 348 dwelling units who returned completed questionnaires Pilot survey done in Feb 2006 (18 999 Dwelling units	The Community Survey (CS) Questionnaire developed in line with the household (HH)-based survey questionnaire conducted by Stats SA	Total SA population Education level of the population aged ≥20 years; Ability and disability in the population Household assets in working condition (such as the radio, TV, computer, Refrigerator; HH using electricity, HH with access to pipe water The type of toilet facility each HH has)

Source: Statistic South Africa

4.5 South African Income and Expenditure Surveys (IES)

These surveys were conducted from September 2005 to August 2006.

4.5.1 Aims of the IES

The IES main aims were to help inform the Consumer Price Index (CPI) through identifying goods and services to be included in the CPI (Table 8). The additional aim was to "collect and provide information regarding the income, acquisition and expenditure patterns of a representative sample of households", and "provide an independent source of information required to estimate the final private consumption expenditure component of National Accounts".[14] (Appendix C).

4.5.2 Sampling of the IES

The sampling frame used was a Master Sample based on the 2001 Population Census Enumeration Areas. The Master Sample was national coverage of all households in South Africa, targeting all qualifying persons and households in the country. The focus of this sample was on private dwelling units and workers living in workers' quarters in the country. A sample of 3000 primary sampling units (PSUs) was drawn and eight dwelling units were selected from each PSU. The sample was then evenly spread over 12 survey periods of one month each. At the same time, the sample was kept nationally representative in each quarter. A total of 22 617 households were sampled. The Master Sample is used for all household surveys that are conducted by Statistics South Africa.

Table 8: Outline of the Income and Expenditure Survey (2005/6)

Aim / Objectives

1. To update the goods and services required for the compilation of the Consumer Price Index (CPI)
2. "collect and provide information on income, acquisition and expenditure patterns of a representative sample of households"
3. "provide an independent source of information required to estimate the final private consumption expenditure component of National Accounts" (Statistics South Africa, 2008)

Design	Time interval	Population size and sampling N?	Instruments	Indicators/ Variables related to food insecurity
	Every five years	private dwelling units and workers living in workers' quarters 22 617 households	main questionnaire (series of interviews) weekly diary (booklet filled in by respondents recording daily purchases).	kinds and amounts of items and services acquired by households kinds of sources of income acquired by households (monetary

		or in-kind),
	summary questionnaire (summarized record of the household's total consumption expenditure on each item)	details of how they spent this income.

Source: Statistic South Africa

4.5.3 Questionnaire design

The data collection instruments employed used items to extract three categories of information: the kinds and amounts of items and services acquired by households in South Africa; the kinds of sources of income acquired by households in the study (this includes monetary or in-kind), and the details of how they spent this income.

The survey was conducted over the course of one year from September 2005 to August 2006. Data collection involved visiting households at the selected dwelling units by trained fieldworkers, while quality assurance processes took place at every stage of fieldwork.

Three data collection instruments were used, namely the main questionnaire, the weekly diary, and the summary questionnaire. The main questionnaire was conducted by means of an extensive interview that was divided into five parts and took place over five separate occasions. The weekly diary was a booklet left with the responding household to record its daily purchases for four weeks. Respondents were to record the nature, type, source and purpose of the item. Lastly, the summary questionnaire was filled in by fieldworkers. This was a summarized record of the household's total consumption expenditure on each item for the survey month.

4.5.4 Questionnaire items

The survey sought to elicit information on the kinds of purchases made by households; the sources of income; and ways of spending this income. Specifically, the main questionnaire consisted of items to determine household characteristics, including area where purchase made and type of retailer purchased from; categories of consumption expenditure, and income of household members. The weekly diary was designed for gathering information on purchases made by the household on a weekly basis, including the nature, type, source and purpose of the item. Lastly, the summary questionnaire was constructed to enable the fieldworker to record the household's total consumption expenditure on each purchased item for the survey month.

4.6 South African Labour Force Survey 2008

The survey is based on the information collected during the 2001 Population Census by Statistics South Africa (Stats SA).[15] The aim of the survey was to review the methods used in these survey in an

effort to see whether the definition of items used in the survey were similar to the international definition of job market and labour (Table 9) of this paper outlines these procedures.

Table 9: Labour Force Survey (2008)

Aim / Objectives				
To collect the quarterly information about persons in the labour market i.e. those employed, unemployed and those who were economically active				
Design	**Time interval**	**Population size and sampling N= 3080 dwelings**	**Instruments**	**Indicators/ Variables related to food insecurity**
Stratified 2-stage design 1st stage - Probability proportional to size sampling of primary units and 2nd stage- systematic sampling of dwelling units	Quartely	3080 primary sample units of dwellings in South Africa	Labour Force Survey Questionnaire	The particulars of each person in the household ≥15 years, Their economic activities in the past week, Their unemployment and in-economic activities, Their main activity in the past week (this section requires both personal and the employer's responses)

Source: Statistic South Africa

4.6.1 Research design and sampling

The main aim of the LFSs were to collect the quarterly information about the South African persons aged 15 years and older that were in the labour market, i.e. those employed, unemployed and those who were economically active (Appendix D).

The survey then employed a stratified 2-stage design (that included two phases of population selections namely: 1st stage - probability proportional to size sampling of primary units and the 2nd stage - systematic sampling of dwelling units. In total, approximately 30 000 household / dwellings were included in the surveys. However, in this particular survey 3080 primary sample units are included. By just looking at the procedures employed by the researchers in selecting their population, we may be able highlight the rigorous measures undertaken with sample calculation as well as the inclusion of the check/pass points (such as the cluster-dwelling-selection, revision for dwelling growth, estimation of demographic groups, weighting procedures of all household surveys used using StatMx for calibration, controlling for missing data and identifying non-response of the participants with a blank space) which helped in controlling for sampling errors.

Further, these surveys were done quarterly following the recommendations by the Statistics South Africa (SSA). Such frequency of data collection on its own considered the job market instability and also controlled for / minimized the confounding effects of participants' absenteeism in i.e. ensuring that the absent household members have a better chance of inclusion at their usual residence.

4.6.2 Questionnaire

The surveys employed the interviewer-interviewee procedures whereby persons got interviewed by trained fieldworkers (comprised of permanent and contract staff). The data collecting process was publicized to increase awareness about the survey as well as attracting media and Stats SA staff to be present at the area of data collection. The questionnaire was in English and was translated into ten official languages.

Each item in the questionnaire was conceptualized using different sub-indicators that strengthened the proper definition of the item by including different types of jobs or activities done in the South African context. The survey thus provided estimates to the number, gender, culture or ethnicity of respondents involved in agriculture for own account (subsistence agriculture). Furthermore, and regarding employment status the questionnaire covered the main work activity in the last week the South African persons aged 15 and above engaged in. This item had been further broken down into 24-sub-items that seek to elicit information regarding: i) the person' personal details about the work that they do, the type of work they do, hours they spend at work and the area of business they work; ii) the employers' contribution to securing the income of the particular employee, iii) the contribution of the job into the nation's economy (registration and contribution of the business to the nation's revenue using the income tax). Other work activities included activities involving the market production, asked as the work done for pay or profit; as well as the activities done for non-market production, also asked as work done for the benefit of the household, including subsistence farming, household gardening, fetching wood for use as cooking fuel. In relation to unemployment status, the questionnaire was broken down in 19 sub-items eliciting information about the kind of unemployment persons were in, whether they were the job-seekers, job-losers (also indicating the type of job they used to work in, reason for job loss and the time interval ever-since the last job), job-leavers, job-re-enterers, those in insurance funds/government pension funds.

4.7 HIV / AIDS Surveys

The first and initial burden of disease estimates in SA was completed in 2000 and estimated the causal factors of mortality in South Africa.[16] The study documented that the second causal factor of deaths in

SA was the HIV/AIDS accounting for 30% deaths in all age groups and especially in young adolescent girls and women in their reproductive years . The data used in this study were obtained from the 2000 ASSA data. In the latter study, it was also outlined that HIV/AIDS was more prevalent in under-privileged communities of South Africa. These findings inspired the government to formulate policies directed at managing and treatment of HIV / AIDS in the most vulnerable groups as well as at women during their reproductive years, in an effort to prevent mother-child transmission. Health status (Figure 1) is known to impact on food security by adversely affecting the nation's taskforce / agriculture, disease mediated loss of income and dependency.

In this regard, the survey done in 2007 on the prevalence of HIV and syphilis in pregant women is based on the estimates of HIV prevalence in South Africa that is also based on the surveillance among pregnant women attending sentinel clinics (ANC). The sentinel sites were selected based on their size, as well as closeness to the blood analysis sites. As such, the total population included in this study included 9 provinces with the respondents' sample size consisting of 36 000 pregnant women. The study followed Good Clinical Practice (GCP) (for flabotomy – drawing of blood, transportation and HIV / syphilis testing).

5. Results and Discussion

Clearly, the measurement of food insecurity in South Africa includes a wide range of different indicators from various research domains. Consequently, a meaningful assessment of food insecurity in the country is extremely difficult since each of the datasets reviewed in this study has its own unique methodological approach with differing strengths and weaknesses. In addition, each of these datasets measure different dimensions of food insecurity. For instance, the national HIV/AIDS surveys measures HIV prevalence in South Africa among pregnant women attending sentinel clinics. The underlying hypothesis is that the health status of individuals, communities and nations impacts on their ability to secure food. The Labour Force Survey (LFS) is based on information collected during the 2001 Census conducted by Statistics South Africa. Moreover, information was collected on those who were employed, unemployed and those economically active thus highlighting just how different causal factors influence income. Furthermore, it was assumed that there is correlation between access to income and an individual's ability to access food. The Income and Expenditure Survey (IES) provided information on income, acquisition and expenditure patterns of a representative sample of households. The IES is used to give a perspective on food expenditure, food basket composition and dietary diversity. The General Household Survey is often used to examine which households is experiencing hunger and what the characteristics and locations of these households are. Furthermore, the NFCSs 1999 and NFCS-FB-1 2005, for instance, provided information regarding food security risks as determined by deficiencies associated with different macronutrients, important micronutrients, as well as the total energy intake of individuals, communities and households. In addition, information about the presence of hunger and knowledge, attitude and practices regarding the purchase (implying ability to buy and hence relative food security) use of fortified products as well as awareness of and access to such food products were assessed.

In an attempt to impart an impression on food security in the country, the food insecurity relevant variables and their documented prevalence in the respective surveys has been tabulated (Table 10). The assumption has been made that all unemployed people for instance are food insecure. Such an

assumption may be argued as being erroneous, and indeed it is. The interpretation of data should therefore be made with extreme caution and in any case be seen to be trends in evidence rather than evidence per se. Irrespective, the variety of the variables used for the purpose of estimating food insecurity may be seen as collectively strengthening the existence of food insecurity in the country rather than its extent. For the purposes of comparison, a study specific Food Insecurity Index (FII) was defined such that if the prevalence of unemployment, for instance, was 30% in a given survey, then the prevalence of food insecurity would also be 30%.

Table 10: Summary of survey findings in terms of FS

Survey	**Indicators/ Variables related to food insecurity**	**Key findings in relation to food security -- Food Insecurity Index (%)**
Labour Force Survey (Quarter 4, 2008)	Unemployment rate	21.9%
General Household Survey (2007)	Unemployment rate	24.8%
General Household Survey (2007)	Perceptions of hunger among adults decreased from 6.9% to 2.5% from 2002 to 2007	2%
General Household Survey (2007)	Perceptions of hunger among children decreased from 6.7% to 2% from 2002 to 2007	2%
NFCS 1999	Hunger Scale (Experience of hunger)	50%
NFCS-FB, 2005	Hunger Scale (Experience of hunger)	51.6%
SASAS 2008	Hunger Scale (Children say they are hungry because there is not enough food to eat)	18.3%
	Hunger Scale (Children ever go to bed hungry because there is not enough money to buy food?	11.4%
	Hunger Scale (Does your household ever run out of money to buy food?)	32.7%

FIVIMS 2006	Running out of money to buy food	63.6%
Income and Expenditure Survey (Sept. 2005 – Aug. 2006)	Households with average income of R4 314 in a year / R360 each month (households within the lowest income decile, Decile 1)	0.2%
	Households with average income of R13 300 and below in a year / R1 108 and below each month (households within the lower income deciles, Deciles 1-3)	3.6%
NFCS-FB, 2005	Poor households with an income between R1- R1000	55%
Community Survey (2007)	Households with no access to electricity	20%
Community Survey (2007)	Households with no access to piped water	11.4%

Source: Statistic South Africa

See Appendix E for more details on the key findings of each survey. Also see Appendix F which has identified additional variables that may be used for comparative purposes of the state of food security in South Africa.

The key findings of each survey indicate a commonality in:

- A relative lack of job opportunities and hence high unemployment
- Income and expenditure disparities which adversely impact on people's ability to purchase food
- A high percentage of perceived hunger
- A relative overall improvement in access to basic services associated with measures of improved quality of life, particular among the poor.

There are of course many reasons which mitigate in favour of the food insecurity prevalence being higher that that indicated in Table 10 on the basis of the assumptions made. For instance, South Africa, like the rest of the world, felt the impact of the volatility of the world markets between 2007 and 2009. In particular, steep food and fuel prices, high-energy tariffs and increasing interest rates have

placed severe pressure on ordinary South Africans already struggling to meet their basic household needs. It was further indicated that South Africa's rural poor spend 62 percent of their disposable income on food.[5] Statistics South Africa also argued that the increase in the headline inflation rate between April and May 2008 are attributed to increases of the Consumer Price Index (CPIX) for food and transport[6]. In addition, the Competition Commission has uncovered a food price-fixing scheme by big companies, which may have further exacerbated the food crisis and over-burdening the poor.

These adverse living conditions elicited criticism from all sectors of South African society. For example, the Congress of South African Trade Unions (Cosatu) is of the view that the South African government's policy of interest rates hikes has had a disastrous impact on the people of South Africa. Cosatu in this regard argued that the rate hikes contributed substantially to the slowing down of the South African economy, with devastating consequences such as job losses and increased poverty[7]. Also compare a statement by the policy head in the presidency which indirectly acknowledged that social grants, particularly pension and child support grants, with their current value fail to effectively cushion the poor against the ravages of this price hike wave.[8]

Furthermore, the investment study for the Office of the President highlights that South Africa's levels of mass poverty represent a major constraint to investment, as investors regard the situation as unsustainable.[9] It is also reasoned that the unemployment rate of 25.5 percent recorded in September 2007[10] are unlikely to decrease amidst a climate of low investment. Additionally, the unemployment figure excludes those deemed to be not seeking employment and the official unemployment definition does not distinguish between short and long-term jobs. Nevertheless, it is questionable whether the current employment rate is a true reflection of the 'real picture' if one considers that some people may have lost confidence in ever securing a job and that others are only holding on to short-term jobs.

Consequently, the labour movement has warned of food riots as witnessed in other parts of the world. Compare the sparking violent protests in many countries, including Egypt, Cameroon, Ivory Coast, Mauritania, Ethiopia, Madagascar, the Philippines and Indonesia as a result of the sharp rise of the cost

5 Dlamini K World food crisis is an opportunity for Africa to help its poor, The Times, April 21 2008 - http://www.thetimes.co.za/PrintEdition/Article.aspx?id=751842

6 The CPI for food increased from 15.7% to 17.0% and for transport from 15.6% to 16.7%. See Statistical release P0141, May 2008: www.statssa.gov.za.

7 A statement on interest rates delivered by Patrick Craven, 9 October 2007

8 Pressly D Wealth gap grows everyday, Business Report, July 18 2008 – http://www.busrep.co.za/index.php?ArticleId=4512477

9 Ravi Naidoo, The reality of poverty: Editorial, 2002-11-01: http://www.naledi.org.za/pbull/vol5no3/3.pdf

10 Unemployed (official definition) Persons aged 15 – 65 who did not have a job or business in the seven days prior to the survey interview but had looked for work or taken steps to start a business in the four weeks prior to the interview and were available to take up work within two weeks of the interview. See Statistical release P0210, September 2007: www.statssa.gov.za

of basic foods in the first few months of 2008.[11] Unsurprisingly the labour federation, Cosatu, in July 2008 organized a protest march against rising costs, which was followed by nation-wide protest action in August 2008.

The assessment of the current situation on food insecurity in the country is amptly summarised in the report of the NFCS:FB-I:

"The findings of the present survey are in unison, at least in trend rather then extent, with other available data which reflects on food security. In this regard, available evidence[34] indicates that, in 1995 (secondary analysis of the 1995 Income and Expenditure Survey), food poverty, (i.e. households spending less than the money estimated to buy a low cost food plan) was estimated to occur in 43% of the population, and low energy availability (i.e. the food available to the households from purchases and home production) was insufficient to meet the energy needs of the household in 55% of the population. Also in unison with the findings of the present survey are the findings of the October Household surveys (conducted from 1995 to 1999) which included one (apparently poorly administered) question as an indicator of food security on the ability of households to feed children. Over this period and at the national level one-quarter to one third of households surveyed were not in a position to purchase sufficient food to meet the dietary requirements of children at any given time, a situation that was worse in rural households and in poorer provinces.[35] More recent evidence from the Human Sciences Research Council (HSRC)[36] are also supportive of the findings of the present survey in terms of the majority of South Africans lacking enough food and income to meet all their household needs based on the annual data from the South African Social Attitudes Survey in 2003, 2004 and 2005, with Black South Africans being the worst affected population group in the country. The October Household Surveys have recently been replaced by the General Household Surveys[37] which also included questions on the prevalence of hunger. Respondents in these surveys were asked whether any adult over the age of 18 years as well as a person younger than 18 years had gone hungry in the preceding 12 months of the survey because there was not enough food in the household. The response categories varied from "Never went hungry" to "Always went hungry". The data from the General Household Survey (2002 – 2006)[37] is striking in that the levels of hunger reported are considerably lower than that of all other surveys, including the present survey, which may reflect the nature/spectrum of the questions asked. Over the period of 2002 to 2006, the October Household Surveys has reported that the percentage of households in which hunger was experienced by an adult (seldom, sometimes, often and always) declined from 31.1% in 2002 to 16.5% in 2006. Indeed in 2006, hunger was experienced (often and always) in only 2.5% of the households surveyed as compared with 6.7% of households in 2002."

The current compilation of the available evidence on the assessment of food insecurity in the country indicate that the South Africa government and the Department of Agriculture in particular is faced with a serious challenge of addressing food insecurity which impact on its citizens in a multidimensional manner. One of the key challenges would appear to be the clearer definition on appropriate measurement tools in assessing the prevalence of food insecurity in the country. Such an approach is not dissimilar th Department of Agriculture initiative on providing national data on factors

11 Cosatu warns of food riots, News24 14/04/2008 – http://www.news24.com/News24/South_Africa/Politics/0,,2-7-12_2305864,00.html

affecting agricultural production, levels of agricultural production and food prices (http://www.nda.agric.za).

6. Conclusion

Against the background afforded by the compilation of the available data on food insecurity in the country, the South African government needs to develop or accelerate its existing interventions to effectively target and improve the lives of the poor, and in particular those going without food. The government's approach also needs to be innovative on new, more comprehensive and purpose-specific approaches on the assessment of food insecurity in the country. More specifically, a national representative survey that includes questions that focus exclusively on food insecurity but also encompass a variety of other related fields such as employment, income and health would appear to be essential. Logistical and budgetary constraints should not hamper the implementation of such a large scale survey project which should be conducted overtime. In this regard, another potential approach in need of thorough evaluation may be to capitalize more effectively and strategically on existing vehicles, such as the GHS, or the NFCS 1999 and NFCS-FB-1 2005 as well as FIVISM or the South African Social Attitudes Survey (SASAS).

Appendix A1:

NATIONAL FOOD CONSUMPTION SURVEY-FB: **HUNGER SCALE**

NATIONAL FOOD CONSUMPTION SURVEY-FB:
SA CHILDREN 1-9 YEARS OLD AND WOMEN OF CHILD BEARING AGE

E A **HH**

Household number: EA HH

EA Type: UF/UI/RF/T

DD MM YY

Interview Date: D D M M Y Y

Interviewer: _____ **Interviewer Code:** _____

HUNGER SCALE

- **IF THE MOTHER/CAREGIVER IS ILLITERATE, YOU HAVE TO READ THE EIGHT QUESTIONS ON FOOD THAT IS AVAILABLE IN THE HOUSEHOLD. ALL THE MOTHER/CAREGIVER HAS TO DO IS TO ANSWER "YES" OR "NO" TO EACH OF THESE QUESTIONS.**
- **ALL 3 SECTIONS OF EACH QUESTION MUST BE ANSWERED.**

	YES	NO
1. Does your household ever run out of money to buy food?		
1a Has it happened in the past 30 days?		
1b Has it happened 5 or more days in the past 30 days?		
2. Do you ever rely on a limited number of foods to feed your children because you are running out of money to buy food for a meal?		
2a Has it happened in the past 30 days?		

		YES	NO
	2b Has it happened 5 or more days in the past 30 days?		
3.	Do you ever cut the size of meals or skip any because there is not enough food in the house?		
	3a Has it happened in the past 30 days?		
	3b. Has it happened 5 or more days in the past 30 days?		
4.	Do you ever eat less than you should because there is not enough money for food?		
	4a. Has it happened in the past 30 days?		
	4b. Has it happened 5 or more days in the past 30 days?		
5.	Do your children ever eat less than you feel they should because there is not enough money for food?		
	5a. Has it happened in the past 30 days?		
	5b. Has it happened 5 or more days in the past 30 days?		
6.	Do your children ever say they are hungry because there is not enough food in the house?		
	6a. Has it happened in the past 30 days?		
	6b. 5 or more days in the past 30 days?		

		YES	NO
7.	Do you ever cut the size of your children's meals or do they ever skip meals because there is notenough money to buy food?		
7a.	Has it happened in the past 30 days?		
7b.	Has it happened 5 or more days in the past 30 days?		
8.	Do any of your children ever go to bed hungry because there is not enough money to buy food?		
8a.	Has it happened in the past 30 days?		
8b.	Has it happened 5 or more days in the past 30 days?		

THANK YOU FOR YOUR COOPERATION

Appendix A2

SASAS HUNGER SCALE MODULE

		Yes	No	(Can't choose)
1.	Does your household ever run out of money to buy food?	1	2	8
2.	Has it happened in the past 30 days?	1	2	8
3.	Has it happened 5 or more days in the past 30 days?	1	2	8
4.	Do you ever rely on a limited number of foods to feed your children because you are running out of money to buy food for a meal?	1	2	8
5.	Has it happened in the past 30 days?	1	2	8
6.	Has it happened 5 or more days in the past 30 days?	1	2	8
7.	Do you ever cut the size of meals or skip any because there is not enough food in the house?	1	2	8
8.	Has it happened in the past 30 days?	1	2	8
9.	Has it happened 5 or more days in the past 30 days?	1	2	8
10.	Do you ever eat less than you should because there is not enough money for food?	1	2	8
11.	Has it happened in the past 30 days?	1	2	8
12.	Has it happened 5 or more days in the past 30 days?	1	2	8

		Yes	No	(Can't choose)
13.	Do your children ever eat less than you feel they should because there is not enough money for food?	1	2	8
14.	Has it happened in the past 30 days?	1	2	8
15.	Has it happened 5 or more days in the past 30 days?	1	2	8
16.	Do your children ever say they are hungry because there is not enough food in the house?	1	2	8
17.	Has it happened in the past 30 days?	1	2	8
18.	5 or more days in the past 30 days?	1	2	8
19.	Do you ever cut the size of your children's meals or do they ever skip meals because there is not enough money to buy food?	1	2	8
20.	Has it happened in the past 30 days?	1	2	8
21.	Has it happened 5 or more days in the past 30 days?	1	2	8
22.	Do any of your children ever go to bed hungry because there is not enough money to buy food?	1	2	8
23.	Has it happened in the past 30 days?	1	2	8
24.	Has it happened 5 or more days in the past 30 days?	1	2	8

Appendix B

General Household Survey (2007)

A. Definitions

Household in the survey is defined as a person or group of people occupying a common dwelling unit (or part of it) for a minimum of four nights per week for the past four weeks prior to the interview, *'living together and share resources as a unit'*, *'eating from the same pot'*, and *'cook and eat together'* were other phrases used to define households. People in the same dwelling but who do not share food or other essentials is not regarded as a household unit. Furthermore some of the following concepts have also been defined:

- **Economically active population** – people aged 15-65 who are employed and those who are not
- **Not economically active population** – people who are not available for work, e.g. scholars and students, fulltime homemakers, retired, unable or unwilling to work
- **Formal dwellings** – house on separate stand, flat, apartment, townhouse, room in backyard
- **Informal dwelling** – shack or shanty in informal settlements or backyards
- **Electricity for cooking, heating and/or lightning** – electricity from the public supplier
- **Disability** – The GHS 2007 referred to disability as people who are limited in their daily activities at school or work because of a long-term physical, sensory, hearing, intellectual or psychological condition lasting six months or more.
- **Hunger** - The GHS 2007 referred to people who consumed less than 1 960 calories per day. Note should be taken that experiences of hunger, as measured in the GHS 2007 is perception-based.
- **Tourism** – The GHS 2007 defines a trip as a journey taken by one or more persons of the household for atleast one night away from home without remuneration

B. Key findings

- Education
  - The percentage of individuals attending educational institutes increased from 32.6% in 2002 to 33.7 % in 2007.

- Women more than men are less likely to have no formal education. In 2007, 11.3% of women had no formal education compared to men (7.1%).
- Lack of money for fees remain the most common reason for not attending educational institutes.

- Health
  - Eleven percent of individuals reported injury/illness in the month prior to the survey interview, with close to 80 % of those injured/ill consulting a health worker.
  - Medical aid coverage is lowest among black Africans (7.4%), while the white population had the highest percentage of medical aid coverage (66.5%).
- Labour market activities
  - Employment rates increased from 11 145 000 in 2002 to 12 720 000 in 2007.
  - Unemployment rate is 24.8%.
  - The number of people employed in the agricultural sector declined from 1 287 000 in 2002 to 908 000 in 2007.
- Housing and household assets
  - The percentage of households who lived in informal dwellings increased from 12.7 % (2002) to 14.5% (2007).
  - Nearly 70 % of households owned or partly owned the dwelling
  - Television ownership increased from 56.5 % in 2002 to 67% in 2007
  - Cellphone ownership increased by more than double between 2002 and 2007.
- Energy Supply
  - Increase in percentage of households reported to be connected to the main electricity supply (76 % in 2002 to 81.5% in 2007). The other 20% of households uses other sources of energy such as electricity from a generator, gas, paraffin, wood, coal, animal dung, solar energy, other. Eastern Cape, KwaZulu Natal and Gauteng reported the lowest electrification levels.
- Water access and use
  - The Eastern Cape has the lowest percentage of the population with access to on-site or off-site piped or tap water.
  - In 2007, 63.5% of those who receive piped water from the municipality said that they paid for the water.
  - Reasons such as 1) no metering system, 2) no billing system, 3) cannot afford and 4) water should be free, were given for not paying for water.
- Hunger
  - Percentages of adults and children suffering from hunger decreased from 6.9% to 2% for adults and from 6.7% to 2% for children from 2002 to 2007.
  - Female headed households are more likely to experience hunger than male headed households.
  - It should be noted that experiences of hunger are perception based.
- Social assistance and social security services
  - Eastern Cape, Limpopo and Free State have the highest percentages of use of welfare services (19.1%, 19% and 16.2% respectively).Across South Africa, the percentage of recipients of welfare has increased by more than thrice between 2002 and 2007.

Appendix C

Income and Expenditure Survey (2005/6)

Terms used in the survey were defined as follows:

i) *Consumption expenditure* – "all goods and services that are acquired for own consumption and privately used by household members. This excludes any items and services acquired for business purposes…Consumption expenditure excludes transfers to other households" (p. 38, Statistics South Africa, 2008);

ii) *Household* - "a person, or group of persons who, on average, occupies a common dwelling unit (or part of it) for at least four days a week during the four weeks prior to the interview, and they together provide themselves with food and other essentials for living." (p.39, Statistics South Africa, 2008);

iii) *Durable goods* – 'items that last for a long time", (p.38, Statistics South Africa, 2008). Examples include appliances, cars, furniture, etcetera;

iv) *Non-durable goods* – "items that do not last long, for example food and personal care items. Households acquire these items on a daily or weekly basis" (p.40, Statistics South Africa, 2008); and

v) *Semi-durable goods* – "items that last longer than nondurable goods but still need replacing more often than durable goods", e.g. clothing, shoes, etc (p.40, Statistics South Africa, 2008).

Appendix D

Labour Force Survey (2008)

In the Labour Force Surveys, the researchers have carefully defined their chosen terms / concepts such as:

i) employed – in relation to employee (defined as the person ≥15 years of age who works for a public sector or a private sector employer and receives remuneration in wages, salary, commission, tips, piece-rates any other form/kind of pay);

ii) unemployed – defined as persons ≥15 years of age who were not employed in the week referred to in the survey (further categories have been assigned to the kind of unemployment including the job seekers, job losers, job-leavers, job-re-enterers, those in insurance funds/government pension funds); as well as

iii) economic activity – defined as those individuals/ persons that contribute to the production of goods and services in the country (including 2 types of activities: 1st being the market production (work done for pay or profit) and 2nd being non-market production (work done for the benefit of the household). Looking at these definitions used in the surveys we can be able to ascertain that researchers conformed with the international ways of defining labour at three different levels, such as at the national level, community level and individual level.

Notes:

[1] Brock K. "It's not only wealth that matters – it's peace of mind too" a review of participatory work on poverty and illbeing. **Institute of Development Studies**, Brighton, UK 1999.

[2] FAO 2003

[3] Anderson SA. Core indicators of nutritional state for difficult-to-sample populations. **Journal of Nutrition** 1990; 120:1559-1600.

[4] USDA 2006

[5] Radimer KL, Olson CM, Campbell CC. Development of Indicators to Assess Hunger. **J. Nutr** 1990; 120:1544-1548

[6] Lund F. Changing Social Policy - The Child Support Grant in South Africa. Cape Town: **HSRC,** Press 2008.

[7] Labadarios D. Ed. The National Food Consumption Survey (NFCS): Children aged 1-9 years, South Africa, 1999. **Stellenbosch, South Africa.** 2000.

[8] Labadarios D, Swart R., Maunder EMW, Kruger HS, Gericke GJ, Kuzwayo PMN, Ntsie PR, Steyn NP, Schloss I, Dhansay MA, Jooste PL, Dannhauser A Executive summary of the National Food Consumption Survey Fortification Baseline (NFCS-FB-I) South Africa, 2005. **South African Journal of Clinical Nutrition** 2008; 21(3), (Suppl. 2):247-300.

[9] Davids, Y.D. HSRC Review. 2006: 4(4); 16- 17.

[10] Puoane T, Steyn K, Bradshaw D, Laubscher R, Fourie J, Lambert V. Obesity in South Africa: the South African demographic and health survey. **Obes. Res** 2002; 10(10):1038-1048.

[11] **Swindale A, Bilinsky P.** Development of a Universally Applicable Household Food Insecurity Measurement Tool: Process, Current Status, and Outstanding Issues[1–3] 2006 American Society for Nutrition J. Nutr. 2006; 136:1449S-1452S.

[12] Bilinsky P, Swindale A. Months of Inadequate Household Food Provisioning (MIHFP) for Measurement of Food Access: Indicator Guide 2005:5.

[13] Coates J, Frongillo EA, Rogers BL, Webb P, Wilde PE, Houser R. Commonalities in the Experience of Household Food Insecurity across Cultures: What Are Measures Missing? 2006 American Society for Nutrition J. Nutr. 2006; 136:1438S-1448S.

[14] Statistics South Africa. Income and expenditure of households 2005/2006: Analysis of results. Pretoria: **Statistics South Africa**. 2008.

[15] Statistics South Africa. Guide to the Quarterly Labour Force Survey. Pretoria: **Statistics South Africa**. 2008.

[16] Bradshaw D, Groenewald P, Laubscher R, Nannan N, Nojilana B, Norman R, Pieterse D, Schneider M, Bourne D, Timæus I, Dorrington R, Johnson L. Initial burden of disease estimates for South Africa 2000. S Afr Med J 2003; 93(9): 682-688.