POLICY PAPER

MEASUREMENT OF FOOD SECURITY IN SOUTH AFRICA

MARCH 2013








NDA

National
Development
Agency

Measurement of Food Security in South Africa Policy Paper

By

NDA Research and Policy Unit in Collaboration with
Human Sciences Research Council
Economic Performance and Development

Prof. Margaret Chitiga-Mabugu, Dr. Charles Nhemachena, Dr Selma Karuaihe, Shirin Motala, Nthabiseng Tsoanamatsie, Lebogang Mashile and Thami Ngwenya

March 2013

The Research and Development Directorate
Research, Policy and Networks Unit
National Development Agency
2nd Floor, Grosvenor Corner
195 Jan Smuts & 7th Avenue
Parktown North
Johannesburg
2193

Layout and design: Nthabiseng Kraai

1 Introduction

The right to food is enshrined in the Bill of Rights in the Constitution of South Africa (GOSA, 1996) and has been a key priority of all post – apartheid administrations since 1994. This commitment is aligned to the United Nations (UN) Millennium Development Goal (MDG) of halving the number of people who are hungry in South Africa and to the government's commitment to reducing poverty by 50% between 2004 and 2014. Achieving household level food and nutrition security is critical to realising these goals (GOSA, 2010).

South Africa is considered food secure as a country in that it produces sufficient amounts of staple foods and has the ability to import foods where required, to meet the nutritional needs of the population. However evidence suggests that at a household level, large number of households are food and nutritionally insecure (Jacobs, 2009) and the extent of food insecurity is incomplete mainly as a result of lack of quality data and the lack of an accepted definition of food insecurity in South Africa (Altman, 2009; Hart, 2009).

This policy brief outlines the importance of accurately measuring household level food and nutrition security, identifies some of the conceptual and methodological challenges to measuring food security and outlines recommendations in this regard. This paper is a desk top review of available evidence on food security measurement drawing extensively on work spearheaded by the Human Sciences Research Council (HSRC)[1].

2 Policy Framework

In keeping with internationally accepted definitions of food security, the Integrated Food Security Strategy (IFSS) for South Africa defines food security as *"the right to have access to and control over physical, social and economic means to ensure sufficient, safe and nutritious food at all times to meet the dietary food intake requirements for a healthy life by all South Africans"* (DoA, 2002, p15). South African government recognises the three dimensions of food security namely food availability, food access and food utilisation and stability (DAFF, 2011).

According to FAO (2006) although these food security dimensions are interrelated, they can exist in isolation because food security on one dimension does not imply the same for all other dimensions.

- Food availability refers to the production and procurement of sufficient quantities of food available on a consistent basis. However, availability of food on its own does not ensure food security as food surpluses can exist alongside hunger and malnutrition.
- Food access refers to the availability of sufficient resources to obtain appropriate food/s for a nutritious diet. This relates to promoting sustainable farming practises, enabling access to land for agricultural production and employment for income generation; promoting agriculture by small

[1] Dr Peter Jacobs and Mr Tim Hart are two of the key researchers who have led the initiative around food security measurement at the HSRC.

scale farmers and subsistence farming and implementing social protection measures for the poor and vulnerable.

- Food utilisation refers to appropriate use of food based on knowledge of basic nutrition and care, as well as adequate water and sanitation. Interventions focussing on maternal and child health, programmes to improve infant feeding and access to health care for the prevention and treatment of diseases all contribute to improved food utilisation.
- Stability of availability and access to food refers to sustained access to nutritious food despite suffering shocks such as conflict, droughts, or death or unemployment at household level.

To help achieve the target of halving poverty and hunger government adopted the IFSS in 2002 with the specific goal of eradicating hunger and nutritional deficits, specifically targeting low income households (DoA, 2002). While the IFSS does not make mention of the Constitutional right to food the approach adopted is rights based and obliges the state to take reasonable measures, legislative or other to progressively realise the right (DoA, 2002).

Among the several strategic objectives of the IFSS is the need to "*improve analysis and information management system"* (DoA, 2002, p 6) with Statistics South Africa identified as the lead department to management this particular objective and with the key outcome being that there would be "*greater availability of reliable, accurate and timely analysis, information and communication, on the conditions of food the food insecure and the impact of food security improvement interventions*"(DoA, 2002, p10).

3 Why is measurement Important?

Food security is complex and multifaceted with a range of factors which impact on food supply, access, adequacy, utilisation and acceptability. Hendricks (2005) suggests that this make measurement of food security complex, expensive and thus challenging.

Measurement is important for many reasons (Jacobs, 2009, Hendricks, 2005 & Hart, 2009)-:

- Food security measurements broaden our understanding of the existing causes of chronic food insecurity
- In the context of scarce resources targeting of interventions is critical and for this we need good quality data. It is important to determine households which are food insecure and those which are vulnerable to food insecurity. A challenge for institutions concerned with implementing interventions addressing food security is the ability to differentiate between food secure and food insecure households.
- A precondition for monitoring, evaluating and assessing the impact of interventions to address food insecurity by key institutions is the availability of good information systems and relevant data collection tools to track progress. Such monitoring and evaluation contributes to assessment of the efficiency and effectiveness of policy prescripts and programme interventions implemented and in the design of effective household food policy interventions.
- Measurement is also important for early warnings and for predicting problems in relation to food insecurity.

4 Conceptual Issues relating to measuring food insecurity

There have been major shifts in thinking about food insecurity and in measuring it over the last few decades since the 1980's. Webb et al (2006) identify three conceptual developments that have been informed current thinking about measurement of food security.

- The first development draws from Sen (1981) who introduced broader concept of food security away from a focus only on availability of food supplies to household's ability to access food. Here the shift was away from measuring food availability and utilisation to measuring household access to hold. Much of this changed emphasis was inspired by research findings (Haddad,) which showed poor correlation between food availability and household food security.
- The second conceptual development was the shift in focus from objective to subjective measures. Here again the evolution of food security measures has followed the debates relating to poverty measurement, where largely o Objective measures used such as poverty lines defined by monetary assessment of financial wellbeing (namely expenditure on goods and services) was the basis for defining poverty. This approach was deemed too theoretical in that it did not take into account the lived experiences of poverty. The resulting shift to more subjective measures where household's perceptions of their food insecurity were made explicit through qualitative research.
- The third conceptual development has been on emphasis on focussing on fundamental measurement rather than reliance on proxy measures, with proxy measures being largely indirect measures such as children's nutritional status, agricultural productivity and food storage.
- Webb et al (2006) included a fourth conceptual development namely the recognition of exposure of households to external risks such as climate change, conflict, global economic crises and the related job losses, etc.

It is clear that there is no single measure for measuring all aspects of food insecurity. Most household food security measurements are a collection of fundamental (direct) and derived (indirect) indicators.

Webb et al (2006) explain that derived indicators refer to proxy measures used such as, dietary diversity, food storage estimates at specific times of the year, subsistence potential for mainly agrarian households (ratio of dietary energy requirement and food availability) and nutritional assessments such as anthropometric indicators. These links are not proven and can be tenuous. An example cited is that income will relate differently to food insecurity depending on whether a household consumes home grown products rather than purchases them. Indirect household food security indicators are used where access to such information is either unavailable or too costly to collect.

Direct indicators measure the experience of food insecurity itself (for example: household perceptions of food insecurity or hunger and food frequency measurements). Direct indicators are best measured by observing households over time, along with in-depth interviewing of members of households (Webb, 2006). These are often qualitative measurements which seek to broaden our understanding and awareness of the multiple factors involved in understanding food security. However they make food security determination increasingly complex.

Jacobs (2009) outlines the different categories of food security indicators-:

- Household food supply/availability indicators focus on national food supply. These include agricultural production, pest management, regional conflict, market access and institutional support structures;
- Food utilization indicators include infant and young child feeding and care practices;
- Food access indicators include food entitlement and socio-economic indicators that indicate the ability of households to cope with various stresses induced by economic and social change/s. They measure the monetary value of food as a proxy for food consumption. Measures of food access are useful to assess the severity of food shortfalls, characterise the nature of household food insecurity (for example, seasonal versus chronic), monitor changes in circumstances, assess the impact of various interventions, and the capacity of households affected by social and economic shocks and disasters to withstand the effects of these shocks.
- Composite indexes attempt to integrate available dimensions into a single index, such as the Human Development Index.

5 Food Measurement Architecture of South Africa

While South Africa has several national instruments which contribute to measuring different dimensions of food insecurity in South Africa, it lacks a national survey which assesses all dimensions of food insecurity. These national instruments are elaborated below:

A. October Household Survey (OHS): this was implemented annually between 1994 and 1999. The survey included a question on the ability of the household to feed children as an assessment of food insecurity as a proxy indicator. A key weakness identified by Koch (2011) has been the inconsistency in the phrasing of the questions between years which has made comparisons over time difficult. Irrespectively it enables certain patterns to emerge and it suggested that between 25 and 33 per cent of households were unable to buy food to meet the dietary requirements of children at any given time.

B. National Food Consumption Survey (NFCS): This national survey was conducted twice, in 1999 and 2005. The focus of the survey was households with children between the ages of 1 and 9 years. The survey assessed food procurement, anthropometric indicators and food inventories of households. The sample population for this study was drawn from the national census sampling framework. According to Hendricks (2005), the instruments used to assess nutritional status included the following:
    - Socio-demographic household factors related to the environment in which the child lived.

- A 24-hour recall of food consumption for the child.
- A qualitative food frequency questionnaire for the past six months.
- An inventory of food procurement and household food stocks.
- A hunger scale questionnaire providing information on actual hunger experienced (or not) by the child.

The 2005 National Food Consumption Survey – Fortification Baseline (NFCS-FB) reported that the national prevalence of stunting, underweight and wasting was 18%, 9.3%, and 4.5% respectively (Koch, 2011).

C. Food insecurity Vulnerability Information and Mapping System (FIVIMS): FIVIMS is an internationally developed tool with the purpose of providing decision makers with reliable information about geographic areas and sectors of the population that suffer from hunger and malnutrition, or may be at risk. A regional study was piloted in two phases in 2004 and 2006 in selected areas (Mpumalanga and Limpopo) which measured hunger in households. This was an initiative of the DoA Food Security Directorate in partnership with the HSRC, Agricultural Research Council (ARC) and the Medical Research Council (MRC). The motivation for this pilot was the gap in information available from existing data sets which did not track progress on food security indicators nor did they focus sufficiently on household level responses to food security. These existing studies were also inadequate in focusing on the multidimensionality of food security. The effort to establish a FIVIMS system was abandoned –largely due to the fact that the FIVIMS system is data intensive and did not render clear indicators for food security, although it was successful in identifying 'hunger hot spots' across the country.

D. General Household Survey (GHS): is a large national study which asks general questions and which focus on hunger over time. Between 2002 and 2008, the GHS asked households to indicate whether and how often adults and children went hungry because there was not enough food in the household. The question was discontinued in 2009 but reinstated in the 2010 questionnaire. Since 2009, the GHS questionnaire included a set of questions based on the Household Food Insecurity Access Scale (HFIAS) to determine households' access to food. In the revised module it probed questions relating to coping strategies adopted by households. These questions aimed to measure household food access by asking households about modifications they made in their diet or eating patterns during the previous month because of limited sources to obtain food (Stats SA, 2012). 2009 GHS reported that an estimated 20% of South African households have inadequate or severely inadequate access to food with food access problems being more severe in the mainly rural provinces in South Africa (Koch, 2011).The General Household Survey can also be used to assess the incidence of child hunger or perceived hunger as a proxy for food insecurity.

E. Income and Expenditure Survey (IES): explores the extent of poor household's expenditure on food. The IES provides information on the food spending and home food production patterns. This national survey collects information on income levels and sources of households and expenditure patterns. In the 2005/6 survey the diary method was used for the first time together with the recall method. Households were requested to record in a diary provided all the acquisitions of that household over a period of 4 weeks.

F. The Integrated Food Security Strategy (IFSS): the IFSS used adequacy of daily energy intake (set at 2000 kcal/day), based on World Health Organisation's (WHO) as the best direct measure of food insecurity. The IFSS using the seven day recall expenditure data estimated that 39% of the population did not meet their daily energy requirement (2000 kcal/day) (DoA, 2002). Also, the IFSS used income earning capacity of households to measure food insecurity. The IFSS used the average price of the food basket compared to household income and expenditure to assess food insecurity at household level.

G. The South African Medical Research Council (MRC): measures food insecurity in relation to undernourishment. The MRC classifies someone as food insecure if they receive less than 2261kj per day. In monetary terms this is R 211 per person based on 2000 prices.

Table 1: Measuring Food Insecurity according to different Proxies and Methods

Source	Date	Proxy Used	Estimated Level of Food Insecurity
General Household Survey	2009	Household Food Insecurity Access Scale (HFIAS)	20%
Nutrition Indicators	2004	Stunting 1-9 years	21.6%
October Household Survey	1999	Household's ability to feed children	25-33%
General Household Survey	2007	Perceived hunger, incidence of child hunger	18%
Measuring Poverty, IFSS	2002	Household Income and food basket expenditure	35%
Measuring Poverty, IFSS	2002	Daily Energy Intake	36%

Source: Koch (2011)

Table 1 above illustrates the challenge when there is an absence of a single integrated measure of food security. It is unsurprising that the different data sets give a slightly different assessment of the food insecurity situation in South Africa ranging from 18% to 35% levels of food insecurity.

6 Challenges in the Measurement of Household Food Security in South Africa

Hart (2009) suggests three main constraints to accurate food security measurement in South Africa namely -:

- the absence of current national data;
- the use of different methodologies and criteria for selecting respondents; and

- the relatively long period between nutritional surveys

Despite the many indicators and proxies for food security status as found in the many national data sets we remain unclear as to the extent and nature of household level food insecurity in South Africa a finding confirmed in the 2010 MDG Country Report for South Africa (GOSA, 2010).Table 1 illustrated the absence of a single measurement for food insecurity in South Africa.

Jacobs (2009) notes that the different categories of food security indicators (elaborated on earlier) have their strengths and limitations. He posits that food availability indicators ignore individual nutritional status and focus almost exclusively on national food supply. Similarly he notes that food expenditure and access indicators which measure the monetary value of food as a proxy for food consumption, exclude individual nutritional status (or other anthropometric measurements) and finally he raises a concern about composite indexes where the weights attached to components of the index might misrepresent their values in practice.

In respect of the use of different methodologies and selection criteria Jacobs (2009) notes that the evidence on the state of hunger generated by the General Household Survey (GHS) and the National Food Consumption Survey (NFCS) differed with the NFCS finding a much higher percentage of the population in hunger at similar average incomes to the GHS. This conflicting evidence raises the question of which methodological approach to use to determine a meaningful food security baseline. Determining a national food security target is dependent on reliable baseline information

Hart (2009) warns that not only are national data problematic for determining progress towards MDG-1, but they also mask the intra-country differences, especially between the prevalence rates in the different provinces and among different groupings of people and households (e.g. farmworker households).

An opportunity for the development of food security measurement instruments is provided through the establishment of the Government Programme of Action (PoA) monitoring system and the setting up of a Department of Performance Monitoring and Evaluation(DPME) in the Presidency in 2010. It demonstrates government commitment to ensuring that government policy and programmes make meaningful impacts on the lives of its people (DPME, 2013). http://www.thepresidency-dpme.gov.za/dpmewebsite/

7 Recommendations

7.1. Establishment of a common food security target

Jacobs (2009) makes a strong plea for establishing a common food security target for South Africa with the motivation that a food security target will enable more effective pro – poor policy responses and will ensure efficiency in fiscal spending in relation to food security interventions (Jacobs, 2009). According to Jacobs (2009) the development of a household food security target should take into account the following:

1. Household composition: household size and the number of children (to account for economies of scale in consumption);
2. Wealth and livelihood strategy: income, education and assets (land, livestock, labour etc.)
3. Geography: rural/urban location and formal/informal settlements – e.g. distance from food markets and the related costs;
4. Institutions: markets, the state, social capital/networks
5. Time: whether the food security condition is transitory or chronic
6. Risk: shocks that are weather-related, health-related and so forth, commodity price movements

Jacobs further proposes that government utilise a food expenditure approach to identify a preliminary food security target. It is also suggested that using a recommended nutrient intake for all South Africa be used as a method for measuring food insecurity.

Development of this target must involve diversity of stakeholders including civil society organisations and research institutions among others.

7.2. Development of a food and nutrition security monitoring and evaluation system

Jacobs (2009) proposes that government urgently invest resources to the development of such a system based on an agreed upon food security target. Such a system must include impact assessment ex-post which can feed in to learning, reviews and design of interventions. This Jacobs (2009b) suggests will require further work to develop the conceptual and methodological tools for generating more nuanced food security baseline information and for the development of composite indicators for food security targeting. Of necessity will be the need to identify appropriate tools and methodologies for measuring levels of food insecurity. An opportunity exists for harnessing government performance monitoring and evaluation commitment and Infrastructure to develop this system.

7.3. Enable improvements to current national survey instruments

Ailber (2009) suggests that there is value in expanding the questions in current national research tools such as the General Household Survey (GHS) which probes issues of food security more deeply. He proposes that a mini food security module will emerge which will take advantage of size and regularity of the GHS instrument to provide reliable and relevant data. Instruments need to be inter-disciplinary and inter-sectoral in focus.

7.4. Investment in Qualitative In-depth Studies

Hendricks (2005, 118) argues that quantitative studies have limitations to helping us understand the experience of poverty at household level. She therefore proposes that in the absence of national, representative panel studies funding and support should be provided for qualitative local studies of household experiences of vulnerability and insecurity "..... to develop a baseline knowledge of how households respond to food security shocks and stressors.....". Hart (2009) supports this call with a request for local studies to adopt a more combined and multidimensional approach to understanding the effects of stressors on households. Studies also need to identify and focus on the vulnerable,

including children under five, orphans, older persons, female-headed households, etc., and their responses to shocks.

References

Aliber M (2009). Exploring Statistics South Africa's national household surveys as sources of information about food security and subsistence agriculture. Pretoria: Human Sciences Research Council.

Altman, M., T. G. B. Hart and J. T. Jacobs (2009). 'Household Food Security Status in South Africa', *Agrekon* 48 (4).

Chitiga-Mabugu M, Nhemachena C, Karuaihe S, Motala S, Tsoanamatsie N, Mashile L. 2013. Civil Society Organisations Participation in Food Security Activities in South Africa, Draft Report submitted to the National Development Agency. Human Sciences Research Council, Pretoria.

Department of Agriculture (2002). The Integrated Food Security Strategy for South Africa.
Pretoria, Department of Agriculture.

Department of Performance Monitoring and Evaluation, (2013). http://www.thepresidency-dpme.gov.za/dpmewebsite/ accessed 29th March 2013

Food and Agriculture Organisation (2006) The state of food insecurity in the world 2006.Rome: FAO

FIVIMS (2010). Food Insecurity and Vulnerability Information and Mapping Systems in South Africa.

Government of South Africa (1996). 'The South African Constitution–Bill of Rights'.

Government of South Africa (2010). Republic of South Africa Millennium Development Goals: Country Report, 2010.

Hart, T. (2009a). Food Security Definitions, Measurements and Recent Initiatives in South Africa and Southern Africa. Pretoria, Human Sciences Research Council.

Hart, T. (2009b) Exploring definitions of food insecurity and vulnerability: time to refocus assessments Agrekon, Vol 48, No 4 (December 2009)

Hendriks, S.L., (2005): The challenges facing empirical estimation of household food (in)security in South Africa, Development Southern Africa, 22:1, 103-123

Hendriks, S.L., Ngidi, M. and Freude, B. (2011) The Food Policy Capacity of South Africa, Commissioned by the International Food Policy Research Institute (IFPRI)

Jacobs, P. (2009a). Identifying a Target for Food Security in South Africa. Pretoria, Human Sciences Research Council: Centre for Poverty, Employment and Growth.

Jacobs, P.T. (2009b) The status of household food security targets in South Africa, *Agrekon, Vol 48, No 4 (December 2009)*

Jacobs, P. (2012) Protecting food insecure households against rapid food price inflation. Policy Brief. Human Sciences Research Council.

Koch, J. (2011) THE FOOD SECURITY POLICY CONTEXT IN SOUTH AFRICA; Country Study International Policy Centre for Inclusive Growth

Statistics South Africa. (2000). Measuring Poverty in South Africa. Pretoria, Statistics South Africa.

Statistics South Africa. (2009). General Household Survey 2009. Pretoria, Statistics South Africa.

Webb P., Coates J., Frongillo,E.A., Rogers B.L., Swindale A.,& Bilinsky P. (2006) Measuring Household Food Insecurity: Why It's So Important and Yet So Difficult to Do in Journal of Nutrition No 136 (2006) (p 1404S – 1408S)

EASTERN CAPE

The Ridge Building
Ground Floor,
3 Berea Terrace
Berea
East London
5214

Tel: 043 721 1226/7
Fax: 043 721 2096
Email: ecprovince@nda.org.za

NORTH WEST

Office 0113A
First Floor
West Gallery Megacity
Mmabatho
2735

PO Box 6118
Mmabatho
2735

Tel: 018 392 6892
Fax: 018 392 5432
Email: northwestprovince@nda.org.za

WESTERN CAPE

The Chambers Building
2nd Floor
50 Keerom Street
Cape Town
8001

Tel: 021 422 5175
Fax: 021 422 5180 EXT: 2002
Email:westerncapeprovince@nda.org.za

FREE STATE

Quantum Building
Office 209 – 2nd floor
172 Zastron Street
Bloemfontein
9300

Postnet suite 131
Private Bag x01
Brandhof
9324

Tel: 051 430 2024
Fax: 051 430 3376
Email: freestateprovince@nda.org.za

MPUMALANGA

Ground floor
Biwater Building Office 103
16 Branders Street
Nelspruit
1200

Tel: 013 755 1478 / 013 755 3777
Fax: 013 753 2244
Email: mpumalangaprovince@nda.org.za

NORTHERN CAPE

13 Dalham Road
Kimberley
8301

PO BOX 390
Kimberley
8300

Tel: 053 831 4828/9
053 831 4831
053 832 3365
Fax: 053 831 4824
Email: northerncapeprovince@nda.org.za

LIMPOPO

Albatross Centre - Suite 8
19 Market Street
Polokwane
0700

Tel: 015 291 2492
Reception Ext (2201)
Fax: 015 295 7586
Email: limpopoprovince@nda.org.za

KWAZULU NATAL

Suite 1202
Nedbank Centre
303 Smith Street
Durban Club Place
DURBAN
4001

Tel: 031 305 5542
Fax: 031 305 5140
Email: kznprovince@nda.org.za

GAUTENG

10th Floor, Braamfontein Centre
23 Jorissen Street
Braamfontein

Tel: 011 339 6410
Fax: 011 339 6410
Email: gautengprovince@nda.org.za

NDA
National
Development
Agency

NATIONAL HEAD OFFICE

2nd Floor – Grosvenor Corner
195 Jan Smuts & 7th Avenue
Parktown North
Johannesburg
2193

P.O. Box 31959
Braamfontein
2017

Tel: (011) 018 5500
Web: www.nda.org.za
Email: info@nda.org.za

social development
Department:
Social Development
REPUBLIC OF SOUTH AFRICA

sassa
SOUTH AFRICAN SOCIAL SECURITY AGENCY

NDA
National
Development
Agency