A CRITICAL REVIEW OF THE STATE OF FOOD AND NUTRITION SECURITY IN SOUTH AFRICA

PREPARED BY THE HUMAN SCIENCES RESEARCH COUNCIL (HSRC) FOR THE NATIONAL DEVELOPMENT AGENCY (NDA)

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ACRONYMS AND ABBREVIATIONS

APAP	Agricultural Policy Action Plan
BMI	Body Mass Index
CONSEA	Conselho Nacional de Segurança Alimentar e Nutricional
DAFF	Department of Agriculture, Forestry and Fisheries
DAFFSP	Department of Agriculture, Forestry and Fisheries Strategic Plan
DBE	Department of Basic Education
DEA	Department of Environmental Affairs
DED	Department of Economic Development
DoH	Department of Health
DPME	Department of Planning, Monitoring and Evaluation
DSD	Department of Social Development
FAO	Food and Agriculture Organisation of the United Nations
FIES	Food Insecurity Experiential Status
FNS	Food and Nutrition Security
GFSI	Global Food Security Index
HDDS	Household Dietary Diversity Score
IES	Income and Expenditure Survey
IFPRI	International Food Policy Research Institute
IFSS	Integrated Food Security Strategy
INP	Integrated Nutrition Programme
IPAP	Industrial Policy Action Plan
LCS	Living Conditions Survey
MTSF	Medium Term Strategic Framework
NAMC	National Agricultural Marketing Council
NDP	National Development Plan
NFNSC	National Food and Nutrition Security Council
NFNSP	National Food and Nutrition Security Plan
NGP	New Growth Path
NIDS	National Income Dynamics Study
NPFNS	National Policy on Food and Nutrition Security

NSNP	National School Nutrition Programme
PFNS	Provincial Food and Nutrition Security Council
PoU	Prevalence of Undernourishment
RDP	Reconstruction and Development Programme
RNSA	Roadmap for Nutrition in South Africa
RRFCF	Regulations Relating to the Fortification of Certain Foodstuffs
SAVAC	South Africa Vulnerability Assessment Committee
SDGs	Sustainable Development Goals
SPCOSA	Strategy for the Prevention and Control of Obesity in South Africa
SPPCNCD	Strategic Plan for the Prevention and Control of Non-Communicable Diseases
SRDG	Social Relief of Distress Grants
TA	Traditional Authority
TSSB	Taxation of Sugar-sweetened Beverages
ZVRBF	Zero Vat Rating of Basic Foodstuffs

EXECUTIVE SUMMARY

This South Africa Food and Nutrition Security (FNS) status report was prepared for the National Development Agency (NDA) as part of the NDA's legislative mandate to conduct research and publish research outputs that can inform development policy in the country. The NDA identifies FNS as a cause and consequence of poverty and inequality – two of the enduring development challenges in South Africa. The overarching aim of this FNS status report is to inform policy debates and provide options for enhancing food and nutrition security programmes in the country. In essence, the report offers a descriptive snapshot of the state of FNS in the country to pave way for further deeper analytical investigations. Through a comprehensive review of published and grey literature, FNS-related policy documents, and datasets emanating from tools commonly used to understand the status of FNS in the country; the report sought to address the following three broad objectives: (a) describing the challenges, successes, institutional and policy arrangements associated with the food availability, food access and food utilisation dimensions of FNS in South Africa; (b) comparing and contrasting South Africa's FNS experience with how other countries in Africa and internationally have approached FNS as part of their developmental programmes; and (c) describing trends and drivers of FNS in South Africa and providing recommendations on how the country can reduce and/or deal with food and nutrition insecurity within National Development Plan (NDP: Vision 2030) timelines.

The main conclusions following from this review are as follows:

1. There is a solid rights-based legislative and constitutional framework for FNS policy imperatives in the country, however, structural challenges (inequality, poverty and unemployment) have been barriers to the full operationalization of the framework
2. Whilst the country has sought to approach FNS from a food systems perspective at least on paper, as reflected, for example, in the 2002 IFSS, the 2014 NPFNS and the 2017 NFNSP; the implementation aspect has been seriously lacking, with FNS initiatives still scattered across different departments and with no effective coordination mechanisms and lack of meaningful stakeholder consultations in crafting key FNS-related policies
3. Whilst the government has instituted various important policy initiatives towards ensuring the realization of the four dimensions of FNS over the years, there have been critical challenges associated with these initiatives, such as, the rural-bias of policies associated with food availability; the short-term and unstable (employment) opportunities designed to assist in advancing the food access dimension; as well as much emphasis on the food

consumption aspect and less on the food preparation aspect of the food utilization dimension (to highlight but a few).

4. South Africa has high levels of stunting, overweight and obesity when compared to the global averages and other middle-income countries
5. While food is considered to be available for people to have access in South Africa, the challenge is improving the logistical means of poor households to access and consume it. Food and nutrition insecurity in South Africa is, therefore, not due to shortages of food, but rather because of insufficient access as a result of structural poverty and inequality as well as the under-researched food loss and waste factor
6. The Sustainable Development Goals (SDGs) have given impetus towards the crafting of more nuanced approaches vis-à-vis food and nutrition security policy in South Africa
7. South Africa is doing fairly well with respect to domesticating SDGs, especially for food availability and food access dimensions, through its key FNS information and decision instruments
8. Food and nutrition insecurity in South Africa is highly racialized and has a substantial spatial dimension.
9. Whilst government grants are important in alleviating food and nutrition insecurity concerns in the country among the poor and disadvantaged (especially in helping them to afford a more diverse diet), the grants do not seem to have much effect in reducing the prevalence of stunting and obesity
10. Many indicators of food and nutrition insecurity are positively correlated with subsequent mortality in the household

Subsequent recommendations following from the above conclusions particularly in as far as further lines of deeper investigation on the FNS situation in South Africa is concerned are as follows:

1. Given the current poor coordination of FNS initiatives, there is need to explore what structures and models would be most appropriate to govern the South African food system in a decentralized but more integrated and holistic way. Taking a cue from success stories like Brazil, such factors as strong political will in policy formulation and implementation, and a well-coordinated multisectoral strategy shaped by civil society participation will be key in dealing with the food and nutrition insecurity challenges in the country. Furthermore, policy initiatives towards dealing with food and nutrition insecurity should

also be expressly tied to efforts addressing structural developmental challenges of poverty and inequality.

2. FNS tends to be affected by many government policy efforts. Subsequently, issues around competing priorities, limited capacities, and 'turf-wars' between competing government entities are bound to come up. It is only through initiating coordinative procedures and structures e.g. interdepartmental committees and joint impact assessments, coupled with sustained political will that these bottlenecks will be overcome (cf. Delport, 2019)
3. There is need for elevating focus on research and investigation into the food preparation aspect of FNS, which is currently submerged under the broad food utilization dimension. For South Africa, this is important in the context of such health challenges as the outbreak of listeriosis in 2017-2018 as well as practices gaining traction such as the eating of food (prepared) away from home
4. There is need for an in-depth understanding into the politics and dynamics around the issue of food loss and waste, which has not received much attention but which has the potential of opening up avenues for understanding and dealing with some of the critical factors driving food and nutrition insecurity in the country

1. INTRODUCTION

This report presents a comprehensive review of the state of food and nutrition security (FNS) in South Africa as part of a broader conversation that seeks to contribute towards informing policy debates and providing options for enhancing food and nutrition security programmes in the country. Food security has been acknowledged as a national priority since 1994 as evidenced by the significant policy attention it has received in and through such key guiding national policies as the 1994 Reconstruction and Development Programme (RDP), Outcome 7 Delivery Agreement, the 2012 Integrated Food Security Strategy (IFSS), the 2012 National Development Plan (NDP Vision 2030), the 2014 National Policy on Food and Nutrition Security (NPFNS) and the 2017 National Food and Nutrition Security Plan (NFNSP). Furthermore, the right to food is firmly entrenched in the Constitution of the Republic (Sections 27, 28 and 35). Notwithstanding the strong constitutional guarantees and the significant policy attention, the country currently faces a number of challenges which threaten to worsen its FNS situation. These challenges include population growth, the impacts of HIV/AIDS, concerns around the impacts of climate change and variability, rising poverty and unemployment levels and, subsequently, lack of purchasing power for many, and nutritional concerns stemming from the country's current 'nutrition transition' status whereby undernutrition – particularly stunting and micronutrient deficiencies, is co-existing with rising incidences of overweight and obesity, and the associated consequences such as hypertension, cardiovascular diseases and diabetes (DoH, 2013; Pereira and Drimie, 2016). It is also well-documented that whilst South Africa is food secure at the national level, experiences of food and nutrition insecurity at the household and individual levels are increasing (Boatemaa et al, 2018; Pereira and Drimie, 2016, John-Langba, 2015).

It is within this context, therefore, that this review paper seeks to answer the following three broad questions: (a) what have been the challenges, successes and driving factors vis-à-vis the five dimensions of FNS (i.e. food availability, access, utilisation, quality and stability of supply) in South Africa (b) to what extent is FNS in South Africa tied to international development imperatives, especially the Sustainable Development Goals (SDGs), and lastly (c) what are the gaps and opportunities vis-à-vis current efforts by both state and non-state actors to improve FNS in the country and what lessons can South Africa learn from other countries (in Africa and internationally) towards improving its policies, programmes and practices which promote FNS.

Box 1. Dimensions of FNS defined

The four dimensions of FNS commonly identified are food availability, food access, food utilisation and stability of supply. A fifth dimension included in this discussion, which is usually submerged under the food utilisation dimension, is food quality. These dimensions are hierarchical, with availability necessary but not sufficient to ensure access, while access is, in turn, necessary but not sufficient for effective utilisation (Barrett, 2010). The *food availability* dimension refers to the availability of sufficient quantities of food of appropriate quality, supplied through domestic production, imports or donations. *Food access* is about households or individuals having adequate resources to acquire, in a socially acceptable manner, appropriate foods for a nutritious diet. The *food utilisation* dimension speaks to the ability of households to select, store, prepare, distribute and eat food in ways that ensure adequate nutritional absorption for all members of a household. This dimension therefore focuses on how households use the food through adequate diets, clean water, sanitation and health care to reach a state of nutritional well-being where all members' physiological needs are met. The *food quality* dimension speaks to the micronutrient content of food accessed and consumed by individuals and households. Food quality is a stronger determinant of nutritional status than food quantity. The *food stability* dimension feeds from and cuts across the other three FNS dimensions. It points to the fact that to be food secure, a population, household or individual must have access to adequate food at all times. They should not risk losing access to food due to sudden shocks (e.g. an economic or climatic crisis) or cyclical events.

Following this introduction, the rest of this paper is organised around five sections. Section 2 briefly outlines the methodology used in undertaking this review. This is followed by a synthesis of themes underpinning the review in subsequent sections, with Section 3 focusing on insights into FNS dimensions in South Africa, including comprehensive discussions on institutional arrangements as well as legislative and policy frameworks informing food availability, food access, food utilisation and food quality dimensions in the country. Section 4 gives an overview of current and evolving FNS trends in comparative regional & international cases from which lessons on improving FNS in South Africa can be drawn – with a specific focus on Brazil. Section 5 discusses the links between FNS issues in the country to the global development agenda, including an analysis on how far the SDGs have been domesticated vis-à-vis FNS. Section 6 explores trends and drivers of food and nutrition insecurity in the country using datasets from the National Income Dynamics Study, the Income and Expenditure Survey and the Living Conditions Survey. Lastly is the conclusion and recommendations section, which includes suggestions of areas for further in-depth investigation.

2. METHODOLOGICAL APPROACH

Preparation for this report took a three-pronged approach in order to adequately address the 3 broad questions highlighted in the introduction section. The first approach involved a thorough and critical desktop review of published scientific material (i.e. books, journal articles, manuscripts, occasional papers and theses) and other grey literature. Free text searches were conducted on a number of databases such as *Academic Search Premier*, *Google Scholar* and *Scopus*, using such terms as "food and nutrition security in South Africa", "challenges to food and nutrition security in South Africa", and "improving food and nutrition security South Africa" among other terms. The second approach involved a careful analysis of food and nutrition security-related policy documents since 1994 so as to gain a clear understanding of the changes that have been made vis-à-vis the policy direction of FNS in the country over the years as well as the gaps and opportunities for improving FNS from a policy perspective. The third approach was an engagement with various tools commonly used to understand (the status of) FNS in the country, particularly the National Income Dynamics Study (NIDS), the Living Conditions Survey (LCS), and the Income and Expenditure Survey (IES); and examining how far these tools have gone in bringing out an understanding of the current and evolving status of FNS in the country.

3. INSIGHTS INTO FNS DIMENSIONS IN SOUTH AFRICA

3.1. Introduction

This section explores legislative and policy frameworks as well as institutional arrangements underpinning, primarily, the four main dimensions of FNS in South Africa i.e. food availability, food access, food utilisation and food quality. The fifth FNS dimension, stability of supply, is cross-cutting and its success rests on the successful realisation of the other 4 FNS dimensions. Besides obtaining a clear understanding of current institutions, legislative and policy arrangements for FNS in the country, a main aim of this discussion is to explore how successful these frameworks and arrangements have been, and the gaps that are there vis-à-vis the effective and efficient functioning of the institutional arrangements in the execution of their mandates.

3.2. Legislative framework

At the dawn of democracy in 1994, South Africa adopted a rights-based approach to Food and Nutrition Security; intrinsically linking people's right to food to one's right to life and dignity and building into the Constitution requirements that food be available, accessible, appropriate

and adequate for everyone without discrimination (Ramkisson, 2016). Section 27 (1) (b) of the Constitution of the Republic of South Africa underscores the right of everyone to access to sufficient food and water, whilst Section 27 (2) emphasises that the State must proactively ensure 'within its available resources' and as supported by reasonable legislative and other measures, that these rights are achieved. Sections 28 and 35 respectively expand on the right to food as right to basic nutrition for children and as a right for detainees and sentenced prisoners. South Africa therefore has a solid legislative and constitutional framework upon which FNS initiatives and policy imperatives should rest.

3.3. Policy context, policy initiatives and related challenges

Since 1994, the FNS policy context in South Africa has reflected recognition of the multisectoral nature of FNS; facilitating various initiatives to advance the five FNS dimensions as spearheaded by different government departments and entities. The 2017 National Food and Nutrition Security (Implementation) Plan (NFNSP) notes that South Africa has had almost 60 FNS-related policies, strategies, plans and programmes. For the purposes of this analysis, the formulation of key FNS-related policies in post-apartheid South Africa can be divided into 3 waves (see Table 1).

The first wave includes the 1994 Reconstruction and Development Programme (RDP) which identified food security as a basic human need and mainstreamed food security as a priority policy objective, and the Zero Vat Rating of Basic Foodstuffs (ZVRBF) spearheaded by the National Treasury, also in 1994. The second wave starts from 2002 to around 2004 and it includes such policies and programmes as the 2002 Integrated Food Security Strategy (IFSS), the 2002 Integrated Nutrition Programme (INP), establishment of the Food Price Monitoring Committee under the National Agricultural Marketing Council in 2003, the 2003 Regulations Relating to the Fortification of Certain Foodstuffs (RRFCF), and the 2004 Social Assistance Act which paved the way for the institution of the existing social grants system which plays a crucial role in alleviating hunger for beneficiaries. The third wave starts from around 2009 to date and includes such policies and programmes as the 2009 Zero Hunger Strategy, Outcome 7 (2009), the 2012 National Development Plan Vision 2030, the 2013 Roadmap for Nutrition in South Africa, the Social Relief of Distress Grants (2013), the 2014 NPFNS, and the 2017 NFNSP, among others.

It is important to note that whilst South Africa is now actively and increasingly seeking to approach FNS from a food system perspective[1], food and nutrition security policies and related initiatives over the years have been scattered across different departments in an uncoordinated manner – a point further discussed later in this section.

Table 1. Main FNS policies in South Africa

	Year	Policy initiative	Department	Focus/Objective	Food security dimension
First Wave	1994	The Reconstruction and Development Programme (RDP)	Multisectoral	Identified food security as a basic human need and mainstreamed food security as a priority policy objective.	All
	1994	Zero Vat Rating of Basic Foodstuffs (ZVRBF)	National Treasury	Allowed consumers to purchase 19 staple food items without the VAT levy. 19 staple foods are tax free because of this policy	Access
Second Wave	2002	Integrated Food Security Strategy (IFSS)	Department of Agriculture	Food security (broad scope)	All
	2002	Integrated Nutrition Programme (INP)	Department of Health	Improve the nutritional status of all South Africans The programme focuses heavily on nutrition education, fortification and supplementation, and growth monitoring.	Utilisation and Quality
	2003	Food Price Monitoring Committee under the National Agricultural Marketing Council (NAMC)	Department of Agriculture	Consumer protection (food prices)	Access
	2003	Regulations Relating to the Fortification of Certain Foodstuffs (RRFCF)	Department of Health	Regulated the importation and production of fortification mix; Required all food vehicles to be micronutrient fortified;	Utilisation and Quality

[1] The food system concept emphasises the interconnected relationships of various issues and FNS outcomes linked to the five dimensions of FNS (i.e. availability, access, utilisation, quality and stability of supply); relationships between various activities in the commodity chain (production, distribution, trading and consumption of food); various interactions across scales (time, space and jurisdiction); and various socio-economic and environmental constraints and impacts (Termeer et al, 2018).

				Regulated the labelling of fortified foods	
	2004	Social Assistance Act	Department of Social Development	Paved the way legislatively for the existing social grants system, which plays a critical role in alleviating hunger for beneficiaries.	Access
	2004	National School Nutrition Programme (NSNP)	Department of Basic Education	The programme has 3 pillars i.e. providing nutritious meals to all learners in in quintile 1–3 primary and secondary schools, as well as identified special schools, on all school days; educating learners and the community at large about good nutrition and creating awareness about the Deworming Campaign; and facilitating food gardens and other food production projects in schools.	Access and Utilisation
Third Wave	2009	Zero Hunger Strategy/ Food for All Campaign	Department of Agriculture	Focus on small-scale agriculture and food access – not implemented.	Availability
	2009	DPME Outcome 7 is entitled 'Vibrant, equitable and sustainable rural communities and food security for all'	Department of Rural Development and Land Reform	The delivery agreement for this Outcome frames food security around the general recognised standards of availability, access, utilization, and affordability.	All
	2011	New Growth Path (NGP)	Department of Economic Development	Promote economic development and job creation	Access
	2012	National Development Plan Vision 2030 (Chapter 6) (NDP)	National Planning Commission	Reduce food insecurity and address malnutrition	All
	2013	Roadmap for Nutrition in South Africa (RNSA)	Department of Health	Optimal nutrition for all South Africans	Utilisation
	2013	Strategic Plan for the Prevention and Control of Non-Communicable	Department of Health	Prevention of NCDs and promotion of health and wellbeing	Utilisation and Quality

		Diseases (SPPCNCD)			
	2013	Social Relief of Distress Grants (SRDG)	Department of Social Development	Provides immediate response to a crisis situation where citizens are without the means to provide the basic necessities for themselves	Access
	2013	Fetsa Tlala ("End Hunger")	Department of Agriculture	1 million hectares of land under production by the 2018/19 production season	Availability
	2014	Medium Term Strategic Framework (MTSF)	National Planning Commission	Reduce inequality and promote economic development	All
	2014	National Policy on Food and Nutrition Security (NPFNS)	Department of Agriculture	It is the current reference point for coordinated government work on food security, serving as a successor to the IFSS.	Utilisation
	2014	National Aquaculture Policy Framework for South Africa	Department of Agriculture	Food security (production and some economic access)	Availability
	2014	Agricultural Policy Action Plan (APAP)	Department of Agriculture	Provide steps to improve decent employment and food security	Availability and Access
	2015	DAFF Strategic Plan (DAFFSP)	Department of Agriculture, Forestry and Fisheries	Outlines programmes and activities for agriculture, fisheries and forestry for the period	Availability
	2015	Industrial Policy Action Plan (IPAP)	Department of Trade and Industry	To improve production, employment and economic development in agro-processing	Availability
	2015	Strategy for the Prevention and Control of Obesity in South Africa (SPCOSA)	Department of Health	To reduce the prevalence of obesity by 10% in 2020	Utilisation and Quality
	2016	Taxation of Sugar-sweetened Beverages (TSSB)	Department of Health	A tax rate of 2.29 cents was imposed on sugar-sweetened beverages per gram of sugar. To help reduce the intake of excessive sugar	Utilisation and Quality
	2017	National Food and Nutrition		To implement a priority set of actions and establish the necessary	All

		Security Plan (NFNSP)		institutional architecture to lead, coordinate, budget and monitor the implementation of these actions to deliver significant improvements in food and nutrition status by 2030	

Sources: Boatemaa et al, 2018; McLaren et al, 2015

3.3.1. Food availability

Most policies promoting the food availability dimension have revolved around the provision of inputs and human capital development, with land reform also receiving prominent government focus vis-à-vis agricultural production and, hence, food availability (Boatemma et al, 2018). From the 1994 RDP, to the 2002 IFSS, the 2009 Outcome 7, the 2013 Fetsa Tlala programme and the 2015 DAFFSP; the running thread vis-à-vis food availability has been around ensuring improved access of the majority of South Africans to productive land, farmer education and expanded extension services. Two major challenges widely raised in literature in as far as food availability initiatives in South Africa are concerned are that, firstly, the policies and initiatives have mostly been rural biased, with little or no proactive approaches towards supporting or encouraging urban agriculture for example, yet the majority of South Africans reside in urban areas and there is increasing evidence of high levels of food insecurity particularly in urban informal areas. A second concern is that the land reform process has been slow and has largely failed to reach the set targets over the years, yet this is one of the main vehicles for sustained household food availability in the country.

3.3.2. Food access

In as far as the food access dimension is concerned, policies and initiatives have revolved mainly around ensuring sustained safety nets for households as well as price monitoring and the provision of jobs and/or income generation. Sustained social safety net programmes have mainly been through different grants and cash transfers spearheaded primarily by the Department of Social Development, to include: (a) the disability grant (b) child support grant (c) the foster care and care dependency grant, and (c) the social relief of distress grant implemented by South Africa Social Security Agency (SASSA). The social relief of distress grant involves the provision of food parcels or food vouchers for a period of 3 to 6 months to families identified as distressed. Taylor (2015) notes that as at 2015, close to 46% of households in South Africa were receiving some form of social grant. Essentially, government

expenditure on social grants has increased over the years (Boatemma et al, 2018). Looking at job provision, such policies as the NDP, IPAP and NGP have all focused on the creation of employment opportunities for both skilled and unskilled people. In addition, the introduction of zero-rating Value Added Tax (VAT) on a basket of staple food items in 1994 have allowed consumers to have affordable access to important food items[2].

Also contributing to the food access dimension over the years has been the National School Nutrition Programme (NSNP), previously known as the Primary School Nutrition Programme, and initially spearheaded by the Department of Health from 1994 until 2004 when the programme was transferred to the Department of Basic Education. The programme aims at addressing hunger in public schools through the provision of a healthy meal for children at schools, whilst at the same time encouraging school attendance. Under the programme, schools are also encouraged to establish food gardens from which they will obtain fresh produce to supplement the feeding programme.

Four major concerns have been raised vis-à-vis initiatives related to the food access dimension in South Africa. The first concern is that most employment opportunities spearheaded by the government especially for low skilled people are short term and unstable, and therefore incapable of sustainably addressing the enduring problems of unemployment and poverty which are two of the main root causes of food insecurity in most households in South Africa (Cloete, 2015). As Theron and Visser (2012) articulate, such jobs as those provided for under the Expanded Public Works Programme for example, are temporary, pay less, and do not offer pension and other employee benefits. Employment creation initiatives in South Africa have therefore not been as effective as anticipated in contributing to FNS.

A second concern raised vis-à-vis initiatives related to the food access dimension is that there is lack of systematic monitoring and evaluation, particularly in as far as the social grant system is concerned; to be able to establish the gaps and how effective it has been over the years. Some scholars e.g. Devereux and Waidler (2017), for instance argue that, from their studies, most cash transfers have not been used on food since the onus of deciding what to spend the money on lies with the individual. Furthermore, it has been argued that the social grant system is not encompassing enough as able-bodied unemployed people older than 18 years and younger than

[2] Included among tax-free items are cereals and grains such as maize meal, samp, rice, brown bread, nuts and legumes, animal-source foods such as milk powder, dairy blend, milk and eggs, as well as fruits, vegetables and vegetable oils.

60 do not have relief in the form of access to social security. Yet within this cohort is a group of people – the youth – especially those in the 18 to 24 age range, who have been greatly affected and have borne the brunt of the huge problem of unemployment in the country[3]. A last concern in as far as initiatives linked to the food access dimension is concerned relates to the NSNP. Some scholars (e.g. Sanousi, 2019; Tshisikhawe 2017; Netshipise, 2016) have argued that whilst the NSNP has gone a long way in ensuring food access especially to learners from poor households, it has not always ensured access to nutritious food. Ramkisson (2016) argues that meals provided under the NSNP have not always been nutritious and healthy enough for growing children, and whilst the Department of Health (DoH) advises schools and the Department of Basic Education (DBE) on the types of meals to be provided to children, the DBE is not obliged to take up the DoH's advices as the meal types are also largely dependent on the budget available to DBE.

3.3.3. Food utilisation and food quality

Policy initiatives towards fulfilling the food utilisation and food quality dimensions in South Africa have mainly been spearheaded by the DoH and DBE and revolved around the fortification of certain foodstuffs, breastfeeding campaigns, micronutrient supplementation, nutrition education and counselling, deworming, and, most recently, the prevention and control of non-communicable diseases. These initiatives have been anchored around such policies and programmes as the 2002 INP, the 2003 RRFCF, the provision of antiretroviral therapy to HIV positive mothers in a bid to curtail mother-to-child transmission through breastfeeding, the NSNP – one of whose pillars is nutrition education to promote nutritional knowledge and healthy food choices, and the 2013 SPCOSA which seeks, among other aspects, to propose guidelines around the marketing and advertisement of food, food labelling and physical activity in a bid specifically to reduce the prevalence of obesity.

Four main gaps have been identified in as far as food utilisation- and food quality-related policy initiatives in the country are concerned. Firstly, it has been noted in literature that most policies dealing with food utilisation and food quality are directed at very specific groups of people such as school children and pregnant women, leaving out the generality of the population. Milman (2008), for example, points out that initiatives related to micronutrient supplementation mainly focus on pregnant women, yet the pre-pregnancy period is also critical

[3] Youth unemployment rate in South Africa increased to 56.40 percent in the second quarter of 2019 from 55.20 percent in the first quarter of 2019. It has averaged 52.43 percent from 2013 until 2019.

in reducing maternal anaemia and the risk of pregnancy complications and deaths. In line with this observation, Boatemma et al (2018) also emphasise that policy responses supporting the food utilisation and quality dimensions such as malnutrition treatment are delivered mainly through schools and hospitals, which potentially leaves out individuals who may be in need of such services but do not have contact with these institutions.

A second gap highlighted in literature vis-à-vis policy issues and initiatives related to the food utilisation and food quality dimensions is that there has been a lack of a robust approach by government to control not only the proliferation of fast food outlets particularly in residential areas but also the advertising (and subsequently, increased consumption) of fast foods – usually characterised as energy dense, low in micronutrients and fibre and high in simple sugars and salt (Pereira and Drimie, 2016). This may also be one of the major reasons why cases of overweight and obesity are increasing in South Africa (Misselhorn and Hendriks, 2017). A third gap identified has to do, again, with the lack of monitoring and evaluation of such key food utilisation and food quality initiatives as the NSNP. Devereux et al (2018) for example note that despite the sizeable scale and cost of the NSNP, its objectives and priority outcomes have been vague because of lack of monitoring and evaluation. They argue that it is unclear what the NSNP is trying to achieve beyond simply delivering meals to school children, and the difference the programme is making, and what planning and organising is needed to make it work better.

A last concern with the food utilisation and food quality dimensions in South Africa has been the limited focus on the food preparation aspect (with much focus being on the food consumption aspect). Taking an example of the NSNP once more, there is no serious emphasis into how food for children in the various schools is prepared. Such measures as infection control, regular training and certification of food handlers in proper storage and cooking of foods as well as training on meticulous hand-washing practices, are not given the serious attention they deserve.

3.3.4. Institutional arrangements and FNS governance

As noted earlier and as reflected in Table 1, the complexity of the food system means that different government departments spearhead and oversee different aspects of availability, access, utilisation and stability of food supply in the country. What is remarkable however is that there are currently no clearly functional overarching FNS institutional arrangements especially at the national level that are responsible for coordinating FNS activities. Whilst on

paper the government have sought to approach FNS in a coordinated, interdepartmental way, especially through the 2002 IFSS, the 2014 NPFNS, and, more directly, the recent 2017 NFNSP; there appears to be lack of political will to actualise the coordinated approach in practice. The 2017 NFNSP, for example, recommended the establishment of (a) an intersectoral National Food and Nutrition Security Council (NFNSC) chaired by the Deputy President, (b) Provincial Food and Nutrition Security Councils (PFNSCs) chaired by Premiers, (c) district sub-councils on Food and Nutrition Security chaired by Mayors, and (d) Consultative Forums at all levels which are supposed to meet at regular intervals. There has, however, been very little movement towards the setting up of these structures. There has only been the establishment of a National Food and Nutrition Security Coordinating Committee chaired by the Department of Planning, Monitoring and Evaluation (DPME) mainly to steer the implementation of the six strategic objectives of the NFNSP. Meanwhile, the task of coordinating food security efforts has been and continues to be the mandate of the Department of Agriculture, yet the department lacks both the convening powers and the resources required to ensure interdepartmental accountability.

There is the South African Vulnerability Assessment Committee (SAVAC) at the national level, chaired by the Department of Agriculture, where vulnerability and other FNS-related issues are deliberated. This platform has however not been as functional as it should be as, for example, the committee has only met twice in the last two years. At the subnational level, there are Provincial and Municipal War Rooms on Poverty in all provinces (coordinated by the Premier and Mayor's offices respectively) where FNS-related issues are advanced as well as Integrated Food Security Committees chaired by provincial departments of agriculture. Different provinces have different platforms where FNS-related issues are/have been advanced such as Operation Sukuma Sakhe in KwaZulu Natal and the Food Security Governmental Work Group in the Western Cape. The general consensus in literature, however, (e.g. see Delport, 2019; Termeer et al, 2018; Pereira and Drimie, 2016; Nkwana, 2015) is that the aspect of FNS governance in South Africa, especially as it concerns institutional coordination at both the national and subnational levels needs serious attention. As explicitly acknowledged in the 2017 NFNSP, the setting up of well-defined FNS structures which guide the coordination of actions among different stakeholders, FNS information management, and the monitoring of progress vis-à-vis food availability, access, utilisation and stability of supply will be one of the biggest game changers in as far as FNS in the country is concerned.

4. OVERVIEW OF REGIONAL AND INTERNATIONAL CASES

4.1. Introduction

Despite the global commitments to dealing with food and nutrition insecurity as entrenched in the Sustainable Development Goals (SDGs) for example, successes vary across regions, countries and within countries. Some regions, such as Southern Asia have experienced success in the area of reducing hunger, while others such as Sub-Saharan Africa have seen increased vulnerabilities to hunger among its populations. Also, countries such as Brazil have seen significant improvements, while for others, which include South Africa, there have not been much successes. The question is, why have other regions and countries been more successful than others in improving FNS?

The aim of this section is to compare and contrast other countries with South Africa with regards to FNS status quo, trends and interventions that have been implemented to improve FNS.

The key questions asked include the following:

- What are the current and evolving trends of FNS in selected comparative case countries in Africa and internationally?
- Is South Africa's position worse or better off than these countries in so far as the 4 pillars of FNS are concerned?
- What are the factors that place South Africa in a better or worse position and how can the situation be improved or rectified?

4.2. Current and evolving food and nutrition security trends

4.2.1. An overview FNS indicators and measurement for international comparisons

Before presenting the current and evolving food and nutrition security (FNS) trends, it is important to reflect on the state of global FNS measurement and indicators. The aim is to highlight how FNS has been measured across time and space, and the extent to which there is global consensus on FNS indicators. Unfortunately, there is little consensus on FNS measurements and indicators, with most agencies applying their preferred methods of data collection, aggregation, and analysis for FNS monitoring, and programming (see for example: EIU, 2018; FAO et al., 2019; von Grebmer et al., 2018).

Consequently, there is currently an inefficient multiplicity of FNS indicators and instruments collecting and reporting information on the key dimensions of FNS, with tremendous variation in the content, quality, and quantity of the information collected (de Haen et al., 2011; Ibok et al., 2019; Lentz, 2019). Several studies (e.g., Barrett, 2010; Carleto et al 2013; de Haen et al., 2011; Ibok et al., 2019; Maxwell et al., 2014; Pérez-Escamilla et al., 2017; Vaitla et al., 2017) have discussed and critiqued the different FNS measurement techniques, without reaching consensus on the best approach. Sadly, the many indicators have not resulted in increased FNS coordination, and have often not been adequately nutrition sensitive, despite the mainstreaming of nutrition in the development discourse (Heady & Ecker, 2013).

South Africa does not currently have an official measure of the state of FNS, or a coherent FNS information system, at the national and subnational levels. While the national FNS policy implementation plan includes a list of possible FNS indicators, these have not been officially adopted as the standard FSN indicators across various government departments and agencies as well as non-state actors (DAFF, 2014; Misselhorn & Hendriks, 2017). To facilitate international comparisons, three FNS indices are often used: (a) The Prevalence of Undernourishment (PoU) by the Food and Agriculture Organisation (FAO); (b) Global Food Security Index (GFSI) by The Economist Intelligence Unit, and (c) Global Hunger Index by the International Food Policy Research Institute (IFPRI). The PoU, through which the FAO measures calorie availability/deprivation/hunger at the country level based on national food balance sheets, is one of the oldest and widely used indicators of FNS. Despite its wide use, the estimates of PoU have been widely criticized for lacking accuracy in both cross-sectional comparisons and trends (Carletto et al., 2013; Heady & Ecker, 2013; Pérez-Escamilla et al., 2017).

FAO recently added the prevalence of severe and moderate food insecurity, based on the Food Insecurity Experiential Status (FIES), which complements the PoU to monitor SDG 2.1 (ending hunger and ensuring access to food by all). The discussion of FNS status quo and trends in this report is based on the FAO's: (a) PoU measuring world hunger[4]; (b) Food Insecurity Experience Scale (FIES) indicating the prevalence of moderate or severe food insecurity, and (c) anthropometric measures (wasting, stunting and obesity/ overweight levels).

[4] The PoU is based on the availability and adequacy of the dietary energy supply relative to dietary energy requirement of the average individual in the population

4.2.2. Current and evolving FNS trends in comparative regional & international cases

Figure 1a shows the trends of people affected by hunger globally over the years. The figure shows that the number of people suffering from hunger (food deprivation) has been increasing since 2015, after a steady decline since 2005. In 2018, the number of undernourished people increased to a high of 821.6 million (from 810 in 2017). Figure 1b shows the trends in the relative prevalence of food deprivation. It shows a similar pattern as Figure 1a, indicating a decline in the prevalence of undernourishment from 2005 to 2015, and a slight increase since then. The graph shows that in 2018, 10.7% of the people in the world were undernourished, a slight increase from the 10.6% level in 2017.

FAO et al (2019) reported that hunger has been on increase in Africa and Latin America, while on a decrease in Asia[5]. The fact that there is currently a huge proportion of hungry people globally, and that the world is currently failing to tame the rising trend in the state of food deprivation, suggests that the world is less likely to achieve the 2030 SDG targets of achieving a world without hunger or food insecurity (FAO et al., 2019; EIU, 2018).

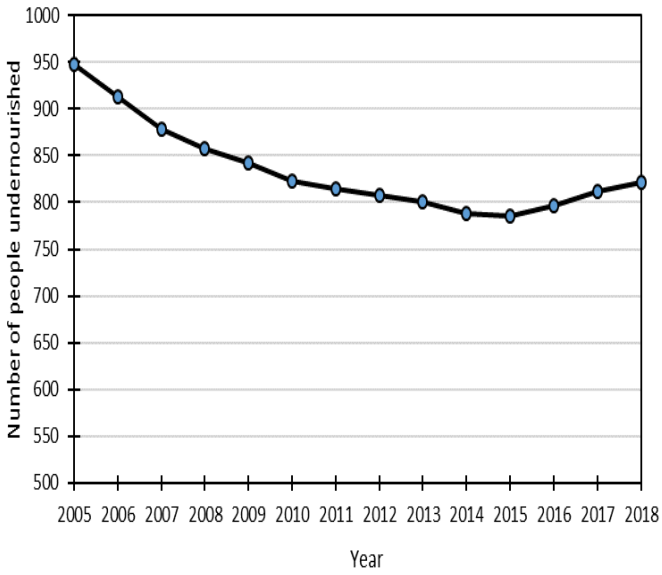


Figure 1a Number of undernourishment globally, 2005 – 2018

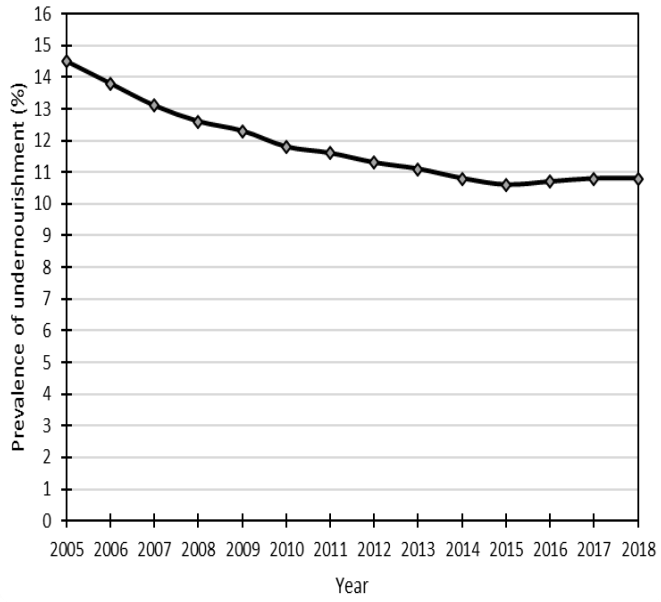


Figure 1b Prevalence of undernourishment globally, 2005 – 2018

Source: FAO et al., 2019

Using the FIES, FAO et al (2019) reported that 700 million people experienced severe food insecurity (in comparison with the 821.6 mil using PoU) in 2018. Additionally, the FIES indicated that 1.3 billion experienced moderate food insecurity. In total, 2 billion people

[5] Only Western Asia experienced an increase in hunger in 2018 in Asia

globally experienced some form of food insecurity in 2018. Key causes of food insecurity in 2018 included conflicts, droughts, climate change, and poor economic performance (in particular, declining prices of primary commodities) (FAO et al., 2019).

Table 2 shows that variations exist among regions in terms of the prevalence of undernourishment and food insecurity. For example, the PoU shows that, in 2018, Africa had the highest prevalence of hunger (PoU=19.9%), followed by Asia (PoU=11.4%). However, in absolute terms, most of the undernourished people in 2018 were from Asia (513.9 mil), while 256.1 mil were from Africa (FAO et al., 2019). In Africa, 90% of the undernourished people (239 mil) were from Sub-Saharan Africa, representing 22.8% of the people in the sub-region. Only 7.1% of the people in North Africa were undernourished in 2018.

Table 2. Regional variations in food insecurity levels, 2018

Region	Prevalence of Undernourishment (%)	Prevalence of Severe Food Insecurity (%)	Prevalence Severe or Moderate Food Insecurity (%)
World	10.7	8.7	25.4
Africa	19.6	22.1	53.1
Asia	11.4	6.7	21
South America	5.4	8.2	30.8
N. America & Europe	<2.5	1.1	8.4
South Africa	6.2	29.2	51.1

Source: FAO et al., 2019

Table 2 shows that, using the PoU (calculated using food balances), South Africa had low levels of food deprivation than the world average in 2018. However, using the FIES, South Africa had higher levels of severe food insecurity than all regions in the world. One of the limitations of the PoU is that it assumes that the average population calorie consumption is equivalent to the average dietary energy supply, which is not the case in reality (Pérez-Escamilla et al., 2017). The PoU and FIES figures imply that while South Africa produces enough food to feed most of its population, as per the food balances, the food is not accessible to a huge proportion of its population, who then experience severe or moderate levels of food insecurity (due to high levels of resource, wealth & income inequalities; unemployment, etc.).

Table 3 shows that South Africa has a prevalence of undernourishment that is lower than that of upper middle income countries. South Africa is considered an upper middle income country. However, a huge proportion of South Africans experienced severe food insecurity, a proportion higher than that of the average of even low income countries. Again, this indicates that South Africa's food availability levels are comparable to those of their peers in the upper-middle

income category. While food is available for people to have access; in South Africa, the challenge is improving the logistical means of the poor households to access and consume it. As explained by d'Agostino et al. (2017), food and nutrition insecurity in South Africa is not due to a shortage of food, but rather to insufficient access as a result of structural poverty and inequality.

Table 3. Variations in food insecurity levels with income levels

Income categories	Prevalence of Undernourishment (%)	Prevalence of Severe Food Insecurity (%)	Prevalence Severe or Moderate Food Insecurity (%)
World	10.7	8.7	25.4
Low income	27.7	23	58.3
Lower middle income	13.8	10.9	30.6
Upper middle income	7.1	8.7	28.6
High income	<2.5	1.9	8.6
South Africa	6.2	29.2	51.1

Source: FAO et al. (2019)

Continuing with the trend, Table 4 shows that South Africa has low levels of food deprivation than averages of all African sub-regions, except for North Africa, but has a higher level of severe food insecurity prevalence than most of all African sub-regional averages, with the exception of Southern Africa.

Table 4. Africa sub-regional variations in food insecurity levels with income levels

Africa Sub-Region	Prevalence of Undernourishment (%)	Prevalence of Severe Food Insecurity (%)	Prevalence Severe or Moderate Food Insecurity (%)
North Africa	4.3	9.6	30.8
Sub Saharan Africa	22.5	25.1	58.2
Southern Africa	8.3	30.7	53.6
East Africa	30.9	27.5	64.3
West Africa	13.9	17.3	47.6
South Africa	6.2	29.2	51.1

Source: FAO et al. (2019)

In comparison to a selected few countries, Table 5 shows that South Africa has a comparable level of food deprivation to countries such as Mauritius or Argentina, and better than that of countries such as India, Botswana and Malawi. The prevalence of severe food insecurity is only better than that of Botswana and Malawi, and is significantly higher than countries with comparable prevalence of undernourishment levels.

Table 5. Food security comparisons with other countries

Country	Prevalence of Undernourishment (%)	Prevalence of Severe Food Insecurity (%)	Prevalence Severe or Moderate Food Insecurity (%)
South Africa	6.2	29.2	51.1
Mauritius	6.5	6.2	18.5
Botswana	26.4	41.3	70
Malawi	17.5	51.7	81.9
Argentina	4.6	11.3	32.1
Brazil	1.5	3.3[a]	7.9[a]
Mexico	3.6	8.9	28
India	14.5	7.9[b]	46[b]

Sources: FAO et al., 2019; dos Santos et al, 2018[a], [b]Joshi et al, 2019 & Jacob et al, 2018.

In terms of nutrition, Table 6 shows that 7.3% of children under 5 years were stunted, while over 21% were wasted. Just below 15% of children born had low birthweight. While on one hand the problem of undernutrition is persisting especially among low and lower middle income countries, there is, on the other hand, a rising challenge of over-nutrition (obesity/ overweight), particularly among upper middle and higher income countries. In terms of global nutrition trends, FAO et al (2019) reported an increase globally in overweight and obesity levels, and a decrease in the prevalence of stunting in 2018. About half of all the stunted children live in Asia and more than one third in Africa. Despite the decrease in stunting, this has not occurred at a pace that is required to meet the SDGs 2030 targets, implying that the nutrition targets will likely not be met (FAO et al., 2019). Sub-Saharan Africa lags behind in terms of the reduction of stunting.

Table 6. Variations in anthropometric measures with income levels

Region	Prevalence of wasting (<5yrs) (%)	Prevalence of Stunting (< 5yrs) (%)	Prevalence of overweight (<5yrs) (%)	Prevalence of obesity (>18 yrs) (%)	Prevalence of low birthweight (%)	Prevalence of exclusive breastfeeding (0-5 yrs) (%)
World	7.3	21.9	5.9	13.2	14.5	41.6
Low income	7.4	34.2	3.1	6.8	14.3	49.9
Lower middle income	11.6	31.1	3.9	3.1	19.9	47.6
Upper middle income	1.8	6.3	7.4	13.8	7.3	23.9
High income	0.6	3	7.2	24.6	7.6	-
South Africa	2.5	27.4	13.3	24.5	14.2	31.6

Source: FAO et al., 2019

South Africa had a lower prevalence of wasting (weight-for-height) compared to the world as well as lower middle and low income countries. The table shows that the country experienced higher levels of stunting (height-for-age) than the world average, and it had comparable levels to those of low income countries. Compared to other upper middle income countries, South Africa had almost twice as much prevalence of stunting and low birthweight.

Table 6 clearly demonstrates South Africa's dual nutrition problem. While on one hand, South Africa experiences higher levels of undernutrition, it also experiences higher levels of overweight and obesity. When it comes to undernutrition, South Africa is comparable to low income countries. However, when it comes to over-nutrition (overweight/ obesity), South Africa is comparable to high income countries. The dual nutrition problem is such that South Africa should come up with strategies of dealing with undernutrition for one section of the population, on one hand, while also designing options of addressing over-nutrition for another cohort of the population.

Table 7 indicates that in terms of the prevalence of stunting and low birth weight, South Africa is comparable to countries such as Malawi and India. On the other hand, South Africa experiences obesity and overweight at higher levels, comparable to upper middle income countries such as Brazil and Mexico.

Table 7. Anthropometric indicators comparisons with other countries

Country	**Prevalence of wasting (<5yrs) (%)**	**Prevalence of Stunting (< 5yrs) (%)**	**Prevalence of overweight (<5yrs) (%)**	**Prevalence of obesity (>18 yrs) (%)**	**Prevalence of low birthweight (%)**	**Prevalence of exclusive breastfeeding (0-5 yrs) (%)**
South Africa	2.5	27.4	13.3	24.5	14.2	31.6
Brazil	1.5[a]	3.9[a]	12.2[a]	22.3	8.4	38.6
Mexico	2	10	5.3	28.4	7.9	30.1
India	20.8	37.8	2.4	3.8	20	54.9
China	1.9	8.1	9.1	6.6	5	18.6
Malawi	2.8	37.4	4.6	4.7	14.5	59.4

Source: FAO et al. (2019), [a] means source is Gonçalves et al (2019)

To sum, this sub-section indicates that, when it comes to food availability (measured through FAO's PoU), South Africa performs very well. South Africa has a competitive commercial farming sector, which produces huge quantities of food. However, given the high levels of income equalities, the challenge is ensuring access to food by the people. As such, the country performs poorly in the access indicators of food security, often performing worse than the

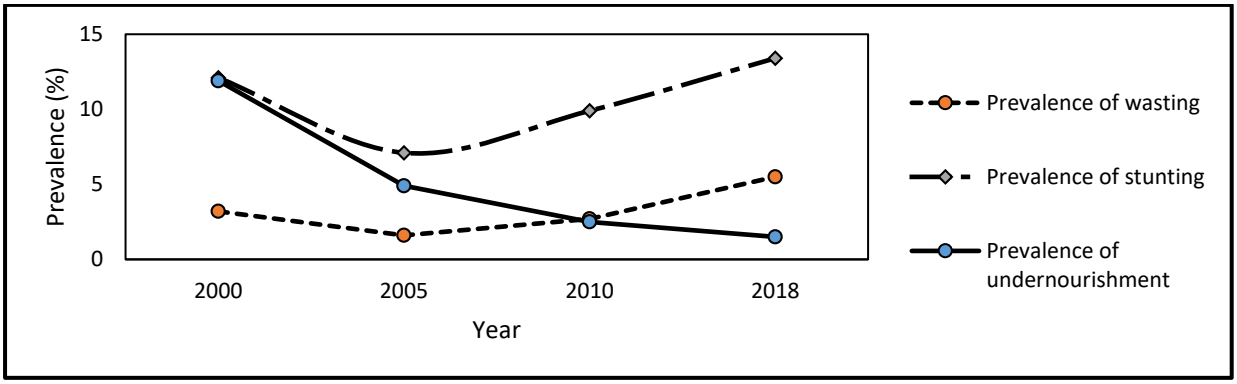
world average. In fact, a higher proportion of South Africans experience food insecurity, even higher than that of the poorest countries. When it comes to nutrition indicators, South Africa faces a dual problem, signifying its internal contradiction. On one hand, the country's malnutrition levels are comparable to that of low income countries. On the other hand, South Africa's over-nutrition levels are those of high income countries.

Overall, the trend analysis indicate that South Africa faces a huge challenge in dealing with food and nutrition insecurity. What lessons can be learned from countries that have been successful in addressing this scourge? The next section presents a case study of Brazil's interventions in dealing with the challenge of access to food and improving nutrition. Brazil is a relevant case study because, like South Africa, it is considered an upper middle income country, is characterised by high structural inequalities, has a dual agricultural sector (large and small scale farming sectors), and has introduced a comprehensive system of cash transfers.

4.3. Food and Nutrition Security interventions in Brazil: Lessons for South Africa

Brazil was declared off the hunger map in 2014 after it attained levels of undernourishment that were below 5% (FAO et al., 2014). Between 1990 and 2012, the country experienced a decrease from 25.5% to 3.5% in the incidence of extreme poverty (i.e., less than US$1.25/day per capita). These improvements in food availability and incomes were associated with reduced prevalence in stunting and wasting among children, making Brazil a huge FNS success story, particularly from the 1990s until around 2005 for the later indicators (Monteiro et al., 2009a). Thus, Brazil has been regarded as an interesting case for the world in general and for South Africa in particular to learn invaluable lessons on how to deal with the challenge of food and nutrition insecurity. Figure 2 shows the trends in the prevalence of undernourishment, stunting and wasting in Brazil since the year 2000.

Figure 2. Trends in the prevalence of FNS indicators in Brazil, 2000 – 2018



Source: von Grebmer et al, 2018

Figure 2 shows that Brazil experienced significant reductions in the incidence of undernourishment from 11.9% in 2000 to 1.5% in 2018. This represents a decline of over 87% in undernourishment in less than two decades. While there were also successes in the reduction of child stunting and wasting around until 2005, the graph, however, shows that there has been an increase in child malnutrition in recent years.

Brazil's success has been attributed to a number of reasons. The role of intentional and empirically grounded policy has been lauded as key in Brazil's impressive improvements in food and nutrition security (Monteiro, 2016; Monteiro et al., 2009b; Rocha et al., 2016). In designing these policies, Brazil made efforts to understand the underlying causes of the food and nutrition insecurity and prioritised the participation of civil society (Kepple & Segall-Corrêa, 2017; Monteiro, 2016). The result was that factors such as inadequate access to food, inadequate care for children and women, insufficient health services and an unhealthy environment were identified as the main drivers of FNS challenges (Kepple & Segall-Corrêa, 2017; Monteiro et al., 2009; Rocha et al., 2016; Skidmore & Matter, 2004). Having understood the root causes of the problems ensured that proposed policy interventions were not just addressing symptoms, but the underlying factors.

Given the identified problems, the focus of the policies was on poverty reduction through a set of well-designed pro-poor policies, targeting income distribution and access to basic services (Monteiro et al., 2009a; Rocha et al., 2016; Skidmore & Matter, 2004). Through the Zero Hunger Strategy, specific programs to combat hunger and food insecurity were implemented. The Zero Hunger programme reflected a systemic view of food and nutrition security by addressing food access and also production, distribution and consumption of quality food and diets (Graeub et al., 2016; Mattos & Bagolin, 2017; Monteiro et al., 2009b). The Brazilian government was very committed to eliminating hunger, that "Fome Hunger" (Zero Hunger) became the name of a ministry dedicated specifically to the task (da Silva, 2019). To convert political commitment and expressions of goodwill to tangible interventions depends on effective decisions, programmes and funding. In Brazil, the political commitment led to plans and investments aimed specifically at rescuing millions of people from hunger and poverty (da Silva, 2019). The hungry were specifically taken into account in budgets, with the target being that they should receive their share of the increasing wealth as the economy was growing (da Silva, 2019).

The focus on income distribution led to a decrease in inequality, and this was associated with reduced child stunting and food insecurity (Skidmore & Matter, 2004). This happened even though there was no considerable economic growth (Oxfam, 2010; Rocha, 2016). According to Rocha (2016), the reduction in poverty and food insecurity was not driven by economic growth but by income distribution. Brazil's successes in reducing poverty and increasing food security outstripped those of India and China, despite the fact that these two countries experienced faster economic growth (Oxfam, 2010). The Brazilian experience suggests that improving FNS would require efforts in addressing the massive inequalities in South Africa (the highest in the world). The focus on growing the economy, in the hope that the economy will rise with all the people when it grows, based on the trickle down hypothesis, is largely ineffective in improving food and nutrition outcomes, as economic growth leads to the rich becoming richer while the poor becoming poorer.

The Family Grant Program (Programa Bolsa Família), introduced as part of the Zero Hunger strategy in 2003, is now recognised as one of the most advanced in the world, benefitting about 14 million families (about 50 million people) (Rocha et al., 2016). In fact, South Africa has the largest non-contributory cash transfer programme in the world after Brazil (Barrientos et al., 2013). The Bolsa Familia programme allocates a monthly stipend to families with income below the poverty line, which is meant to lift these poor households above the poverty line.

While South Africa also has a social grants programme that benefits many members of poor households, there are some differences that make Brazil's cash transfers more effective in dealing with food and nutrition insecurity. Firstly, in Brazil, the amount given to a household is depended on their poverty level, with the aim of assisting the household to cross the poverty line. While the social grants recipients are income and asset means tested in South Africa, the amounts given are not informed by the poverty levels of households. Instead, the amounts given to households in South Africa do not explicitly seek to lift households above the poverty line, as is the case in Brazil. Secondly, while the social grants are unconditional in South Africa, the cash transfers in Brazil are conditional upon women and children in these families attending primary health centres and older children regularly attending schools. The focus on health and schooling has resulted in improved school attendance, nutrition and health in Brazil (de Janry et al., 2006). These interventions are crucial in dealing with structural causes of poverty and food insecurity and assisting the poor to break out of the vicious poverty cycle.

According to Kepple & Segall-Corrêa (2017), the success story of Brazil was not only the result of strong political will or a vigorous economy, but, to a large extent, of a well-coordinated multi-sectoral strategy shaped by civil society participation. The formation of the first National Food and Nutrition Security Council (*Conselho Nacional de Segurança Alimentar e Nutricional* - CONSEA) in 1993, has been described as a key step in improving the collaboration between government and civil society for FNS (Kepple & Segall-Corrêa, 2017; Pérez-Escamilla et al., 2017). Two-thirds of the members of the CONSEA were representatives of civil society (organised social movements, religious leaders and members of the academic community), and one third was composed of government representatives (Kepple & Segall-Corrêa, 2017). CONSEA played a critical role in promoting inter-sectoral thinking among members of civil society and government, and was integrally involved in the evolution and monitoring of the Zero Hunger Strategy.

The institutional structures and legislation that eventually transformed key aspects of the Zero Hunger strategy into government policy were broadly debated and heavily shaped by the CONSEA (Kepple & Segall-Corrêa, 2017). The participation of different players in problem identification, policy formulation and implementation ensured that the perspectives of different players were considered in defining the problems as well as in crafting the solutions, leading to maximum buy-in from key stakeholders (Kepple & Segall-Corrêa, 2017). While the policies prioritizing social protection and support for smallholder farmers were essential to success, none of this would have been possible without civil society pushing the agenda (Kepple & Segall-Corrêa, 2017; Rocha, 2016). In the case of South Africa, whilst the 2014 National Policy on Food and Nutrition Security (NPFNS) acknowledges the multi-sectoral nature of FNS, and the importance of multi-sectoral collaboration, the irony is that its formulation did not involve a wide range of actors outside government (Nkwana, 2015). It does not seem that there is adequate political commitment, as well as buy in from particularly non-state actors, on some of the proposals of the 2014 NPFNS, and it remains to be seen if the proposed FNS structures (outlined in the 2017 NFNSP), akin to CONSEA in Brazil, will be successfully formed in South Africa.

In Brazil, adequate measurement tools were key for documenting changes in food insecurity nationwide and garnering support for government policies (Pérez-Escamilla et al., 2017). As the adage goes, "what gets measured gets done" (von Grebmer et al., 2016). CONSEA prioritised developing these indicators to monitor FNS, which they then used to advocate for policies that address the identified challenges. Sadly, South Africa still lags in terms of

establishing a properly functioning official information management system for FNS, even though this is currently in the pipeline. The result is that it is difficult to establish a common understanding of the magnitude of the food insecurity problem, with different players relying on different information or indicators. On the other hand, it is easier to garner support for a clearly defined problem that is supported by concrete and widely accepted figures, as the Brazilian experience indicates.

Increased access to basic services such as health, education and sanitation was also a focus of Brazil's pro-poor policies. The focus was on breaking the vicious cycle and turning it into a virtuous one, where food production, the country's macroeconomic policy and social protection systems and programmes would be coordinated and would feed back into each other (da Silva, 2019). For instance, the Brazilian government provided nutritious school lunches for poor children from the most disadvantaged neighbourhoods (da Silva, 2019). The school lunches not only improved diets of school children, but also encouraged them to attend class (da Silva, 2019; de Janvry et al., 2006). Additionally, investments were made in school programmes, driving access to education. The deliberate complementarity of interventions ensured that the food was sourced from the impoverished small-scale farmers, which enabled many of these marginalised farming families to have improved access to the market. As a result, the smallholder farming households benefitted from a source of income that allowed them to improve their circumstances and develop their businesses (da Silva, 2019). Improving access to the market was but one important area of intervention for smallholder farmers' success. It was complemented with other initiatives, focusing on credit subsidies, capacity development activities, and subsidies and grants programmes, adding up to 30 different measures included within different social and developmental programmes (da Silva, 2019).

Access to medical facilities was increased, with many people gaining access to medical practitioners (Rocha, 2016). Furthermore, access to antenatal care was dramatically improved. For example, while only 37% of poor mothers had access to antenatal care in 1996, 80% had benefits from antenatal care in 2016, substantially reducing the socioeconomic disparities in antenatal care (Rocha, 2016). This was achieved with investments in primary health clinics and family health teams, particularly in poor settings, while investments in infrastructure led to increased access to water supply and sanitation (Monteneiro, 2016; Rocha, 2016). A key lesson in this instance is that improving food and nutrition security requires coherence in policies, and investments, across different departments, such as health, agriculture, infrastructure development, water, etc. Unfortunately, FNS-related policies in South Africa lack coherence

across government departments, as these have often operated in silos. Another difference between Brazil and South Africa is that the former is good on both policy intent as well as implementation, while the latter often formulates very good policies that are not implemented. For example, following the success of Brazil's Zero Hunger strategy, South Africa also formulated its own Zero Hunger strategy, with similar strategic intents and objectives, hoping to emulate the Brazilian success story (DAFF, 2012). However, there was not enough political commitment, sectoral coordination and follow-through in terms of implementation of the key pillars of the strategy (Hendriks & Olivier, 2015). The challenge in South Africa's policies towards addressing food and nutrition security is that the legislative framework and implementation strategy necessary to achieve policy goals are often not operationalised (Hendriks & Olivier, 2015).

To sum up, Brazil's FNS interventions were informed by contextual realities, and with collaboration of players across sectors, they resulted in improvement in agricultural production, family incomes, income equality, basic sanitation, and mothers' education, breast feeding rates, vaccination coverage, and greater access to basic health services. The suites of interventions increased food and nutrition security, placing Brazil above the world average in the reduction of undernourishment, malnutrition and child mortality rates.

5. FNS, THE NATIONAL DEVELOPMENT PLAN AND LINKS TO SUSTAINABLE DEVELOPMENT GOALS

The Sustainable Development Goals (SDGs) herald a departure from the traditional practice of reducing food security to aggregate farm production towards a more multifaceted perspective. This broader view incorporates food available but also gives prominence to facets such as adequate access to food, how food is being prepared and nutritional outcomes that result from actual food intake. This multifaceted view is neither concerned with whether one looks at national agro-food output nor how much a farm household produces for its own consumption, typical food availability counts that vary by the scale of observation (national/household/individual) rather than the substance of what is being measured. At a level of definition, this multifaceted understanding of food and nutrition security better fits the globally accepted meaning of this concept promoted by the Food and Agricultural Organisation (FAO), the chief UN agency leading the design and execution of global food policy. In terms of empirical methodology, multidimensionality is particularly helpful for a more realistic and

nuanced approach to operationalise the implementation of food and nutrition policies as well as how to measure, monitor and evaluate the benefits of these policies.

This section reviews progress towards achieving the SDGs by global developmental agencies and looks at how far the South African government has gone in domesticating the SDGs. The following broad question guides this overview: what is the degree of alignment or divergence between the substance in SA food and nutrition policy relative to the SDGs in terms of substance, targets and mechanisms? As a UN member state, it is reasonable to expect that South Africa's FNS policies, framework and execution mechanisms ought to be tightly aligned to the SDGs. However, since 1996 when SA elevated rights to adequate food and nutrition as constitutional obligations, the country's food and nutrition policy landscape went through several iterations as indicated in earlier sections of this report.

When the SDGs came into effect on 1 January 2016, it became a binding framework for all member states and agencies of the United Nations. In the food and nutrition security domain, the Food and Agricultural Organisation (FAO), World Food Programme (WFP) and International Fund for Agricultural Development (IFAD) have adopted the SDGs as guides to execute their respective mandates. Adoption by another multilateral agencies with developmental mandates, such as the World Bank, kept pace with this process. In fact, as an influential global knowledge producing agency, the World Bank has been involved in shaping the new SDG agenda from the outset, heavily concentrating on how to finance the realisation of the SDGs, the thrust of its flagship annual SDG report.

Table 8: Comparing food and nutrition security dimensions, SDGs and SA FNS Metrics

Food and Nutrition Security (FNS) Dimension	**Sustainable Development Goal (SDG#) – Priority Ranked & Relevancy***	**South African FNS Information & Decision Instruments (Metrics)**		
		NDP 2030 - Outcome 7 (Delivery Agreement)**	**NPFNS - Implement Plan 2019-2024*****	**SDG Baseline Report (2016)********
Availability	SDG#2; SDG#12; SDG#6; SDG#8; SDG#1; SDG#5; SDG#10; SDG#13; SDG#14; SDG#15;	X	X	X
Access & Affordability	SDG#2; SDG#12; SDG#6; SDG#8; SDG#1; SDG#10; SDG#5	X	X	X

Food Preparation	SDG#2; SDG#12; SDG#6; SDG#8; SDG#5; SDG#1; SDG#10;	?	?	?
Consume/Nutrient Intake/ Nutritional Outcome	SDG#2; SDG#12; SDG#3; SDG#5; SDG#6;	?	?	?
Stability	SDG#2; SDG#12; SDG#6; SDG#5; SDG#8; SDG#1; SDG#10; SDG#13; SDG#14; SDG#15;	?	?	?

Notes: *= SDG#1:End poverty in all its forms everywhere; SDG#2:End hunger, achieve food security and improved nutrition and promote sustainable agriculture SDG#3: Ensure healthy lives and promote well-being for all at all ages; SDG#4: Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all; SDG#5:Achieve gender equality and empower all women and girls; SDG#6:Ensure availability and sustainable management of water and sanitation for all; SDG#7:Ensure access to affordable, reliable, sustainable and modern energy for all; SDG#8:Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all; SDG#9:Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation; SDG#10: Reduce inequality within and among countries; SDG#11:Make cities and human settlements inclusive, safe, resilient and sustainable; SDG#12:Ensure sustainable consumption and production patterns; SDG#13: Take urgent action to combat climate change and its impacts; SDG#14:Conserve and sustainably use the oceans, seas and marine resources for sustainable development; SDG#15:Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss; SDG#16:Promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable and inclusive institutions at all levels; SDG#17:Strengthen the means of implementation and revitalize the Global Partnership for Sustainable Development.

** = Adoption of the National Development Plan (NDP) – Vision 2030 has informed the refinement of government's monitoring and evaluation instruments. Outcomes-based Delivery Agreements for Food and Nutrition Security is in Outcome 7, entitled "*Vibrant, equitable and sustainable rural communities and food security for all*" convened by the Department of Rural Development and Land Reform. In this section the reference point is "*Output 2: Improved access to affordable and diverse food*".

*** = Government gazetted the National Policy on Food and Nutrition Security Policy (NPFNS) in August 2014. Subsequently, the NFNSP has been translated into two 5-yeary National Implementation Plans, namely plans for 2017-2022 and 2019-2024 respectively with indicators broadly aligned to core FNS dimensions.

**** = Statistics South Africa (StatsSA) has developed and populated a Baseline report for the targets and indicators in the SDGs.

Source: Authors (See Also Appendix 2)

With the adoption of the 17 SDGs, the WFP for instance refined its own vision around "Steps to Zero Hunger", pivoting around SDG#2 and SDG#12. The WFP Zero Hunger vision incorporates elements related to adequate food and nutrition in the other SDGs, framed in the following five overarching steps or guiding principles:

- Put the furthest behind first
- Pave the road from farm to market
- Reduce food waste

- Encourage a sustainable variety of crops
- Make nutrition a priority, starting with a child's first 1000 days

6. TRENDS AND DRIVERS OF FOOD AND NUTRITION INSECURITY IN SOUTH AFRICA

6.1. Introduction

This section explores the trends and drivers of food and nutrition insecurity in South Africa. In exploring the mentioned aspects, the analysis follows Coates et al.'s (2006) conceptual framework, which identifies three domains of food insecurity. These are: (a) anxiety and uncertainty about household food supply; (b) insufficient food quality (including the variety and the preferences of the type of food); and (c) inadequate quantity (including the physical consequences of inadequate food consumption). As noted by Maxwell et al. (2013), these domains capture and interrogate the identifiable elements of the Food and Agricultural Organization's (FAO) definition of food security[6]. Each of these domains can be represented by two measurable indicators i.e. anxiety and uncertainty can be represented by self-reported hunger and perceptions of food adequacy; insufficient food quality by dietary diversity and the proportion of total expenditure devoted to food; while the physical consequences of food is captured by body mass index (BMI) and child stunting and wasting (Ryan & Leibbrandt, 2015). Analysis will, therefore, focus on these indicators.

Three datasets were used in analysis i.e. the National Income Dynamics Study (NIDS), the Income and Expenditure Survey (IES) and the Living Conditions Survey (LCS). NIDS is the only nationally representative panel survey in South Africa. The first wave was collected in 2008, comprising over 28,000 resident household members from over 7,000 households. Each subsequent wave was collected roughly two years apart, with the fifth wave which was collected in 2017 being the latest wave. One key advantage of the longitudinal nature of NIDS is that it allows tracing the evolution of FNS indicators over time.

The IES and the LCS, both collected by Statistics South Africa, are similar especially with regard to the use of the diary and recall methods to collect expenditure data. The use of the diary method, where households record their food expenditures in a diary is particularly

[6] According to the FAO (2001, page unknown), "Food security exists at the individual, national, regional and global levels when all people, at all times, have physical, social and economic access to sufficient, safe, and nutritious food to meet their dietary needs and food preferences for a healthy and active life."

advantageous in so far as it is likely to reduce measurement error. Thus, the expenditure data in the IES and LCS may be more accurate than in NIDS. However, the former are not longitudinal and do not have the richness of NIDS in terms of other important food security indicators like anthropometric measures. In this sense, these datasets complement each other and their combination helps in providing a holistic picture of FNS in South Africa. Analysis here focuses on the most recent IES wave (2010/2011) and the most recent LCS wave (2014/2015) which were collected from 25,328 and 23,380 households respectively over a 12-month period[7].

6.2. Anxiety and uncertainty about household food supply

In NIDS, households were asked how often adults and children went to bed hungry because of lack of food in the past year. The responses were: 'never', 'seldom', 'sometimes', 'often', and 'always'. About 1 in 5 households reported an adult 'sometimes', 'often' or 'always' going to bed hungry due to lack of food. 17% of households reported such levels of child hunger. The prevalence of both adult and child hunger was higher in female- than male-headed households. 25% of female-headed households reported an adult 'sometimes', 'often' or 'always' going to bed hungry due to lack of food, compared to 17% for male-headed households. For child hunger, the prevalence in female- and male-headed households were 22% and 13% respectively. This question was only captured in the first wave of NIDS; therefore, it was not possible to trace the evolution of self-reported hunger over the waves. The discontinuation of the hunger question may not be unconnected to the problematic nature of such self-reported hunger questions (see e.g. Aliber, 2009 for the pitfalls of these hunger questions). Hunger questions are not available in both the IES and LCS. That said, the high prevalence of hunger is striking given that hunger is an extreme form of food insecurity. Indeed, many food insecure households might not have experienced hunger over the reference period, resulting in hunger scales of this nature under-estimating the prevalence of food insecurity in the country (Battersby, 2012).

6.3. Insufficient food quality

The two indicators for this domain are dietary diversity and the proportion of total expenditure devoted to food. In NIDS, a food diversity measure was constructed from questions eliciting the different kinds of food consumed over the past 30 days. Using the format available in Swindale & Bilinsky (2006), we grouped these food items into 12 distinct food groups to obtain

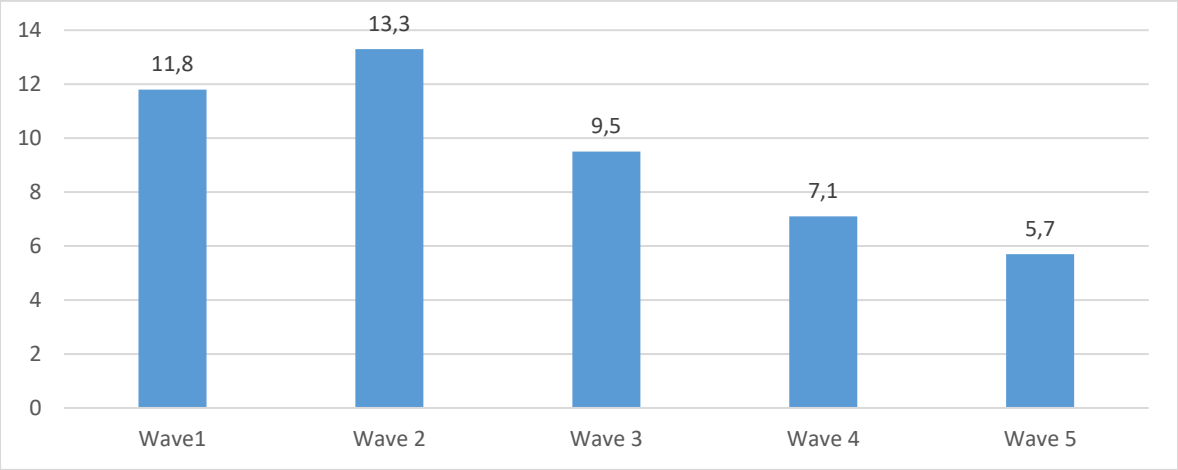
[7] Appendix 1 elaborates on the characteristics of the 3 datasets used, highlighting how FNS-related data is captured in each of the datasets, the tools used, units of observation and frequency of measurement

a household dietary diversity score (HDDS). Using this measure, the average number of food groups consumed slightly declined from approximately 10 to 9 between 2008 and 2017. However, this measure might have overstated dietary diversity in South Africa given the long recall period of 30 days. As noted by Swindale & Bilinsky (2006), a 24-hour recall period should be used to avoid an over-estimation of the extent of food diversity in the population. The HDDS measures in both the IES and LCS follow the food groups used by Statistics South Africa based on the classification of individual consumption according to purpose (Statistics South Africa, 2012, 2017a). Unlike in NIDS, the HDDS measures derived from IES and LCS resulted in 11 food groups. The averages were approximately 7 in both datasets.

Though there is no generally accepted cutoff for the number of food groups below which an individual/household may be deemed food insecure, Swindale & Bilinsky (2006) suggest the average of the number of food groups consumed by the richest tercile of the population as a practical cutoff. Using this cutoff, the proportion of households deemed food insecure increased from 55% in 2008 to 60% in 2017 (among households who consumed at least one of the food groups over the 30-day reference period) using NIDS. For the IES and LCS, the proportion of food poor households were 50% and 62% respectively, also indicating an increase in the prevalence of food insecurity by dietary diversity over time. In NIDS, the average household food expenditure relative to total household expenditure declined from 35% in 2008 to 30% in 2017. It was 25% using the 2010/2011 IES and 24% using the 2014/15 LCS (the amounts in NIDS waves 2 and 4 which roughly correspond to same time as the 2010/11 IES and the 2014/15 LCS respectively were 36% and 31%). It is important to note that the IES and LCS figures may be more reliable given the combination of diary and recall in expenditure data collection, whereas expenditure data in NIDS were only collected via recall.

A common sentiment is that households spending a significant proportion of their total expenditure on food are more likely to be food insecure relative to those who spend a smaller proportion (Jonsson & Toole, 1991; Maxwell et al.1999). Maxwell et al. (1999) suggest that households that spend at least 60% of their total expenditure on food may be deemed food insecure. Using this cutoff on the NIDS dataset, the proportion of households deemed food insecure halved between 2008 and 2017 (declining from 12% to 6%). It was 4% in both the IES and LCS.

Figure 3 Proportion of households spending at least 60% of total expenditure on food



Source: Authors' calculations; NIDS wave 1 – wave 5 (weighted estimates)

6.4. Physical consequences of food

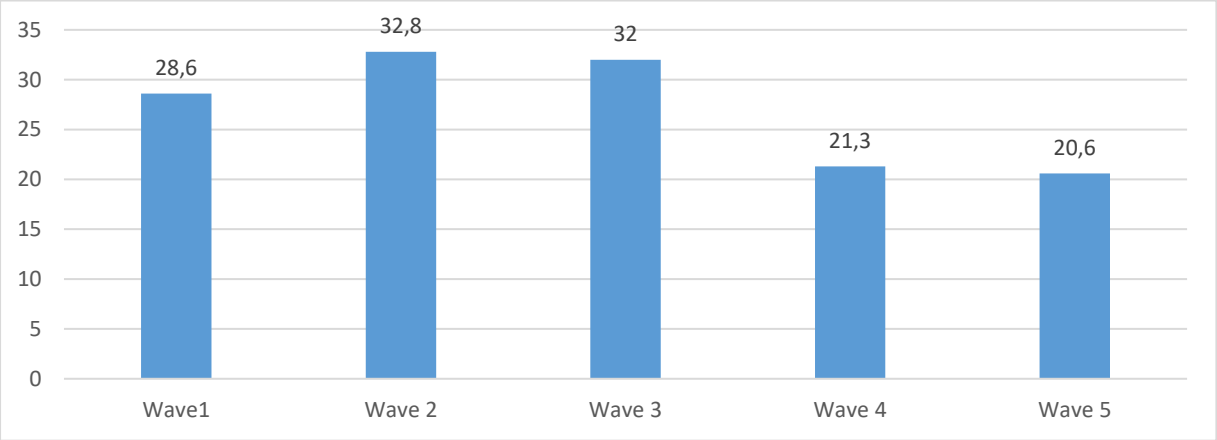
As earlier noted, the indicators used in measuring this domain are BMI (for adults) and stunting and wasting (for children). BMI is defined as weight (in kilograms) divided by the square of height (in metres). For adults, the following cutoffs have been suggested: BMI less than 18.5 (underweight); between 18.5 and 24.9 (normal weight); between 25 and 29.9 (overweight); and at least 30 (obese)[8]. For children, height-for-age z-scores and weight-for-height z-scores are used to capture long term and short-term nutrition status respectively. Children with a height-for-age z-score below 2 standard deviations of the reference population are deemed stunted, while those whose weight-for-height z-scores fall below 2 standard deviations of the reference population are deemed underweight. Among these three datasets, only NIDS contains anthropometric indicators.

The percentage of households with at least one obese member slightly increased from 37.3% in 2008 to 38.5% in 2017, while those with at least one underweight adult remained virtually constant over the same period (9 – 9.3%). On the other hand, the proportion of households with

[8] The use of BMI to measure obesity is controversial (see Bosello et al., 2016).

at least one stunted child dropped 8 percentage points from 28.6% in 2008 to 20.6% in 2017. While commendable, it is remarkable that 1 in 5 households still experience child stunting in South Africa. The household prevalence of wasting did not decrease significantly over the analytical period as the proportion of households with at least one wasted child declined from 5.8% in 2008 to 4.1% in 2017. We however note that both underweight and wasting might not be entirely the effect of food and nutrition insecurity, as either could be the result of disease especially given the high prevalence of HIV/AIDS in South Africa.

Figure 4. Proportion of households with at least one stunted child



Source: Authors' calculations; NIDS wave 1 – wave 5 (weighted estimates)

6.5. Correlates of food and nutrition security indicators

6.5.1. Race

It is not surprising that race is an important correlate of food and nutrition security given the country's apartheid history. About 24% of African households reported at least an adult going to bed hungry due to a lack of food in the past year, compared to only 2.9% of Indian and 4.2% of white households. For child hunger, it was 20% of African households, with prevalence rates of 1.9% and 2.2% in Indian and white households respectively. Using the proportion of households that consumed less number of food groups relative to the average consumed by the richest tercile of the population as an indicator of food insecurity, there was also a strong racial gradient to food insecurity. While 65% of African households relative to 17.7% of white households were classified as food insecure based on this metric in 2008, it was 63% of African households and 26.5% of white households in 2017. Thus, while there remained a huge racial gap in food insecurity based on food diversity, white households experienced a nontrivial rise in the prevalence of this type of food insecurity between 2008 and 2017. Using food

expenditure constituting at least 60% of household expenditure as an indicator, 14% of African and only 0.3% of white households were classified as food insecure in 2008. In 2017, 6.5% of African and 0.6% of white households were classified as food poor based on this indicator.

6.5.2. Gender

There was a significant gender gradient with regard to a number of FNS indicators. For instance, we earlier noted that the prevalence of both adult and child hunger was higher in female-headed households than in male-headed households. Similarly, the prevalence of stunting was consistently higher in female- than in male-headed households over the five waves. The stunting prevalence in female-headed households ranged from 22-47% over the five waves, compared to 13-35% among male-headed households. However, stunting was higher among males than females.

The prevalence of having at least an underweight household member was similar between female- and male-headed households across the waves. However, males were three times more likely to be underweight than females (prevalence rates of around 9% and 3% respectively over time). On the other hand, household obesity prevalence (i.e. having at least one obese household member) was generally higher in female- than male-headed households (about 11-21 percentage points higher across the waves). Moreover, the obesity rate among women (more than 40%) was 3-4 times that of males (about 11-15%). The foregoing therefore indicates adverse outcomes for females on most of the FNS indicators analyzed in this report.

6.5.3. Spatiality

Using NIDS, the prevalence of adult hunger was highest in traditional authority (TA) locations and lowest in urban areas. 31% of TA households reported an adult ‘always’, ‘often’ or ‘sometimes’ going to bed hungry in the past year, relative to 15% of households in urban areas. A similar spatial pattern obtained for child hunger, with the highest prevalence (25%) in TA areas and the lowest (12%) in urban areas. Classifying households that consumed less than the average number of food groups consumed by the richest tercile as an indicator of food insecurity, TA areas had the highest prevalence of food insecurity (77% and 73% in 2008 and 2017 respectively) while the Western Cape had the lowest (45% and 52% in 2008 and 2017 respectively). In terms of provincial distribution, using the IES, Limpopo had the highest prevalence of food insecurity by this measure (63%), while the Western Cape had the lowest prevalence (29%). The same provincial pattern obtained in 2014/15 using the LCS, with the highest prevalence in Limpopo (76%) and the lowest in the Western Cape (46%).

6.5.4. Social security

Social security grants can potentially alleviate the food insecurity of the poor due to the additional income it affords them. Using NIDS and restricting the analysis to households classified as food poor based on Statistics South Africa's food poverty lines (Statistics South Africa, 2017b), it was observed that households with at least one stunted child were significantly more likely to receive government grants between 2008 and 2017. They also received significantly higher grant amounts. The same applied for households that had at least one obese household member. These results are remarkable as they suggest that grant receipt may not be very effective in alleviating FNS status among poor households. There was no consistent relationship between having either and underweight adult or a wasted child in the household and grant receipt over the years. However, using the IES, among the food poor in 2010, those classified as not food insecure based on food diversity were more likely to receive grants (9.4%) relative to those who were classified as food insecure based on this measure (5.2%). Thus, it appears that grant receipt might have helped in increasing dietary diversity among poor households.

6.5.5. Food insecurity and mortality

The longitudinal nature of NIDS enables us to track individuals and household members over time in order to ascertain future outcomes. Perhaps, the most adverse consequence of food and nutrition insecurity is death. The data supports that food insecurity indicators are significantly associated with mortality. For instance, in households that devoted at least 60% of household expenditure to food, the prevalence of mortality in any of the subsequent waves (37%) was significantly ($p<0.001$) higher than among those who devoted less than 60% of household expenditure to food (29%). Similarly, households that consumed less food groups than the target in wave 1 (see definition above) were significantly ($p<0.001$) more likely to experience mortality in subsequent waves than those who consumed a higher food variety (34% vs 25%). Similar conclusions were reached for households that experienced adult underweight or child stunting. However, there was no statistical relationship between household experience of obesity or child wasting and subsequent mortality. While these relationships may not be causal in nature, they suggest a possibility that food insecurity may have life-threatening consequences. This is an area which needs to be explored further going forward.

6.5.6. Income-related inequalities and food and nutrition security

It is well documented that South Africa is a highly unequal country. In this section, we analyze income-related inequalities associated with some indicators of FNS in South Africa using concentration indices (CIs). A negative concentration index denotes a pro-poor distribution, implying that the outcome of interest is disproportionately concentrated among the poor. The converse obtains when the concentration index is positive, while a zero concentration index indicates a proportional distribution of the outcome (O'Donnel et al., 2008).

Using NIDS, we found that stunting was consistently concentrated among the poor, though it declined between waves 1 and 5 (CI declined from -0.09 to -0.06). Similarly, underweight was disproportionately concentrated on the poor across the waves (CI of -0.16 and -0.18 in 2008 and 2017 respectively). However, obesity was pro-rich, with CI of 0.09 and 0.08 in 2008 and 2017 respectively. In all these indicators, the magnitude of income-related inequality was higher among males than females.

7. CONCLUSION AND RECOMMENDATIONS

This paper set out to undertake a comprehensive review of the state of food and nutrition security in South Africa with the aim of identifying areas for, and paving the way for, deeper analytical investigations. Against the backdrop of the country's Constitutional commitment to 'sufficient food for all', the 2014 National Policy on Food and Nutrition Security (NPFNS) and the 2017 National Food and Nutrition Security (Implementation) Plan (NFNSP), this Status Report offers a baseline to track improvements in the FNS status of the population for the purposes of informing policy debates and providing options and recommendations for enhancing food and nutrition security programmes in the country. The paper discussed the legislative and policy frameworks as well as institutional arrangements underpinning the three main dimensions of FNS (i.e. food availability, access and utilization) highlighting gaps and constraints. Besides analyzing the position of FNS in South Africa's overall development agenda, the report also sought to compare and contrast South Africa's FNS experience with how other countries in Africa and internationally have approached FNS as part of their developmental programmes. Lastly, the paper explored the trends and drivers of food and nutrition insecurity in South Africa using three of the main tools used to collect FNS-related data in the country over time (i.e. the NIDS, IES and LCS).

From the review and analysis undertaken, the following observations were made:

1. There is a solid rights-based legislative and constitutional framework for FNS policy imperatives in the country, however, structural challenges (inequality, poverty and unemployment) have been barriers to the full operationalization of the framework
2. Whilst the country has sought to approach FNS from a food systems perspective at least on paper, as reflected, for example, in the 2002 IFSS, the 2014 NPFNS and the 2017 NFNSP; the implementation aspect has been seriously lacking, with FNS initiatives still scattered across different departments and with no effective coordination mechanisms and lack of meaningful stakeholder consultations in crafting key FNS-related policies
3. Whilst the government has instituted various important policy initiatives towards ensuring the realization of the four dimensions of FNS over the years, there have been critical challenges associated with these initiatives, such as, the rural-bias of policies associated with food availability; the short-term and unstable (employment) opportunities designed to assist in advancing the food access dimension; as well as much emphasis on the food consumption aspect and less on the food preparation aspect of the food utilization dimension (to highlight but a few).
4. South Africa has high levels of stunting, overweight and obesity when compared to the global averages and other middle-income countries
5. While food is considered to be available for people to have access in South Africa, the challenge is improving the logistical means of poor households to access and consume it. Food and nutrition insecurity in South Africa is, therefore, not due to shortages of food, but rather because of insufficient access as a result of structural poverty and inequality as well as the under-researched food loss and waste factor
6. The Sustainable Development Goals (SDGs) have given impetus towards the crafting of more nuanced approaches vis-à-vis food and nutrition security policy in South Africa
7. South Africa is doing fairly well with respect to domesticating SDGs, especially for food availability and food access dimensions, through its key FNS information and decision instruments
8. Food and nutrition insecurity in South Africa is highly racialized and has a substantial spatial dimension.
9. Whilst government grants are important in alleviating food and nutrition insecurity concerns in the country among the poor and disadvantaged (especially in helping them to afford a more diverse diet), the grants do not seem to have much effect in reducing the prevalence of stunting and obesity

10. Many indicators of food and nutrition insecurity are positively correlated with subsequent mortality in the household

In light of these observations, we make the following recommendations particularly in as far as further lines of deeper investigation on the FNS situation in South Africa is concerned

1. Given the current poor coordination of FNS initiatives, there is need to explore what structures and models would be most appropriate to govern the South African food system in a decentralized but more integrated and holistic way. Taking a cue from success stories like Brazil, such factors as strong political will in policy formulation and implementation, and a well-coordinated multisectoral strategy shaped by civil society participation will be key in dealing with the food and nutrition insecurity challenges in the country. Furthermore, policy initiatives towards dealing with food and nutrition insecurity should also be expressly tied to efforts addressing structural developmental challenges of poverty and inequality
2. FNS tends to be affected by many government policy efforts. Subsequently, issues around competing priorities, limited capacities, and 'turf-wars' between competing government entities are bound to come up. It is only through initiating coordinative procedures and structures e.g. interdepartmental committees and joint impact assessments, coupled with sustained political will that these bottlenecks will be overcome (cf. Delport, 2019)
3. There is need for elevating focus on research and investigation into the food preparation aspect of FNS, which is currently submerged under the broad food utilization dimension. For South Africa, this is important in the context of such health challenges as the outbreak of listeriosis in 2017-2018 as well as practices gaining traction such as the eating of food (prepared) away from home
4. There is need for an in-depth understanding into the politics and dynamics around the issue of food loss and waste, which has not received much attention but which has the potential of opening up avenues for understanding and dealing with some of the critical factors driving food and nutrition insecurity in the country

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APPENDICES

Appendix 1. Characteristics of the different FNS-related datasets used

Dataset	Availability (production)	Access (income and food price)	Utilisation (Food preparation and nutritional intake)	Tool	Unit of observation	Frequency of measurement
NIDS	Own production	Income & Food Expenditure	BMI, DD	30 day recall	Individual, Household	Every 2 years
LCS	-	Income & Food Expenditure	BMI, DD	1 month diary & recall	Individual, Household	Every 5 years
IES	-	Income & Food expenditure	-	1 month diary & recall	Individual, Household	Every 5 years

Appendix 2. Sustainable Development Goals (SDGs) with FNS-related targets and implementation mechanisms per SDG

Sustainable Development Goal (SDG#)	**FNS-related targets**	**FNS-related mechanisms/interventions**
Goal 1. End poverty in all its forms everywhere	1.3 Implement nationally appropriate social protection systems and measures for all, including floors, and by 2030 achieve substantial coverage of the poor and the vulnerable 1.4 By 2030, ensure that all men and women, in particular the poor and the vulnerable, have equal rights to economic resources, *as well as access to basic services, ownership and control over land and other forms of property*, inheritance, natural resources, appropriate new technology and financial services, including microfinance	1a-1b: resource mobilisation and sound policy frameworks for investment in poverty eradication actions
Goal 2. End hunger, achieve food security and improved nutrition and promote sustainable agriculture	All 2.1.- 2.5.	2a-2c: rural infrastructure for enhanced agricultural productivity; agricultural trade liberalisation (zero trade restrictions & distortions); smooth functioning of commodity markets to avoid extreme price volatility
Goal 3. Ensure healthy lives and promote well being for all at all ages	3.1 By 2030, reduce the global maternal mortality ratio to less than 70 per 100,000 live births 3.2 By 2030, end preventable deaths of newborns and children under 5 years of age, with all countries aiming to reduce neonatal mortality to at least as low as 12 per 1,000 live births and under 5 mortality to at least as low as 25 per 1,000 live births 3.4 By 2030, reduce by one third premature mortality from non-communicable diseases	3.d Strengthen the capacity of all countries, in particular developing countries, for early warning, risk reduction and management of national and global health risks

	through prevention and treatment and promote mental health and well Being	
Goal 4. Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all	4.2 By 2030, ensure that all girls and boys have access to quality early childhood development, care and pre primary education so that they are ready for primary education	4.a Build and upgrade education facilities that are child, disability and gender sensitive and provide safe, non violent, inclusive and effective learning environments for all
Goal 5. Achieve gender equality and empower all women and girls	5.1 End all forms of discrimination against all women and girls everywhere	5.a Undertake reforms to give women equal rights to economic resources, *as well as access to ownership and control over land and other forms of property*, financial services, inheritance and natural resources, in accordance with national laws
Goal 6. Ensure availability and sustainable management of water and sanitation for all	6.1 By 2030, achieve universal and equitable access to safe and affordable drinking water for all	
Goal 7. Ensure access to affordable, reliable, sustainable and modern energy for all	7.1 By 2030, ensure universal access to affordable, reliable and modern energy services	7.a By 2030, enhance international cooperation to facilitate access to clean energy research and technology, including renewable energy, energy efficiency and advanced and cleaner fossil fuel technology, and promote investment in energy infrastructure and clean energy technology
Goal 8. Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all	8.2 Achieve higher levels of economic productivity through diversification, technological upgrading and innovation, including through a focus on high value added and labour intensive sectors 8.5 By 2030, achieve full and productive employment and decent work for all women and men, including for young people and	

	persons with disabilities, and equal pay for work of equal value	
Goal 9. Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation	9.1 Develop quality, reliable, sustainable and resilient infrastructure, including regional and transborder infrastructure, to support economic development and human well being, with a focus on affordable and equitable access for all	9.b Support domestic technology development, research and innovation in developing countries, including by ensuring a conducive policy environment for, inter alia, industrial diversification and value addition to commodities 9.c Significantly increase access to information and communications technology and strive to provide universal and affordable access to the Internet in least developed countries by 2020
Goal 10. Reduce inequality within and among countries	10.1 By 2030, progressively achieve and sustain income growth of the bottom 40 per cent of the population at a rate higher than the national average 10.4 Adopt policies, especially fiscal, wage and social protection policies, and progressively achieve greater equality	
Goal 11. Make cities and human settlements inclusive, safe, resilient and sustainable	11.6 By 2030, reduce the adverse per capita environmental impact of cities, including by paying special attention to air quality and municipal and other waste management 11.7 By 2030, provide universal access to safe, inclusive and accessible, green and public spaces, in particular for women and children, older persons and persons with disabilities	11.a Support positive economic, social and environmental links between urban, peri-urban and rural areas by strengthening national and regional development planning
Goal 12. Ensure sustainable consumption and production patterns	12.2 By 2030, achieve the sustainable management and efficient use of natural resources 12.3 By 2030, halve per capita global food waste at the retail and consumer levels and reduce food losses along production and supply chains, including post-harvest losses 12.4 By 2020, achieve the environmentally sound management of chemicals and all wastes throughout their life cycle, in accordance with agreed international frameworks, and significantly reduce their release to air, water	12.a Support developing countries to strengthen their scientific and technological capacity to move towards more sustainable patterns of consumption and production

	and soil in order to minimize their adverse impacts on human health and the environment 12.7 Promote public procurement practices that are sustainable, in accordance with national policies and priorities 12.8 By 2030, ensure that people everywhere have the relevant information and awareness for sustainable development and lifestyles in harmony with nature	
Goal 13. Take urgent action to combat climate change and its impacts*	13.1-13.3 All	
Goal 14. Conserve and sustainably use the oceans, seas and marine resources for sustainable development	14.2 By 2020, sustainably manage and protect marine and coastal ecosystems to avoid significant adverse impacts, including by strengthening their resilience, and take action for their restoration in order to achieve healthy and productive oceans 14.4 By 2020, effectively regulate harvesting and end overfishing, illegal, unreported and unregulated fishing and destructive fishing practices and implement science based management plans, in order to restore fish stocks in the shortest time feasible, at least to levels that can produce maximum sustainable yield as determined by their biological characteristics 14.5 By 2020, conserve at least 10 per cent of coastal and marine areas, consistent with national and international law and based on the best available scientific information	14.b Provide access for small scale artisanal fishers to marine resources and markets 14.c Enhance the conservation and sustainable use of oceans and their resources by implementing international law as reflected in the United Nations Convention on the Law of the Sea, which provides the legal framework for the conservation and sustainable use of oceans and their resources, as recalled in paragraph 158 of "The future we want"
Goal 15. Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss	15.2 By 2020, promote the implementation of sustainable management of all types of forests, halt deforestation, restore degraded forests and substantially increase afforestation and reforestation globally 15.3 By 2030, combat desertification, restore degraded land and soil, including land affected by desertification, drought and floods, and	15.a Mobilize and significantly increase financial resources from all sources to conserve and sustainably use biodiversity and ecosystems

	strive to achieve a land degradation-neutral world	
Goal 16. Promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable and inclusive institutions at all levels	16.5 Substantially reduce corruption and bribery in all their forms 16.6 Develop effective, accountable and transparent institutions at all levels 16.7 Ensure responsive, inclusive, participatory and representative decision making at all levels	16.b Promote and enforce non-discriminatory laws and policies for sustainable development
Goal 17. Strengthen the means of implementation and revitalize the Global Partnership for Sustainable Development	17.14 Enhance policy coherence for sustainable development 17.15 Respect each country's policy space and leadership to establish and implement policies for poverty eradication and sustainable development 17.17 Encourage and promote effective public, public private and civil society partnerships, building on the experience and resourcing strategies of partnerships Data, monitoring and accountability (17.18-17.19)	