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FOOD SYSTEMS PROFILE - SOUTH AFRICA

Catalysing the sustainable and inclusive
transformation of food systems



South Africa



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transformation of food systems

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FOOD SYSTEMS PROFILE

SOUTH AFRICA

Key messages

The South African food system is characterized by a paradox. The country is in the upper-middle-income group, has the second-largest GDP value, and is the most industrialized in Africa. Home to 60 million people (the fifth most populous country on the continent), South Africa has a positive food balance, supported by sophisticated food, nutrition, and agricultural policies and many programmes. However, food system outcomes are sobering; they include significant under- and overnutrition, unsustainable agricultural production systems, extreme territorial imbalances and a slow transformation towards inclusiveness. The food system remains shaped by inequities rooted in colonialism and exacerbated by apartheid policies and the concurrent isolation of the country. This history, together with reintegration into the global food economy and the adoption of liberalization policies, and shaped by the neo-liberal paradigm promoted by international donors, have contributed to the following:

- persistence of food and nutrition insecurity despite the availability of sufficient food and public health interventions;
- degradation of an already vulnerable natural environment aggravated by the early adoption of conventional agriculture techniques and, more recently, by climate change;
- continuation of extreme wealth and income inequality arising from multidimensional poverty and unemployment shaped by former racial policies; and
- growing asymmetries in power, efficiencies, and information across food value chains and spheres of governance.

Four core challenges have been identified for the country to transition towards a sustainable food system: improved nutrition; sustainable agricultural production systems; levelling the food system playing field, and improved food system governance.

To address these challenges, policy levers include the following:

- in the area of food insecurity and nutrition: reduce the cost of nutrition dense food and increase the range, scale, and coverage of child-centred food system interventions in the built environment;
- in the area of food production: support the transition towards agroecological food systems, and link land reform with place-based farmer support;
- in the area of market functioning: reform and enforce food system regulatory policies, adopt an integrated approach to building an inclusive food system; and
- in the area of food system governance: improve inclusive stakeholder participation and enhanced engagement, and adopt a two-pronged place- and issue-based approach to food system governance.



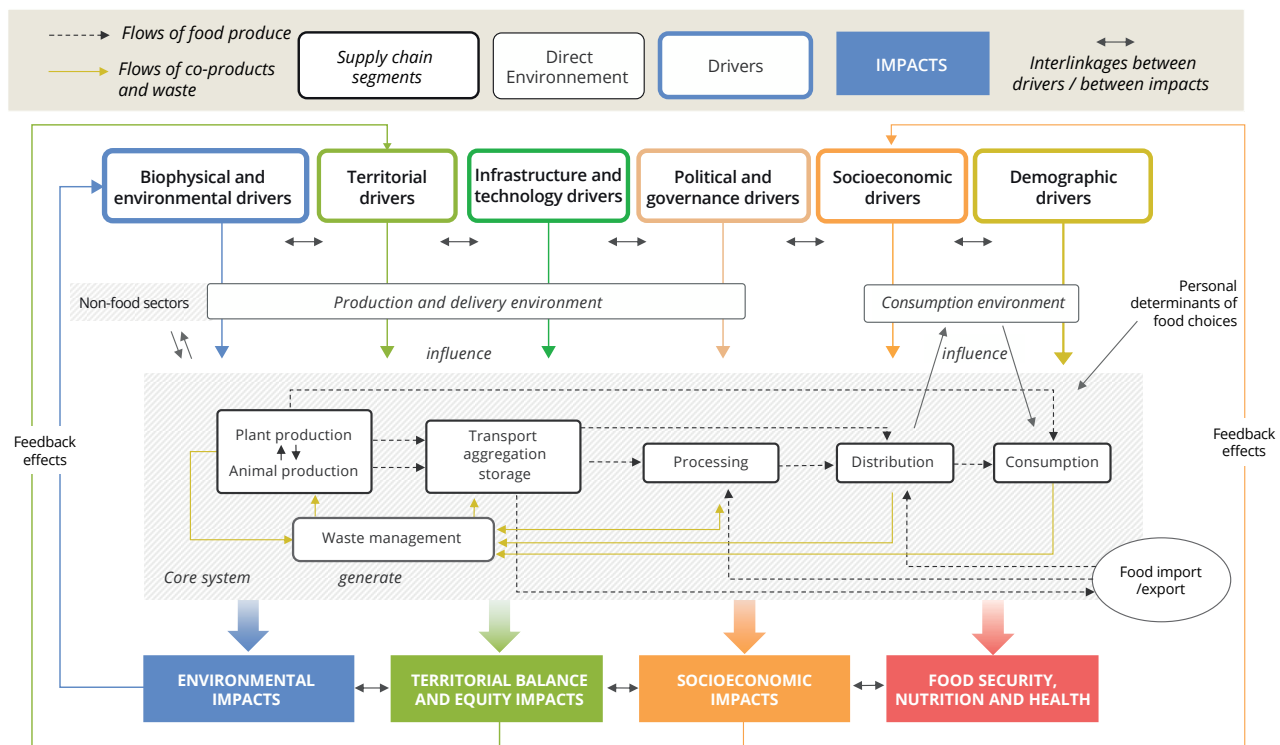


Country-level methodology and process

This Rapid Food System Assessment is a collaboration between the Department of Science and Innovation-National Research Foundation Centre of Excellence in Food Security (DSI-NRF Centre of Excellence in Food Security (CoE-FS)) hosted by the University of the Western Cape and the University of Pretoria in South Africa, the European Union, FAO, and CIRAD. It was implemented from July to November 2021. The methodology used for preparing this brief is the result of a global initiative of the European Union, FAO and CIRAD to **support the sustainable and inclusive transformation of food systems**. This assessment methodology is described in detail in the 2021 joint publication entitled *Catalysing the sustainable and inclusive transformation of food systems: conceptual framework and method for national and territorial assessment* (David-Benz et al., 2022).

The assessment integrates qualitative and quantitative data analysis with participatory processes by mobilizing public, private and civil society stakeholders. The approach includes interviews with key stakeholders and a consultation workshop to refine a systemic understanding of the food system and discuss potential levers to improve its sustainability. The assessment process thus initiates participatory analysis and stakeholder discussion on the strategic opportunities and constraints to the sustainable transformation of food systems. The approach assesses the actors and their activities at the core of the system, together with their interactions along the food chain as well as the environments directly influencing their behaviour. Conditioned by long-term drivers, these actors generate impacts in different dimensions that in turn influence drivers via several loops (see **Figure 1**).

Figure 1. Analytical representation of the food system



Source: David-Benz, H., Sirdey, N., Deshons, A., Orbell C. & Herlant, P. 2022. *Catalysing the sustainable and inclusive transformation of food systems: conceptual framework and method for national and territorial assessment*. Rome, Brussels and Montpellier, France. FAO, European Union and CIRAD.



The approach involves a detailed understanding of the key challenges along the four dimensions of sustainable and inclusive food systems: (i) food security, nutrition, and health; (ii) inclusive economic growth, jobs, and livelihoods; (iii) sustainable natural resource use and environment; and (iv) territorial balance and equity. Aimed at identifying critical issues affecting the sustainability and inclusivity of food systems, the assessment is both qualitative and quantitative. Critical challenges and key food systems dynamics are specified in the form of **Key Sustainability Questions** (KSQs), whose answers (see schematic representations for all KSQs) help identify **systemic levers** and areas of action that are essential to bringing about desired transformations in food systems.

This approach is designed as a preliminary rapid assessment for food systems and can be implemented over 8 to 12 weeks. The methodology has been applied in more than 50 countries as a first step to support the transition towards sustainable food systems.

In South Africa, the assessment draws on food systems research undertaken by the Centre of Excellence in Food Security, which includes 16 community of practice meetings held in 2020 and 2021. Harmonized secondary data provided by FAO, supplemented by data from Statistics South Africa are used whenever possible. The food dialogues conducted by the Department of Agriculture, Land Reform and Rural Development of South Africa in June and July 2021 are also drawn upon. Four Key Sustainability Questions and an initial set of key systemic levers as areas of action were peer reviewed by 30 academic researchers. The results were then presented to the South African Steering Committee for the United Nations Food Systems Summit convened Department of Agriculture, Land Reform and Rural Development in August 2021. Finally, four thematic consultation workshops (Imbizo) were held during October 2021; they shared and refined the results with approximately 120 key stakeholders from the public, private and civil society sectors.





National context in a nutshell

Table 1. Main figures at a glance

Demographics	<p>Total population: 60 million (2020)</p> <p>Population growth: 1.3% p.a.</p> <p>Urban population: 67%</p> <p>Urban growth: 2.1% p.a.</p>	<p>South Africa has a population of 60 million, making it the 23rd most populous country in the world and the fifth most populous in Africa (2021). Population growth is 1.3% per annum and the fertility rate is 2.38 births per woman (2019).</p> <p>The urban population comprises 67% of the population and is growing at a rate of 2.1% per annum (2019). Since 2000, 60% of the population increase has taken place in the country's eight metropolitan districts, which have 40% of the population and occupy only 2% of the land area.</p>
Macroeconomics	<p>GDP: USD 302 billion (2020)</p> <p>GDP growth: <1% (2020)</p> <p>GDP/capita: PPP USD 13 000 (2019)</p> <p>Inflation rate: 3.2% (2020)</p> <p>Gini index: 63 (highest in the world) (2015)</p> <p>Broad unemployment: 37% (2020)</p>	<p>Although GDP growth was less than 1% per annum in 2019 with a GDP of USD 302 billion (2020), South Africa is the 38th largest economy in the world, the second-largest in sub-Saharan Africa after Nigeria, and a G20 country. GDP/capita is PPP USD 13 000 (2019) (103rd in the world, seventh in Africa).</p> <p>Following the adoption of inflation targeting by the country's central bank, the inflation rate fell from 5.3% in 2000 to 4.1% in 2010 and 3.2% in 2020 (World Bank, 2021).</p> <p>Despite its economic wealth, the Government of South Africa faces severe fiscal constraints. In March 2021, the budget deficit amounted to 11.2% of GDP, giving the country a ranking of 30th in the world in terms of the proportion of the government's budget allocated to interest payments.</p> <p>Economic distribution is highly unequal with a Gini index of 63 (the highest in the world). The top 10% and the top 1%, respectively, hold about 86% and 55% of total wealth, respectively (Stats SA, 2017a);</p> <p>The official rate of unemployment is high (2020), at 32.5%, with 35% for young people (16–35 years); broad unemployment is at 37%, and the labour force participation rate was only 59% in 2017. As a result, South Africa faces jobless growth.</p>
Social development	<p>Schooling of people aged 20 years and older: none 7%, primary 82%, secondary 44%, tertiary 4% (2016)</p> <p>Access to water: 88% (2016)</p> <p>Access to electricity: 85% (2016)</p> <p>% population below national food poverty line: 25.2% (2015)</p>	<p>Following large-scale infrastructural programmes implemented in the 1990s, 85% of the population have access to electricity, and 88% have water inside their dwellings, off-site or on-site. The quality of delivery of electricity, water, and sanitation is a concern, and service-delivery protests occur frequently.</p> <p>Although the National Development Plan (NDP) targets reducing the share of the population below the national lower-bound poverty line to zero, in 2015, 40% and 25% of South Africans, respectively, were living below the national lower-bound and the food poverty lines (Stats SA, 2015).</p> <p>In 2016, 7% of South Africans aged 20 years and older had no schooling; 82%, 44% and 4%, respectively, had attained primary, secondary and tertiary education.</p>
Natural resources	<p>Country area: 1 221 000 km²</p> <p>Inland water areas: 0.4% of the total area</p> <p>Arid or semi-arid: 90% of the area is arid or semi-arid</p> <p>Arable land: 13% of agricultural land</p>	<p>South Africa is the ninth largest country in Africa in terms of land size.</p> <p>It is a dry country, with no natural lakes and a water area (dams and rivers) that is less than 0.4% of its total surface area. Approximately 90% of the country is considered to be arid or semi-arid. Only 13% of agricultural land is arable (181st in the world). In 2016/17, the country experienced a 1-in-100-year extreme drought, requiring the importation of its main staple food, maize.</p>

Sources: FAO. 2022. FAOSTAT, Selected Indicators. In: *South Africa* [online] Rome. Cited 15 February 2022. <https://www.fao.org/faostat/en/#country/202>

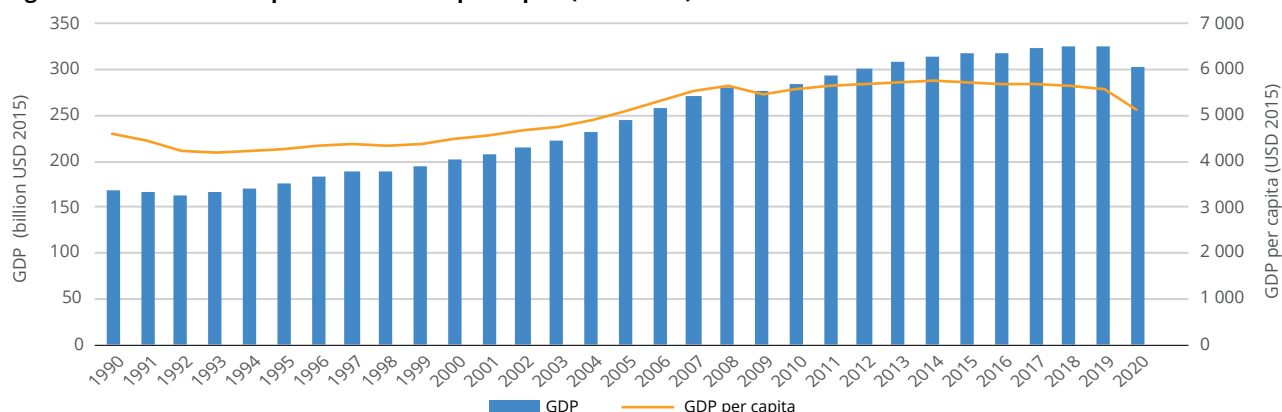


Key figures & trends in food production, consumption and trade

A period of economic expansion followed the end of apartheid in 1994 until the financial crisis of 2008. Since then, growth in GDP has been limited and per capita GDP had stagnated and then

declined recently on the back of the impacts of COVID-19 (Figure 2). This has resulted in a steady increase in unemployment and the heightening of structural weaknesses throughout the economy.

Figure 2. Gross domestic product and GDP per capita (1990–2020)

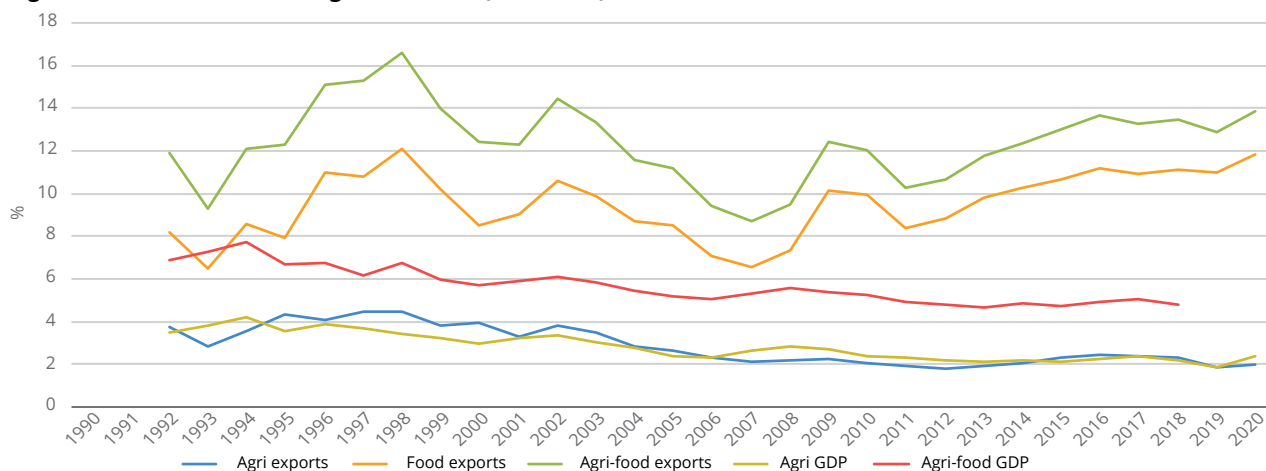


Source: World Bank. n.d. *World Development Indicators* [online] Washington, DC. <https://databank.worldbank.org/reports.aspx?source=world-development-indicators>

The country's competitive commercial food sector is comprised of 40 000 farms that produce 80 percent of food and vibrant agroindustries. Consequently, the agrifood sector accounts for approximately 5 percent of GDP and 14 percent of total merchandise exports, although the contribution of the sector to total GDP is steadily declining

(Figure 3). Declared an essential service, and open throughout the COVID-19 lockdown, agriculture grew faster than any other sector – at 13 percent in 2020. Reflecting the decline in commercial farm employment, the value-added of workers has increased, while the contribution of agriculture, forestry, and fishing to GDP has steadily declined.

Figure 3. Contribution of the agrifood sector (1990–2020)



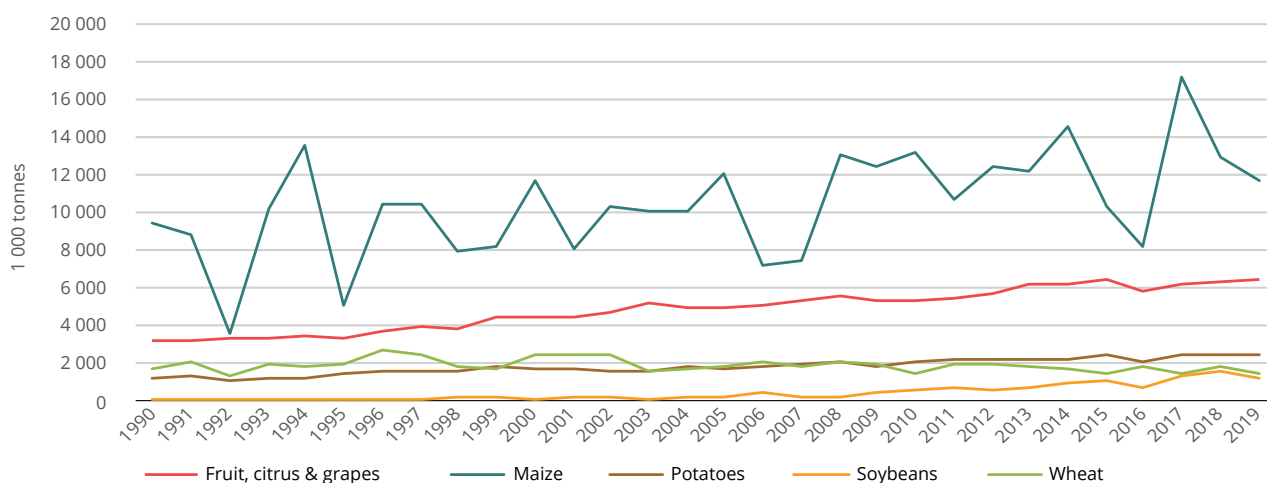
Source: World Bank. n.d. *World Development Indicators* [online] Washington, DC. <https://databank.worldbank.org/reports.aspx?source=world-development-indicators>



Following favourable weather conditions in the 2019/20 season, field crop production volume continued to grow. This can mainly be attributed to an increase in the production of summer crops (maize and sorghum) and the oilseed crops (soybean, sunflower seed, and groundnuts). However, there is significant variation in periods

of drought. The exception is the production of wheat, which is trending lower, as the crop is grown in regions adversely affected by climate change. Although sometimes affected by poor rainfall and excessive heat, the steady growth in the production of soybean, mostly transgene varieties, is notable.

Figure 4. Crop production (1990–2020)

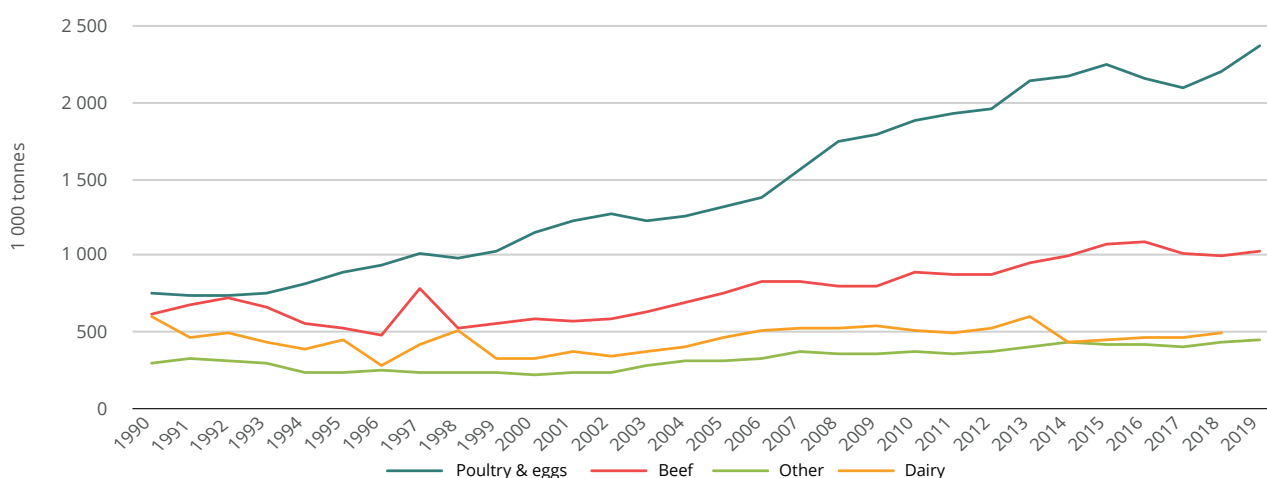


Source: FAO. 2022. FAOSTAT, Selected Indicators. In: *South Africa* [online] Rome. Cited 10 March 2022. <https://www.fao.org/faostat/en/#country/202>

Livestock production has also increased, except for milk, which has declined due to lower prices of unprocessed milk, higher feed cost, and below-average rainfall in the dairy-producing areas. The increase in the production of poultry meat and

eggs is notable and is reflected in the increase in soybean production. Beef production is also notable. South Africa is currently an exporter of beef despite periodic outbreaks of foot-and-mouth disease.

Figure 5. Livestock production (1990–2020)



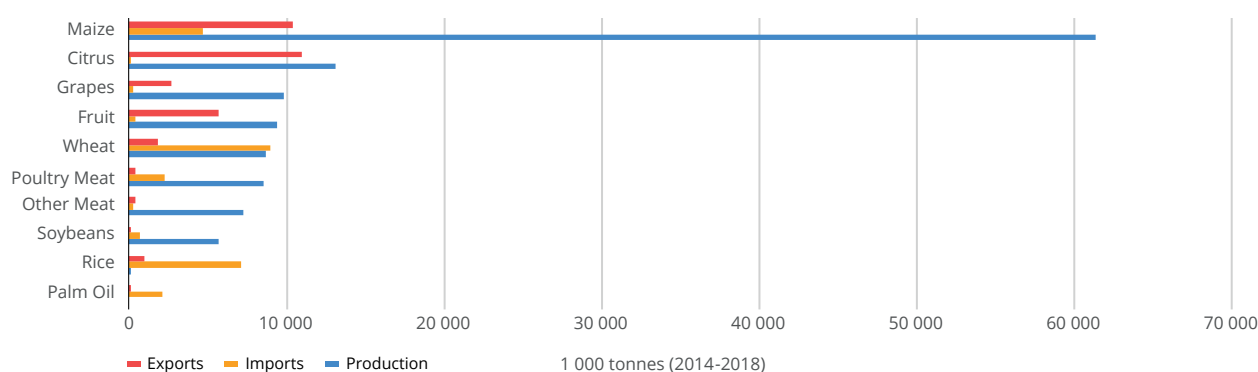
Source: FAO. 2022. FAOSTAT, Selected Indicators. In: *South Africa* [online] Rome. Cited 11 March 2022. <https://www.fao.org/faostat/en/#country/202>



Although periodic droughts affect yields, South Africa was the fifteenth largest producer of maize, soybean, beef, and chicken in the world in 2019, and the largest in Africa. The commercial agricultural sector is globally competitive. The country's major trading partners are the European Union, the United Kingdom of Great Britain, and

Northern Ireland and increasingly China, the Middle East, and sub-Saharan Africa. Maize is the main staple crop and dominates production in terms of quantity. Citrus, other fruits and fruit products, such as juices, lead in terms of the value of exports, along with prepared foods, snacks, and non-alcoholic beverages (Figure 6).

Figure 6. Quantity of production, imports, and exports of selected foods, cumulative 2014-2018

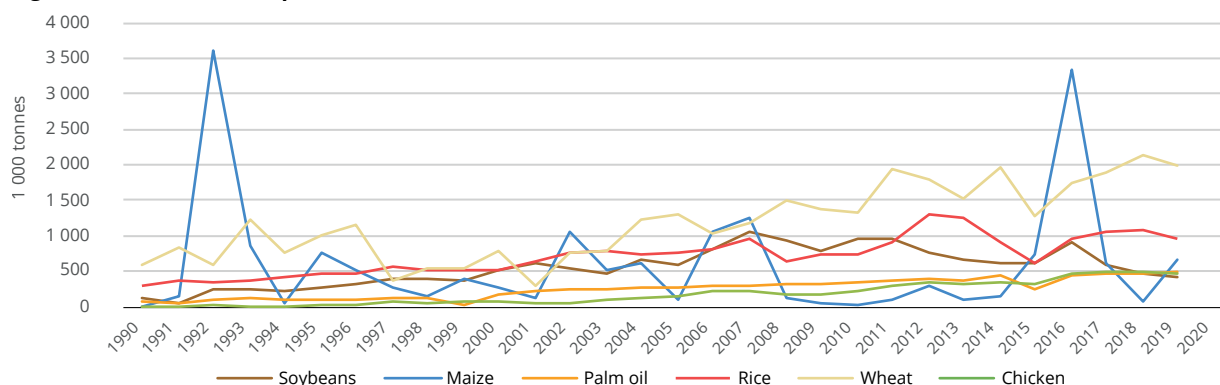


Source: FAO. 2022. FAOSTAT, Selected Indicators. In: *South Africa* [online] Rome. Cited 14 March 2022. <https://www.fao.org/faostat/en/#country/202>

Agricultural production in South Africa is diverse and the country does not need to import most fruit or vegetables to meet dietary requirements. Indeed, South Africa is one of the largest exporters of citrus, pome fruits, and table grapes and is self-sufficient regarding most vegetable products. Some out-of-season and exotic products are imported, largely to meet demand from high-income groups. Most rice and palm oil are imported and wheat imports are

increasing (Figure 7). Maize imports are needed during drought years, reflecting the importance of the accessibility of this crop for food security. Argentina is the country's largest supplier of maize and wheat. The recent growth in imports of chicken meat is notable, as it is rising despite a threefold increase in production domestically over the past 30 years. This reflects changing dietary patterns towards greater consumption of meat, wheat products, and rice.

Figure 7. Trends in the import of selected foods (2014-2019)



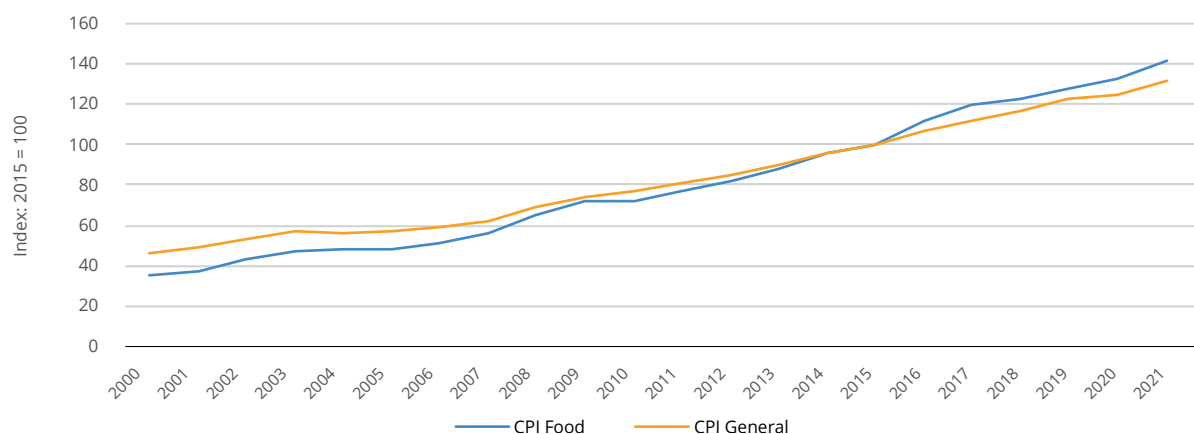
Source: FAO. 2022. FAOSTAT, Selected Indicators. In: *South Africa* [online] Rome. Cited 14 March 2022. <https://www.fao.org/faostat/en/#country/202>



Food prices have been steadily rising. The pace of the increase has exceeded that of the general consumer price index since 2015, exacerbating

food insecurity for low-income households. Notably, food prices have increased more rapidly since the start of the COVID-19 pandemic (**Figure 8**).

Figure 8. Food prices (2000–2021)

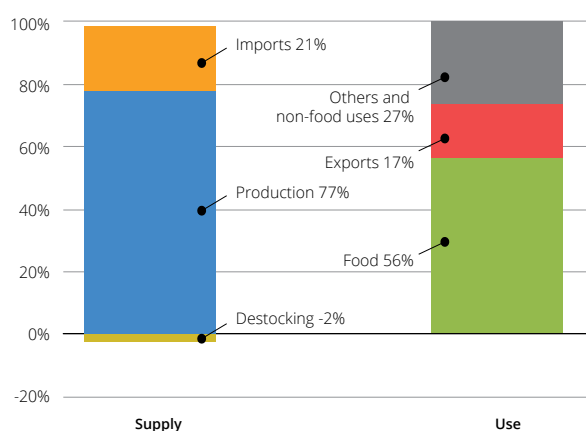


Source: FAO. 2022. FAOSTAT, Selected Indicators. In: *South Africa* [online] Rome. Cited 14 March 2022. <https://www.fao.org/faostat/en/#country/202>

South Africa has a positive food balance and can produce more than three-quarters of the calories required to feed its population (**Figure 9**). Cereals are the main contributor (51 percent) to the total calories production. As discussed, periodic drought requires the importation of staple cereals. Despite this, the country maintains a positive balance of payments and

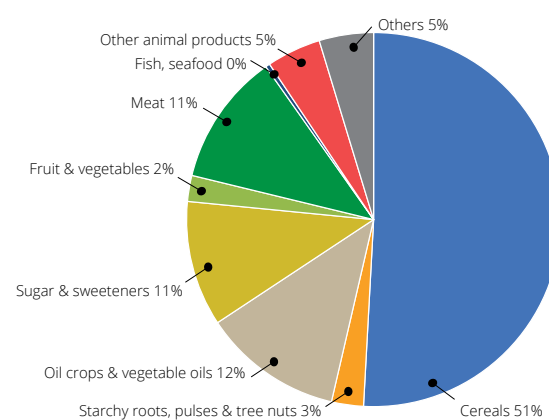
has a well-established infrastructure used for importing and distributing food. Preferences for low-cost meat and ultra-processed food have led to the need to increase imports of frozen poultry meat and palm oil. The majority of food produced in South Africa is used for human consumption, approximately 15 percent is dedicated to animal feed.

Figure 9. Food balance (in calories, 2018)



Source: FAO. 2022. FAOSTAT, Selected Indicators. In: *South Africa* [online] Rome. Cited 16 March 2022. <https://www.fao.org/faostat/en/#country/202>

Figure 10. Food availability by commodity group (calories in %, 2018)



Source: FAO. 2022. FAOSTAT, Selected Indicators. In: *South Africa* [online] Rome. Cited 14 March 2022. <https://www.fao.org/faostat/en/#country/202>



Key challenges to the achievement of the core sustainable food system goals

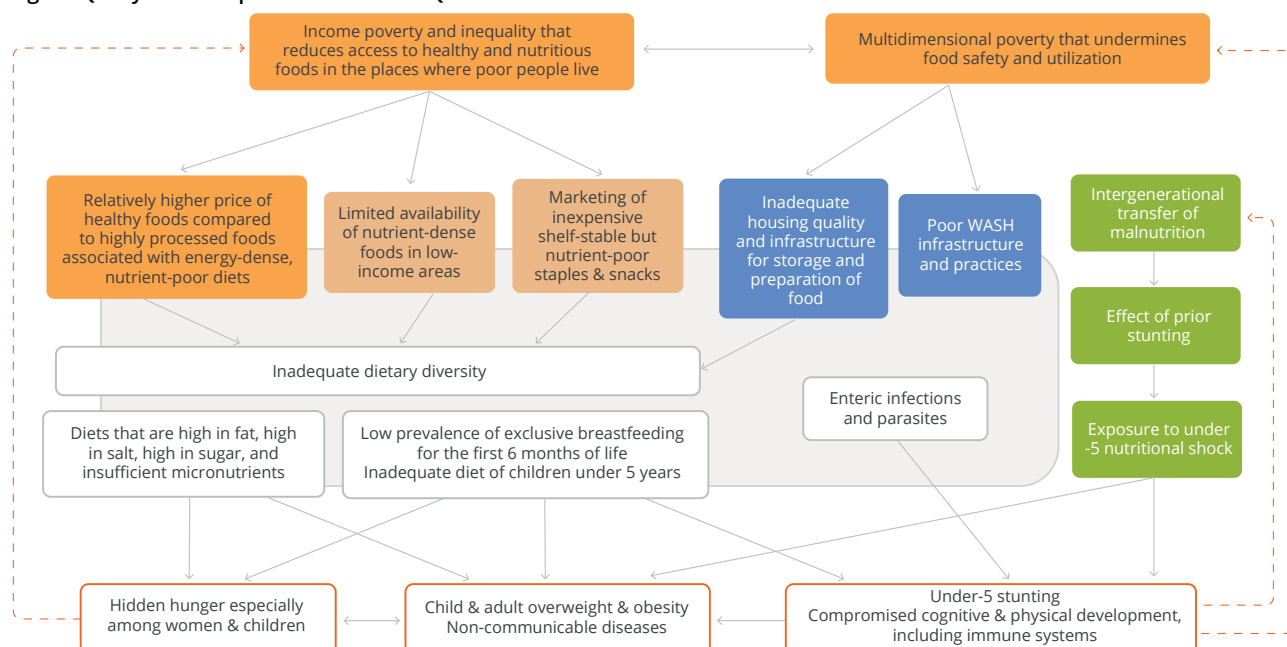
Four challenges complete the South African food system paradox. These are improving nutrition, transitioning to more sustainable agricultural

and food production processes, levelling playing fields across the food system and improving food system governance.

Challenge One: Improved nutrition

Key Sustainability Question 1: Why is there a triple burden of malnutrition with sufficient food and food security policies?

Figure Q1. Systemic representation of KSQ 1



Source: authors.

The severity of the triple burden and its impacts on food system outcomes

Although South Africa usually produces a sufficient quantity of food and diverse food types, the country faces a triple burden of malnutrition – undernutrition, micronutrient deficiencies, and overweight/obesity. This is occurring even though the country has developed food and nutrition security and agricultural policies. Seven million South Africans experience chronic hunger, while 21 million people are **overweight or obese**. Almost 68 percent of women and 31 percent of men are overweight or obese. This prevalence,

already the highest in sub-Saharan Africa, is increasing. (Stats SA, 2016a). Obesity and stunting are linked, and found in the same households – at least one obese adult is found in 45 percent of households with a stunted child (Reddy *et al.*, 2010). The risk of being overweight or obese has also been linked to prior nutritional status, with the odds of being overweight among stunted children twice that of children of appropriate height (Steyn *et al.*, 2005). At 15 percent of births, the prevalence of low birth weights is high for a middle-income country. It has declined by less than a percentage point since 2000 (May, Witten and Lake, 2020).



One-fifth of adults report a high fat intake. People living in urban areas and those in the younger age groups are more likely to report higher levels of fat intake (Simbayi *et al.*, 2012). One report indicates that almost 40 percent of South African children in grades 8 to 11 regularly consume food items high in fat, such as fast foods, cakes, and biscuits, and 50 percent of them regularly drink sugary beverages (Reddy *et al.*, 2010). These are the third most commonly consumed food/drink items among young urban South African children (aged 12–24 months), topping milk. A similar pattern is revealed for sugar consumption, with the highest intake in the 15–24-year group, at 27 percent of this population segment. The mean per capita salt intake exceeds the recommended 5 grams per day set by the World Health Organization (WHO) (Eksteen and Mungal-Singh, 2015). These patterns are aggravated by the advertising of unhealthy foods to children in violation of Regulation R991 on foodstuffs for infants and young children (Van Niekerk *et al.*, 2020).

Food fortification, introduced in 2003, is an illustration of the food system paradox in South Africa in which appropriate policy responses have not yielded the results that were expected. Although all maize and wheat products are fortified with vitamins and minerals, 40 percent of children under 5 years have zinc deficiencies,

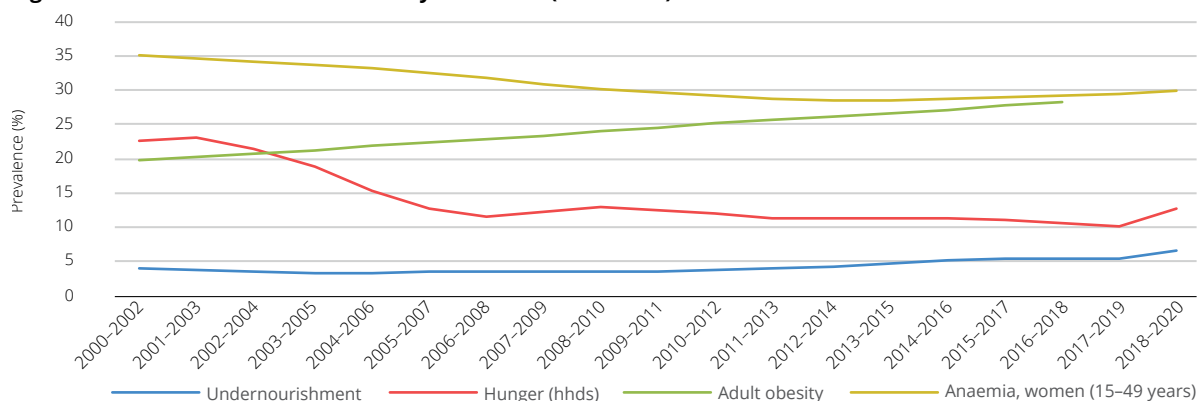
44 percent have vitamin A deficiencies and 61 percent are anaemic (Harika *et al.*, 2017; Sishana *et al.*, 2014). 44 percent of children have zinc deficiencies, 44 percent have vitamin A deficiencies and 61 percent of children under 5 years old are anaemic (Harika *et al.*, 2017). The prevalence of anaemia for people age 15 and older is 31 percent for women and 17 percent for men. This is particularly concerning for women in the reproductive age groups, fuelling intergenerational transfers of malnutrition through a cycle of low birth weights, undernutrition during childhood and non-communicable diseases (NCDs), such as diabetes and hypertension.

Finally, the prevalence of self-reported undernourishment is relatively low in South Africa. However, it should be noted that although the trend in self-reported hunger among adults and children was flat from 2000 until 2011, it is now increasing (Stats SA, 2019b). Adult and child hunger ranges from 19 percent in the North-West region to 3 percent in Limpopo (May, Witten and Lake, 2020). The impact of COVID-19 is based only on estimates, however, the NIDS-CRAM survey reported that 18 percent of households experienced moderate or severe hunger in 2020 (Bridgman *et al.*, 2020). Most other indicators of poor nutrition are on the rise, most notably adult obesity.





Figure 11. Food and nutrition insecurity indicators (2000–2020)



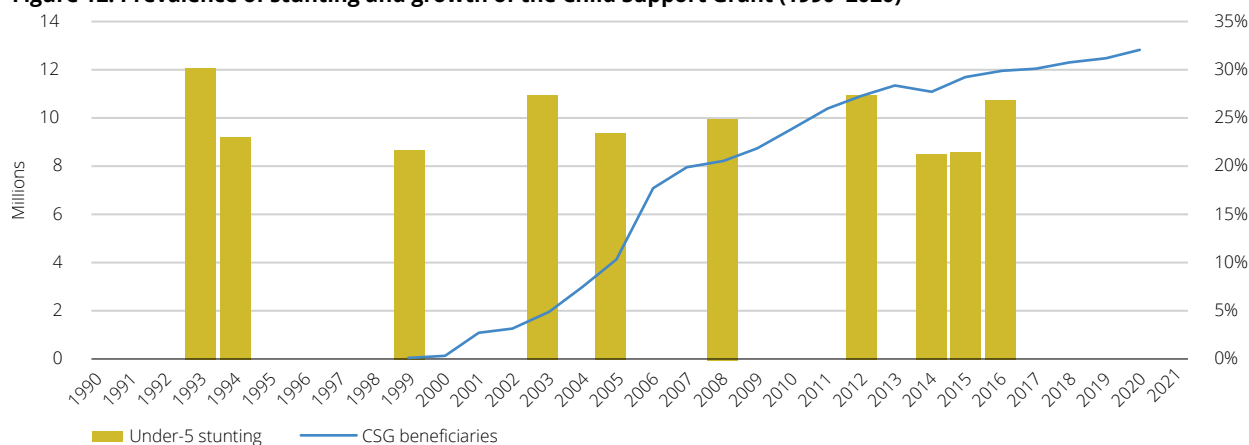
Sources: FAO. 2022. FAOSTAT, Selected Indicators. In: *South Africa* [online] Rome. Cited 15 February 2022. <https://www.fao.org/faostat/en/#country/202>; Stats SA. 2019b. The Extent of Food Security in South Africa. <https://www.statssa.gov.za/> [2021, September 25]; Bridgman, G., van der Berg, S., & Patel, L. 2020. *Hunger in South Africa during 2020: Results from wave 2 of NIDS-CRAM*. Department of Economics, University of Stellenbosch. <https://cramsurvey.org/wp-content/uploads/2020/09/3-Bridgman-G-Van-der-Berg-S.-Patel-L-2020-Hunger-in-South-Africa-during-2020-Results-from-Wave-2-of-NIDS-CRAM.pdf>

A total of 26.9 percent of under-5 children were reported as stunted in 2016, making South Africa an outlier in terms of the prevalence of stunting compared to its economic wealth measured by per capita gross national income (GNI). The prevalence of under-5 stunting is higher for boys (30 percent) than girls (25 percent) and higher in rural areas (29 percent) than urban areas (26 percent) (Devereux, Jonah and May, 2019). In addition, the burden of malnutrition is borne disproportionately by younger children aged 0–2 years: 32 percent are stunted; 2.3 percent

are affected by wasting; and 5.9 percent are underweight (May, Witten and Lake, 2020).

The government's main response to this issue, the unconditional means-tested Child Support Grant (CSG), introduced in 1998, is well-targeted and reaches more than 12 million children. However, indicators of child malnutrition have remained constant over the past 20 years (**Figure 12**) (South Africa, Department of Social Development, SASSA and UNICEF, 2012; Devereux, Jonah, and May, 2019).

Figure 12. Prevalence of stunting and growth of the Child Support Grant (1990–2020)



Sources: Devereux, S., Jonah, C. & May, J. 2019. How many malnourished children are there in South Africa? What can be done? In: *Putting Children First: New Frontiers in the Fight Against Child Poverty in Africa*. Stuttgart: ibidem Press. SASSA. Cited on 10 March 2022. Annual Report 2020–21. <https://www.sassa.gov.za/statistical-reports/Documents/Annual%20Report%20-%202021.pdf>



The consequences of stunting are severe for the children affected, and also have long-term implications for the economy. Although a recovery in physical growth from stunting can occur, children who recover still perform significantly worse on cognitive tests than children who do not experience early malnutrition, and nearly as poorly as children who remain stunted (Casale and Desmond, 2015). In addition, children who recover from stunting in early childhood complete fewer years of schooling compared to those who have not been affected by stunting (Casale, 2020). Evidence shows an association between childhood stunting and subsequent success in the labour market, likely the consequence of incomplete schooling (McGovern *et al.*, 2017).

These outcomes have long-term consequences that are inequitable, unfair, unjust, and unnecessary. The risk of stunting, obesity, and diet-related NCDs is carried disproportionately by the black population, the poor – especially those living in rural areas and informal settlements in cities, and children (Nojilana *et al.*, 2016). Data show that more females (55.1 percent) than males (41.1 percent) develop NCD comorbidities. NCD prevalence is also higher in urban (57 percent) versus rural areas (43 percent) (Ajaero, De Wet, and Odimegwu, 2020). Women and young people, especially those who have a lower socioeconomic status and young people not in school are at the greatest risk across urban and rural areas.

The prevalence of diabetes among women is 13 percent compared with 10 percent for men, and the prevalence of mortality attributed to diabetes mellitus and cardiovascular disease-related deaths are trending higher (Nojilana *et al.*, 2016; WHO, 2016). Diet-related NCDs are poorly managed among older populations, especially in rural areas (Wong *et al.*, 2021).

Main drivers of the triple burden of malnutrition

Although there are many drivers, high inequality and persistent income poverty are structural causes and the **first driver** of the triple burden of malnutrition in South Africa. The Eastern Cape, KwaZulu-Natal, and Limpopo are the poorest provinces. The Eastern Cape had the highest poverty rate in 2015, 59 percent of the population were below the lower-bound poverty line. This was followed by Limpopo at 5 percent. Gauteng and the Western Cape have the lowest poverty rate (19 percent and 20 percent respectively, in 2015). Poverty rates are higher in rural areas than in urban areas (World Bank, 2018).

Low-income results in poor diets with low dietary diversity and unhealthy food options for the poor. A cereal-based diet is high in energy (calories) but lacks micronutrient value with low diversity, and is low in animal products, vegetables, and fruit. The average national intake of fruit and vegetables is 200 grams per person per day – half the WHO recommendation of 400 grams per day (Mchiza *et al.*, 2015; WHO, 2020). In 2017, 36 percent of households were categorized as having a low dietary diversity score (Jonah and May, 2019). The segment of the population in rural areas living on communal land is most likely to have low dietary diversity (60 percent) followed by those in urban informal settlements, mostly slums (47 percent) (Jonah and May, 2020). A low diversity score is not the only dietary concern. Only 32 percent of infants are exclusively breastfed during the first six months of life, and only 23 percent of children 6–23 months are fed a minimum acceptable diet (Stats SA, 2016a).

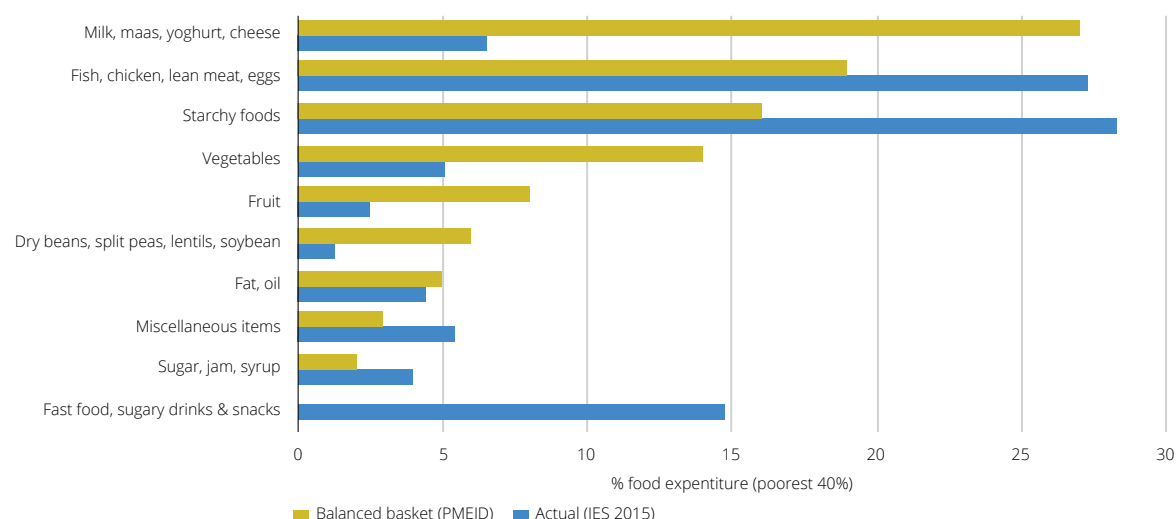
Multidimensional poverty is the **second driver**. This refers to a composite indicator of poverty focusing on the intensity of multiple sources of deprivation. It includes dimensions of WASH (water, sanitation and health), which are important for the storage and preparation of



food, such as housing quality, affordable and reliable energy, and appropriate facilities. When ineffective waste management is compounded by poor hygienic conditions and food utilization practices, the risk of enteric infections, which are detrimental to child development, increases. In 2018, 3.6 million South Africans (7 percent) were considered multidimensionally poor. Critically, 60 percent of children live in households that fall into this category; the rates are higher in non-metropolitan municipalities (77 percent) as compared to metropolitan municipalities (40 percent) (Stats SA, 2020a). Between 5 million and 6 million children are exposed to a significant risk of gastro-intestinal infection related to hand and food hygiene, sanitation, and supply. This is associated with under-5 stunting in rural and urban areas (Voth-Gaeddert *et al.*, 2020).

The **third driver** is the price of healthy foods compared to highly processed foods, which are associated with energy-dense, nutrition-poor diets. These shelf-stable foods are readily available in the spaza (house) shops and from street hawkers in low-income areas and are promoted through advertisements (billboards and TV), and sometimes within schools. The price of nutrient-dense foods is rising, while nutrient-deficient food has become more affordable (Wiggins *et al.*, 2015). In South Africa, the cost of fruit and vegetables has risen more rapidly than other food sources because of the impact of drought on the price of fresh produce. **Figure 13** shows a comparison of the share of actual household expenditure on selected food groups to the share of expenditure that is recommended by the Economic Justice and Dignity Group, as being required for a balanced healthy diet.

Figure 13. Actual and recommended food expenditure (2015)



Source: Stats SA. 2015. General Household Survey: 2015. Pretoria. PO318. <https://www.statssa.gov.za/publications/P0318/P03182015.pdf>; Pietermaritzburg Economic Justice and Dignity. 2021. Household affordability index | August 2021. Johannesburg. https://pmbejd.org.za/wp-content/uploads/2021/08/August-2021-Household-Affordability-Index-PMBEJD_24082021.pdf

For 33 out of 42 price comparisons, healthier food options are more expensive (Temple and Steyn, 2011). Eight out of the ten foodstuffs that had the largest increase in prices were vegetables. On average, healthier diets cost almost 70

percent more than less healthy diets. Low-income households are more likely to purchase foods with high energy but low nutritional content. There are also geographic disparities in food prices (Pietermaritzburg Economic Justice and



Dignity, 2021). Consumers in urban areas pay more than consumers in rural areas for the same basket of selected food products, largely due to the transportation costs (NAMC, 2019). Economic concentration in the food system and weak food system governance are among the reasons for this situation and are addressed in KSQ3 and KSQ4 below.

What levers can reduce the triple burden and improve food system outcomes?

Lever One: Reduce the relative cost of nutrient-dense food and modify the consumer environment: Policy levers used to mitigate the impact of income poverty on diet are already in place in South Africa (WHO, 2016). The limited progress in reducing the triple burden points to the need to improve dietary patterns by targeting the relative cost and desirability of nutrient-dense foods. Boosting the resources available to food insecure households to purchase healthy alternatives is an essential component of this lever and could be achieved by raising and broadening the coverage of social grants. Options include increasing the Child Support Grant to at least the level of the food poverty line, providing the grant to pregnant women to take full advantage of the first 1 000-day window, and introducing a food voucher component to the grant, giving access to in-kind healthy food packages. In parallel, support to improve the food environment of consumers living in low-income areas is needed to reduce the cost of fresh food by improving logistics and storage facilities. Raising the cost of calorie-dense foods that contain excessive salt, sugar and unhealthy fats could also shift dietary preferences. For example, the tax on sugary beverages introduced in 2019 could be increased and extended to other high-salt and high-fat snack foods. Better enforcement of regulations that target private sector behaviour, especially those relating to advertising unhealthy

foods, breastfeeding supplements and food advertisements directed at children is essential (Yamoah *et al.*, 2021). Finally, funds for interventions promoting healthy lifestyles could be increased, together with the provision of facilities in communities and schools.

Lever Two: Increase the range, scale, and coverage of child-centred food system interventions in the built environment:

South Africa also has policies in place to address multidimensional poverty through service delivery. However, the pace and quality of this delivery has not matched the pace of urbanization, resulting in inequalities across different settlement types. In particular, informal settlements provide an unhygienic environment for children and increase the risk of environmental enteropathy and child malnutrition (Tickell, Atlas and Watson, 2019). The COVID-19 pandemic illustrated the importance of clean water provision, water-borne sewerage, and solid-waste removal. To address this risk, child-centred food system interventions that focus on the built environment are required. Examples include the adoption of a zero-tolerance policy by local government for lapses in the provision and maintenance of WASH services and facilities in settlements and in schools. This would need to be accompanied by increasing the density of safe water provision and water-borne sewerage. Early childhood development facilities, primary health centres, school, and other institutional gardens could be incorporated into food system planning and serve as places where healthy food options are provided (in-kind food vouchers), and safe WASH practices are promoted. In addition, non-financial actions, such as increasing access to antenatal and postnatal care to pregnant women and new mothers could ensure that the intention to exclusively breast-feed is translated into the agency to do so, while also improving food literacy and care practices.

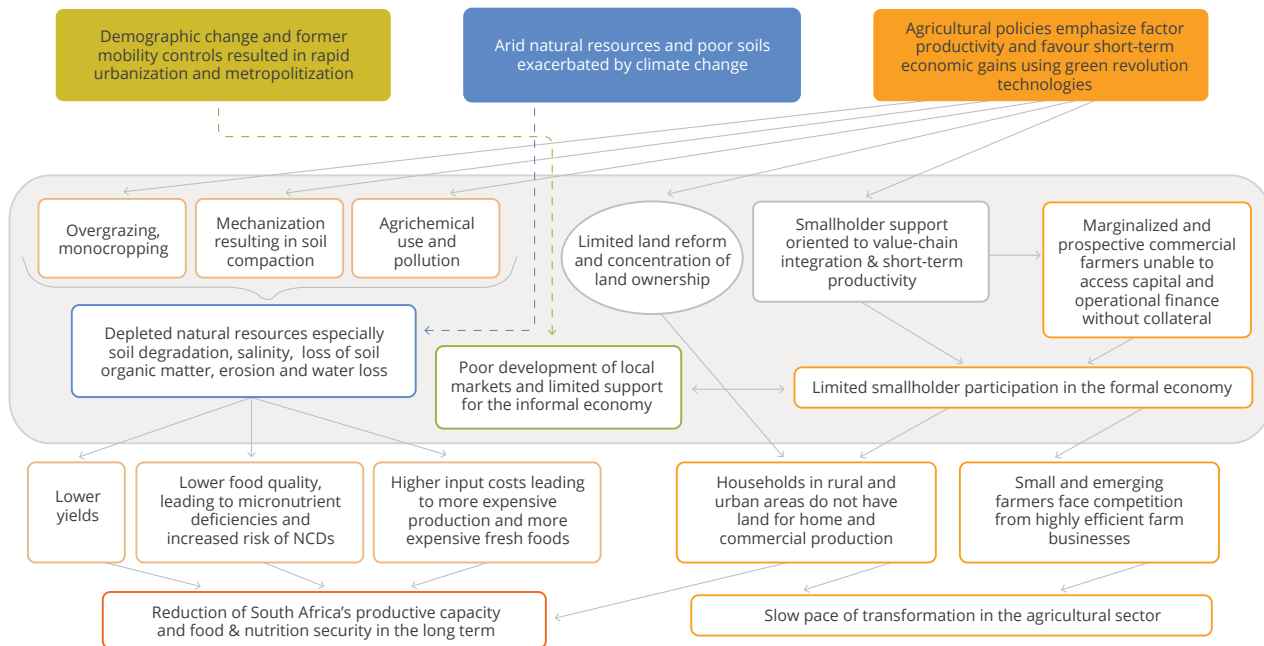




Challenge Two: Sustainable agricultural production systems

Key Sustainability Question 2: What are the constraints to more sustainable agricultural production systems?

Figure Q2. systemic representation of KSQ 2



Source: authors.

The impacts of unsustainable agricultural production systems

South Africa is characterized by a harsh natural environment. Eighty percent of the land is semi-arid to arid. The country is ranked among the top 20 ecosystems in a fragile state (Schelske *et al.*, 2020) and fertile farmland and water are scarce. Out of approximately 1.2 million km², only 13.7 percent is potentially arable and only 3 percent of total land has high output potential (South Africa, Department of Environment, Forestry and Fisheries, 2020). In addition, 70 percent of the agricultural land is classified as degraded, presenting potential negative implications for food production (Musvoto *et al.*, 2014).

Limited water availability is a key element. Low rainfall is aggravated by a high annual potential evapotranspiration (Du Preez and van Huyssteen,

2020). The country's water requirements are mostly provided through surface runoff captured in rivers and dams. Because of limited runoff supplies, groundwater is increasingly being extracted to service the needs of the agricultural sector. Water stress is high and water demand is projected to exceed availability by 2025 (FAO, n.d.). Although only 13 percent of the cultivated land area in South Africa is equipped for irrigation, agricultural irrigation accounts for 62 percent of the country's water supply (Stats SA, 2020b). Only 5 percent of the water used in agriculture is used by black farmers (South Africa, Department of Water and Sanitation, 2019). Access to water rights is curtailed by the limited transformation of water licensing procedures for agricultural irrigation (Mahlati *et al.*, 2019).

Using the General Household Survey (Stats SA, 2015) as a base, **Table 1** provides an



estimate of all forms of engagement in food production. Approximately 2.6 million households engage in agricultural activity, but only approximately 215 000 of them are estimated to be involved in some form of commercial farming, and only 40 000 of them are registered as commercial farmers.

These households are mostly located in areas formerly designated for the white population. Another 2.4 million households are partially engaged, principally for self-consumption, but it is also for occasional sales or leisure. Most of them are recorded in the rural districts of former bantustans (Stats SA, 2016b).

Table 2. Number of households engaged in farming activities

Type of farm enterprise	Number of households
Large (> ZAR 22.5 m)	2 607
Medium (ZAR 13.5 m – ZAR 22.5 m)	1 847
Small (ZAR 2.5 m – ZAR 13.5 m)	10 712
Micro 2 (ZAR 1 m – ZAR 2.4 m)	6 219
Micro 1 (< ZAR 1 m)	111 371
Part-time	109 465
Subsistence	1 891 185
Leisure/other	195 640
Backyard gardeners	300 000
Total	2 629 045

Sources: Stats SA. 2015. General Household Survey: 2015. Pretoria. PO318. <https://www.statssa.gov.za/publications/P0318/P03182015.pdf>; Stats SA. 2017b. Census of Commercial Agriculture, 2017: Financial and Production Statistics. Pretoria. <https://www.statssa.gov.za/publications/Report-11-02-01/Report-11-02-012017.pdf>; Sihlobo, W. 2021. *Will the positive trend of South Africa's agricultural machinery sales persist?* Harvest SA, 16 April. <https://www.harvestsa.co.za/2021/04/16/will-the-positive-trend-of-south-africas-agricultural-machinery-sales-persist/> [2021, September 12]. **Note:** In 2017, ZAR 100 = USD 7.50.

The agricultural practices of this wide-ranging farming population are highly diverse. However, support policies for agriculture and extension services focus on integration into markets and increased productivity. As such, green revolution technologies (mechanization, chemical inputs, selected seeds and GMOs, and irrigation) are the main reference. In practice, only commercial farmers have adopted this technical package to an extent determined by their level of skills and access to capital. It means that only the larger farms have embraced the full range of techniques and notably the costliest ones, such as large-scale mechanization and irrigation, while chemical inputs and improved seeds are more accessible.

The adoption of green revolution technologies is increasingly recognized as being unsustainable and associated with environmental degradation, excessive water use, and public health hazards (Crist, Mora, and Engelman, 2017). In South Africa, a primary factor of degradation is conventional tillage techniques. Seventy percent of crop production is being carried out using conventional ploughing (Phillips, 2019) and soil degradation is a long-standing concern. Crop yields on compacted are 15 to 30 percent lower because water and nutrients are ineffectively used, due to shallow root development. In addition, this is causing surface crusting that reduces water infiltration and leads to increased runoff and erosion, which affects more than 70 percent of the country's surface area (Masehela *et al.*, 2016).



These effects are accelerated by overgrazing and maize monocropping. Currently, more soil is lost through erosion than what is formed. Climatic conditions combined with these unsustainable practices have also led to veld degradation and bush encroachment, especially in the former bantustans (Hoffman and Todd, 2000).

Evidence is mixed, but the use of pesticides, herbicides, fertilizers, seed hybrids, and monocropping are associated with significant biodiversity loss, including microorganisms that promote soil health and undermine agricultural resilience to climate change (Masehela *et al.*, 2016). Poor soil quality and loss of nutrients have contributed to the sharp rise in the cost of producing food, further limiting access (Le Roux, 2014).

Glyphosate, a product authoritatively classified as a probable human carcinogen, is widely used in the country's staple food, and maize, and makes a significant contribution to the profitability of this subsector (Gouse, 2014; Myers *et al.*, 2016). The unintended impact of these technologies on biodiversity is a long-standing concern, including when used in smallholder production (Sereda and Meinhardt, 2003). In addition, agrochemicals affect farm workers' health when adequate equipment is not provided (Devereux, Levenda, and Yde, 2017).

Current approaches to agriculture account for a significant amount of pollution. Crop farming uses 2163.6 tonnes of pesticides per hectare and contributes 300.2 kg of CO₂ emissions per hectare of agricultural land. Agriculture contributes 6 percent of the total greenhouse gas emissions of the country (South Africa, Department of Environmental Affairs, 2018). Residues in soils reduce biodiversity and pollutants make their way into waterways, affecting water quality.

Drivers of unsustainable agricultural production systems

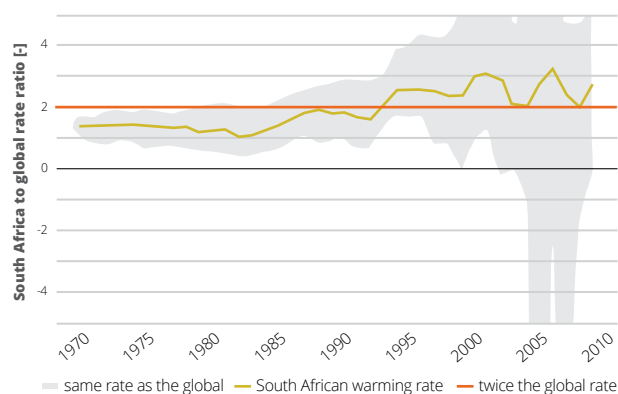
In common with the other food system challenges, the political economy of colonialism, apartheid and reintegration into a globalized economy continue to influence the characteristics of the agricultural production systems and the current agricultural practices. These practices are affected by continuing inequalities in terms of access to land, credit, and agricultural services. Drivers specific to unsustainable agricultural production systems stem from the impact of climate change on already demanding natural conditions for farming; population dynamics and urbanization; and the adoption of farming practices that impact negatively on the environment.





The **first driver** influencing the sustainability of agricultural production is the natural environment in the context of climate change. South Africa is experiencing more severe impacts than an average country, at least in terms of temperature (IPCC, 2018; Wolski, 2019). The country is also experiencing increased rainfall variability (drought, flooding, and changes in the timing of the rainy season) (Roffe *et al.*, 2019). By 2055, further warming of between 1 °C and 3 °C and a reduction in rainfall of between 5 and 10 percent is anticipated. These changes are likely to be accompanied by increases in daily maximum temperatures that are greater than the global average, especially in the western parts of the country. This is expected to be accompanied by more frequent and more severe episodes of droughts, uncontrolled fire, and flooding. Between 2015 and 2017, key cropping areas struggles with a 1-in-100-year drought, experiencing the lowest annual rainfall and highest temperatures since 1904, which reached 42 °C. The central regions of South Africa experienced conditions during the summer crop production season, which were described as being similar to the Dust Bowl of the 1930s in the United States of America (Phillips, 2019). This drought reduced the national maize harvest by 14 percent relative to the 2011–2015 average, and by a further 25 percent in 2016.

Figure 14. Ratio of warming rate South Africa/Global (1970–2010)



Source: Wolski, P. 2019. Twice the global rate. CSAG blog, 25 September. <https://www.csag.uct.ac.za/2019/09/25/twice-the-global-rate/>

The **second driver** is demographic change following four decades of settlement restrictions, which have affected the geographical distribution of the population. A key pillar of apartheid was control over the mobility of the black population and, in particular, restrictions on urbanization by black Africans. This was achieved through the notorious “pass laws”, which enforced oscillating migration of workers only while confining their families into increasingly crowded conditions in ethnic-based mostly rural “homelands”/bantustans. In many areas of the former bantustans (Eastern Cape, KwaZulu-Natal, Limpopo, North West provinces), rural densities are high, resulting in pressure on natural resources, and many settlements became rural slums, contributing to a process of de-agrarianization, with little connection to agricultural activities. Backyard gardens, very small farms with small livestock, focusing on self-consumption, are the rule. The agricultural practices used for them are basic and cannot contribute to the sustainable management of natural resources.

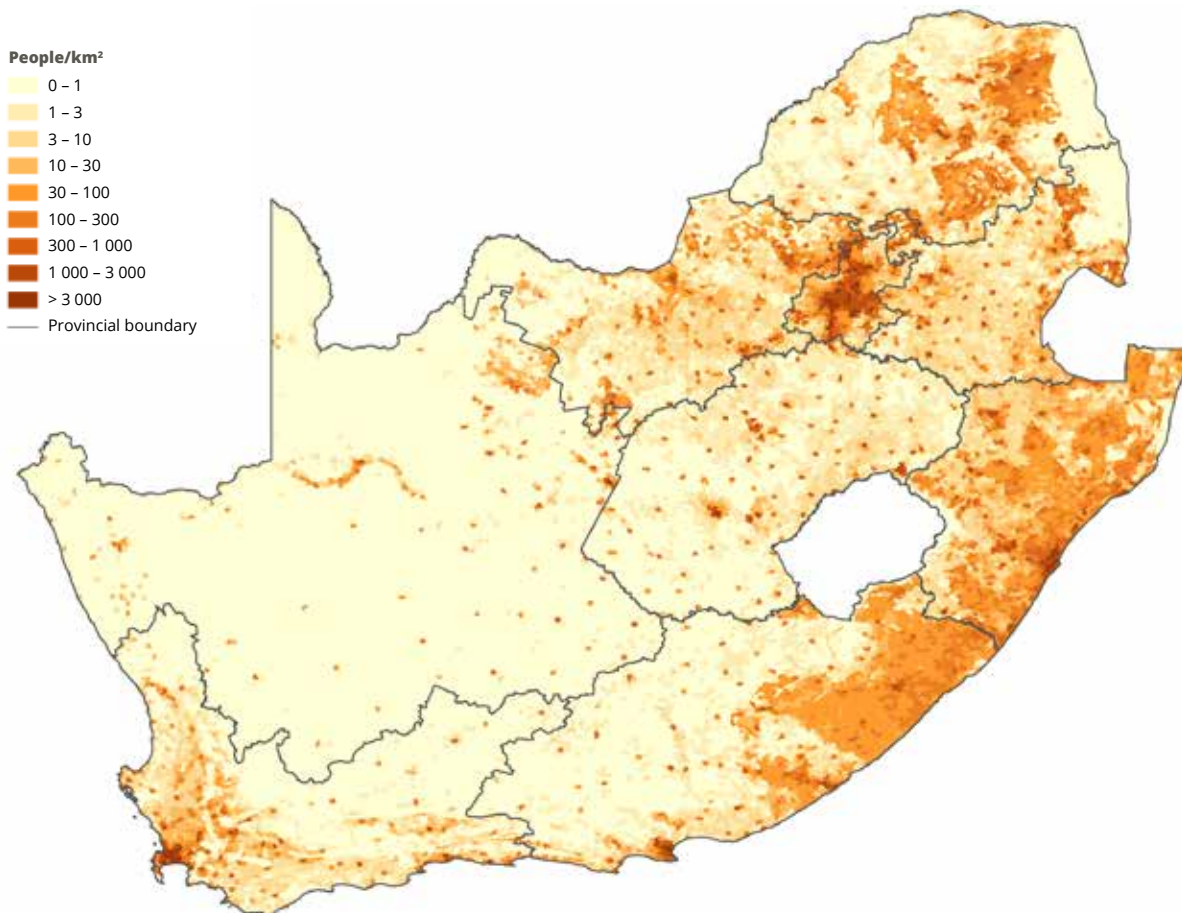
In parallel, the pace of urbanization has increased significantly following the removal of internal travel restrictions in the 1980s. Of particular importance is the growth of the population in the eight metropolitan areas. That was three times higher than the rest of South Africa between 2001 and 2011. These metropolises account for 40 percent of the country’s population. Gauteng, the most populous province, houses three of them, including Johannesburg, which is projected to become a megacity (population >10 million) by 2030 (Bello-Schünemann and Aucoin, 2016). The province contributes 3 percent of the total agricultural output, but accounts for 20 percent of agricultural demand (Von Bormann and Gulati, 2014).



The main consequence of these processes is a highly unbalanced distribution of the population, with growing metro areas, high rural densities in former bantustans and very low densities in the arid areas and, in the former white areas where

large farms are prevalent. These asymmetries result in significant pressure on natural resources and combine with the high farm heterogeneity to contribute to the global unsustainability of the production systems.

Figure 15. Population density in 2016



Source: Data from SA CSIR MesoZone 2018v1. Dataset (http://stepsa.org/socio_econ.html). Map conforms to UN. 2020. "https://www.un.org/geospatial/content/map-world" Map no. 4170, Rev. 19

The **third driver** is the priority given by the government, supported by the main agroproducers, to agricultural intensification using green revolution technologies. The objective of productivity increase, which is central to the modernization paradigm in agriculture adopted worldwide, received a specific echo in South Africa due to the imperative of national self-sufficiency during the economic embargoes of the apartheid

era, and then to the necessary improvement of competitiveness following economic liberalization. These technologies are short-term solutions, which can be profitable, but are not sustainable due to their impacts on soils and long-term fertility, biodiversity and pollution. The skills and capital necessary to access this range of technologies also contribute to the continuing marginalization of smallholders and growing disparities in agriculture.



Policy support for all types of farms, including smallholders, is fully focused on value chain integration and productivity. It corresponds to 78 percent of the funding in the National Food and Nutrition Security Plan (strategic objective 2) (South Africa, 2017). The sustainability challenges related to these options are compounded by the inadequate investment in agricultural research and development (R&D). Although among the highest in Africa, at 2.7 percent of agricultural GDP, the country's expenditure on agricultural R&D has declined over time (Beintema, Gao and, Chaminuka, 2017), does not address the diversity of farming systems and the situation of smallholders, and fails to invest the amount required in sustainable solutions for agricultural development.

What levers can improve agricultural sustainability?

Moving towards sustainable agriculture in South Africa means engaging firmly in a transition to a new agricultural development model. It also means attaining objectives of lower prices for healthy foods, better profits for a more diversified farmer population, and more secure and better-paid livelihoods for a range of farmers.

Lever One: Support the transition towards agroecological food systems: There is a continuum of practices and trade-offs towards improved sustainability. The first step for incremental change can be fast-tracking climate-smart agriculture, which offers some benefits for environmental sustainability, reducing production risks, and the ability to achieve the same or greater productivity with reduced industrial inputs (South Africa, Department of Agriculture, Forestry and Fisheries, 2014). But it is not enough. The transformational change also requires a vision to provide support for different producer categories, the development of new food networks supporting local food system

dynamics, and improved participation based on consumer-producer collaboration (Gliessman, 2016). Behaviour change among consumers and producers is required if the impact of climate change is to be mitigated. Implementing the country's draft 2013 Agroecology Strategy is a basis for coordinated policy and strategic vision.

Shifting business models implies expenses and risks and therefore requires policy support (similar to what occurred with the development of the green revolution). Financial mechanisms, including insurance and credit, are cornerstones to promoting risk-taking by agribusinesses, as are investments in relevant infrastructure and support services. Farmers' support is necessary and the implementation of payments for environmental services (PES) must be considered.

Lever Two: Link land reform with place-based farmer support: failure to implement land reform must be addressed. More strategic use of land resources demands a stronger commitment to placing small-scale farmers at the centre of local food systems. Rural revitalization and more spatially balanced development are necessary if food systems were to become more sustainable. In particular, smallholder and newly established farmers require support, and access to land cannot be disconnected from access to water, markets, and information, to enhance the position of farmers relative to big retail companies. Local farmers' markets, local processors, and local procurement must be encouraged by public and also supermarket procurement. Central to this strategy are land transfers to black farmers and providing timely and adapted producer advice and support (Cousins *et al.*, 2020). Land adjacent to former homeland areas, cities, and smaller towns should be targeted. Mechanisms, such as blended financing, the creation of a land reform fund, and land bonds could unlock this situation (Mahlali *et al.*, 2019).



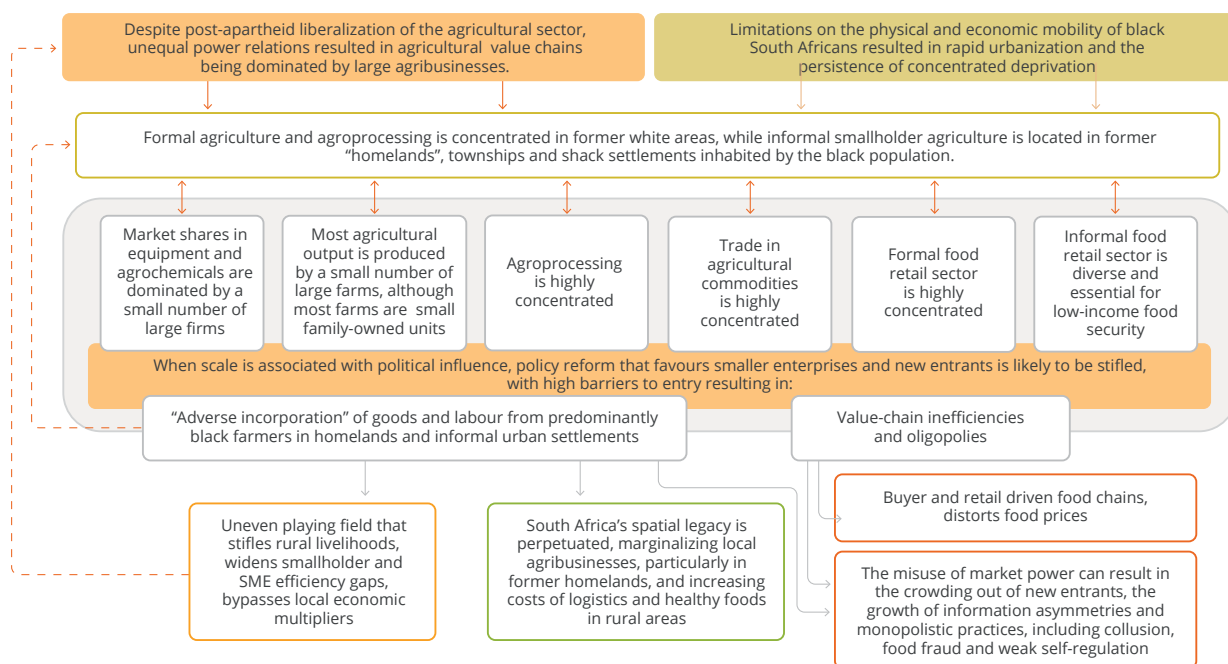
Extension and information systems must be more decentralized. Local government and other local stakeholders must play a larger role to take account of the specificity of local contexts and provide a two-way conduit for information linking producers, agroprocessors, and consumers. The development of local innovation platforms, support hubs, or help

desks at local and district municipalities levels can be used to coordinate existing initiatives or programmes and encourage local stakeholders to join forces to improve access to information, knowledge, networking, and funding options. This change concerns support design (Losch, 2020) and does not require significant financial resources.

Challenge three: levelling the food system playing field

Key Sustainability Question 3: How does the concentration of economic power shape the food system outcomes?

Figure Q3. systemic representation of KSQ 3



Source: authors.

The extent of economic concentration

Concentration exists along with the nodes that make up most food value chains. The country's Competition Commission reports that market shares of dominant companies in the food and agroprocessing sector average 52.9 percent – double the global average for the sector. This has resulted in a Herfindahl-Hirschman Index score of 2861 (OECD, 2018). Internationally, this is regarded as highly concentrated. The nature

of concentration varies and there are important exceptions (Greenberg, 2017).

Commercial agricultural production amounted to USD 18 billion in 2017/2018; livestock and poultry production (50 percent of gross value) dominate primary agricultural production (South Africa, Department of Agriculture, Land Reform and Rural Development, 2020). The fastest-growing sector is poultry meat and egg production, accounting for 60 percent of all animal protein

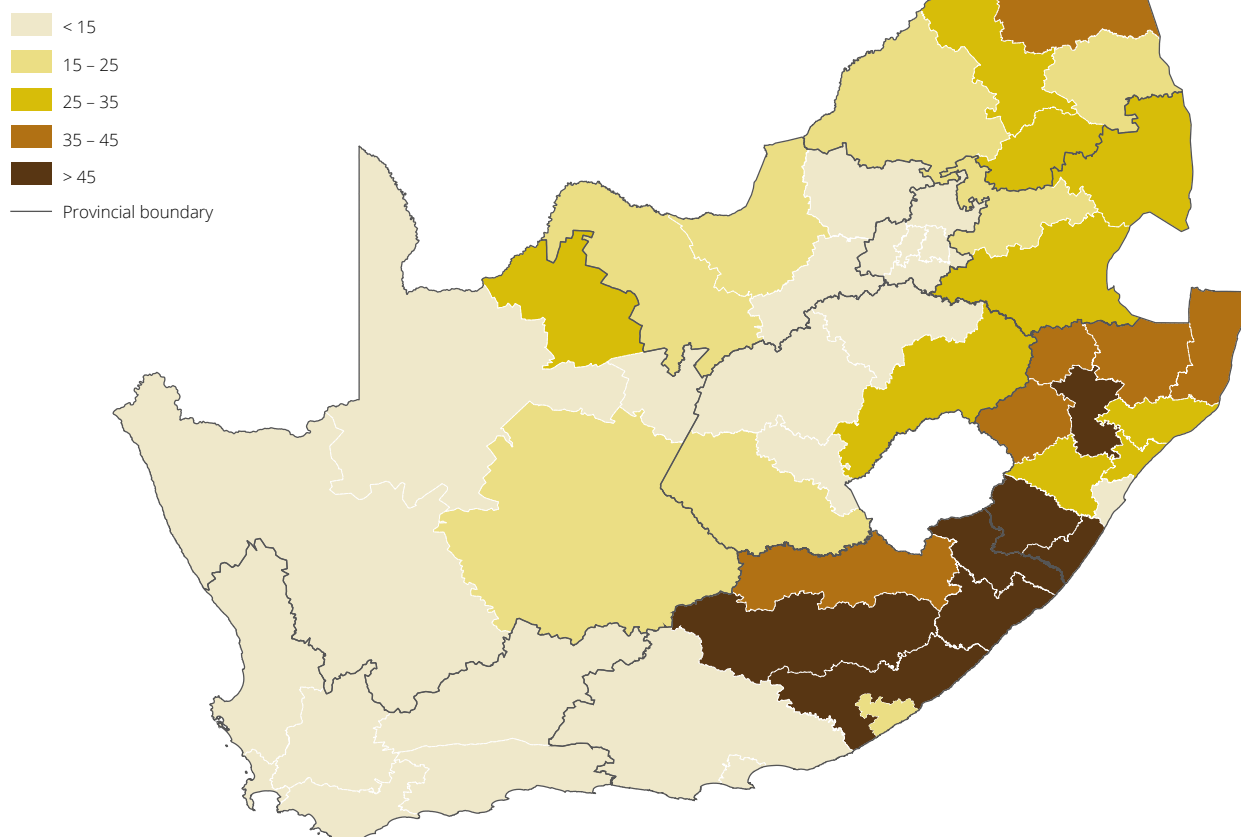


consumption and 21 percent of all agricultural production in 2017, giving poultry the highest production value in the agricultural sector in 2018 (South Africa, Department of Agriculture, Land Reform and Rural Development, 2020; Sihlobo and Kirsten, 2021). In some sectors, such as dairy, the decline of producers has been precipitous, falling from 14 000 farmers in 2005 to fewer than 1 200 in 2020, accompanied by a consolidation of milk producers (Wegerif and Anseeuw, 2020).

The distribution of farm income is highly skewed. Out of the 2.6 million households engaged in some sort of agricultural activity in 2017, only 57 592 reported earning more than USD 20 200 per annum from agriculture (Sihlobo and Kirsten, 2021). Approximately 40 000 registered commercial farmers produced 80 percent of the total value of agricultural output (Stats SA, 2017b).

The majority are small-scale and family-based (Sihlobo and Kirsten, 2021). Only 6.5 percent are large farms with a gross farm income on average that exceeds USD 1.5 million/year. Ninety percent are micro- or small-scale farms. Only 0.6 percent (237 units), constituted as private companies account for one-third of gross farm income (Liebenberg, 2013). While large farms were responsible for 67 percent of farm income and employed approximately 757 000 farm workers (51.4 percent of the agricultural labour force), small farms accounted for 23 percent of total farm income and employed 37 percent of the agricultural workforce (Stats SA, 2016b). However, estimates show that the value of the “informal” production, mostly implemented in former bantustans, was equal to nearly one-quarter of the gross value added by commercial agriculture (Aliber and Mdoda, 2015).

Figure 16. Households engaged in agriculture per district in 2016 (% of the population)



Source: Stats SA. 2016b. *Community Survey 2016*, Statistical Release P0301. Pretoria. Statistics South Africa. Map conforms to UN. 2020. “<https://www.un.org/geospatial/content/map-world>” Map no. 4170, Rev. 19



In nodes upstream from production, concentration is evident in input markets (Greenberg, 2017). Downstream, the number of food processing enterprises is not known, however, estimates for them range between 1 800 and 4 000 enterprises (Greenberg, 2017). Although food manufacturing is not among the most concentrated sectors, the concentration ratio of the top five firms is above 75 percent (Fedderke, Obikili, and Vieg, 2018). Packaged food makes up 44 percent of the total food and beverage market, while small and micro-processing enterprises generate only 1.4 percent of the total income, but employ 6 percent of the workforce in food processing.

Vertical integration is important in several processing nodes. The commercial animal feed sector is an example of this, especially among the large poultry producers. Regarding grain storage and handling, three companies control have 73 percent of grain silo capacity (Vyver, 2019). In some sectors, such as livestock, 75 percent of cattle go through concentrated feedlots before reaching the market (Greenberg, 2017). The five largest feedlots held a 54 percent market share in 2010 and again there is considerable vertical integration with feedlots having their own abattoirs (South Africa, Department of Agriculture, Forestry and Fisheries, 2019). Intermediaries in the trading of food financials are also highly concentrated; two companies handle 70 percent of maize trading in South Africa.

At the retail level, most food distribution takes place through five large corporations (Greenberg, 2017). The largest controls 36 percent of the market, employs almost 100 000 workers, and has more than 1 700 outlets of which 200 are located in other countries in Africa. The second and third largest outlets each hold 28 percent market shares. Supermarket food sales account for the largest share of all food consumed in South Africa, at 60 percent. Markets are segmented with differently branded and stocked outlets servicing different socioeconomic groups and locations. No-frills outlets are in small towns and townships, while those in high-income suburbs offer luxury products.

Trade in the informal food sector remains important, although products are often sourced from the formal wholesale and retail sectors to be sold in smaller volumes or more convenient locations. Approximately 50 percent of the consumer food basket is made up of shelf-stable products, mostly processed staple foods, such as maize meal, rice, flour, and margarine (Crush and Frayne, 2011).

Informal food vendors are predominant in townships and informal settlements. They account for 55 percent of all small-scale enterprises and more than 81 000 outlets outside the formal sector. An estimated 400 000 hawkers/spaza (house) shops provision these areas, mostly sourcing food from formal retailers and wholesalers. Approximately 70 percent of households in poor urban areas source food from these businesses (Battersby, Marshak, and Mngqibisa, 2016).

Impacts of excessive concentration on food systems outcomes

Economic concentration is not necessarily problematic if there are benefits of scale throughout the food system and the distribution of costs and benefits does not result in unacceptable social disparities. However, policy reform that favours more diverse ownership, smaller enterprises, new entrants, and underserved communities may be stifled by high barriers to entry. The result is food value chains in which large retailers influence what is demanded and produced, how it is branded and what it costs. In some instances, these retailers are multinational corporations that are beyond the reach of the regulatory powers of the national government.

Of particular concern for the focus of South Africa on transformation in the agricultural sector are the significant efficiency gaps between smallholder and commercial farmers. These are linked to farmer experience and access to off-farm income that cannot easily be addressed by public policy. This erodes an opportunity for poverty reduction



even when smaller farming units may be a preferred option for policies and programme. The preponderance of large-scale agriculture and “big retail” also undermines employment in the non-farm rural economy. It promotes “enclavic” value chain configurations that bypass local operators. Management practices and the private food standards required by the food industry can produce further barriers to entry.

Misuse of market power can result in the growth of information asymmetries and monopolistic practices, including collusion. As far back as 2008, the Competition Commission, a statutory body constituted in terms of the Competition Act, earmarked the food sector as a concern (CCSA, n.d.; Rakhudu, 2008). Processors have been prosecuted for anticompetitive behaviour in the processed food market, and evidence of collusion is found elsewhere in food value chains (CCSA, 2010; Roberts, 2017). The grocery retail sector has been identified as giving preferential treatment to larger suppliers at the risk of anticompetitive behaviours (CCSA, 2019). Concentration may enable large food corporations to influence urban planning, including mall development and transport routes. This “mallification” generally occurs in already partially built areas, at the expense of cheap housing, and also affects informal traders. Large food corporations also influence the management discourse in ways that discourage regulation and intervention, and that promote further private-led initiatives (Ledger, 2016; Mialon, Crosbie, and Sacks, 2020).

Prices are a concern and changes in the average mark-up on food have been found to be driven by large firms (Dauda, Nyman, and Cassim, 2019). The rise in average mark-ups in South Africa, at an annual increase of 25 percent, exceeds those in emerging and developing countries. Rapid increases in food prices since the onset of the COVID-19 pandemic have persisted beyond the pandemic mitigation strategies (Thakoor, 2020; Pietermaritzburg Economic Justice and Dignity, 2021). The Competition Commission is now

monitoring food prices to assess the reasons for this, although price increases in international markets are also a contributing factor (BFAP and Louw, 2021). There is also a huge variation in prices across the country. For example, the difference between the average price of onions in the most expensive fresh produce market and the least expensive market was found to be 40 percent, irrespective of the size of the market.

Food system regulation failures are also apparent. There is evidence of food fraud in which items are incorrectly labelled or contain undeclared constituents (Cawthorn *et al.*, 2015; Cawthorn *et al.*, 2013; Schönfeldt, Hall, and Pretorius, 2019). This raises concerns about the unsustainable use of protected species and the failure to enforce policies related to adulteration and food safety; those concerned with conservation; and those that focus on market traceability and transparency (FAO, 2018; Boatemaa *et al.*, 2019). A 2018/19 listeriosis outbreak, the largest in the world to date, which emanated from the country’s largest food company, exemplifies the weaknesses arising from self-regulation of food safety procedures (Boatemaa *et al.*, 2019).

Drivers of economic concentration

Unequal power relations in the political economy of national and global food systems are the **first driver** of concentration in South Africa. Following the end of apartheid, legislated racial discrimination ended. South Africa liberalized the agricultural sector and rapidly integrated into global markets dominated by a neoliberal approach promoting reduced state involvement and the interests of large corporates (Ducastel and Anseeuw, 2018). Enterprises and stakeholders who benefited from apartheid-era policies were best able to take advantage of these reforms. These changes increased urbanization, shifting production and consumption patterns, with less profitable enterprises closing or merging. Despite the democratic transition, path dependency, contradictory agricultural policies,



insufficient public resources and the prioritization of other sectors have resulted in the persistence of economic and spatial dynamics set in place by centuries of structural underdevelopment (Carter and May, 2001; Friedman, 2021).

The legacy of limitations placed on the physical and economic mobility of the black population is the **second driver**. This created poverty traps, concentrating deprivation in homelands, townships, and informal settlements. As a consequence, the South African food system appears to be dualistic (Binswanger and Deininger, 1993), and is often described as having an hourglass market configuration: many farmers; few processors, wholesalers, and large retail chains; and many small retailers and consumers (Ledger, 2016). Although economic power remains largely correlated with race, this does not mean that there are two distinct food flows and sealed spaces. The situation is more complex, with the formal and informal components of the core activities and the nodes along the value chains linked through flows of goods and labour, often with adverse incorporation, and with inequalities and deprivation in both components. The result is that the spatial distribution of the apartheid food system persists, despite more than two decades of policies and plans that have sought integration and redistribution.

What levers can level the playing field?

Lever One: Reform and enforce food system regulatory policies:

The implementation, monitoring and enforcement of existing regulatory policies by all spheres of government can reduce economic and spatial concentrations. In some cases, existing policies and procedures need to be reviewed and reformed, especially those that disregard or prejudice informal economy stakeholders and small-scale agrifood producers. The statutory Competition Commission needs to be strengthened so that it can fulfil its oversight functions. The Food Council provided for in the National Food and Nutrition Security Plan, the Technical Coordinating Committee in the Department of Planning, Monitoring and Evaluation and other coordination and regulatory structures at the national and subnational level must also play an important role in this (South Africa, 2017). To be effective, these structures must include active engagement by stakeholders from the informal economy, smallholder agriculture and low-income consumers. At each sphere, the roles of rights-bearers and duty-holders should guide activities and processes (De Visser, 2019). The coordination of implementation and reform through appropriate structures in all spheres, is necessary as many policies are the mandate of multiple





government departments and implementation procedures may be unclear or contradictory.

Lever Two: Adopt an integrated approach to building an inclusive food system: Food system transformation, accompanied by land reform and rural development strategies that support smallholder livelihoods, could create significant employment in agriculture and the non-farm sector (Cousins *et al.*, 2020). Stepping up the pace of implementation of food system transformation and land reform policies at all spheres of government could reduce economic and spatial concentration, shortening value chains and contributing towards building vibrant rural communities (Shackleton *et al.*, 2019). Complimentary reforms are needed to ensure access of new entrants to input and output markets, many of which require food-and-nutrition-sensitive actions by local governments. However, having the numbers right is a prerequisite for evidence-based policy and plan-

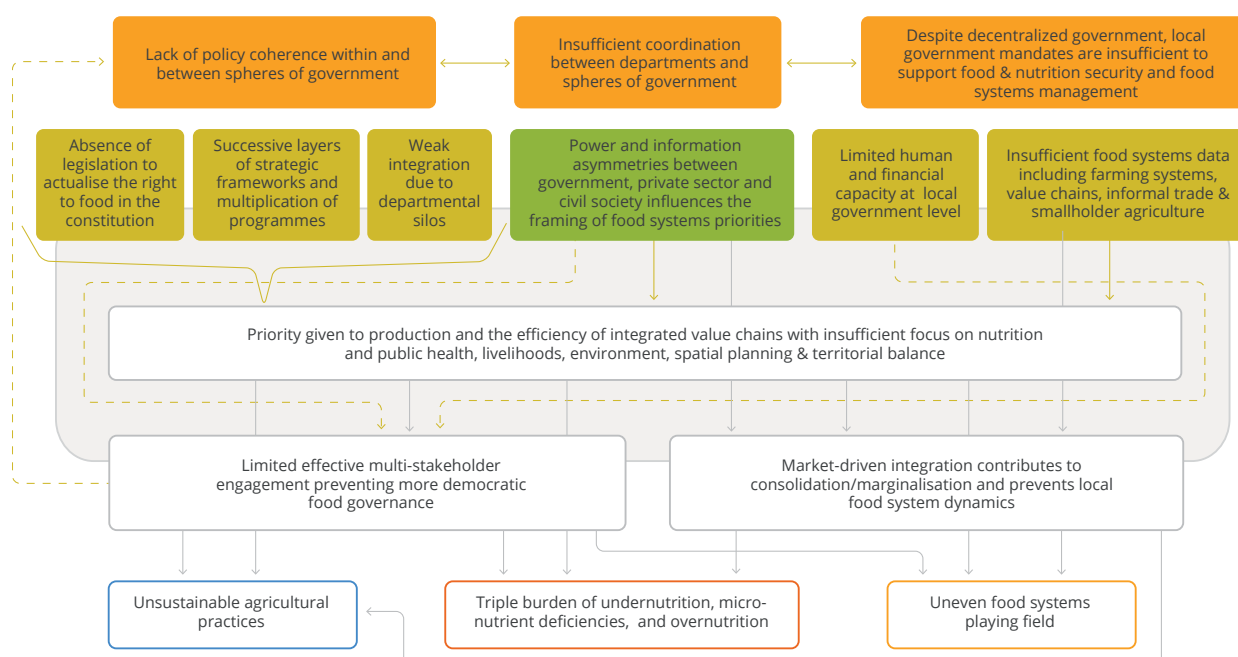
ning. Spatially referenced data concerning all categories of farmers, agroprocessors, and informal traders should become part of the national statistical system and be incorporated into the monitoring and evaluation activities in all spheres of government.

To avoid generating further inequality, the development of new chains by the private sector should also be supported by all spheres of government to guarantee access to local actors and avoid concentration in the most profitable places. These should be grounded on smaller-scale actors with more equitable power relations and wider ownership, and incorporate new entrants. Risks include legal battles over procedures; existing legislation that inhibits the subdivision of land; competition between different land-use needs as well as water-use needs; and the absence of food-and-nutrition-sensitive planning by most local governments (Vink and Kirsten, 2019).

Challenge Four: Improved food system governance

Key Sustainability Question 4: What explains the discrepancy between a sophisticated food policy and the current food and nutrition security results?

Figure Q4. systemic representation of KSQ 4



Source: authors.



Characteristics of government action and drivers of food system governance

Compared to many other countries, South Africa has a sophisticated food-policy framework, which is rooted in the interventionist tradition of the State dating back decades. The 2012 NDP, the last major overall strategy of the Government of South Africa identifies food security and rural transformation as enabling milestones for the eradication of poverty and reduction of inequalities by 2030 (The Presidency of the Republic of South Africa, 2014). The government has set standards and regulation procedures for domestically grown and imported food concerning safety and food labelling. It has also established oversight functions related to pricing and safety in food retailing environments and food manufacturing (Food Advisory Consumer Service, 2019; CCSA, 2020).

Despite this, the government does not yet have an integrated food systems strategy to jointly address the different goals: food and nutrition security; a sustainable natural environment; livelihoods and socioeconomic progress; spatially balanced and equitable development; and managing the trade-offs between these dimensions. Instead, many strategies, policies, plans, and programmes have focused on food and nutrition security and some specific dimensions, notably food production. Land reform, public health, maternal and child development, science and innovation, multilevel governance, and social protection are often separately addressed in sometimes conflicting policies, with different focal areas.

Given the coverage of food-related policies, the poor results in terms of food system outcomes (the triple burden of malnutrition, unsustainable agricultural practices, continuing unequal access, and returns to and from production factors due to excessive concentration) are a paradox and they highlight important governance issues.

The **first driver** of this paradox is the lack of policy coherence resulting from the complexity of the food system (Boatema, Drimie, and Pereira, 2018). Interventions are characterized by successive layers of strategic frameworks, a weak integration of government action due to “siloization” between departments, and limited mandates and interventions of provincial and local governments related to food security and food system management (Kraak, 2011).

Since the right to food and adequate child nutrition was enshrined in the 1996 South African Constitution and its Bill of Rights (sections 27 and 28), the government has developed several overarching policy documents: the 2002 Integrated Food Security Strategy, designed by the department in charge of agriculture; the 2014 National Policy on Food and Nutrition Security, prepared by the departments in charge of agriculture and health; and the National Food and Nutrition Security Plan, released in 2017 and led by the Department of Planning, Monitoring and Evaluation in the Presidency (Constitution of the Republic of South Africa, 1996; Department of Agriculture, Forestry and Fisheries, 2002: 2014; South Africa, 2017). These major policy documents have been complemented by specific plans and programmes. Several target nutrition: the 2002 Integrated Nutrition Programme, the 2013 Strategic Plan for the Prevention and Control of Non-Communicable Diseases, and the 2015 Strategy for the Prevention and Control of Obesity. Agricultural production is the target of the 2014 Agricultural Policy Action plan), focusing on critical value chains, smallholders, and commercial farming (South Africa, Department of Health. 2001; South Africa, Department of Agriculture, Forestry and Fisheries, 2014). The articulation between these successive, sometimes overlapping, and parallel policies is somewhat elusive, but an implicit priority emerges – targeting the production of food and omitting the urban part of the food system and the consumption and waste components (Drimie, 2016).

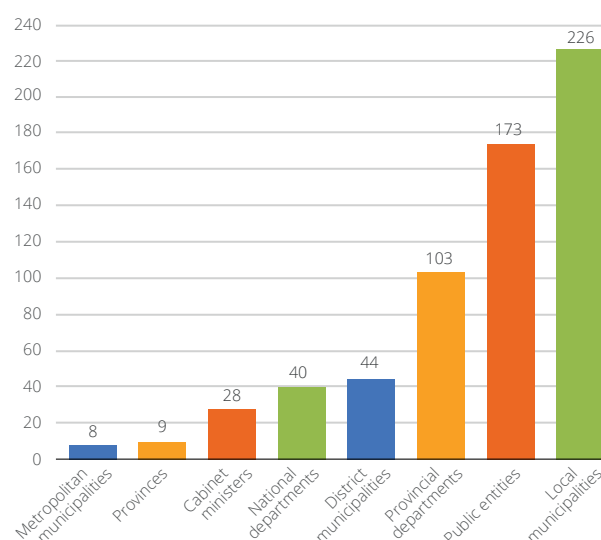


Four national departments, with their own organizational structures, are in charge of implementing interventions related to food and nutrition security across the country's nine provinces: the Department of Agriculture (renamed the Department of Agriculture, Land Reform and Rural Development – DALRRD), the Department of Health, the Department of Social Development, and the Department of Basic Education. Together with 11 other departments and many government agencies, they manage more than 50 programmes that address food insecurity and malnutrition (South Africa, Department of Planning, Monitoring and Evaluation and UNICEF, 2020; Pereira *et al.*, 2020). Other food system dimensions, notably the environment and spatial planning, are addressed by specific thematic departments. Even the Department of Public Works and Infrastructure is involved, through the Expanded Public Works Programme, a component of which is the Environment Programme, and is managed with the Environmental Affairs Department and includes the Sustainable Land-based Livelihoods programme (South Africa, Department of Public Works and Infrastructure, 2018). Blurred mandates can result in overlaps, duplication of roles and responsibilities, leading sometimes to competition among leading departments for budget allocation and implementation on the ground. Together with insufficient coordination and limited monitoring, this explains the poor performance concerning the policy objectives (Termeer *et al.*, 2018).

The **second driver** is the decentralized system of government in South Africa, including in provinces and municipalities which carry out specific mandates. As per the Constitution, provinces have limited exclusive competency, and their legislative and executive powers are concurrent with the national sphere, which is the case for agriculture, environment and human settlement, as well as for

urban and rural development. As a result, departments in provincial governments are mostly implementing national policies and programmes designed centrally, with reduced influence of local governments on issues affecting food systems. While other provinces have sometimes engaged in strategic thinking, the Western Cape is the only province that has fully developed its own food security strategy (in 2016), even if it remains as a draft while awaiting approval by the cabinet (Western Cape Government, 2016). Municipal governments do not have any specific direct mandate related to food and nutrition security or food systems management but have some levers for action related to spatial planning, land use, markets, and trade regulations (De Visser, 2019; Haysom *et al.*, 2020). Except for metropolitan municipalities, they are, however, often crippled by weak human and financial capacity, which drastically prevents the implementation of effective interventions. Even well-resourced metros are confronted with the difficulties of internal fragmentation (Kroll, 2021).

Figure 17. Structure of the South African multitier government



Source: South Africa. 2019. *The National Government Handbook*: South Africa. <https://issuu.com/yesmedia/docs/ngh2019>

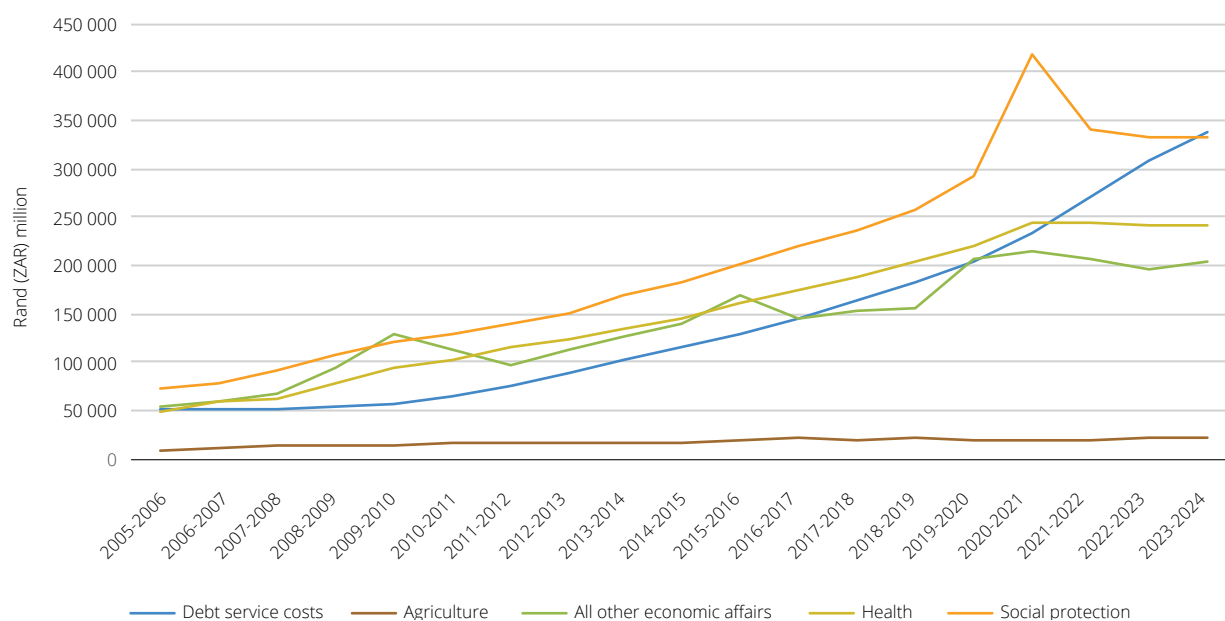


The **third driver** is the lack of effective coordination between departments and spheres of government, which has been a recurrent issue since the implementation of the Integrated Food Security Strategy in 2002. It can relate to tensions between departments, knowing that the department in charge of agriculture had a leading role in the Integrated Food Security Strategy and the 2014 National Policy on Food and Nutrition Security (Pereira and Drimie, 2016). The coordination of the 2017 National Food and Nutrition Security Plan by the Department of Planning, Monitoring, and Evaluation at the level of the Presidency and the implementation of the Coordinating Committee can be considered a significant move towards improved integration and should help to reduce rivalry. Moreover, the plan provides for the establishment of the multisectoral National Food and Nutrition Security Council (together with provincial and municipal councils), but this national council was only approved by the cabinet in 2021 and still needs to be appointed

(Hendriks, 2020). In addition, despite the explicit right to food in the Constitution, there is no legislation on food security to actualize this right (Hendriks and Olivier, 2015). The implication is that existing food policies are not enforceable and legally binding and, as a consequence, efforts to monitor the impacts to improve interventions is not a priority. Establishing a monitoring and evaluation unit to support the implementation of the plan are one of its six strategic objectives, but it only receives 0.03 percent of its budget for 2018–2023 (South Africa, 2017).

Tensions related to implementation are compounded by the fiscal constraints that face South Africa. Debt service costs have been rising rapidly and are now equivalent to the cost of social protection, despite the sharp increase in the latter following the government's COVID-19 mitigation response. In contrast, expenditure on agriculture, fishing and forestry have not increased in almost two decades.

Figure 18. Government expenditure (2005–2024)



Source: South Africa, Department of National Treasury. 2020. Budget review 2020. <http://www.treasury.gov.za/documents/national%20budget/2020/review/FullBR.pdf>





Asymmetries between stakeholders shape food policy priorities

The poor outcomes of the current governance of the food systems are also a consequence of substantial asymmetries among the three main categories of stakeholders: government entities, the private sector, and civil society organizations, even if the last two categories are not clear-cut and include a significant variety of status, outreach and economic power (Greenberg, 2017). This result stems in poor data on current food systems actors and inadequate disaggregation of information to the local level (Battersby, 2019).

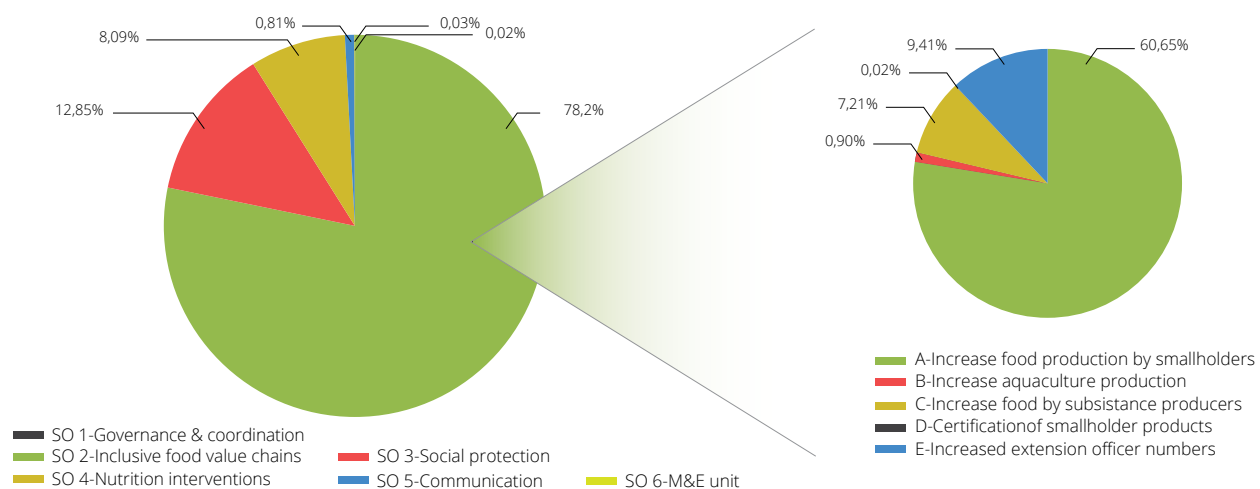
Different stakeholders' positions and power result in competition, which affects the framing of food systems issues and the subsequent policy priorities. Stakeholders do not have the same voice, due to different human and financial capacities, which shape their possibility to influence, suggest and propose. Private sector stakeholders are multifarious and prominent in the agrifood value chains, and some major companies hold market power, which results in oligopolistic food markets. They face weak civil society organizations, which mostly focus on the provision of food and have limited capacity to influence, and government entities

supporting diverse priorities, between economic growth, health, social development or preservation of natural resources.

This landscape has resulted in different implicit coalitions (Thow *et al.*, 2018). The Department of Trade and Industry, which supports the growth objectives of NDP, favours economic development, production, employment creation and income distribution as the principal answers to food issues. It meets the objectives of major businesses and financial institutions.

This positioning fits with the productivist orientation of the department in charge of agriculture, which has an inherent production focus and also plays a prominent role in food policy, as shown by the USD 5.7 billion National Food and Nutrition Security Plan budget priorities. It results in a primacy concerning to the supporters of health and nutrition. In the budget, the two strategic objectives targeting nutrition (SO4) and social protection (SO3) receive 8.1 percent and 12.9 percent, respectively, of the allocations, while the development of food value chains (SO2) obtains 78 percent of the total budget, with a focus on smallholders' productivity and integration in food value chains (SO2A) (South Africa, 2017).

Figure 19. Cost breakdown of the National Food and Nutrition Security Plan (2018/19–2022/23)



Source: South Africa. 2017. *National Food and Nutrition Security Plan for South Africa 2018-2023*. Pretoria. [chrome-extension://efaidnbmnnnibpcajpcgcle-findmkaj/viewer.html?pdfurl=https%3A%2F%2Fwww.nutritionandsociety.co.za%2Fwp-content%2Fuploads%2F2021%2F02%2FNational-Food-and-Nutrition-Security-Plan-2018-2023.pdf&clen=3164211&chunk=true](https://efaidnbmnnnibpcajpcgcle-findmkaj/viewer.html?pdfurl=https%3A%2F%2Fwww.nutritionandsociety.co.za%2Fwp-content%2Fuploads%2F2021%2F02%2FNational-Food-and-Nutrition-Security-Plan-2018-2023.pdf&clen=3164211&chunk=true)



These power asymmetries among contributors to the food system are reinforced by the limited possibilities for stakeholder involvement in the policy debate, despite initiatives promoting dialogue and fostering engagement for co-production of knowledge and improved food democracy (Drimie *et al.*, 2018; Abrahams *et al.*, 2020; Adelle *et al.*, 2021). Many private sector actors do not need to be deeply involved, as they possess the opportunity and capacity to influence and lobby. In contrast, many civil society organizations lack access to policy dialogues as well as the capacity for engagement and to access information; this prevents the expression of other perspectives and voices (particularly the most marginalized in the food system) and limits the possibility of attaining a larger scope in strategic design and a better definition of priorities.

What levers may improve food system governance?

Among possible, two main levers are proposed. These levers are not costly, can be supported by budget reallocation, and correspond to a more integrated and articulated approach to the complexity of the food system.

Lever One: Improve inclusive stakeholder participation and enhance engagement:

A “Whole-of-Society” approach is critical to address policy coherence and to balance the current asymmetries in the food system. This approach has the potential to accommodate the different perspectives and interests and to progress towards more democratic food-governance arrangements. To have the different voices heard, the effective implementation of the food and nutrition security councils planned by the National Food and Nutrition Security Plan is an important step, which must be accelerated and should include local councils (at least at the district and metropolitan levels). However, if the objective is to strengthen multi-stakeholder participation, these councils cannot be managed with a top-down approach under which the deputy president or the provincial premiers are the chairs.

Participation is not enough and more is needed to bring all stakeholders into the discussion. Due to the inequalities rooted in the South African context, prerequisites for effective participation and engagement include the improvement and sharing of the existing knowledge and data,





more inclusiveness, transparency, and mutual accountability among partners in the food system; the definition of clear roles and responsibilities, facilitation by the government and the provision of specific support to civil society organizations, which need to have facilitated access to information and specific training to enable their engagement. This multistakeholder collaboration can be consolidated by the preparation and adoption of a common framework, such as a food charter, and the definition of common objectives and plans of collective action.

Lever Two: Adopt a two-pronged place- and issue-based approach to food system governance: To better address the much-needed decentralization of the food systems governance and to improve outcomes, a shift towards a territorial approach is needed. Food systems are rooted in places with their own specificities and territorial asymmetries are a critical issue in the South African context. Local scales are well-suited for collective engagement to contest power relations and to identify opportunities and constraints to sustainable development. Local engagement can identify and support economic

activities and the management of natural resources. Such an approach implies strategic frameworks that avoid setting a unilateral top-down vision and applying unilateral top-down practices but has to be developed with specific attention to particular issues because addressing the whole system can be disempowering for non-state actors. Broader involvement of local governments is necessary for the design and the implementation of food policies, using the potential of multistakeholder participation. If local governments are, in theory, well-suited to organize an effective debate about existing challenges, their current situation in terms of capacity and budget constraints implies strong support with adequate backing and training. It will also require clarification and specification of their mandate. Collaborative intermediary organizations can help to foster relationships. The new District Development Model, which has been tested since 2019 as a way to structure cooperative governance and promote intergovernmental relations, could be an opportunity to move forward if the pilots are successful (South Africa, Department of Cooperative Governance and Traditional Affairs, 2020).

Transition to sustainable food systems

Despite the legacy of extreme inequality and structural poverty and a recent history of mismanagement of public funds, South Africa possesses the resources of an industrialized middle-income country that can be used to fund and effectively implement its relatively well-developed food security strategies, policies and regulations. The paradox of poor food system outcomes points to the need for a more assertive approach, which takes into account the country's system of government and its unique spatial and environmental challenges. A significant refocus of political will by the government at all levels is necessary to achieve a transition towards a sustainable and just food system

respectful of people and the environment. Some elements for an improved food system have been identified. The Bill of Rights, the Constitution, the flagship National Development Plan, and the National Food and Nutrition Security Plan address food and nutrition security. However, a fully integrated approach is missing and insufficient attention is paid to the achievement of food system outcomes relating to livelihoods, environmental sustainability and territorial balance. Furthermore, the trade-offs and synergies that result when promoting different objectives are not addressed in any detail. These shortcomings also apply to other sector-specific policies and spatial plans.



The levers proposed in this brief thus focus on the fundamental values of the South African Constitution: human dignity; the achievement of equality; and the advancement of human rights and freedom. In particular, many of the levers emphasize the need for legislation and processes that will actualize the progressive right to food security for all and the absolute right to adequate nutrition for children. These have been matched with levers that call for improving production and food networks, economic inclusion, and for strengthening the institutional architecture of food systems: better coordination; accountability; and the enforcement and improvement of existing regulations. These are brought together in the final challenge, in which improved governance becomes the connector among the different challenges faced by the South African food system.

Following discussions during the stakeholder consultations, it was proposed that a way for improvement and political mobilisation is through more decentralized governance, with more local-level mandates and more support. In particular, a focus on children-centred food systems could be a way to mobilize a common agenda, despite differences. Engagement with civil society organizations is key to the success of the process. This should include the organizations comprised of informal sector traders, smallholder and subsistence farmers, consumer groups,

and vulnerable groups, such as young people, farmworkers and the homeless. This proposal recognizes that people live in places and not in sectors, and places offer the right level to focus on local challenges, opportunities, and constraints. Places offer opportunities to establish coalitions of actors who share goals, and a way in which networks of stakeholders can mobilize local resources and dedicate them to projects of local importance. They are also spaces of coordination and contestation among actors, where local resources can be activated through collective effort to answer shared challenges, including those related to environmental sustainability.

Finally, as has been necessary for other structural transitions worldwide, effective support is critical if this process is to deepen. Notwithstanding resource constraints, the country's Bill of Rights is grounded on principles of universality and inalienability; indivisibility, interdependence, and interrelatedness; equality and non-discrimination; participation and inclusion; accountability; and rule of law. Addressing the food system paradox is fundamental if these principles are to be respected. Reprioritizing budgets and reallocating and reorienting human resources of national, provincial, and local government, together with more effective taxation, is needed to generate the required resources.





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