

Strategic Analysis Paper

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Food and Water Security in South Africa: Present and Future

Key Points

- South Africa is characterised by a paradox of instances of food insecurity amid a national food surplus.
- 14 million South Africans are vulnerable to food insecurity.
- Future food and water security will be determined by the interaction between population growth, income and agriculture.
- Inequality remains the primary barrier to achieving universal food security in South Africa.
- Future water shortages will become severe and persistent, resulting in supply gaps of up to 39 per cent in some catchment areas.
- Continued demand for South Africa's natural resources will assist in its efforts to combat food insecurity.

Analysis

Present & Future Populations

South Africa is a diverse country with multiple ethnicities and languages. In 2011, the population was estimated to be 50.59 million people. Life expectancy is towards the lower end of the global scale, at 54.9 years for males and 59.1 years for females. The infant mortality rate for 2011 is estimated to be 37.9 deaths per 1,000 births. An important factor in this high rate is childhood malnutrition. The high prevalence of AIDS, too, causes higher death and infant mortality rates, and lowers life expectancy. Of all deaths in South Africa in 2011, 43.6 per cent were related to AIDS.

Among South Africa's diverse and dynamic population are a large number of illegal immigrants, estimated to be as many as 5 million. These originate from a range of African countries, such as Malawi, Mozambique, the Democratic Republic of the Congo and even Somalia, though Zimbabwean nationals account for the vast majority following the collapse of that country's economic system. The relative wealth of South Africa compared to its neighbouring countries is the drawcard for illegal immigrants, with the average South African being six times better off than an average Zimbabwean, for example, and twenty times better off than a Malawian. This influx undoubtedly places added pressure on South

Africa's ability to satisfy food and water demand, particularly given that the majority of illegals end up in outlying areas of cities already at risk of food insecurity.

Despite possessing a birth rate that exceeds its death rate, population growth in South Africa has been decreasing annually for the last decade. The most recent recorded growth rate, between 2010 and 2011, was just 1.10 per cent, down from 1.12 per cent the previous year. There are numerous causes for this slowing growth, though it is primarily due to an increasing AIDS contraction rate and a positive net emigration rate. In recent years, political turmoil (caused by instability in the ruling ANC), economic globalisation, and an ever-increasing crime problem, have combined to catalyse a widespread exodus of people from South Africa. This has caused a substantial drain on the country's human capital, with a large proportion of leavers being highly skilled or tertiary-educated. South Africa must have all resources available to combat the threat of food and water insecurity, therefore, emigration invariably has a negative effect on solving the country's problems. South Africa's projected population to 2025 is limited by these negative factors. According to the United Nations, the country's population should increase by no more than 3-5 million over the next decade.

Income, Economic Outlook & Unemployment

Per capita income in South Africa is high for a developing country. The World Bank's Development Indicators place it 77th in the world, with a per capita income of \$US10,486. The country's economy had been strengthening consistently following the end of the apartheid era, until the recent global financial crisis. Economically, it is considered a leader among the Southern African Development Community (SADC). Recognising that food security is primarily a function of total household income, the present and future income levels of South Africans, as well as food prices, are significant in determining levels of food security.

South Africa's future food security will depend in part on the country's economic outlook. Strong real GDP growth, managed well, will assist in raising household income and the ability to purchase food. As the country recovers from the global financial crisis, output growth is expected to improve substantially. During 2009 its economy contracted by 1.7 per cent, but grew the following year by 2.8 per cent. In 2011 the economy grew by 3.7 per cent and in 2012 is expected to grow by a further 4.3 per cent. On the back of its strong economic performance, the IMF expects South Africa's GDP to keep expanding at around 4 per cent a year over the next five years. In the current global financial environment, predictions beyond five years are hazardous. Robust demand from rapidly developing nations for its natural resources, however, should lead to consistent and steady growth to 2025, which bodes well for per capita income levels.

In spite of South Africa's projected growth, unemployment levels remain a distinct concern. In the fourth quarter of 2011, the unemployment rate was 23.9 per cent. This worrying level is expected to persist in the coming years. In fact, this figure conceals the true state of South Africa's unemployment problem as measurements do not include discouraged workers who have ceased looking for employment. Further analysis of South Africa's labour market

reveals inequitable patterns of race, gender and geography. The unemployment level among non-white South Africans is far greater than the national average. This is widely seen as the legacy of apartheid schooling, with education levels similarly deviating according to race. Divergence also exists between sexes, with females accounting for the vast majority of the unemployed. Perhaps the most striking feature of South Africa's unemployment problem, and detrimental to its food security, is the remarkably high prevalence of unemployment among people who live in informal township settlements on the outskirts of cities. Jobless rates in these areas are as high as 57 per cent, which is a major contributing factor to South Africa's urban food insecurity.



National Food Security Situation

South Africa is a major food producer. While agriculture is no longer the basis of its economy, it remains an important component for both employment and the domestic supply of food. The country possesses an advanced sector that produces a vast variety of grains, vegetables, fruit and livestock. The range of produce provides for adequate levels of nutrition and food diversity within the country, which produces more than it consumes. South Africa is an important food exporter to the immediate region and Europe, particularly in maize and fruit. Despite being a net exporter of food, however, there are large sections of South African society that cannot be considered food secure. In fact, 35 per cent of its population, or more than 14 million people, are estimated to be vulnerable to food insecurity. This is due to the great disparities in food access between communities and households across the country.

The unbalanced nature of food security in South Africa reflects the country's continuing social and economic inequities. Stemming from the pre 1994 apartheid era, different sections of the population are faced with varied circumstances in education, employment, health and nutrition. Many facets of South African society have improved over the last two decades. Food security and nutrition, however, remain key obstacles to achieving national equality. At present, the country must contend with the double challenge of both under- and over-nutrition, as it undergoes transition to a developed economy. Despite numerous government schemes, indicators of food insecurity, such as malnutrition rates among children, have not improved over the period since democratic change. The condition of South African women is also severely affected by a lack of security in food; as many as one quarter of females in the country do not have adequate levels of nutrition and vitamins. This has consequences for the health of future generations of South Africans.

A significant contributing factor to food insecurity is the price level. The rising cost of food poses the greatest threat to South Africa's poorest, and is a barrier to obtaining universal access to food. In recent years, the average price of food items in South Africa has been increasing faster than the economy's consumer inflation level. Annual CPI inflation in 2011 was 5 per cent, within the central bank's target range, while food inflation was recorded at 10.3 per cent in January 2012. The higher rate of food price increases compared to general goods, diminishes the ability of households to purchase food and limits alternative livelihood strategies aimed at achieving food security. The effect of food inflation on South Africa's population is substantial, especially given the country's abundance of food resources. Therefore, it is a lack of affordability and manoeuvrability due to price rises, rather than a shortage of supply, that renders millions of South Africans food insecure.

When analysing the state of food security in South Africa, special consideration must be given to urban areas. While income plays an important role in food security nation-wide, additional factors that worsen the situation come into play in an urban setting. These primarily relate to the design of residential districts and the location of food retailers, particularly within low-income areas. Access to food markets and regulations pertaining to informal food vending limit purchase and sale opportunities as well as the variety of food available to many urban dwellers. Surveys in targeted urban communities show that those households qualifying as food secure are in the minority, indicating that much work needs to be done to correct the position of South Africa's urban food insecure.

A contributing factor to urban food insecurity has been the rapid rate of urbanisation over previous decades, reflecting trends across the southern continent. Fast population growth has led to overcrowding at the periphery of many urban centres. The construction of infrastructure has been unable to keep pace with new settlements, and concentrated areas of poorer South Africans with minimal access to services, has been the result. Present figures place South Africa's urban dwellers in the majority at 60 per cent of the population. This is expected to increase further over the coming decades as economic opportunities within cities continue to grow.

Water Insecurity

In South Africa, rainfall is distributed unevenly across the country, with some areas prone to drought. This affects provincial agriculture by determining which crop may be grown in each area. Nation-wide, agriculture uses almost 50 per cent of the country's total water supply, with around ten per cent of its arable land, or 1.3 million hectares, under irrigation. This equates to 8.4 billion m³ of water consumed annually. Despite the importance of irrigation to the sector, The National Water Authority has capped allocations at their current levels due to limited water availability. Irrigation practices, however, are reasonably efficient and crop yields are quite high, making South Africa's agricultural sector, as a whole, very productive. Importantly, 80 per cent of agriculture in the country relies on rain-fed land.

Total annual rainfall in South Africa is just half that of the world's average. Catchment issues further deteriorate its small water supply; South Africa's rivers are generally narrow and shallow, characterised by a weak flow and high evaporation rate. It shares most of these rivers with neighbouring countries, including Lesotho, from which it also receives 10 per cent of its runoff surface water. Placing the highest pressure on South Africa's water supply are the country's growing urban areas, which use 3.5 billion m³ of water annually. Increasing urban demand, where 99 per cent of people have access to water, is outpacing supply, necessitating new strategies for reducing water usage. In rural locations, water is accessible to 78 per cent of households, though the majority of rural inhabitants depend entirely on groundwater, which is in very short supply. It is worth noting that water efficiency and access have improved dramatically since 1994.

Future Projection – Potential for crises to 2025?

South Africa presents a unique challenge to achieving food security in the Southern African region. It finds itself as both a recipient of international food aid and a regional leader tasked with averting potential crises. Furthermore, there exists a paradox of abundant food amid widespread food insecurity, which is unlikely to disappear over the next decade. The dominant feature of food insecurity emanates from entrenched inequality, owing to decades of segregation and uneven opportunity. Disparities in all facets of living standards renders a proportion of the country's population vulnerable to future food insecurity. This problem will persist in the medium term.

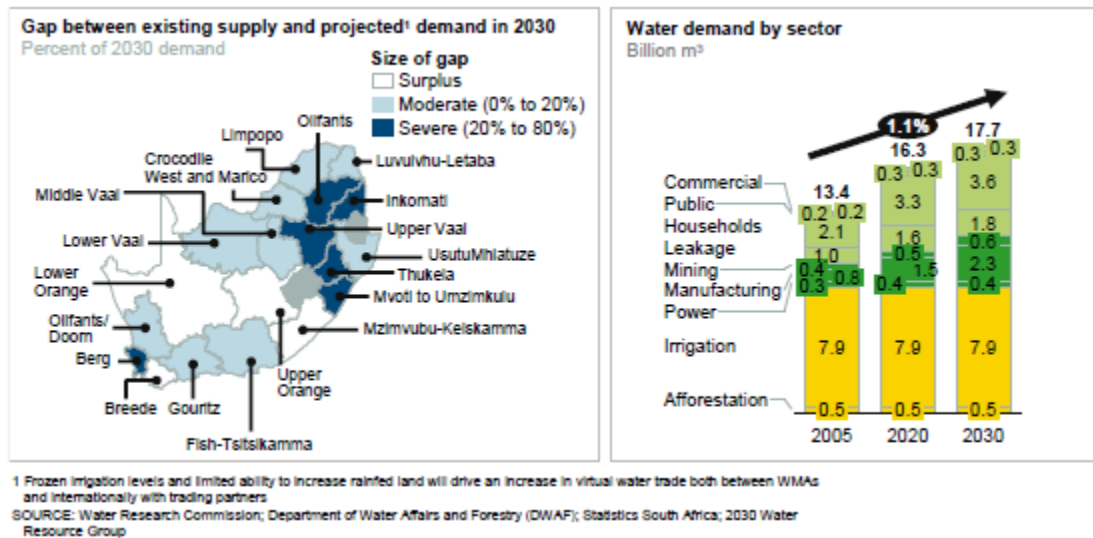
When compared with other food insecure African countries, South Africa is unlikely to become a focal point for international efforts to alleviate the problem. Yet millions of its people live in an insecure food environment. Given that sufficiency in food will remain, the country's future food security status will largely depend on the implementation of just and equitable governance and the convergence of uneven sections of the population. Achieving universal food security will involve education, opportunities for employment, stability in food prices and improved health services. Programmes being run by government and non-government bodies should ensure that the situation does not deteriorate. For the situation to improve, however, efforts must be intensified and directed at food insecurity's root causes of poverty and unemployment.

Positive factors for South Africa's food security status between now and 2025, include its relatively strong agricultural sector and projected economic growth. If the country can offset the loss of skilled farmers in rural areas caused by emigration, it will go a long way to ensuring an adequate supply of food is maintained over the next decade. Notwithstanding the drain on agricultural knowledge, it is very unlikely that food shortages will become an issue. Consistent economic growth, as forecast by the IMF, will generate the financial resources required to allay food security by addressing social inequality. Since 1994, the growth of South Africa's economy has contributed significantly to improving food security across the country. For the foreseeable future, robust demand from other rapidly developing economies for South Africa's natural resources will continue to strengthen the government's ability to address food insecurity, and potentially raise income levels.

At first glance, its moderate population growth may also be seen as a positive factor. Underlying causes, however, make the relationship between food security and population growth complex. On the one hand, the trends of high emigration and AIDS related death will, from a purely numerical perspective, lead to a manageable increase in population size. On the other hand, AIDS prevalence and emigration worsen food security, therefore, should the trends reverse, the negative consequences of each factor will be mitigated. Recognising the damaging effects of diminishing human capital, organisations with the aim of repatriating South Africans living abroad have been established. In spite of this, it is reasonably unlikely that South Africa will experience a large-scale return of emigrants in the near future.

The country's rate of urbanisation will continue to overwhelm resources and infrastructure. The urbanisation rate is expected to increase by 1.2 per cent until 2015. Beyond this, rates will likely continue to increase, though at a slower pace. This scale of change is by no means exceptional when contrasted with those of other African nations, though the current poor position of township-settlements means that the process will be enough to make solving urban food insecurity difficult. Therefore, the threat of urban food insecurity in South Africa will persist. Having a significant impact on the likelihood of a future crisis is regional food security. Due to projections of food insecurity in other Southern African countries, which are far worse, South Africa will have to cope with the added responsibility of being Africa's economic and political power. It will need to take into account future food refugees and outgoing aid. Current regional food crises are set to become chronic and persistent, compounding the future challenges South Africa are likely to face.

Projected water supply and demand gap by 2030



In terms of South Africa’s potential for future crises in water, severe shortfalls in supply are expected over the next two decades. Exacerbating urban food insecurity, the country’s most populous cities of Johannesburg, Pretoria, Durban and Cape Town are likely to face large water gaps, as demand increases rapidly. Extra demand will come from the urbanisation process, specifically middle class and above. Increased usage of showers, toilets and landscaping are expected to account for much of the increased water demand in residential areas. Industrial growth, too, will contribute to increased demand for water, mainly through the need for greater power generation. In some cases, catchment areas close to cities, such as Olifants near Johannesburg, will face demand-supply gaps of up to 39 per cent by 2030. In light of these projections, internal and external water transfers will most likely be required to satisfy domestic and industrial demand. In addition, South Africa will have to become more efficient in its water use to avert catastrophic shortages. Agriculture must also become more productive to be sustainable into the future. This will particularly be the case for rain-fed crops.

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Any opinions or views expressed in this paper are those of the individual author, unless stated to be those of Future Directions International.

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