Development Planning Division
Working Paper Series No. 16

Seeding change: A proposal for renewal in the South African food system

Milla McLachlan and Janine Thorne

2009

Development Planning Division
Working Paper Series No. 16

Suggested citation

McLachlan, M. & Thorne, J. 2009. *Seeding change: A proposal for renewal in the South African food system.* Development Planning Division Working Paper Series No. 16, DBSA Midrand

Note

This review paper provides a synopsis of a set of papers on the theme of food security that the Development Planning Division of the DBSA commissioned in 2009. There is a list of these papers at the back of this document.

Acknowledgements

Paper compiled by Milla McLachlan and Janine Thorne, based on papers prepared by members of the Food Security Research Initiative: Jane Battersby-Lennard, Scott Drimie, Robert Fincham, Bruce Frayne, James Garrett, Ralph Hamann, Candice Kelly, Gareth Haysom, Tarak Kate, Johan van Rooyen and Nick Vink.

Published by

Development Planning Division
Development Bank of Southern Africa
PO Box 1234
Halfway House 1685
South Africa

Telephone: +27 11 313 3048
Telefax: +27 11 206 3048
Email: lyns@dbsa.org

Intellectual Property and Copyright

Legal Disclaimer

Series Editor: Andrew Paterson
Series Publication Coordinator: Lyn Sumners

DBSA Development Bank of Southern Africa

Contents

Introduction

Food is back on the table. After years of neglect by governments, development agencies and investors, food issues are making headlines again. A major reason is deep concern about the numbers of hungry people in the world. After slow but steady declines during the 1990s, hungry people are estimated to have increased by 75 million between 2005 and 2007 to more than 800 million people worldwide (FAO, 2008). In Sub-Saharan Africa, food price riots broke out in several countries, including Senegal, Ethiopia, Mozambique and Madagascar. For poor people who already spend 60-80% of their incomes on staple food, the high prices meant fewer meals of poorer quality (Naylor, 2008). In South Africa, in spite of strong government commitment to addressing development issues, there are signs of increasing food insecurity in specific places in rural and urban areas. These signs are related to increasing unemployment, food price increases, HIV and AIDS, adverse environmental conditions, Hallo a demise in agricultural support and poverty in general (Medical Research Council, 2008). Malnutrition stunts the physical and mental development of thousands of children, and food insecurity is a daily reality for a third of the South African population (Swart et al., 2008).

Another important reason for the renewed attention to matters related to food is growing evidence that food systems are affected by, and contribute to, resource depletion and climate change. Higher temperatures over much of Sub-Saharan Africa combined with declining soil moisture and more variable rainfall, will make agriculture more difficult. It is estimated that maize production is likely to fall by some 30% in Southern Africa by 2030, unless urgent mitigating measures are taken (Naylor, 2008). Land degradation and desertification are two of South Africa's most challenging environmental issues, and they are closely tied to food insecurity and poverty (Department of Environmental Affairs and Tourism, 2006). Agriculture and food issues must be on international and national climate change policy agendas to ensure that responses to the emerging risks are efficient and pro-poor (Von Braun, 2007). Unless we rethink how Africa, including South Africa, will feed all its people in the coming decades, a positive future for the region is unlikely.

The matter is urgent. The lack of progress in recent decades suggests that existing approaches are insufficient to ensure sustainable and equitable food security for all. There is thus a pressing need to draw together insights from different perspectives and disciplines to inform a renewed effort to safeguard food security.

This paper first introduces the concept of food security and the range of meanings attached to the concept. It then summarises the findings of five papers commissioned by the DBSA and completed in 2009 on: urban food security, dilemmas in the current food and agriculture system, the role of the private sector in addressing food security, and institutional arrangements for food security (A list of the five background papers is given in Appendix A of this synopsis paper). The findings indicate that piecemeal efforts to 'tinker at the margins of the existing food system' will not be sufficient to achieve South Africa's food security goals. While much can and should be done to strengthen existing initiatives,

an innovative participatory effort is also recommended to stimulate the transformation of the food system. The report concludes with a summary of key issues and makes specific recommendations on short and long-term actions.

Defining food security

The concept of food security was first introduced into the discourse on hunger during the 1960s and 1970s. Since then, the concept has been modified, expanded and redefined many times to focus on shifting priorities in different contexts. Given the diverse roles that food plays in human society, adequate definitions of food security must capture the wide range of nutritional, symbolic, cultural, economic, social and political roles of food, and cover these roles as they relate to the production, distribution and consumption of food in society. Furthermore, food security can be analysed at a global, regional, national, community, household and individual level, with a focus on any or all of the following five dimensions: universality (food for all people), stability (at all times), dignity (psychological, social and cultural acceptability), quantity (enough to meet basic needs) and quality (safe and nutritious, to support health and wellbeing) (Toronto Public Health, 2006).

The Integrated Food Security Strategy (IFSS) for South Africa defines food security as 'physical, social and economic access to sufficient, safe and nutritious food for all South Africans at all times to meet dietary [needs] and food preferences for an active and healthy life' (Department of Agriculture, 2002: 15). This definition is broadly similar to the definition adopted in the Rome Declaration on World Food Security at the World Food Summit in 1996, and endorsed by the United Nations, the World Health Organisation and 183 nations (World Food Summit, 1996). It meets the criteria for an adequate definition of food security to guide analysis and action at all levels.

In the literature, access and utilisation usually receive priority attention when the focus is on individual or household food security, whereas issues of food availability and adequacy and long-term sustainability are more frequently covered under the rubric of community, national and global food security. Thus, the literature suggests that there are two major perspectives – a focus on access, which tends to emphasise issues of hunger and income poverty, and a focus on the food system, which tends to emphasise issues of food availability. More recently, in view of growing concern regarding climate change and biodiversity, issues related to the sustainability of the food system are also a focus of increasing attention. The concept remains ambiguous, however, and this can cause considerable confusion in practice.

In South Africa, for example, the IFSS has the eradication of hunger, malnutrition, and food insecurity as its goal. While it is generally understood that these concepts overlap, they are not the same. It is important to note that malnutrition is the outcome of actions in the food system, access to health services, and household factors such as women's time and education, and capacity to care for children. Likewise, achieving food security requires inputs from systems and structures unrelated to

food, notably employment and social safety nets. This conundrum has led some analysts to propose adopting the concept 'livelihood security' to put the emphasis on actions needed to enable people to gain economic access to food. This is particularly important under conditions, such as those prevailing in South Africa, where the majority of the population obtain food via the commercial market, rather than through self-provisioning.

A further dilemma is that much of the food security discourse seems to be couched in terms related to public sector functions, in spite of the fact that achieving food security requires action by the public sector, private sector actors along the entire food value chain, as well as civil society: eating is, after all, one of the few actions we all take, every day. In spite of these conceptual difficulties, the concept of food security has shown its resilience over the years and is still widely used. To move forward, it is important to acknowledge the range of meanings and different focus areas, and to debate where to draw the boundaries of the system for analytical and planning purposes, in order to achieve the sought-after outcomes.

The food security situation in South Africa

Malnutrition continues to affect the lives of millions of children and women in South Africa. While some indicators show improvement, several conditions seem to have worsened over the past decade. Birth weight, which is an indicator of perinatal health, provides information about foetal growth and maternal well-being. The prevalence of low birth weight (i.e. a full-term baby weighing less than 2.5 kg at birth) in South Africa is estimated to be 16%. The highest rates (22%) are recorded in Northern Cape province, and the lowest (14%) in Limpopo province (Day & Gray, 2005). These rates are above the estimated average of 11% in all developing countries and considerably above the estimated 6% for industrialised countries (ACC/SCN, 2000).The goal established by the 1990 World Summit for Children (UNICEF, 1990) is to have less than 10% of children born with low birth weight.

The 2005 National Food Consumption Survey – Fortification Baseline (NFCS-FB) reported that the national prevalence of stunting, underweight and wasting was 18%, 9.3%, and 4.5% respectively (Kruger et al., 2007) (see figure 1). While there has been a statistically significant reduction in the prevalence of stunting and severe stunting between 1999 and 2005, notably in rural areas, the prevalence of underweight and wasting has increased in urban areas.

Children's nutritional status varies considerably among the nine provinces. Stunting levels of more than 20% were recorded in Free State, Northern Cape and Limpopo. Wasting prevalence is greatest in the Northern Cape, Western Cape and Mpumalanga (Kruger et al., 2007).

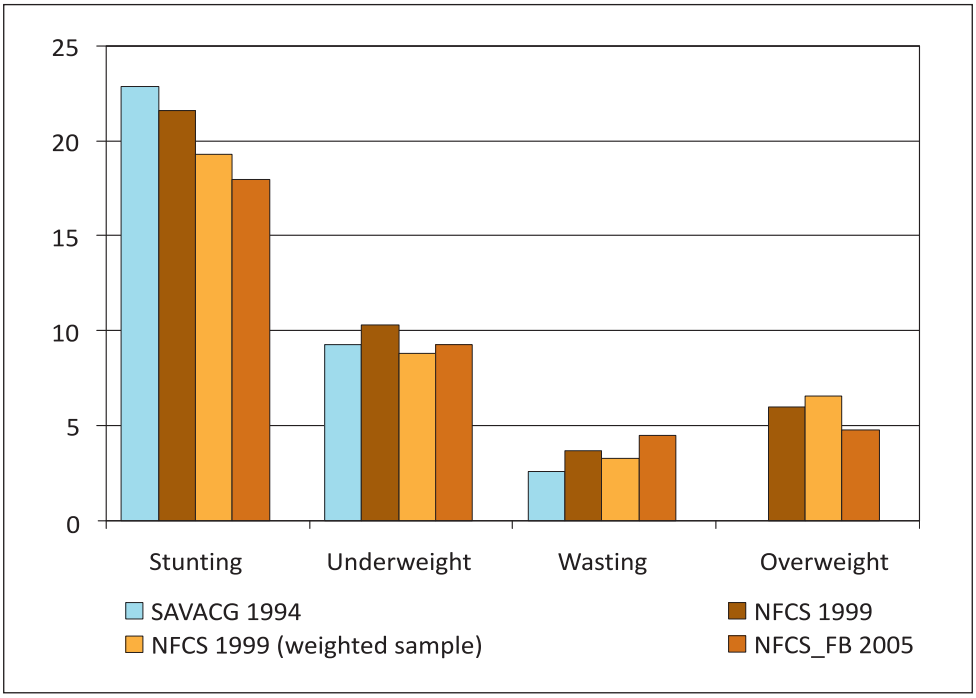

Figure 1: Comparison of changes in anthropometric status of children in South Africa: 1994 – 2005

Sources: SAVACG 1995; Labadarios ed. 2000; Steyn et al. 2005; Kruger et al. 2007

With regard to micronutrient status, an indicator among other things, of dietary quality, Vitamin A status is of particular concern. According to the 2005 NFCS-FB (Labadarios, 2005), the Vitamin A status of children has deteriorated significantly since 1994. The study found that only 38% of children had a mean serum vitamin retinol concentration greater than 20mg/dL which is indicative of an adequate status. These findings are despite the legislated fortification of bread flour and maize meal since 2003 (Department of Health, 2003) and the national high-dose vitamin A supplementation programme implemented in most provinces since 2001 (Department of Health, 2001).

The 1999 NFCS indicated that the dietary intake of children is inadequate in energy, all micronutrients and fibre (Labadarios ed., 2000). The Birth-to-Twenty study of a cohort of 143 black urban residents, which started in 1990, suggests that dietary quality has deteriorated over time. It confirmed findings of the 1999 NFCS that the inadequate dietary intake observed is a reflection of the lack of variety in the diet, the infrequent consumption of fruit, vegetables and milk, and the daily consumption of a large variety of miscellaneous foods, frequently with sugar (MacKeown, n/d).

Underweight in men and women is relatively uncommon, with 4.6% of women (Kruger et al., 2007) and 8% of men (DOH, 2001) having a body mass index (BMI) of <18.5. In contrast, 50% of young women (aged between 16 and 35 years) and 30% of young men are overweight or obese (Kruger et al., 2007; Department of Health, 2001; Department of Health,, 2007). The problem is particularly acute in

urban areas. Contributing factors to the levels of overweight in adults are a lack of physical activity and dietary patterns. A national survey in South Africa by the WHO in 2005 indicates that less than a third of the adult population meet the international requirements for health-enhancing physical activity (at least 30 minutes of accumulated physical activity per day for every day of the week). The dietary changes resulting in diets that are too high in fat and saturated fat (from animal products), too low in fruit and vegetables, too high in salt, sugar and refined carbohydrates and too low in fibre have been related to urbanisation (Chopra et al., 2007). An unhealthy diet is currently one of the most important causes of chronic diseases, together with a lack of physical activity and long-term use of tobacco products. The latter is the third leading cause of premature years of life lost (Groenewald et al., 2001), especially in the age group 35-64 year-old age group. Due to the rapid epidemiological transition, the poor are becoming the most vulnerable victims of these chronic diseases (Reddy & Yusuf, 1998).

Household food insecurity is widespread, in both rural and urban areas. Despite the findings on increasing overweight within the South African population at large, hunger persists. The 2005 NFCS-FB found that 51% of households reported that they experienced hunger, with another 28% at risk of hunger (Labadarios ed., 2000). Only one out of five seemed to be food secure. (This is in contrast with the General Household Survey 2006, which suggests that hunger has been decreasing, with only 6% of households experiencing hunger (Statistics South Africa, 2006). These contradictory findings indicate a need to standardise food security and hunger indicators and call for further investigation into contributing factors.

Households at risk or experiencing hunger tended to live in informal dwellings, had the lowest monthly income and spent the lowest amount of money weekly on food. Mothers from these households also had the lowest level of education. There was an overall consistent correlation between anthropometric status (H/Az, W/Az, W/Hz) and socio-demographic parameters such as household monthly income, weekly expenditure on food, employment status, education level of the mother, and hunger risk classification. The high incidence of hunger is in line with evidence that the incidence of poverty has also not improved markedly. Economic inequality has also not improved significantly. It is estimated that between 50 and 70% of the population live in poverty, depending on which poverty line is used. Given the recent economic slowdown, this situation is likely to have deteriorated further.

Urban food security – the new frontier

As noted, one of the five themes emerging from the initial workshop on food security was the need to focus on urban food security in view of the increasing urbanisation of the population. This section outlines some of the key findings from the background paper: *Urban food security in South Africa: Case study of Johannesburg, Cape Town and Msunduzi* (Frayne, et al., 2009).

The scale of demographic growth and urbanisation experienced in the Southern African Development Community (SADC) indicates that urban development challenges will intensify over the coming

decades. This is equally true in South Africa. Already in 2001, 56.2% of the population lived in cities and this is expected to increase to 70% by 2025. In late 2008, the African Food Security Urban Network (AFSUN) undertook the Urban Food Security Baseline Survey (UFSBS), which assessed food security in several towns across the region. It uses the notion that 'a city is what it eats' (Roberts, 2001:4) to demonstrate the complexity of the urban food system. The three South African case studies (Johannesburg, Cape Town and Msunduzi) were analysed to explore the dynamics of urban food security.

While supply is generally adequate at the city level in South Africa, citizens do not have equal or universal access to sufficient food. Likewise, food is often highly processed and devoid of good nutrition. If, rather than eating an energy-dense and nutrient-deficient diet, the 'city was able to eat well', citizens would have a chance of moving from chronic food and nutrition insecurity to a state of satisfaction and health. One option would be a move towards local food production, which could help to promote livelihoods within the city, reduce environmentally costly food imports and start to close carbon-nutrient cycles, so helping to promote a more sustainable city for all its inhabitants. Such a move would necessitate the development and support of local level, neighbourhood-accessible marketing systems to distribute produce throughout the city, to rich and poor alike. While local food production could be an important way of improving economic conditions for the city's poor, a move towards the goal of creating a healthy, vibrant and prosperous city around food requires an enabling and supportive environment. Food (in all is complexity) must be fully integrated into the planning and management systems of the city, that are further enabled and supported by provincial and national line ministries.

Access to food: Food insecurity is widespread in poor communities in the three cities. On average, 70% of the households in the sample reported going without food at least three times in the last four weeks. Msunduzi reported the highest level (87%), whereas food insecurity was lowest in Johannesburg at 42%. In Cape Town, 80% of the households were food insecure. As expected, income and food security are positively correlated. Food insecurity was found to be more prevalent in informal settlements and among female-headed households.

Impact of food price changes: Food price changes have had a measurable impact on poor households in urban areas, increasing food insecurity and contributing to dietary changes which, for their part, may have ripple effects in the food processing industry, affecting employment and incomes. In the year to October 2008, food inflation, at 16.7%, outstripped overall inflation, at 12.1% (NAMC, 2008). The prices of staples and meat had increased substantially in the past year. As an indication of what this implied for poor households, it is estimated that between April 2007 and October 2008, the poorest households would have had to raise their incomes by a minimum of 22% to maintain the same food basket (NAMC, 2008:14). In terms of the three case studies, such an increase would have been equivalent to an additional income of R1187, which was greater than the median household income recorded for Msunduzi and only R413 less than the median household income for Cape Town.

A full 79% of households in the case study areas reported going without food in the past six months as a direct outcome of food price increases. These increases negatively impacted 83% and 86% of households surveyed in Cape Town and Msunduzi respectively. While price rises had the least impact on household food security in the Johannesburg sample because of higher average incomes, more than half of the respondents indicated a negative impact on their food consumption (54%).

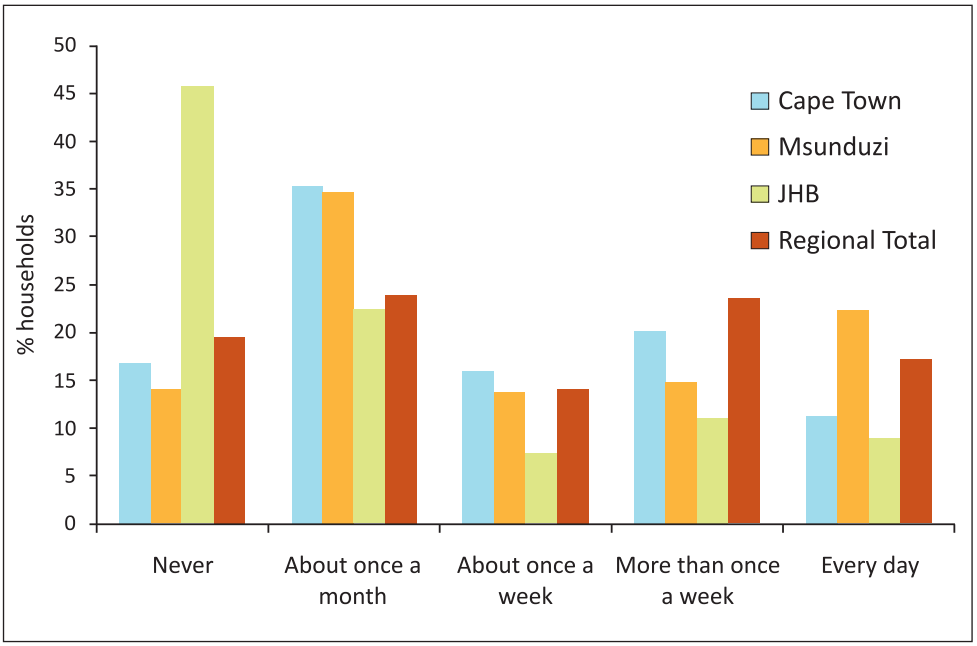

Figure 2: Effects on food price changes: Frequency of households going without food (unaffordable in past six months)

Source: Frayne, et al.(2009)

Dietary diversity: As indicated earlier, national data suggest that poor dietary diversity – that is, a monotonous diet, low in fruit and vegetables – contributes to micronutrient deficiencies among women and children and, together with a sedentary life style, to obesity and diet-related chronic diseases. These trends are confirmed by data from the three cities, which indicate that 10% of people surveyed had one or more chronic diseases.

Dietary sufficiency and diversity are also associated with communicable diseases, of which TB and HIV/AIDS are important in South Africa. The UNAIDS/WHO (2009) estimates that, at the end of 2007, 5.7 million people were living with HIV, including 3.2 million women and 280 000 children under 15. Of these, the greater number live in urban areas. Furthermore, approximately 2.8 million are people infected with TB (Department of Health, 2007). The links between poverty, AIDS and food and nutrition security are now well established. Ongoing research by the International Food Policy Research Institute (IFPRI) demonstrates the complexity of both biological and socioeconomic factors in relation to HIV and AIDS, and the direct role that food poverty plays both in respect of risky behaviour and physiological susceptibility to the virus (Gillespie and Kadiyala, 2005; Gillespie 2006). As one of many overlapping stressors related to poverty, AIDS affects households in a number of

ways, which include reducing income through unemployment, increasing time spent by care-givers away from economically productive work, and increasing dependency ratios within households, all of which have a negative impact on the ability of households to secure sufficient food for their needs. Having AIDS also increases energy and nutritional requirements, as does ARV treatment, placing additional burdens on those members responsible for meeting the food needs of the household (De Waal and Whiteside, 2003).

Local production and markets: The environment is central to the food question in South Africa's cities (and elsewhere). Managing the ecological challenge of urban growth through a food security lens connects rural and urban systems, and also helps to focus production, waste management and environmental stewardship at the local level of the city and its neighbourhoods. In so doing, the ecological footprint of South Africa's growing cities could be better controlled and managed, while economic development related to the food system could bring much-needed employment opportunities to poor urban households. However, very little food production is currently taking place at the household level, and any potential for the country's cities to feed themselves remains largely untapped. On average, only 5% of households in the three cities of Cape Town (1%), Msunduzi (11%) and Johannesburg (3%) grow food. Although the numbers are very small, of those who do engage in urban agriculture as a source of food, 31% are totally dependent on what they produce. Urban agriculture may therefore be a last resort for poor households, rather than a choice. This is supported by the recurring observation that income, social security and informal social networks (safety nets), rather than self-production, are the main determinants of food security. The potential of urban agriculture to contribute more substantially to food security and economic development is still largely unexplored.

Urban households obtain food from a variety of sources, with supermarkets (30%), small shops, restaurants and take-away outlets (20%), and informal and street food vendors (20%) being the main sources. Yet a range of coping strategies ranging from food aid, shared meals, borrowing, community food kitchens, and getting food from other people are also 'normal' sources of food for 30% of households. This suggests a diversity of strategies to obtain food. Decisions about where to obtain food are influenced by transport costs, a lack of money to make bulk purchases, and (possibly) personal safety issues. These decisions increase the unit costs and quality of foods and may increase health risks from unsanitary conditions in informal settings. While informal safety nets are important mechanisms for households to obtain food, formal safety nets such as community food kitchens and direct food aid are seldom used. These findings raise questions about the functioning of urban food markets, urban spatial planning, and the role of the state and civil society in creating food safety nets for the poor. These complexities underscore the need to develop city-wide food security strategies that address availability, access, utilisation and sustainability

Policy recommendations

Ensure access to social grants for all eligible households: In addition to positive, equitable economic growth, which is essential to reduce the food gap for poor urban households, social welfare should provide a specific pro-poor mechanism to relieve chronic hunger. Some 30% of households in the study indicated that they received income from social grants. Given the high levels of poverty, it is likely that some eligible households are not accessing grants. Measures should be taken to improve the take-up rate of grants. In addition, direct food grants, food production for own use or for sale, and support to community service organisations to provide food-related services should be considered. Currently these mechanisms are virtually non-existent in the cities.

Implement measures to improve dietary diversity: Policy options to improve dietary diversity include increasing access to better quality and a larger variety of food through increased income, self-provisioning, and community service organisation activities, as discussed earlier. Education on dietary and lifestyle choices at schools and in the community deserves more attention. Addressing the quality and safety of foods provided through vendors and informal shops through education and incentives could contribute to improving the quality of diets in the city. Improving infrastructure, particularly in informal settlements, can contribute significantly to improving health, and should therefore continue to be a priority.

Implement a national urban agriculture policy, and integrate food security into integrated development plans: Local food provisioning and marketing has the potential to support the social and economic development of poor people and to steer cities towards a more ecologically sustainable future. The City of Cape Town has started to implement an urban agriculture policy. In view of the significant institutional and practical challenges in such an undertaking, this process needs to be studied carefully so that lessons can be applied in other cities embarking on such an approach. There is also scope to make food security central to the integrated development plans of cities. Such an initiative, the Msunduzi Innovation and Development Institute (MIDI), is taking shape in Msundizi.

Strengthen and support the role of the private sector in food security initiatives: The role of the private sector in developing a bridge between the formal market system and food aid activities also deserves more attention. Recent innovations in this area, such as the Feedback Food Redistribution initiative (www.feedback.org.za) and the South African Food Bank (www.sa-foodbank.org) deserve closer attention.

In conclusion, South Africa's cities will have to be part of a new approach to food production and access that includes the agricultural, processing, marketing, transportation, consumption and waste aspects of the food system. Sustainable social, economic and environmental development will only be possible if cities are fully integrated into the country's development and food security strategies, from household level upward. Given social and environmental pressures, cities can no longer rely on

the 'hinterland' for food – they must start feeding themselves. An orchestrated effort by all levels of government, in partnership with civil society and the private sector, to focus on revitalising the food system in cities, can become a major driving force behind the re-creation of cities as sustainable, inclusive and healthy environments.

The challenges and opportunities presented by the urban food security situation are closely associated with dilemmas in the food value chain, including in the agricultural sector, and with the institutional arrangements required to create an environment in which the food sector can flourish. These issues are addressed in the following two sections.

Dilemmas in the food value chain

The South African food system is highly dualistic. An industrial food system, based on high-input commercial farming, food processing and retailing exists side by side with a highly ineffective, low-input subsistence agriculture sector and an informal food distribution system that, while meeting the needs of poor consumers, is costly and may have negative health consequences for consumers. Much of the food security discourse has concentrated on the two ends of the food value chain – food production, particularly the production of staple foods, and access and utilisation by consumers. However, food processing, packaging, and distribution are key factors determining the availability, safety, and cost of food and must also be included in the discussion. This section first summarises key findings of two background papers on agriculture in South Africa, and then turns to a discussion of the role of the private food sector and cross-sectoral collaboration in food security in South Africa.

Current agricultural practices and food security

This section reflects key findings of the background paper on *The economic performance of agriculture in South Africa since 1994: implications for food security* (Vink & Van Rooyen, 2009). The paper discusses the performance of the agricultural sector in its historical context, and reviews the relationship between agricultural policies and performance, particularly since 1994. It considers both commercial agriculture and farming in the communal areas. Based on this information, it provides a typology of farming in South Africa, and discusses the connection between agricultural production and food security in relation to the different farm types.

The agricultural sector is highly open to global markets, with few subsidies to the farming sector. International trade (imports and exports) makes up a large proportion of total production, and trade has been substantially liberalised. Farmers' incomes are therefore highly dependent on movements in the exchange rate, and on global economic conditions. There has been a substantial increase in food exports to the rest of Africa, but only three SADC countries feature in the top 25 import sources for food. Argentina is the main source of agricultural imports – largely in the form of animal feed, due to the rising consumption of poultry. Deregulation has affected field crop production in a number

of ways: most significantly, it has reduced input use and shifts toward production on better quality soils, and out of production in more marginal areas. It has also led to income diversification and asset diversification by large-scale farmers and has resulted in the consolidation of large commercial farms leading to an overall increase in average farm size. The number of commercial farmers declined by 20% over the 1990s, whereas on-farm employment decreased by 15%. At the same time labour productivity increased, and the contribution of labour cost to output costs declined to 10.8 cents in every R1 of output in 2007. Primary production was generally more competitive than the value-adding downstream industries during the 1990s but since then the competitiveness of both have increased, although with considerable variability among sub-sectors.

The expectation that the transformation of South African agriculture would lead to greater variability in farm sizes and thus a reduction in the stark differences between commercial and 'traditional' agriculture has by and large not yet been realised. For most of the 1.3 million rural households with access to land for farming purposes, farming production makes a small, though important, contribution to livelihoods. The most important sources of livelihoods are social grants while farming often serves as a coping strategy when other livelihood sources fall away. It appears that the significance of agricultural income as an asset for poor rural households is declining. There seems to have been both an absolute and a relative loss of access to land, particularly for households with access to very small land parcels. It can therefore be concluded that smallholder agriculture has declined over the past 10 years. Binding constraints faced by these farmers include: agronomic factors such as disease and adverse climatic conditions, coupled with a lack of adequate information on how to manage these events; institutional factors such as insecure land tenure and access to production credit to purchase inputs; as well as declining agricultural support services such as research and the provision of extension services (Tregurtha, et al, 2008).

The Department of Land Affairs completed the process of land reform policy design with its white paper in 1997, while implementation of the programme had already started in 1994. Land reform policy in South Africa consists of land restitution, tenure reform and redistribution programmes. Briefly, restitution deals with historical land rights and rightfully returning them, tenure reform examines forms of land holding, while redistribution focuses on the transformation of existing, racially biased land ownership patterns. Despite all efforts to speed up land reform, the net effect has been limited. After almost 15 years of state sponsored land reform processes, slightly more than 4 million hectares of the available agricultural land in South Africa – about 4% – has been transferred through the formal programme. This is still far behind the target of 30%. Furthermore government recently admitted that the failure rate of new land reform projects could be as high as 50%.

Production conditions in the communal farming areas have remained largely unchanged or may even have become worse, and tenure forms have hardly changed in the communal areas despite attempts to provide greater tenure security. There is also no evidence that the supposed beneficiaries of land reform are better off as a result of their participation in the programme. Empirical evidence,

in fact, suggests that private transfers, some funded by mortgages from the Land Bank or the commercial banks, have occurred at a higher rate than state transfers. Nevertheless, there are a few notable examples of land reform that have had local impacts, and that possibly serve as examples for future land reform. These include: the small cane growers in the sugar industry in KwaZulu-Natal and Mpumalanga; efforts to develop a land rental market in communal areas; farm worker equity schemes, mostly in the fruit export industries in the Western Cape, whereby farm workers use the land reform grant to buy shares in an operating farm business; empowerment schemes in aquaculture and mariculture (mussels, oysters, seaweed, abalone) along the west and south coasts, which have the potential to reduce poaching while also providing new opportunities for local small-scale producers; and agricultural projects aimed at the production of specialty products such as rooibos tea, honeybush tea, indigenous flowers, medicinal plants, essential oils, hydroponics and organic products whose purpose is to build new markets and to empower new producers.

While the direct contribution of the agricultural sector to GDP has declined steadily over the past few decades, the sector's real contribution to GDP is substantial. Agricultural production and food processing together contribute about 8% of GDP. In addition, agriculture employs a large proportion of the economically active labour force (between 8 and 9%). Farmer and farm worker purchasing power contributes significantly to economic activity in rural areas. This also includes a link to the tourism industry, a growing provider of employment in rural areas. While agriculture is no longer a net earner of foreign currency, the sector covers the exchange cost of importing basic foods into the economy, and in this way ensures that, at the national level, South Africa is food secure. Agriculture contributes to the livelihoods of poor people through subsistence production and informal activities relating to the processing, distribution and retailing of food products in poor rural and urban communities. Finally, agriculture plays a role in the stewardship of the environment. While many farming activities cause environmental damage, agriculture also provides the basis for agro-tourism (i.e. it provides valued environmental amenities). In addition, changing production practices, specifically the introduction of minimum intervention practices in the production of grains, has resulted in less environmental damage and has allowed the release of more than 2 million hectares of land once ploughed to revert to natural grazing for livestock and game farming.

Typology of farmers in South Africa

The links between agricultural production and household food security can be analysed through two lenses: the first is agricultural production across the spectrum of farming types in the country, including the supply chains that bring inputs to the farm gate and the food processing, distribution and retail activities that are related to moving products off the farm to their point of final consumption (in the desired time, place and form); and second is the prices that farmers receive for their produce and that consumers pay for food. These two aspects are discussed in turn below, with a focus on policies to enhance household food security. Table 1 provides a typology of farmers in South Africa.

Table 1: Typology of farmers in South Africa

Production unit	Turnover	Ownership and management	Number	Binding constraint	Support required
Large commercial on private property	>R2 million	Family owned but incorporated Multiple farms Rent in land Professional management	± 5 400	Market size Equity capital	Export market access Financial market innovation
Medium commercial on private property	R300 000 to R2 million	Family owned, could be incorporated Some renting in of land Family management	17 000	Land Capital Management	Mortgage capital for land access Management training
Small commercial on private property	< R300 000	Family owned, generally part time Some lifestyle farming (game ranches, weekend farms)	24 000	Management time	
Commercial in communal areas	> R300 000	Communal ownership Development projects Private ownership	–	Capital Management Infrastructure	Grants for land access Property rights Comprehensive farmer support Credit Physical infrastructure
'Emerging' commercial in communal areas	< R300 000	>20 hectares Communal ownership Small farmers in development project Private ownership	35 000	Land (property rights) Capital Labour Management Employment opportunities	Grants for land access Property rights Comprehensive farmer support Physical infrastructure Institutional infrastructure
Subsistence farmer in communal areas Allotments Market gardens		<20 hectares Communal ownership Private ownership Little formal market participation	1.256 million	Employment opportunities	Social welfare transfers

Source: (Vink & Van Rooyen, 2009)

At the one end of the spectrum are the large-scale commercial farmers with turnover of more than R2 million annually. These enterprises are generally found in the high-potential parts of the country are: large-scale field crop producers, or export-oriented and irrigated horticulture producers, or are intensive livestock operations. Many of the largest of these enterprises will farm on more than one non-contiguous farm, and some of the land will be rented in. They hire both labour and managers. These farmers are constrained largely by the size of the domestic and export market and by the difficulties that they face in accessing equity capital. One could argue that they require no more than the government support afforded to business enterprises generally in South Africa, including assistance in gaining export market access and an environment that is conducive to investment.

Just more than a third of the commercial farmers (some 17 000 farmers) had a turnover of between R300 000 and R2 million in 2001. These enterprises are largely family farms, but many are incorporated as private companies or closed corporations. These are generally large extensive livestock enterprises in the drier parts of the country, medium-scale field-crop producers, or smaller irrigation farms. They are characterised by some renting in of land, are mostly managed by family members while farm workers are hired in, and they usually live on the farms. Their binding constraints are invariably access to mortgage finance for land purchase, more smoothly functioning land rental markets and management capacity. Government support could probably be limited to access to mortgage financing via the Land Bank, while they depend o the private sector for other services.

About half of all commercial farmers in South Africa had a turnover of less than R300 000 in 2001. They include a wide variety of overlapping categories of farms, many in peri-urban areas. Some are part-time and many can be classified as 'lifestyle' farming (game ranches, weekend or part-time farmers etc.). The binding constraint in this instance is most probably management time which is in most cases restricted by choice, it is not clear that any targeted development efforts by the state are required.

The final three rows in Table 1 describe farmers in the communal areas of South Africa. Commercial farming operations in these areas include a spectrum of enterprises with turnover size greater than R300 000. Confusingly, there are farms in the 'communal' areas under private ownership (i.e. farms that predate the 1913 Land Act or were part of the 'homeland consolidation' that took place during the 1970s and 1980s). This category also includes development projects, mostly managed and financed by provincial Departments of Agriculture or their development agencies. There are also an unknown (but generally considered small) number of large scale farms on communal land.

Row 5 in Table 1 includes farmers in the communal areas who farm for a profit, albeit on a very small scale. Some farm privately owned land, while others farm on agricultural development projects such as irrigation schemes. These circumstances virtually guarantee a lack of success. Land holdings are too small, property rights are insecure, and access to financial or other support services is limited. Given the population distribution in these areas, with most of the able-bodied either employed or seeking employment in the modern economy, these farmers usually face labour constraints. They are often far away from even the most rudimentary infrastructure, making them inaccessible even to public servants such as extension officers, veterinarians, who are supposed to help them. Furthermore, they lack political voice, and hence the ability to organise and to lobby for benefits from the state. These farmers require the full slate of farmer support services. They are almost by definition reliant on the state rather than the private sector unless they can gain access to land in the commercial farming areas under the land reform programme. In this event, they, along with farm workers, could become the prime beneficiaries of land reform and AgriBEE projects. The smallest farms in the communal areas (row 6) are usually homestead gardens farmed by women and the elderly.

The food security implications of this typology of farmers can be summarised as follows:

- *Large and medium-scale commercial farmers* play a pivotal role in providing national food security and are, by definition, food secure at the household level. In addition, they pay a disproportionate share of total farm worker remuneration. While many farm worker households on these farms (especially seasonal, temporary and part-time workers) are thought to be food insecure, they are better off than unemployed rural households in general, especially since the adoption of the minimum wage. In addition, these commercial farms are linked to commercial supply chains that take their produce to domestic and foreign consumers and that bring farming requisites from domestic or international suppliers. Hence, expansion of the large and medium-scale commercial farm sector in the longer term is an important element in the process of ensuring household food security for a larger number of relatively poor South Africans. However, these farmers should not be afforded a high priority in targeting food insecure households in the shorter term, as needs are greater elsewhere. They should, however, be given every encouragement to participate in AgriBEE programmes.
- *Small-scale commercial farmers* make up the largest segment of commercial farmers but include many types of farmers with different needs. These farmers pay well below the industry average per worker, and the prevalence of household food insecurity among workers on their farms is higher. In general, a larger share of produce off these farms enters the market through the informal sector; hence employment creation and employment conditions may be less satisfactory than among large and medium scale commercial farms. Farming plays an important part in the creation of livelihoods for many of these farmers, especially part-time farmers. Land reform targeted at these farms has the merit of lessening the potential impact on food production in South Africa, as they make a relatively small contribution to total output.
- *Commercial farmers in the communal areas* are less likely to be linked to commercial input and food markets because they often farm in geographically isolated places, and receive relatively few farmer support services from the state. They are usually far away from most food processing facilities. It is unclear why these farmers have not been targeted as the prime source of land reform beneficiaries over the past 15 years, as they have proven themselves capable of producing surpluses under the most difficult circumstances, and in many cases would be able to expand their farming operations in commercial farming areas close by. Many of these farmers face labour constraints, and they employ relatively few permanent workers, depending more on family labour. It is expected that levels of household food insecurity will be high among farm workers on these farms. Their greatest need is comprehensive farmer support programmes, which would largely have to be provided by the state.
- *Small-scale communal farmers* are hardly linked to commercial supply chains, are mostly poor themselves, and do not create much employment for non-family members. They are obviously the most important target for food security programmes, but it is difficult to address their food insecurity through agriculture as they face both cash and family labour constraints to increased

production. Furthermore, they are constrained in terms of access to land, as well as to even the most rudimentary farmer support services. What they require is livelihood support strategies (one component of which, namely social grants, is already in place) rather than farmer support strategies.

Food prices – balancing producer and consumer benefits

Globally, farm commodity prices track commodity prices in general and have become far more interrelated with energy prices, owing to the energy intensity of food production, the energy dependence of supply chains in the food industry, especially the maintenance of the cold chain and, more recently, the diversion of resources to the production of bio-fuels. While commodity prices (and food prices) spiked during the first half of 2008, they have not declined to their levels of a few years ago, and are not expected to decline to those levels in the next few years. In South Africa, food prices remain at high levels, and food price inflation continues, somewhat contrary to expectations.

If farm commodity prices remain above their average levels of the past decades, farmers stand to benefit in two ways (given that input prices have largely also declined from their high levels in the second half of 2008). First, farmers can sell their output at higher prices, and second, they can plan to produce more in the expectation of higher prices. Obviously, all farmers will benefit from the first of these factors. However, larger farmers face fewer constraints to expansion than smaller farmers, and will therefore benefit more in the longer run. If they are successful, as they have been in the past, it is likely that they will increase supply to levels where surpluses push prices down once again.

If small farmers are to benefit from high food prices in the longer run, they must be supported by the state with comprehensive farmer support programmes that include access to land held under private property as well as access to markets, farming requisites, and so on.

Whether consumers will be worse off as a result of rising farm commodity prices depends on what will happen in the supply chain, as food prices lag behind commodity prices, and are also subject to a host of other influences, such as the cost of transport, the cost of maintaining the cold chain, and competitive forces in the supply chain that allow processors, distributors and retailers to increase their profits at the expense of either producers or consumers, or both.

High food prices affect everyone but they have an immediately negative effect on household food security among the poor in general, among farm workers and among workers employed in the informal sector – in short, among those who spend a higher proportion of their income on food than do those in formal employment.

Recommendations related to agriculture

In view of the above analysis, the following policy and programme recommendations can be identified:

- Accelerate land reform and afford greater priority to currently successful small farmers as beneficiaries.
- Target farmer support services at those who need it most, especially farmers in remote rural areas: this will include assistance in accessing commercial supply chains, which favour large-scale farmers; support for collective action; and support for access to alternative markets where commercial processors and supermarkets play a less prominent role.
- Target efforts at improving the efficiency of the supply chains that bring inputs to the farm and take products to the consumer, whether domestic or international.
- Support existing and new entrants to export markets through measures such as information and market intelligence, and attendance at trade fairs.
- Continue with the diligent application of competition policy along the supply chain, as has been accomplished over the past few years.

Alternative agriculture options for environmental sustainability

This section reviews key findings from the background paper: *Food security in South Africa: Alternative agricultural options – towards agro-ecological sustainable production and access* (Kelly, Kate, & Haysom, 2009). This paper reviewed key recent international publications (e.g. IAAASTD, 2008a & b; Stern, 2006; MEA, 2006) in the light of agricultural conditions in South Africa to make recommendations for alternative approaches to be considered to ensure food security in South Africa.

The Millennium Ecosystem Assessment (MEA) (2006) concluded that the state of the global natural resource base has already degraded to such an extent that we can no longer first eradicate poverty and food insecurity and then 'clean up the environment'. In the past, protecting the environment was seen as expensive, a 'nice to have', and not the responsibility of developing country inhabitants. However, the state of the environment is now such that not protecting it will have a direct impact on all global systems and in particular on health and agriculture (Swilling, 2008).

In Southern Africa, a key challenge is how to find ways to maintain and enhance food production, while protecting ecosystem services, including: food provision; fresh water and genetic resources; regulatory services such as climate, disease and water regulation and pollution control; cultural services including the spiritual and aesthetic; and supporting services such as soil formation and nutrient cycling (see Figure 3). This challenge requires not merely a technical solution, but an approach that recognises the value of the ecological services that through social interactions and cooperation work with rather than against nature.

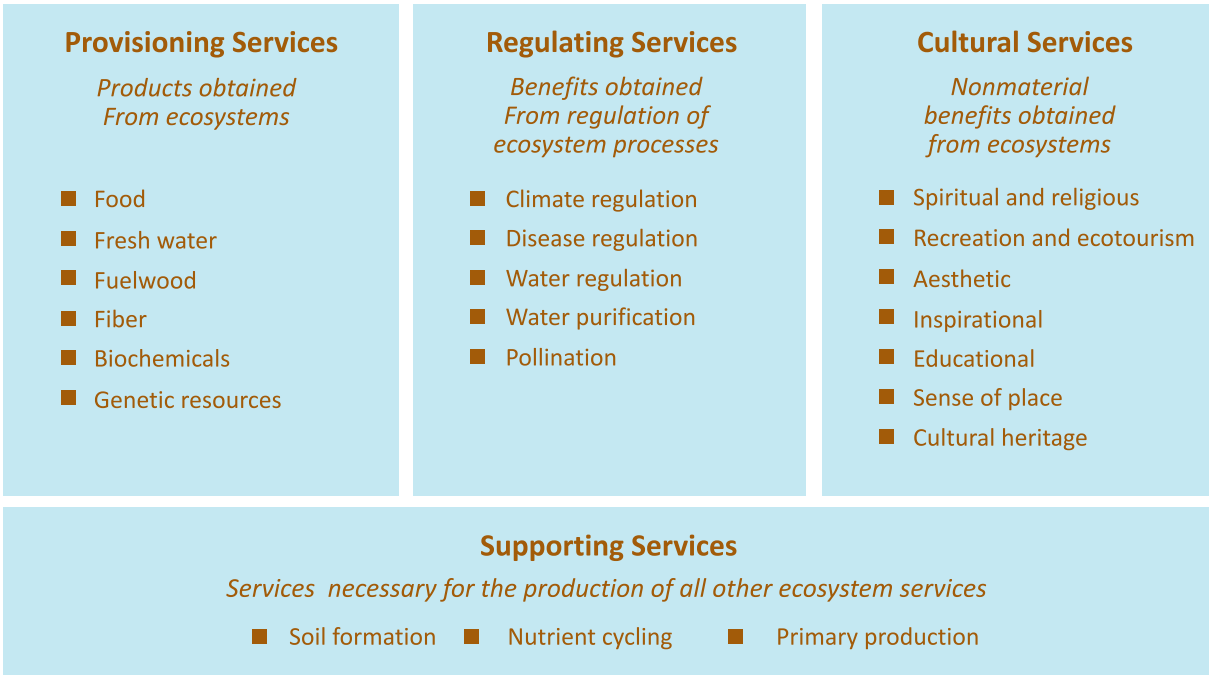

Figure 3: Ecological Services

Source: Millennium Ecosystem Assessment, 2006

Specific food security challenges in South African agriculture

An environment conducive to a viable, emerging, agricultural sector is developing in South Africa, but it has yet to benefit most resource-poor producers. Some of the crucial constraints are accessibility and affordability of resources and services. Two key challenges that illustrate the need for great urgency in redesigning an agricultural sector in South Africa are declining soils and water scarcity:

- *Declining soils:* South Africa's underlying agricultural resource base is poor. Only 17 million hectares of the land is arable – out of about 122 million hectares – and only 3% is considered high-potential land. Lands in South Africa are mostly shallow, sandy, fragile and extremely vulnerable to various forms of degradation (Department of Environmental Affairs and Tourism, 2008). The vulnerability of the soils to degradation, coupled with a tendency to over-exploit the limited carrying capacity to meet growing food requirements by using inappropriate farming methods, has resulted in far-reaching nationwide soil degradation (Mills & Fey, 2003). In the commercial sector, contributing factors include monoculture cereal production, intensive tillage and limited crop rotation. In the communal areas, excessive firewood collection, inappropriate land use, population density and overgrazing are the main factors contributing to soil degradation. Urgent precautionary measures are needed to save the soils in order to ensure food security in the future. Key strategies need to

focus on soil rehabilitation and the promotion of agricultural systems that assist in the development of soil and soil activity. It is argued that in the context of the national developmental state approach, soils should be considered as infrastructure – infrastructure that attracts investment. This approach, where communities are viewed as infrastructure, is already emerging, and similar strategies should be applied to soil.

- *Water scarcity:* South Africa is defined as water-stressed with an uneven distribution of water availability across the country, and lack of groundwater resources. The Department of Water Affairs (DWAF) anticipates a number of significant problems that include: water shortages due to a combination of climate change and increased demand if existing technologies and management practices remain unchanged; declining quality of water supplies and resultant cost increases if infrastructure design and expenditure do not take into account the need to mitigate pollution impacts from human systems; serious future supply constraints relative to demand if pricing structures do not provide incentives for water saving and efficiency measures in the agricultural and industrial sectors; and inflationary pressures that could push up prices (NSDF, 2008).
- *The cheap food vs sustainable food debate:* From an equity and sustainability perspective, the winners and losers of efforts to keep food prices low should be carefully considered. This debate is potentially one of the most contentious ones related to food security, but is urgently needed. A variety of sectors, from labour to agricultural economists, are advocating strategies to produce cheap food and in volumes that would address and insulate South Africans from food security challenges. The food price issue demonstrates the interconnectedness of the food system – with pricing strategies having different effects on small and large-scale producers, labour in different sub-sectors, consumers, and ultimately on natural resources. For example, bread price increases encouraged lower income consumers to switch to staples that are imported (such as rice) or to lower value-added products (such as flour).The loss of domestic added value has had a negative impact on employment (Watkinson & Makgetla, 2002).

Based on mounting international evidence pointing to the limitations of a narrow focus on industrial agriculture in the face of global climate change, increasing poverty and economic challenges, a more concerted effort is needed to refocus agricultural development on meeting fundamental human needs and, in the South African context, to consider both ecosystem health, and equity concerns, including land reform, human health and nutrition. This requires greater investment in research and extension focused on sustainable agriculture, and the use of participatory methods to involve farmers in all stages of research. It also requires the adoption of mixed models of farming and food production, working in partnership with nature, and making effective and efficient use of ecological services. Meeting the goals of food security will require paying attention simultaneously to increasing production, environmental sustainability, and human wellbeing.

Private sector perspectives on the challenges of food security in South Africa

The background paper on *The role of business and cross-sector collaboration in food security in South Africa: notes on an action-research project* (Hamann, Giamporcaro, Yachkaschi & Johnston, 2009) explored the views of the private sector in South Africa on the current food security crisis. Interviews were conducted with representatives of the private sector involved in the food system: retailers, wholesalers, food commodity traders, manufacturers, logistic suppliers, producers and inputs suppliers, as well as with food experts (academics and consultants). This section briefly highlights food industry perspectives on the food crisis, its implications and possible remedies.

The investigation was based on the premise that while increased agricultural production is vital in achieving food security, it also requires broader, more systemic interventions in the value chains linking the production, manufacturing and retail of food. The private sector faces a compelling business case to resolve the food security situation, including risks of economic stagnation, social unrest, trade restrictions and impacts on reputation and brand value.

The important but often ignored role of the private sector is highlighted in a recent United Nations (UN) publication on the topic: 'While government leadership is crucial for addressing the implications of the food crisis, business also has a vital role to play in partnership with others to develop and implement innovative responses' (United Nations, 2008). This is also in the context of the international corporate responsibility movement, with corporate responsibility defined by groups such as the World Economic Forum as 'the contribution a company makes to society through its core business activities, its social investment and philanthropy programmes, and its engagement in public policy' (Hamann, 2006). Bearing in mind the human right of access to food, the current activities of the UN Special Representative of the Secretary General on human rights and business are noteworthy. He argues that companies need to develop due diligence on human rights issues that may arise in their activities as 'producers, service providers, employers, and neighbours' (United Nations 2008a).

Many companies in the South African food supply chain are responding individually to these pressures and incentives. However, it is increasingly recognised – at least internationally – that improving food security and dealing with related challenges, such as diminishing water supply, require collective action among companies in the supply chain, as well as cross-sector collaboration between business, government, and civil society. Hence, for example, the Director-General of the United Nations Food and Agriculture Organisation, Dr. Jacques Diouf, argues, 'The challenge of food security can only be resolved through a global partnership involving national, international, public, private and voluntary sectors' (FAO, 2008). In South Africa the benefits of collaborative approaches to supply chain management are increasingly recognised, though difficulties remain. In a 2007 survey of South African retail CEOs, the highest rated objective for the next year was identified as 'improve cooperation/ collaboration in the supply chain' (Barloworld Logistics, 2007).

Background on the food sector in South Africa

In line with similar trends in other countries, such as Canada, the South African food sector has become increasingly concentrated with a few large supermarket chains controlling food sales. There also exists a highly concentrated food manufacturing sector with few large listed companies controlling both production and sales capacity in most food categories (Fig, 2007, Mather, 2005, Louw et al, 2007). The growing concentration of power in the retailing segment of the food value chain has heightened competition and resulted in restructuring in the food manufacturing sector. This has also resulted in small farmers, small manufacturers and small retail outlets, some black owned, struggling to be part of this new competitive commercial system.

Starting in the mid-1980s, the agricultural and food sector, which had been heavily regulated since the 1930s, became increasingly free-market oriented. Following the transition to democracy in 1994, the Marketing of Agricultural Products Act (1996) abolished the agricultural marketing boards and state trading organisations as part of the liberalisation process. This new emphasis on a free market met the need to comply with the World Trade Organisation's (WTO) regulations. The post-apartheid South African government implemented far-reaching deregulation of the food sector and ended the era of agricultural subsidies. Meanwhile, the new government also started to implement policy to redress the injustices of the apartheid system. The government's policies on black economic empowerment (BEE), which aim to enhance the participation of previously disadvantaged South Africans in the economy, were extended into the various sectors involved in the food value chain. In agricultural production, one of the prominent aspects of BEE has been the expectation that companies in the value chain would support emerging farmers.

Perspectives of the leaders in the food sector on the food crisis

Business leaders were interviewed about their perspectives on the food crisis, its implications and possible remedies. Most were in agreement that there is a food security crisis in South Africa. Various trends and causes of increasing prices and decreasing access – especially for the poor – were identified. There was general consensus that a confluence of trends was contributing to rising prices, with frequent mention of international trends, such as rising input costs (linked to the oil price) and increasing demand, as well as domestic concerns, such as lack of investment in agriculture and problems related to land reform. As noted by a representative of a South African manufacturing company: 'Food prices tend to work by cycle – today the situation is dramatic because several factors are in motion.'

Concerning general solutions to the food crisis, all the interviewees were against any intervention involving the determination of food prices through price control measures and agricultural subsidies. Nevertheless, at different levels of the food supply chain, a majority shared the view that South Africa, as a nation, needs to produce more food to solve the current food crisis. While some consensus emerged for goal of increasing food production in South Africa, the interviewees did not necessarily

agree on the way to make this happen: there were widely different perspectives on the role of public agricultural investment versus free market approaches, genetically modified and intensive agriculture versus conservation agriculture, and large-scale commercial agriculture versus smaller-scale and subsistence agriculture.

With regard to possible solutions, three routes were identified:

- taking action through changing core business practices
- supporting small producers and suppliers
- corporate social investment and food banking

Innovative initiatives were identified, including the promotion of emerging farmers' programmes which enable small producers to secure sales. For the retailers it is both a way to promote BEE and a more sustainable agricultural solution, as they often ask the producers to follow the organic route. Other companies see it as a way for the emerging farmers to become commercial farmers because it allows for better access to finance and therefore to agricultural inputs. A second innovative business initiative identified is the promotion of nutritious product projects, targeting poor communities. Through this initiative, in terms of social investment and philanthropy, some companies could demonstrate their commitment to improving the food giving system nationally. Third, the need for efficient school or community feeding schemes and the promising potential of implementing school or community vegetables gardens were also highlighted.

On the whole, there was a degree of scepticism about the need for improved collaboration on issues related to food security, especially with regard to pricing. The reluctance to discuss issues related to pricing was also linked to recent high-profile cases of collusion and anti-competitive practices in the food industry, and increased attention given to the sector by the Competition Commission. Many respondents highlighted constraints to collaboration due to fears of being seen to be engaged in anti-competitive practices. In this regard, an interviewee from the Competition Commission argued that there are legal avenues for collaboration between private sector organisations in the public interest but that such initiatives need to be proactively identified and announced as such with the authorities. He also suggested that private sector fears regarding anti-competitive practices seem to be unduly constraining necessary and beneficial communication between market players. It appears that there is a need for more transparent dialogue on what constitutes acceptable industry cooperation and what constitutes collusion.

Despite identified constraints and challenges, various respondents highlighted the need for developing collaborative approaches to food security. A number of thematic issues were identified that might be particularly conducive to such collaboration.

Key issues for further exploration

- Do we sufficiently understand long-term environmental changes and their implications for food security?

- Can we consolidate the profuse labelling, tracing and certification schemes to enhance access to markets, while limiting costs of compliance?
- How can we better share information on supply and demand expectations to reduce price volatility, without falling foul of competition laws?
- How can we develop and distribute innovative, nutritious and affordable food products targeted to poor consumers?
- How can we develop the most efficient, safe and accountable food banking system in support of those most in need of food?
- How can we scale up and enhance current efforts in support of emerging farmers, by providing resources, training and access to the value chain?
- How do we better understand and respond to the complex interrelationships between different actors and trends in the food system?

Institutional arrangements for food security

The background paper on *Aligning and transforming institutions to safeguard food security in South Africa: concepts and critique* (Drimie & Garrett, 2009) reviewed the institutional arrangements for food security in South Africa, and made recommendations on strategies to strengthen the management and implementation of the national food security strategy. South Africa's response to food insecurity is reflected in the Integrated Food Security Strategy (IFSS) and the Integrated Food Security and Nutrition Programme (IFSNP). The strategy was motivated by Cabinet's view of the 'unsatisfactory' situation and a 'lack of a unified approach' to food security by different government departments in all spheres (NDA, 2002). Two other factors also lay behind the decision to establish the IFSS. The first was the fact that the government needed to strengthen action on the constitutional provision for the right to food (Clause 27(1)(b)). The second was a range of regional and international obligations for evaluating and reporting on the state of food security that the South African government had agreed to.

The IFSS was specifically designed to resolve the following key food security challenges (NDA, 2002):

- to ensure that enough food is available to all, now and in the future
- to match incomes of people to prices to ensure access to sufficient food for every citizen
- to empower citizens to make optimal choices for nutritious and safe food
- to ensure that there are adequate safety nets and food emergency management systems to provide for people who are unable to meet their food needs from their own efforts and to mitigate the extreme impact of natural or other disasters on people
- to possess adequate and relevant information to ensure analysis, communication, monitoring, evaluation and reporting on the impact of food security programmes on the target population

In order to achieve these broad aims, the IFSS strategic objectives were to:

- increase household food production and trading
- improve income generation and job creation opportunities

- improve nutrition and food safety
- increase safety nets and food emergency management systems
- improve analysis and information management systems
- provide capacity building
- hold stakeholder dialogue

This was intended to be a multi-sectoral exercise incorporating a range of sectors: agricultural production and imports to achieve food supply at various levels, efficient production and marketing to make food available, education linked to both production and marketing, as well as to good food choices, all consolidated by a range of government programmes designed to improve access and availability of food at different scales.

The institutional arrangements and organisational design to implement this broad undertaking is outlined in the IFSS document. In pursuit of a multi-sectoral and multi-agency approach, the IFSS, mandated by Cabinet, proposed the establishment of new intergovernmental structures, including an inter-ministerial steering committee, a national coordinating team, and provincial coordinating units. Importantly, it also recommended the establishment of a national food security forum, which would involve stakeholders from the public sector, the private sector and civil society. A national coordinating unit, known as the Integrated Food Security and Nutrition Task Team (IFSNTT), served as the technical support unit for the ministerial committee.

The IFSNTT had a mandate – but no direct control or authority – to promote greater intergovernmental coordination in state programmes which addressed poverty and food insecurity. This structure was meant to be replicated in all of the provinces, where provincial coordinating units would integrate activities. At the district level, food security officers were intended to coordinate intersectoral initiatives, while food security officers would perform this function at the local level. These institutional arrangements reflect an innovative blend of interventions and mechanisms. The arrangements follow guidelines of 'inclusivity' and integration of programme leaders (NDA, 2002).

However, a review of recent literature highlighting some of the institutional challenges facing food security policy in South Africa reveals a disjuncture between the strategy and its implementation in reality (for example Misselhorn, 2006; HSRC, 2007; Ruysenaar, 2009).

The National Food Security Strategy faces a number of institutional constraints, which are summarised below.

- No department is assigned the responsibility for addressing food security in a comprehensive fashion. The national Department of Agriculture focuses on a prosperous agricultural sector rather than assuring 'food security for all'.
- The coordination has been tasked to a directorate that does not have much institutional power.

- There are no dedicated funds for government to spend on food security, at all administrative levels. All budgets have been allocated by sector, limiting the emergence of joint projects/ programmes, funded by one entity.
- The absence of a food security policy prohibits government from providing a clear line of authority as well as the means to enforce non-collaboration and implementation.
- Stakeholder dialogue with civil society has been minimal.
- Political leadership is lacking, resulting in a lack of creativity, capacity, resources and incentives.

The extent of these institutional challenges supports the contention that the overall approach to food security needs to be reconsidered. First, the nature of the problem needs to be better understood. Second, innovative social technologies need to be employed to move forward. Third, effective leadership needs to be exercised to address the problem. These recommendations are briefly discussed below.

Food security as a complex social challenge

The food security problem in South Africa exhibits many elements of what Kahane terms a 'complex social challenge' (Kahane, 2004). There are three types of complexity that need to be considered when designing approaches and processes to bring about change (see figure 4). Dynamic complexity arises when the causes and effects of a problem are far apart in space and time. For example: land allocation decisions made decades ago still influence land access and the ability to farm; wheat prices set on the Chicago exchange have an impact on South African farmers' decision whether or not to sell; conventional problem solving approaches that tackle a problem piece by piece cannot be used to solve these problems. It is necessary to see the system as a whole to find effective solutions.

Social complexity exists in situations where there are many stakeholders who have different interests and hold different perspectives on the same issue. For example, different stakeholder groups hold divergent views on the use of genetic modification to increase crop yields. Rising food prices affect urban consumers, food processors and farmers in different ways. And environmental lobby groups and land developers will likely disagree on how particular land areas should be managed. In these situations, relying on experts and officials alone to propose solutions does not work, and a participative process that involves the relevant stakeholders must be fashioned. Finally, generative complexity refers to situations in which the context is rapidly changing, making the future very different from the present and therefore invalidating existing solutions. For example, rapid urbanisation, climate change, and reaching the limits to fossil fuel production have implications for the food value chain that are still largely unknown. Given an unknown future, we have to craft solutions as we move forward, and therefore we need an open-ended and 'emergent' process.

Figure 4: Types of complexity

Type of complexity	Definition	Ordinary approach for challenges of low complexity	Extraordinary approach for challenges of high complexity	Process requirement
Dynamic	Cause and effect are far apart in space and time	Piece by piece	System as a whole	Systemic
Social	Actors have diverse perspectives and interests	Experts and authorities	Stakeholders	Participative
Generative	Future is unfamiliar and undetermined	Existing solutions	Emerging solutions	Emergent

Source: Kahane, after Scharmer, 2007

Approaches that have worked for problems of low complexity do not work for highly complex problems. We cannot expect to resolve the food security problem by relying on experts only, nor can we carve up the problem and try to solve it in a piecemeal fashion. And we need to grasp that the context is changing, making the future largely unknown, and we therefore need to be ready to discard solutions and approaches that may have worked in the past.

For a challenge like food security, which displays the characteristics of dynamic, social and generative complexity, it is necessary to use change processes that are systemic, participative, and emergent. The Change Lab process, developed by Otto Scharmer (2007) and colleagues based on a change theory, Theory U, is an example of such a change process. The approach enables participants to develop the capacity to see the system as a whole. It requires a trusting and open environment, in which participants can begin to see their own role in creating and perpetuating the system as it currently exists. The saying, 'If you are not part of the problem, you can't be part of the solution' captures well the notion that understanding moves from seeing the reality 'out there' to seeing the reality as a whole where one is an integral part.

The above approach has been applied with considerable success in a number of change initiatives. One of these, the Sustainable Food Laboratory (SFL), is a global multi-stakeholder partnership involving individuals and organisations from the food industry, governmental agencies and civil society. It is aimed at mainstreaming sustainability considerations in the food system. The SFL's stated purpose is to 'accelerate the incorporation of economic, environmental, and social sustainability into the DNA of the mainstream food and agriculture system' (www.sustainablefoodlab.org). It has set itself the goal of ensuring that by 2018, all food bought and sold around the world will be connected to a sustainability programme, and that progress toward this goal will be planned and objectively measured. More than 70 organisations around the world, linked to the SFL, are involved in prototype projects, institutionalising sustainability commitments in their organisations, sharing knowledge and building capacity of leaders to work together across boundaries.

In Kahane's words, the Change Lab has become:

- an extraordinary effort to address a vital challenge in a complex system
- an unlikely alliance of committed and influential business and civil society leaders that form a strategic microcosm of that system
- a systemic, participative and emergent process through which these leaders have built up a shared understanding of their current reality and their own roles in it, of what is possible and what is needed of them, and of what they will do in order to co-create a new reality
- a structured space for acting, reflecting and learning (Kahane, 2009).
- South Africa: prospects for systemic change
- An initiative to create systemic change in the food system in South Africa could have a good chance of success, for the following reasons:
  1. South Africa's progressive Constitution provides a favourable context for a system-wide initiative to ensure food security for the whole population. Food security is enshrined in the South African Constitution. Section 27 of the Bill of Rights states that all South Africans have the right to sufficient food and water, and that government must take reasonable legislative and other measures, within its available resources, to achieve the progressive realisation of this and other social and economic rights (Republic of South Africa, 1996).
  2. Government has expressed willingness to collaborate with other sectors on the implementation of the IFSS.
  3. Private sector role players have also expressed interest in collaborating among themselves, and with the public and civil society sectors, to achieve food security goals.
  4. There are several 'nodes of innovation' and innovation leaders across the country. These could form the nucleus of an initiative to develop a systemic understanding of the problem and in which participants begin to work together to create prototypes of a new system that works for everyone.

Conclusions and recommendations

The food security situation in South Africa displays the characteristics of a complex social challenge, and therefore requires innovative strategies if the country's aspiration to ensure access to sufficient food for all citizens is to be realised. In the context of the national Constitution, which enshrines food security as a human right, the Integrated Food Security Strategy (IFSS) provides a robust framework for action. Both government and private sector stakeholders have indicated their readiness to participate in initiatives to find solutions. However, the multidimensional nature of the problem, the changing context, and institutional dilemmas pose significant implementation challenges.

Specific issues related to urban food security, agriculture, and institutional arrangements that require priority attention are highlighted below.

- Ensuring access to social grants for all eligible households: Measures should be taken to strengthen local capacity at all levels to improve the take-up rate of grants. In addition,

the implementation of direct food grants, food production for own use or for sale, and support to community service organisations to provide food-related services should be considered.

- Implementing measures to improve dietary diversity, food safety and food quality: Education on dietary and lifestyle choices at schools and in the community deserves more attention, as do measures to limit advertising of non-nutritious food to children. The quality and safety of foods provided through vendors and informal shops should be improved through education and incentives. Improving infrastructure, particularly in informal settlements, can contribute significantly to improving health, and should therefore continue to be a priority.
- Implementing a national urban agriculture policy and incorporating food security into integrated development plans: Local municipalities should be assisted to incorporate food security into local planning processes, within the framework of a national urban agriculture and food security policy.
- Strengthening and supporting the role of the private sector in food security initiatives: The role of the private sector in developing a bridge between the formal market system and food aid activities deserves more attention.

With regard to agriculture and the food system, the following issues require priority attention:

- accelerating land reform and affording greater priority to currently successful small farmers as beneficiaries
- targeting farmer support services at those who need it most, especially farmers in remote rural areas: including assistance in accessing commercial supply chains, which currently favour large-scale farmers; supporting collective action; and supporting access to alternative markets where commercial processors and supermarkets play a less prominent role
- improving the efficiency of the supply chains that bring inputs to the farm and that take farm products to the final consumer, whether domestic or international
- supporting existing and new entrants to export markets through measures such as information and market intelligence, and attendance at trade fairs
- developing a thorough understanding of the food pricing mechanisms, including benefits and costs to farmers, input suppliers, and small and large operators in the supply chain
- continuing with diligent application of competition policy along the supply chain, as has been accomplished over the past few years
- developing and implementing a research and action agenda to promote sustainable agriculture development across the range of farming types in South Africa
- in the context of the developmental state approach, broadening the definition of infrastructure to include soil as part of infrastructure that attracts investment.

With regard to institutional arrangements, leadership and capacity to address food security, the following issues require priority attention:

- focusing on strengthening local municipalities in rural and urban areas to develop and implement food security strategies, including measures to address food emergencies, and collaborative strategies to harmonise the efforts of the public and private sector and civil society

- at all levels, developing a cadre of outstanding food security leaders, by implementing a management and leadership development programme for the sector, in collaboration with leading management and leadership institutions in the country
- at the national level, considering the establishment of a national food security task team within the Presidency, with the authority and capacity to ensure coordinated action to achieve agreed food security goals.

References

ACC/SCN 2000. 4th report on the world nutrition situation. Geneva: ACC/SCN in collaboration with IFPRI.

Barloworld Logistics, 2007. Supplychainforesight 2007. FMCG &retail report. Johannesburg: Barloworld.

Chopra, M, Steyn, N, Lambert, V. 2007. Decreasing the burden of cardiovascular disease, Western Cape burden of disease reduction project. Final report. Volume 6 of 7.

Day, C and Gray, A. 2005. Health and related indicators. In: Ijumba, P, Barron, P (eds): South African Health Review 2005. Durban: Health Systems Trust.

Department of Environmental Affairs and Tourism. 2006. State of the environment report, Pretoria: Department of Environmental Affairs and Tourism (DEAT).

Department of Environmental Affairs and Tourism. 2008. *National framework for sustainable development*. http://www.environment.gov.za// nssd_2005/background_docs/

Department of Health. 2001. *Immunisation awareness campaign* 2001. Directorate Nutrition Fact Sheet. Vitamin A. Pretoria: Department of Health.

Department of Health, 2003. Foodstuffs, Cosmetics, and Disinfectants Act (Act 54 of 1972). Regulations relating to the fortification of certain foodstuffs, Government Notice no R2003. Pretoria: Department of Health.

Department of Health, 2007. WHO report on TB in South Africa. Pretoria: Republic of South Africa.

De Waal, A and Whiteside, A. 2003. New variant famine: AIDS and food crisis in southern Africa. The Lancet, 362:1234-1237.

Drimie, S. & Garrett,J. 2009. Aligning and transforming institutions to safeguard food security in South Africa: concepts and critique. Commissioned by the Development Planning Division, DBSA. Unpublished Paper.

FAO. 2008. The state of food insecurity in the world. 2008. Rome: Food and Agriculture Organisation of the United Nations.

Fig, D. 2007. Corporate social and environmental responsibility in the South African food and drink industries, in Fig, D (ed): Corporate Social and Environmental Responsibility in South Africa. Pietermaritzburg: University of KwaZulu Natal Press.

Frayne, B., Battersby-Lennard, J., Fincham, R., Haysom, G., 2009. Urban Food Security in South Africa: Case study of Cape Town, Msunduzi and Johannesburg. Development Planning Division Working Paper Series No.15 , DBSA: Midrand.

Giamporcaro, S, Hamann, R and Yachkaschi, S. 2008. The food price crisis and long-term food security: Analysis of the views of private sector representatives in South Africa. Unpublished report submitted to the Gesellshaft fuer Technische Zusammenarbeit.

Gillespie, S (ed). 2006. Aids, Poverty, and Hunger: Challenges and Responses. Washington, D.C.: International Food Policy Research Institute (IFPRI).

Gillespie, S and Kadiyala, S. 2005. HIV/AIDs and food and nutrition security: from evidence to action. Food Policy Review (7). Washington, D.C.: International Food Policy Research Institute (IFPRI).

Groenewald P, Bradshaw, D, Nojilana B, Bourne D, Nixon J, Mohamed H. et al. 2001. Cause of death and premature mortality. Cape Town: South African Medical Research Council.

Hamann, R., Giamporcaro, S., Yachkaschi, S. & Johnston, D. 2009. The role of business and cross-sector collaboration in food security in South Africa: Notes on an action-research project. Commissioned by the Development Planning Division, DBSA. Unpublished Paper.

Human Sciences Research Council. 2007. Achieving food security in South Africa: characteristics, stressors, and recommendations to 2019. Report to the Office of the Presidency. Pretoria: HSRC.

IAASTD. 2008a. Synthesis report: International assessment of agriculturalknowledge, science and technology for development. Island Press, Washington DC.

IAASTD. 2008b. Sub-Saharan Africa: Summary for decision makers: International assessment agricultural knowledge, science and technology for development. Island Press, Washington DC.

Kahane, A. 2004. Solving Tough Problems. San Fransisco: Berrett-Koehler Publishers.

Kelly,C., Kate,T. & Haysom,G. 2009. Food security in South Africa: Alternative agricultural options – towards agro-ecological sustainable production and access Commissioned by the Development Planning Division, DBSA. Unpublished Paper.

Kruger, HS, Swart, L, Labadarios, D, Dannhauser, A, Nel JH. 2007. In Labadarios, D.

National food consumption survey; fortification baseline; South Africa 2005. Chapter 4. Stellenbosch: Department of Health.

Labadarios D. ed. 2000. The national food consumption survey (NFCS) – children aged 1-9 years, South Africa, 1999. Stellenbosch: Department of Health, 2000.

Louw, A, Vermeulen, H, Kirsten, J, and Madevu, H. 2007. Securing small farmer participation in supermarket supply chains in South Africa. Development Southern Africa, 24(4):539-551.

Loyn, D. 2008. Long era of cheap food is over. BBC News. May 29, 2008. Retrieved on January 4, 2009, from: http://news.bbc.co.k/go/pr/fr/-/2/hi/business/7425078.stm

Mather, C. 2005. The growth challenges of small and medium enterprises (SMEs) in South Africa's food processing complex. Development Southern Africa, 22(5):607-622.

McKeown, J. n.d. The birth-to-twenty (Bt20) study – Nutrition research brief. Available at: http://www.mrc.ac.za/healthdevelopment/nutrition.pdf

Medical Research Council. 2008. Combating malnutrition in South Africa: Input paper for health roadmap. Unpublished paper submitted to the national Department of Health, September 2008.

Millennium Ecosystem Assessment (MEA). 2005. *Ecosystems and human well-being: synthesis*. (online). Washington DC: Island Press. URL: http://www.millenniumassessment.org/documents/document.356.aspx.pdf [Accessed on 17 June 2008]

Mills, A. & Fey, M. 2003. Declining soil quality in South Africa: effects of land use on soil organic matter and surface crusting, South African Journal of Science 99, 429-436.

Misselhorn, AA. 2006. Food insecurity in Southern Africa; Causes and emerging response options from evidence at regional, provincial and local scales: Unpublished PhD thesis, University of the Witwatersrand, Johannesburg.

National Department of Agriculture, 2002. The integrated food security strategy for South Africa. Pretoria.

Naylor, R. 2008. The global food crisis exposes the fragility of sub-Saharan economic progress. Science 323, 239-240.

National Agricultural Marketing Council (NAMC). 2008. Food price monitor, November.

Reddy KS, Yusuf, S. 1998. Emerging epidemic of cardio-vascular disease in developing countries. Circulation. 97: 569-601.

Ruysenaar, S. 2009. Silhouettes and safety nets: Unpacking national food security policy and agricultural interventions in Gauteng, South Africa. Unpublished Masters thesis, University of Witwatersrand, Johannesburg.

South African Vitamin A Consultative Group (SAVACG), 1995. Children 6-71 months in South Africa: their anthropometric, vitamin A, iron and immunisation coverage status. Isando, South Africa.

Statistics South Africa, 2006.General household survey 2006. Pretoria. Statistics SA. Available at: http://www.statssa.gov.za

Stern, N. 2006. Stern Review: The Economics of Climate Change; Cambridge University Press, UK.

Steyn, NP, Labadarios, D, Maunder, E, Nel, J, Lombard, C. 2005. Secondary anthropometric data analysis of the national food consumption survey in South Africa: the double burden. Nutrition 21, 4-13.

Swart, R, Sanders, D and McLachlan, M. 2008. Nutrition: A Primary Health Care Perspective. South African Health Review. Durban: Health Systems Trust.

Swilling, M. 2008. Greening public value: the sustainability challenge. In Benington, J. and Moore, M. (eds). (forthcoming). In Search of Public Value: Beyond Private Choice. London: Palgrave.

Toronto Public Health, 2006. Food security: implications for the early years. Background paper. Toronto, Ontario: Toronto Public Health.

Tregurtha, N, Vink, N. and Kirsten, J. 2008. Presidency fifteen year review project: Review of agricultural policies and support instruments, 1994-2007. Pretoria. Unpublished.

UNICEF. 1990. *World declaration on the survival, protection and development of children.* www.unicef.org/wsc/declare.htm Accessed August 2008.

United Nations 2008. Food Sustainability; A Guide for Private Sector Action. New York: United Nations. Page 5.

United Nations 2008a. Protect, respect, and remedy: a framework for business and human rights. Report of the special representative of the secretary general on the issue of human rights and transnational corporations and other business enterprises, John Rugge. UN Documents A/HRC/8/5. New York: United Nations. Available at: http://www.business-human-rights.org/Documents/RuggieHRC2008

Vink, N. & Van Rooyen, J. 2009. The economic performance of agriculture in South Africa since 1994: Implications for food security. Development Planning Division Working Paper Series No.17, DBSA: Midrand.

Von Braun, J. 2007. *The world food situation: new driving forces and required actions*. Washington: International Food Policy Research Institute. Food policy report. www.ifpri.org [11 April 2008]. 1-27.

Watkinson, E. & Makgetla, N. (2002) South Africa's food security crisis. National Labour & Economic Development Institute (NALEDI) and Congress of South African Trade Unions (COSATU).

World Food Summit (1996). *Rome Declaration on World Food Security*. November 13-17, 1996. Rome, Italy. Available from http://www.fao.org/wfs/index_en.htm

Papers on food security commissioned by the DBSA, 2009

Seeding change: A proposal for renewal in the South African food system	Paper compiled by: Milla McLachlan and Janine Thorne, based on papers prepared by members of the Food Security Research Initiative: Jane Battersby-Lennard, Scott Drimie, Robert Fincham, Bruce Frayne, James Garrett, Ralph Hamann, Candice Kelly, Gareth Haysom, Tarak Kate, Johan van Rooyen and Nick Vink.
Urban Food Security in South Africa: Case study of Johannesburg, Cape Town and Msunduzi	Paper prepared by: Jane Battersby-Lennard (University of Cape Town), Robert Fincham (University of KwaZulu-Natal), Bruce Frayne (University of Cape Town and Queen's University (Canada)) and Gareth Haysom (University of Stellenbosch)
The economic performance of agriculture in South Africa since 1994: Implications for food security	Paper prepared by: Nick Vink and Johan van Rooyen, (Department of Agricultural Economics, University of Stellenbosch)
Aligning and transforming institutions to safeguard food security in South Africa: concepts and critique	Paper prepared by: Scott Drimie and James Garrett (CGIAR)
Food security in South Africa: Alternative agricultural options – towards agro-ecological sustainable production and access	Paper prepared by: Candice Kelly (Sustainable Agriculture Programme, Sustainability Institute), Tarak Kate (Dharamitra), Gareth Haysom (Sustainability Institute)
The role of business and cross-sector collaboration in food security in South Africa: Notes on an action-research project	Paper prepared by: Ralph Hamann (UCT GSB), Stephanie Giamporcaro (Dept of Economics, UCT), Schirin Yachkaschi (Environmental Evaluation Unit, UCT) and David Johnston (York University).