The Stellenbosch Food System: Towards 2030
Draft Strategy Document
This strategy has been drafted as a result of work carried out by a number of authors, each contributing specific case studies and research reports to the process. These authors included: Candice Kelly, Jess Schulschenk, Anri Landman, Wessel van der Berg and Luke Metelerkamp.

Magdelien Spies, Katherine Hyman, Marcela Gonçalves and Nadia Thorn assisted with research work on certain projects.

All photography is by Luke Metelerkamp unless otherwise stated.

This strategy has been drafted by Gareth Haysom as the lead author with support from Scott Drimie, Jess Schulschenk, Anri Landman and Candice Kelly.

Editing of the report was carried out by Scott Drimie.

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<td>Acquired Immune Deficiency Syndrome</td>
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<tr>
<td>AKST</td>
<td>Agricultural Knowledge, Science and Technology</td>
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<tr>
<td>ASPO</td>
<td>Association for the Study of Peak Oil</td>
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<tr>
<td>BD</td>
<td>Biodynamic</td>
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<tr>
<td>BRICs</td>
<td>Brazil, Russia, India, China (now includes South Africa)</td>
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<td>CM</td>
<td>Cape Town Metropol</td>
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<td>CSA</td>
<td>Community Supported Agriculture</td>
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<td>CW</td>
<td>Cape Winelands</td>
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<td>DAFF</td>
<td>Department of Agriculture Forestry and fisheries</td>
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<td>FANTA</td>
<td>Food and Nutrition Technical Assistance Programme</td>
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<td>FAO</td>
<td>Food and Agricultural Organisation</td>
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<td>FBGs</td>
<td>Faith Based Groups</td>
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<td>FSI</td>
<td>Food Security Initiative</td>
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<td>FSS</td>
<td>Food System Strategy</td>
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<td>GDP</td>
<td>Gross Domestic Product</td>
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<td>ha</td>
<td>Hectares</td>
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<td>HIV</td>
<td>Human Immunodeficiency Virus</td>
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<td>IAASTD</td>
<td>International Assessment of Agriculture Science and Technology for Development</td>
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<td>IDP</td>
<td>Integrated Development Plan</td>
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<td>IFSS</td>
<td>Integrated Food Security Strategy</td>
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<td>IPCC</td>
<td>Intergovernmental Panel on Climate Change</td>
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<td>LED</td>
<td>Local Economic Development</td>
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<td>LEI</td>
<td>Lower External Input</td>
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<tr>
<td>Acronym</td>
<td>Full Form</td>
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<td>LRC</td>
<td>Legal Resources Centre</td>
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<td>LSM</td>
<td>Living Standards Measure</td>
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<td>MEA</td>
<td>Millennium Ecosystem Assessment</td>
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<td>MRC</td>
<td>Medical Research Council</td>
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<td>MSG</td>
<td>Monosodium Glutamate</td>
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<td>NDA</td>
<td>National Department of Agriculture</td>
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<td>NFCS</td>
<td>National Food Consumption Survey</td>
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<td>NFCS-FB</td>
<td>National Food Consumption Survey-Fortification Baseline</td>
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<td>NGO</td>
<td>Non-Governmental Organisation</td>
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<td>PSFA</td>
<td>Peninsula School Feeding Association</td>
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<td>RDA</td>
<td>Recommended Dietary Allowance</td>
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<td>SAVACG</td>
<td>South African Vitamin A Consultative Group</td>
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<td>SEED</td>
<td>School’s Environmental Education and Development Organisation</td>
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<td>SI</td>
<td>Sustainability Institute</td>
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<td>SM</td>
<td>Stellenbosch Municipality</td>
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<td>SSA</td>
<td>Statistics South Africa</td>
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<td>Stellenbosch University</td>
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<td>TB</td>
<td>Tuberculosis</td>
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<td>UA</td>
<td>Urban Agriculture</td>
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Executive Summary

Access to food is a fundamental human right, enshrined in the South African Constitution (Section 27a(1)) committing our institutions to ensuring that no one is ever allowed to go to bed hungry in our society. Food security and food system challenges are issues that affect everyone. To ensure that Stellenbosch becomes a viable, liveable and vibrant municipality, it needs to consider the food system as one of the key development pillars on which the town and region rest. This is currently not the case as the food system in no longer sustainable. Socially, ecologically and financially, the current food system is showing signs of extreme stress.

While Stellenbosch Municipality is a key stakeholder in regional food security, it has shown little intention of devising a comprehensive food security strategy. The 2010 Integrated Development Plan (IDP) for Stellenbosch recognises food insecurity as a challenge but fails to include improving food security among its strategic objectives. The plan cites food security as a key initiative for reducing poverty with municipal resources, but stipulates no clear performance indicators for food security projects (SM 2009). The 2010 IDP’s only other references to food security are as a plausible outcome of the Municipality’s land reform programme and the creation of a community garden. The Local Economic Development Strategy also recognises food insecurity as a challenge but assumes that successful land reform will begin to address it. This approach reflects the challenges associated with the understanding of the complex nature of the food security problem and that food insecurity is not just as a result of low agricultural production. This fault cannot be laid on the door of the Municipality alone as the structures and systems within which the entire food economy functions work against effective food strategies, evidenced in the dominance of larger retail chains in the food supply arena as well as an agricultural economy that is export oriented and driven by non-food based products.

In the context of peak oil, climate change and population growth, Stellenbosch will have to prioritise local food production to ensure resilience against future shocks. The transition from fossil fuel dependency to post-oil communities will carry significant social and environmental costs if preparations are not put into place now to promote resilient local communities. Such preparations will require small but strategic investments in the short term to avoid devastating human (as well as financial) cost in the long term.
This strategy has borrowed from a conceptualisation of the food system where the different components are described as including food system activities and food system outcomes. The food system activities are divided to include specific activities such as food production, food processing and packaging, the distribution and retailing of food and then the consumption of food. Arguably, when food security strategies are devised, they generally consider either the production activity or the consumption activity, or sometimes both. These various components within the food system are seen as critical in understanding the overall systemic challenge. The neglect for certain activities within the system, it is argued, would always result in an undermining of any strategy that is developed.

The approach goes further to describe the food system outcomes and disaggregates these into distinct components; social welfare, including income issues, employment, wealth, social and political capital and human capital. These aspects contribute to and interact with the levels of food security (or the lack thereof), the second food system outcome. Here food security is described in accordance with the 1996 World Food Summit definition of Food Utilisation, Food Access and Food Availability. Each of these core elements of food security have additional specific sub categories described later in the text.

The last food system outcome, which interacts directly with food security and the various food system activities, is that of Environmental Security and Natural Capital. This articulation is critical as it calls for a strategic consideration of the role and impact of food acquisition, distribution and processing on the limited and dwindling natural resource base. This outcome calls for the understanding that ecosystems, ecosystem services and access to natural capital play a critical role in the attainment of food security and are a key component of a functioning food system: Put more directly, the destruction of Natural Capital would ultimately undermine the food system, severely undermining food security. The undermining thereof is generally experienced by the poor and vulnerable first and most severely.

A number of international cities have realised that addressing food security issues requires a broader and more holistic approach. Possible the best known of these is Belo Horizonte in Brazil but Toronto, Portland in the USA and other North American cities have developed food strategy documents in order to address food and a number of developmental issues within one all encompassing strategy.
This view of an interconnected and mutually supportive (or destructive) system has been used to assist in the conceptualisation of what a Stellenbosch food system could resemble. The issue of food security remains paramount but, as argued in detail in the text, this would only be achievable if the entire food system of the region is reviewed, reconsidered, questioned and most importantly, at the outset, better understood. In attempting to contextualise this system the approach adopted has sought to understand the food system as an integrated and interconnected system, impacting on all.

The data used to inform the arguments contained within this strategy have been drawn from research projects carried out in the Stellenbosch region over the past year, which involve regional, national and international perspectives, interviews with key stakeholders all supported by academic review and discussion. The perspectives and outputs have been further informed by in excess of 10 years active engagement in the food system by the various authors and contributors to this strategy. This applied and action based research project sought to develop an understanding of the Stellenbosch food System through a number of intersecting processes. These processes allowed for the development of a provisional understanding of the various components of the food system the complexities thereof and the challenges associated with food security and sustainability. These findings were contextualised by way of regional and national data sets and interpreted accordingly. This information was then compared with international trends and challenges associated with both sustainability and food security.

Thus the report draws on this data and attempts to articulate a possible roadmap for the implementation of a Stellenbosch Food System Strategy. What is required if the converging challenges of sustainability and the food crises are to be considered is a collective approach, one that spans directorates, spans sectors, includes all stakeholders (equally) and responds to needs in a systematic manner. Such an approach would need to view certain needs above others, calling for changes to the existing food systems that are in place currently. This has been referred to as a food regime change.

Conceptually, five key areas of intervention emerged as priority areas and the research focussed on interventions and potential areas of action in accordance with these intervention focus areas. These included the following:

1. Enabling and encouraging people to eat a healthy, sustainable diet
2. Ensuring an equitable, sustainable, and competitive food system
3. Reducing food system’s environmental impact (increasing production sustainably)
4. Reducing, reusing and reprocessing waste
5. Increasing the influence and impact of knowledge, research and technology

Stellenbosch needs to facilitate social transitions to a more equitable and just society, one that is locally conscious but at the same time, regionally relevant. If this is a goal, understanding and effectively engaging in the food system is critical. It is for this reason that a food system strategy is required.

These challenges mean that the responsibility of managing the food system strategy needs to be carefully thought out, correctly resourced, effectively empowered, led in a non-partisan and non-political manner and needs, above all, to appreciate that the primary role is long term food system sustainability and not immediate band aiding of the food system. The envisaged food system leadership group needs to be able to traverse all areas of the food system, from the public realm, to the private retail space, to the agricultural sector and the other stakeholders within the food system.

A number of potential programmatic responses have been articulated within this process and are detailed within the report. The identification of these possible areas of intervention was informed by the research carried out to date and reflect a possible starting point for food system action. This is by no means an exhaustive list and further research is required to populate this further:

- Inform decision-making processes
- Conduct Food System Stakeholder Mapping
- Document Food Support Providers
- Adopt an interdisciplinary and interdepartmental approach
- Document and map Food Service Providers
- Conduct Food Security Assessment
- Conduct full Regional Nutritional Review
- Encourage sustainable agriculture production
- Improve healthy food access
- Conduct Food Mapping Exercise
- Support the local food economy
- Reduce or reuse food waste
- Address land reform
- Consider food and other community challenges
- Constitute a Food System Steering Committee
- Establish a Communication and Reporting Strategy
- Establish as Stellenbosch FoodBank or similar such initiative
Food security remains a critical challenge within the Stellenbosch community with research findings from this process demonstrating that over 10 000 meals are served daily to food insecure residents by NGO and Faith based groups in Stellenbosch alone. Poor nutrition particularly within vulnerable children further highlights this invisible challenge within Stellenbosch. In planning a response to these challenges, this Food System Strategy motivation has attempted to highlight the challenge but argues further that if this challenge is considered in conjunction with the convergent sustainability crises associated with the polycrisis, a strategy that effectively integrates all these converging issues and plots an integrated, interdisciplinary approach that elicits collective responsibility and draws all players within the food system onto the same page. Without this, a food secure and sustainable Stellenbosch will not be possible.
Report Highlights

As an overarching summary and as motivation for a specific focus on food security within the administrative structures of the Stellenbosch Municipality, the following set of “sound bites” have been listed as part of the introduction. All documents supporting these figures can be found within the attached report:

People were reported to be suffering from hunger globally in 2010: 925 Million
People suffering from diet related diseases including as obesity and diabetes: 1, 5 Billion

Poor urban dwellers reported as food insecure in Jhb, Cape Town & Msunduzi: 70%
Food insecure residents in Stellenbosch (estimated from a variety of reports): 28%\(^1\)
Meals served by Faith Based Groups and NGOs in Stellenbosch on a daily basis: 9 014
Meals served by FBOs and NGOs in broader Stellenbosch region daily: 27 000
NGO and FBO groups active in food security response initiatives in region: 90+
Estimate of Stellenbosch economy directly linked to Food & Related Economy: 32%

Stellenbosch percentage total gross farm income: Grapes & Deciduous Fruits: 87, 5%
Stellenbosch percentage total gross farm income: Vegetables: 9, 9%
Stellenbosch wine grape usage of land: 71, 5%
Stellenbosch imported foodstuff by weight: Cereals: 53%
Stellenbosch imported foodstuff by weight: Meat: 7%
Stellenbosch imported foodstuff by weight: Fruit: 6%

**Stellenbosch is a net importer of food**

A shift is taking place in Stellenbosch with increases in local markets, locally focussed food providers, societal innovations in food acquisition strategies and shifts in production approaches led by increased financial constraints associated with increase input costs and volatile markets. Farmers, from small scale to large 1000 ha+ are shifting to more agroecological farming typologies.

\(^1\) This is an estimated figure as reports on food security at the town level are not suitable and different reporting methodologies have been used some comparability of data is a challenge.
1. Introduction

1.1 The Challenge

The massive challenge of feeding the world, now and in the future, may well define our generation’s historical legacy. A growing population, unprecedented pressure on land and soil, global environmental change including climate change are being overlaid more locally on the vastly unequal and hungry society that is contemporary South Africa. Simply put, the challenge is how to produce more food sustainably and how to provide the right information in accessible ways for people to make informed choices about what they eat. Both issues will have an impact not only on our health and our economy – but most importantly on sustainability. Focusing specifically on Stellenbosch, our challenge is how to adapt the existing food system, with its intricate linkages across scale and time, to meet these issues. This demands a fundamental re-think of the food system - as it exists in Stellenbosch today - through a strategy that incrementally and systematically begins to put food at the centre of our future. This food strategy is a beginning for Stellenbosch, one intended to provide clear direction and systematic guidance based on sound research and analysis.

1.2 Approach

The suggested approach is based on partnerships across sectors, facilitated by local government, with consumers and producers supported by clear alignment between state agencies and related bodies. The starting point is an acknowledgement of the fundamental weaknesses inherent in the existing food system that characterises Stellenbosch today.

1.3 Vision

The ultimate vision of the Stellenbosch food strategy is of local consumers who can afford, choose and understand healthy and sustainable food – whose demand is met by profitable, resilient and sustainable farming, all supported by first class research and development.

1.4 Priorities

In order to achieve this vision based on this approach, five key priorities have been identified that systematically feed into each other to rebuild and adapt the Stellenbosch food system. These priorities in turn help to structure the strategy required to achieve this. These priorities are:

- Enabling and encouraging people to eat a healthy, sustainable diet;
- Ensuring an equitable, sustainable, and competitive food system;
- Reducing the food system’s environmental impact whilst increasing production sustainably;
- Reducing, reusing and reprocessing waste; and
- Increasing the influence and impact of knowledge, research and technology.

Diagrammatically, the strategy is represented as follows:

![Food System Strategy conceptualisation and components](source: Drimie, S.)

### 1.5 Implementation

An implementation strategy with commensurate institutional arrangements have been suggested to give these arguments impetus that are based on sound, practical recommendations for Stellenbosch to be able to move effectively in addressing this significant challenge.
2. Context: The Global Polycrisis and Local Stellenbosch

2.1 Global Dimensions

Food security is defined as having adequate physical and economic access to sufficient, safe and nutritious food that meets the dietary needs and food preferences for an active and healthy life\(^2\). At a global level, the food security situation is experiencing rapid change. These include increases in commodity prices and new, but increasingly tenuous, relationships between the producer and consumer, which have crucial implications for the livelihoods of poor and food-insecure people (Von Braun, 2007). The converging livelihood challenges of the 2007-08 food price crises, which is edging upwards yet again, and the economic crisis of 2008 - and on-going subsequent challenges - have resulted in increased vulnerability on the part of most consumers, but specifically the poor. Globally 925 million people were reported to be suffering from hunger in 2010 “even after the recent food and financial crises largely passed [which] indicates a deeper structural problem that gravely threatens the ability to achieve internationally agreed goals on hunger reduction” (FAO, 2010: 4).

Although the agricultural technologies developed and extended over the past four decades have contributed to unprecedented growth in world food production, there are growing concerns that the past strategy of agricultural development may not be the best, or the only way, to promote agriculture in the future as its benefits come at a high price (Uphoff, 2002). The doubling of grain output globally between 1965 and 1990 was a remarkable achievement that drew on the skills and innovations of thousands of scientists, extension workers and farmers\(^3\), backed by the supportive decisions of policy-makers. This powerfully demonstrated what could be achieved when different sectors coordinated their efforts in a conducive environment facilitated by state and market. However, the current predominantly rural based industrialised approach to food production has been scientifically proven to have significant flaws by the United Nations International Assessment of Agricultural Knowledge, Science and Technology for Development (IAASTD)\(^4\). This approach to agricultural development – and its inherent flaws - is essentially the approach that is applied in the Stellenbosch region. The general assumption is that the approach is economically viable and results

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\(^3\) Farmers in this instance and through the paper refer to male and females involved in production and beneficiation of a variety of agricultural typologies and within a wide variety of contexts. The term is used generally and refers to all farming unless specifically stated.

\(^4\) The IAASTD Synthesis Report captures the complexity and diversity of agriculture and AKST across world regions. It is built upon the global and five sub-global reports that provide evidence for the integrated analysis of the main concerns necessary to achieve development and sustainability goals. It is organized in two parts that address the primary animating question: how can AKST be used to reduce hunger and poverty, improve rural livelihoods, and facilitate equitable environmentally, socially, and economically sustainable development?
in a better standard of living within the region. This is far from the reality, as only a select few in Stellenbosch have been able to acquire significant wealth from the agricultural base.

This situation is being aggravated by a set of converging challenges taking place on a number of “fronts” where society is being forced to reassess what is has, for some time, taken for granted. These converging crises are what have been referred to as the polycrisis, which is summarised in the table below (Swilling, 2009).

<table>
<thead>
<tr>
<th>Interlinked Polycrisis</th>
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<tr>
<td>These documents, assembled over the past 12 years reflect the convergence of a number of crises that are already having a significant impact on the global systems. These coupled with the global trends all point to the needs for a fundamental review of how society engages with these systems and the potential consequence of ignoring the challenges</td>
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<tr>
<td>Report</td>
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<td>UN Habitat – Challenge of Slums 2005</td>
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<td>UNDP World Development Report of 1998</td>
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<tr>
<td>Trends</td>
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<td>Rapidly growing population</td>
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<td>Hegemonic Shifts</td>
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<td>On-going Financial Insecurity</td>
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Table 1: The Interlinked Polycrises
(Source: Compiled from a collection of sources, drawn from Swilling, 2009 with added detail)

Each of these crises standing on their own will have a profound impact on society. When they converge, the knock-on effects and broader implications for society will be (some argue are already) dramatic. For this reason, it is argued that simply seeking to address one dimension of these multiple, entwined challenges may result in temporary relief but over the longer period, they will undermine any temporary gains and will, amongst other issues, compound the food crisis. A broader view is thus very much required. One cannot simply focus on a food strategy without taking into consideration how this sits within the context of the broader set of challenges. Responses need to be
strategic and need to build the necessary resilience to the converging polycrisis. So, for instance, considering the food challenge without considering the issues of inequality, or considering inequality without considering the ecological threats or implications of climate change would mean that the ultimate outcome would not carry the capacity to address the issue in the long term.

2.2 Contextual Issues

In discussing the challenges facing the Stellenbosch region, specifically issues concerning food insecurity, a contextual understanding of this region is necessary. Describing Stellenbosch’s food security status is difficult as accurate data remains elusive and many different measures are used to understand the multidimensional nature of food and nutrition security. Statistics South Africa (SSA) argues that 14.5 per cent of Western Cape residents have inadequate or severely inadequate access to food (2010), while the Urban Food Security Baseline Survey (UFSBS) conducted in late 2008 found that food insecurity among the urban poor in the cities of Johannesburg, Cape Town and Msunduzi was as high as 70 per cent (Frayne et al 2009). Gericke and Labadarios (2007) believe that the 2005 National Food Consumption Survey-Fortification Baseline (NFCS-FB) reflected the hunger experienced by households was as high as 51 per cent, while those at risk of hunger 28 per cent, translating into only 1 in 5 households being food secure. Pockets of high vulnerability to food insecurity were identified in Stellenbosch by a recent survey on food security of the Department of Human Nutrition at the University of Stellenbosch (van Niekerk 2009). While interpretation of figures and statistics can be debated ad infinitum, there is enough agreement amongst these studies to indicate that food insecurity is a serious issue and to confirm that a large portion of the poor in Stellenbosch experience hunger. This is well understood by a number of Faith Based Groups (FBGs) and Non-Governmental Organisations (NGOs) active in the region that serve in excess of 27 000 meals per day to those in need of food provision with over 10 000 of these being served in Stellenbosch town alone (Van der Berg, 2010).

Securing food sustainably for Stellenbosch will remain intangible as it is enmeshed within the global polycrisis described above – and as a result will not withstand the dramatic changes that are already underway. At a local level the crises are emerging, demonstrated by intensifying water shortages due to climate change and population growth (Hewitson, 2006), limits on economic growth through electricity restrictions (SM, 2008:37) and overflowing sewerage treatment plants and landfill. Stellenbosch, located as it is in the Western Cape, faces the challenge of a convergence of the “multiple set of nested crises that tend to reinforce one another” (Swilling, 2009: 14 ).
2.3 The Existing Stellenbosch Food System

Stellenbosch has a strong agricultural sector dominated by grape and deciduous fruit production, which account for 87.5 per cent of total production by volume for Stellenbosch (SSA, 2006). Agricultural activities are responsible for over 80 per cent of land use in Stellenbosch, with wine grapes alone accounting for 71.5 per cent (SSA, 2006). With an estimated 60.35 per cent of total produce from the region currently exported (SSA, 2006; Louw, 2009:50), the majority of food consumed within Stellenbosch is produced in other areas\(^5\) and the majority of land is dedicated to crops that do not directly support local food consumption, although they do arguably contribute to food security through income earnings.

Farms are predominantly commercially sized (SSA, 2006) and privately owned by wealthy individuals or businesses\(^6\). Farms use mostly conventional agricultural methods that rely heavily on purchased inputs such as fertilisers and pesticides. Nonetheless, there are a handful of farmers in the region who are engaging with sustainable agricultural practices that are building the integrity of the soil whilst promoting optimal nutritional output in the produce they are growing (Schulschenk, 2009). Many of these farmers have recognised the limits of conventional agriculture, particularly in light of the polycrisis described above, and provide important alternatives to the dominant practices in the region.

Although agriculture is itself not a large employer, it indirectly supports a number of other sectors (IDP 2010), manufacturing in particular. Manufacturing is the largest employer in Stellenbosch, followed by wholesale and retail, then community and personal services. This underscores the importance of the sector in terms of providing livelihoods and in indirectly contributing to wage incomes that are used to secure food for people employed in the region. Although tracking the flows of food in and out of Stellenbosch is challenging, as much of the information is either not recorded or publically available, it is clear that most of the inhabitants rely on supermarkets to purchase their food. In South Africa, four of the largest retailers - Pick ‘n Pay, Woolworths, Shoprite Checkers and Spar - account for over 60 per cent of national sales of food products (van Rooyen, 2009). A sample

\(^5\) Cereals and sugars would be entirely sourced from other regions as Stellenbosch does not produce any of its own. Vegetables, fruits and livestock products may originate either from Stellenbosch or from outside of Stellenbosch, but as Stellenbosch consumes more than it is currently producing (discussed further under Consumption), it can be inferred that the majority of Stellenbosch’s food is brought into the region.

\(^6\) Nationally, fewer than 40 000 commercial farmers occupy 85 per cent of agricultural land (Vink & Van Rooyen, 2009). 673 farmers produced 33.5 per cent of gross farm income in 2002, while fewer than 2500 farmers produced more than half the gross income (Vink & Van Rooyen, 2009). It is argued that this same typology is reflected in Stellenbosch.
of a Stellenbosch community found that 70 per cent of food was purchased through supermarkets and large retail chains (Haysom et al, 2010).

Recent research in Stellenbosch suggests that the flow of food from the local food producers, almost entirely, leaves the Stellenbosch region (Schulschenk, 2009). The produce is often exported from the Stellenbosch region to central distribution points before being sent to the large retail outlets or to informal traders (Lubbe, 2009; Coetzee, 2009; Becker, 2009) often returning to the region. The main motivation for this is to achieve the economies of scale and diversity required to meet consumer demands for affordable food with a wide variety (Becker, 2009; Lubbe, 2009; Coetzee, 2009). However, some Spars and Pick ‘n Pay Family Stores allow store managers the option to source their produce directly from local farmers (Engel, 2009; Espos, 2009).

2.4 Nutrition Outcomes

Despite South Africa being a food-secure country in terms of aggregate food availability, it is listed by the World Health Organization as one of 36 high-burden countries home to large numbers of stunted children (Faber et al, 2011). Recent findings, in the context of both over- and under-nutrition, have indicated that adult and child malnutrition rates with resultant health outcomes have deteriorated in South Africa. The 2005 National Food Consumption Survey-Fortification Baseline (NFCS-FB) showed that 64 per cent of 1 to 9 year old South African children were vitamin A deficient, 28 per cent were anaemic, 13 per cent had a poor iron status, and 45 per cent had a low zinc status (Labadarios, 2007). Findings from the 1999 National Food Consumption Survey (NFCS) (Labadarios et al 2000) and the 2005 NFCS-FB (Labadarios 2007) reported that the rural and urban poor bear the burden of poor health as reflected in a greater proportion of these groups having high levels of stunting and underweight children. At the national level, stunting and underweight affect 1 out of 5 children and almost 1 out of 10 children respectively. Also 10 per cent of the children were classified as overweight and 4 per cent as obese.

These figures may be attributable to the “nutrition transition” (Garrett and Ruel 2005) underway in South Africa, as a greater number of the population consume more energy, more processed foods, including refined grains, and foods higher in saturated fat, sugar, and salt. The move away from unprocessed foods to relatively cheaper, more accessible foods has contributed to a rise in overweight and nutrition-related chronic diseases, even as under-nutrition remains high. Expenditure on food is thus an important aspect of food and nutrition security in South Africa.

It is estimated that poor people in South Africa may spend up to 60-80 per cent of their incomes on staple food and consistently increasing food prices are forcing these families into conditions of
poorer nutrition (Naylor, 2008). For most South Africans, a healthy diet is unaffordable, costing on average 69 per cent more than the unhealthy food choices they make presently (Temple and Steyn, 2011). While there are several barriers between the general population and a healthier diet, cost is an important factor for South Africans in gaining access to healthier food. It is important to bear in mind that households have a number of objectives and may choose to forgo food in order to preserve other assets or choices (Ericksen, 2007:4). According to Ericksen, people’s food choices are not always rational: “prices are influential, as are income levels, cultural traditions or preferences, social values, education and health status” (2007:p). As Jacobs points out, “the food price crisis raised the cost of foods and, consequently, made it increasingly difficult for low-income households to afford their pre-crisis food baskets” (2010:p).

Figure 2: Food Insecurity in the Western Cape (Jacobs, 2009)

Although specific nutrition data for Stellenbosch is rare, it stands to reason that these national figures and issues pertain to the region as a microcosm of South Africa. One report exploring food insecurity in the Western Cape argued that eight per cent of adults and 7.65 per cent of children were food insecure in the Cape Winelands (Jacobs, 2009), which encompasses Stellenbosch (see figure 2). This research indicates that after the Cape Town Metropolitan area, the Winelands reflects the next highest levels of food insecurity as measured by individuals that “experienced food insecurity often and always”.

These figures seem conservative when compared to the national studies cited earlier and specific nutrition related studies focused on nearby areas\(^7\). Other reports argue that food insecurity in this region is at far higher levels (some as high as 50 per cent\(^8\)). To give substance to this argument it can be noted that in Stellenbosch, with an estimated population of 240 000 individuals, over 61 faith based and NGO organisations are working to provide in excess of 13 600 meals daily (5.6 per cent of the population) for food insecure residents of Stellenbosch, providing 27 000 meals per day at the broader regional level (van den Berg 2010).

2.5 The Need for Local Leadership to Facilitate Change

Despite national and international commitments such as the South African Constitution, to meet the rights of all South Africans to adequate food (Rep. South Africa, 1996), many of these obligations have not been met in reality. Access to food is a fundamental human right, enshrined within the South African Constitution (Section 27(a)) committing society under the leadership of the State to never allow anyone to go hungry. Government capacity is often highlighted in the context of failing service delivery as the major reason why many rights remain unrealised (Laymen, 2003; Hunter et al., 2003). Theoretically, South Africa’s response to declining food security should be derived through the Integrated Food Security Strategy (IFSS) under the leadership of the National Department of Agriculture (NDA). However, institutional arrangements and a disjuncture between the strategy and reality of food insecurity in South Africa present barriers to any meaningful implementation (Drimie and Ruysenaar, 2010). This has been particularly true at local level where municipalities have struggled to develop coherent responses to food insecurity.

The existing stresses within the Stellenbosch food system reflect clearly that the food system in Stellenbosch is not functioning effectively. While Stellenbosch Municipality is a key stakeholder in regional food security, it has not devised a comprehensive food strategy to address widespread hunger nor shown an intention to engage the IFSS. For example the 2010 Integrated Development Plan (IDP) for Stellenbosch recognises food insecurity as a challenge but fails to include improving food security among its strategic objectives. The plan cites food security as a key initiative for reducing poverty with municipal resources, but stipulates no clear performance indicators for food

\(^7\) For example a cross-sectional analytical study was undertaken to describe the nutritional status and dietary intake of the elderly black population of the informal and formal peri-urban settlements of Cape Town (Charlton et al, 2001). The results showed that mean energy intakes fell below the recommended dietary allowance (RDA) for both men and women; 27 per cent and 36 per cent of men and women, respectively, had energy intakes of less than two-thirds of RDA. Micronutrient and dietary fibre intake was inadequate, largely due to low reported energy intakes, particularly in women. These figures, as a measure of an element of food insecurity, demonstrate a higher physiological experience of hunger than in the Jacob’s study.

security projects (SM, 2009). The 2010 IDP’s only other references to food security are as a plausible outcome of the Municipality’s land reform programme (now apparently suspended), and the creation of one community garden in November 2008, which can support three families (SM, 2009). The Local Economic Development Strategy also recognises food insecurity as a challenge but assumes that successful land reform will address it (SM, 2008). The status of the land reform process in Stellenbosch reflects the challenges faced at the national level with virtually no land transfers taking place to those who should be benefitting. Land reform beneficiaries farming on municipal commonage and other such land reform projects are yet to receive suitable post settlement support (for example see Kepe, 2004, Hall, 2007, Lahiff, 2007 and perscom, Swarts, 2010 and Stone, 2010 ). In short, the Stellenbosch land reform process is non-existent.

The approach to assume municipal led land reform will address hunger shows a lack of understanding of the complex nature of the food security problem particularly as it stresses low agricultural production as the proximate cause. The fault cannot be laid on the door of the Municipality alone as the structures and systems within which the entire food economy functions work against effective food strategies. As emphasised above, these structures and systems include the dominance of larger retail chains in the food supply arena as well as an agricultural economy that is export oriented and driven by non-food based products. A careful rethink and re-conceptualisation about food security, as an outcome of the food system at large, is necessary to begin to address the issue. Indeed, the national framework in the form of the IFSS compels local authorities to respond to food insecurity that is both relevant and appropriate, although does not legally bind this level of government to adhere to the approach. Further, considering the future development of the region without seriously considering the role that food plays in these systems would significantly impede the actualisation of any development strategy. Food is the metaphorical blood that flows through the system, ‘oxygenating’ the various nodal points and providing the much-needed energy to enable activities.

It is therefore seen as being critical that the Stellenbosch region formulate a food related strategy, one that would allow for localised relevant food interventions, would bring the various role players together and would, through local leadership, enable a more equitable and sustainable food regime.

2.6 A Local Food System

In recognition of the global nature of this crisis, there is a growing movement calling for increased localisation of food systems (Norberg-Hodge, Merrifield & Gorelick, 2002:79; Winter, 2003:24; Hopkins, 2008:104). This implies more local food production, processing and distribution, rather
than relying on externally controlled national and global food networks. It is argued “locally and regionally produced food offers greater security, as well as synergistic linkages to promote local economic development” (Rosset, 2002:xix). The proponents of such an approach see this as imperative to combat the vulnerability to the current and future impacts of the polycrisis, and as a way to make the current food system more equitable. In addition, a recent study by Sonntag found that “locally directed spending by consumers more than doubles the number of dollars circulating among businesses in the community” (Sonntag 2008:v). Based on this argument, facilitating a more local food system would help addresses social and economic ills that have long challenged the leadership of contemporary Stellenbosch, as well as make the food system more resilient in the face of the global polycrisis. This demands the strong, local leadership called for above.

However, this does not mean that local government should alienate the existing agricultural sector in an attempt to create such a system. Rather, the underlying principle is to work with the system to enable a more coherent and rapid development of a sustainable, resilient system that is less extractive and inequitable. Also a focus on geography alone will not address the challenges currently presented by the modern food system. Oversimplified localisation strategies, where a local, instead of a sustainable food system is promoted as the end goal, must be avoided. A local food system is not automatically sustainable. Sustainable food systems must be constantly reflexive, inclusive and strategically positioned to address key contextual challenges in Stellenbosch (Landman, 2010). Once again this stresses dynamic, visionary leadership amongst local government and other partners to facilitate change.

Benefits of critically considered localisation include building resilience of community to external shocks such as food price increases and peak oil, building of local food economies that create opportunities for local small scale producers and thus increasing their share of the food dollar, and distributors as well as areas of value adding – stimulating an entire economy around local, yet sustainable food. The IAASTD stresses the need to strengthen local food systems, buffering them against outside shocks, by stabilising production and increasing food security (IAASTD, 2008:18). Supporting local production and the wider local food system for both food and livelihood security are recognised as critical in the findings of the IAASTD, that recommends “investments in infrastructure and facilitating access to markets and trade opportunities, occupational education and extension services, capital, credit, insurance and in natural resources such as land and water” (IAASTD, 2008:11). Perkins suggests that “a local economy essentially supplies the basic needs of a local community — so it is appropriate to begin by discussing food. Besides being physiologically vital, food provides a down-to-earth way of measuring the localness of an economy: the extent to
which people eat local food shows the degree of their economy’s dependence on distant markets” (1999: 60).

The potential for a local or community based approach to food systems to promote greater sustainability lies in that it is both within the interest of local communities to promote their own food, livelihood and environmental security, and that the communities are more closely connected to the impacts of their decisions (Pretty, 2002). Local food systems encourage relationships with the food system that create an environment that tends towards responsible decision making (Feenstra, 1997:28; Hinrichs, 2003:34).

Of course there are limits to such an approach that need to be thought through in a reflective manner. For example the limitations of localisation include the limited capacity of a region to produce all food requirements for the local community and of local food initiatives to compete with the largely cost externalised modern food system. Being realistic enables engagement with existing dimensions of the food system to find optimal solutions and to facilitate lasting change.

A key recommendation in preparing the community of Stellenbosch for a more sustainable future with a gentle transition into a low carbon future is through building knowledge systems that promote learning for change (Pretty, 2002). Creating sustainable food systems are deeply rooted within the community and cannot function without community principles, values, participation and partnerships (Feenstra, 2002). As Feenstra states:

> At the heart of this process is building a diverse coalition through a collaborative process. This means encouraging participation by multiple formal and informal organisations, associations and individuals with a variety of backgrounds and expertise. A broad cross-section of the community is important for the project to be representative and contribute to the growth of the community. Coalition partners are motivated to participate in this process because they will benefit from such a partnership in multiple ways, including: allowing the group to tackle more complex issues; improving the coordination of services; policy development through support of a variety of constituencies; more effective leveraging of resources; and better outreach in the community.

(2000)

Feenstra (1997:34) identifies leadership, collaboration and civic renewal as crucial in building stronger local food economies linked to equitable and sustainable communities. Learning through experience has been highlighted as one of the most meaningful methods of shifting behaviour and again points to the importance of connections with local food systems that allow opportunities for such engagement.
One of the core questions is what form this strategy will take? It is believed that simply adopting a food security strategy would allow for a level of food security for some of the region but would generally be reactive, seeing as its beneficiaries, the food insecure within the region. Alternatively, considering the various challenges associated with food, the globalised nature thereof, the export oriented typology of the Stellenbosch system and the fact that the converging challenges of the polycrisis demand a more holistic and encompassing approach, a regional food strategy that prioritises food, livelihood and environmental security is seen as being a far better option for Stellenbosch. This project therefore proposes a Regional Food System Strategy, with one of its measureable outcomes being increased food security, as opposed to a Food Security Strategy that focus exclusively on increasing food security and ignore other weak points in the food system that negates food security in the long term.

There are a variety of drivers within the food system and each have a specific role in the building of a more sustainable and equitable system. These drivers are graphically represented in figure 3.

Figure 3: Drivers of the Food System (Ericksen, 2007)

Mougout’s argument calls for an interdisciplinary and interdepartmental approach. Such an approach presents significant challenges within the municipal context as departments and areas of responsibility, accountability and budgets can undermine it. Strategies to ensure municipal support must therefore be incorporated in a food system strategy.
2.7 A Food System Strategy for Stellenbosch

Thus a Food System Strategy has been identified as the most appropriate vehicle to address the food challenges faced by the Stellenbosch region. This works from the assumption that the nature and context of the Stellenbosch food system requires a more encompassing approach; one that goes beyond interventions and projects limited to food security, to one that considers the entire food system “that encompasses food production, distribution, preparation, preservation, consumption, recycling and disposal of waste, and support systems” (Power, 2010:32).

From this premise, the research argues for a shift from interventions and projects to an all-inclusive strategy that integrates the existing known and implied challenges facing the broader Stellenbosch region. These challenges include the urban development objectives that will necessitate the inclusion of a number of food strategies into the policy and planning regime of the broader region. When considering the critical components of development in which the region is engaged, food is the ultimate ‘cross-cutting’ issue: food and nutritional security are at the centre of all sustainability challenges.

The transition to a regional approach that combines high quality living conditions, a prosperous economy and a sustainable use of natural resources and waste sinks is a critical sustainability objective, one that Stellenbosch is grappling with. The transformation of current institutions and systems of governance to unlock new values and ethics that are necessary for a sustainable food system is a critical component of this strategy. This would require “space” for social and lifestyle transformation, economic efficiency via appropriately regulated markets, and a sustainable 

RUrban metabolism (Revi et al, 2006).

RUrbanism is a term used, in the Stellenbosch context, to view the spaces left from systemic ecosystem design within the landscape/region in which the region is embedded\(^9\). The challenges associated with urban food insecurity are severe and coping mechanisms and adaptation possibilities often undermine social capital and community cohesion. These challenges also place additional burdens on other social networks such as health, safety and security. As Mougout points out:

> Although the consequences can be visible, the causes and the scope of food-security problems for urban populations may not be apparent. From production to consumption, the food system comprises complex interrelated and interdependent parts: social and economic elements, agencies, processes, and structures. Their interdependent relationship requires a structural and systemic analysis focusing on global as well as local linkages. 

(2010:3)

This is a radical departure from the conventional practice of understanding the urban spaces first and inserting green areas into leftover wastelands. Considering this, this proposal makes use of the term *rurban* to designate the Stellenbosch region as it is argued that the town is intrinsically linked to its adjoining rural regions.

Further, 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. Centrally managed agricultural projects as the main historical development model have largely failed to live up to the expectation of equitable delivery (Verschoor, Van Rooyen & D’Haese, 2005). Arguably, food security and all facets associated with South African agriculture are interlinked.

In Stellenbosch, this challenge is potentially even more acute as dispossession, inequality and disenfranchisement are glaringly evident. The agricultural sector is arguably the most unequal, evidenced for example by inequitable access to land, financial resources, infrastructure provision, networks and relationships, and market resources. This challenge highlights the developmental, governance and planning challenges facing the region. Any attempt to address food security would need to have the necessary information and resources to attempt to model a response that could ultimately benefit the stakeholders of the rurban area of Stellenbosch.

Critical in understanding the issues, identifying possible solutions and generating outputs that can viably address food security and the underlying causes thereof including poverty, inequality, broader social justice, ecological integrity and dematerialised growth, is a long-term and on-going strategy. The development of the foundations of such a long-term understanding provided the basis for this research programme.

**2.8 What is a Food System Strategy?**

Food system planning is the integration of food system issues into policies, plans, and programming at all levels of government work. In the case of this strategy, it is calling for Stellenbosch to develop a Food System Strategy that is specific to the needs of local residents. While this has recently become a recognised expertise within the planning profession and a growing network of planners as a means of strengthening the community, regional and national food systems, this process and approach has not been taken up in the South African planning approaches, evidenced by the lack of such focus in the IDP for example.
Food system activities make up a large percentage of land use in certain communities and create economic, social, ecological and cultural value through growing, distributing, processing, repackaging, retailing, preparing, and warehousing food and agriculture products. This collection of activities is specifically evident in Stellenbosch. Access to affordable, safe, fresh, and healthy food is a benefit to residents and communities. While certain communities within the region have more than ample access to any food required, there is also a significant portion of the community who are food insecure and access to food is a critical development issue. There is also a direct connection between access to healthy food and rates of diet-related diseases, such as diabetes, heart disease, and obesity; and integrating sustainable food production into communities builds liveable communities, strengthens the local economy, and reduces waste, soil erosion, the use of non-renewable energy, and pollution of water from runoff.

Before undertaking local food system initiatives or plans, local governments need to first identify what information already exists and what is missing about the local food system. This research is a critical area where new interdisciplinary and innovative bottom up research needs to be commissioned. In addition, because this is a world of limited resources, local governments need to ask themselves what particular tools, resources, and responsibilities they have, as governmental entities, that can improve the local or regional food system. These tools include council resolutions, land use plans, and zoning ordinances, land reform opportunities, public private partnerships, procurement conditions, among others. The food system strategy works from the premise that the community is in fact interested in healthy food access, supporting local farmers, enhanced sustainability and resilience or improving the local business district. It therefore asks the following questions:

1. **What should be a priority, given available time, money, data, and public interest?**

2. **How can this interest be developed in a manner that facilitates the development of an equitable and just food system?**

3. **What does a food system look like that serves both the human- and broader ecological community, builds resilience and eliminates the unfair and destructive components of the current existing food system?**

It is felt that interventions that emerge from the food system strategy could well feed into and support the regional food security interventions and as such, the food system strategy would be a more encompassing approach.
3. Understanding the Context: The Sustainability Institute Studies

3.1 The Stellenbosch Area

The core focus for the Stellenbosch Food Strategy is the area falling within the Stellenbosch Municipality’s mandate: the towns and settlements of Stellenbosch, Franschhoek, Klapmunts and Pniel including smaller settlements within the boundaries of the Stellenbosch local municipality. Figure 4 provides a detailed map of this area.

In drafting the Food Strategy, a variety of sources were used which did not necessarily fall within this focus area. For example, certain faith based groups conduct feeding projects in all the towns in the region and report regionally, while others report on towns alone. For this reason, data is aggregated to reflect a region or Stellenbosch based view. In other instances, nationally available data, such as the General Household Survey may not be suitably rigorous to offer a suitable Stellenbosch based score and as such, Stellenbosch has been deemed to reflect the regional dynamic. In other instances, very specific information has been accessed that looks at detail that may even focus on the ward scale. In other instances, Stellenbosch has been deemed to be a nodal point and as such, seen as a central point from which certain flows emanate, originate or arrive.

Figure 4: Stellenbosch Administrative Region
When the data is drawn from a larger constituent base, this is detailed as such.

3.2 Community

Stellenbosch Municipal Area has a diverse community, one that reflects the demography of the Western Cape, with a population in excess of 200 000 residents according to the last official population figures (2007 as per the 2010 IDP). If the annual growth pattern of 4.2 per cent is maintained, the conservative current population estimate is 240 000.

The breakdown from a racial perspective as per the 2007 census is as per figure 5 below, which reflects a large coloured population, a growing black population (at 6.2 per cent), a white population group with a growth of 2 per cent and an Asian population growing at over 6.5 per cent (largest in the region although of a low base). The demographics are important as they reflect two things. One is a generalised view on specific culturally oriented dietary desires, and the second is in terms of the rapid growth and what this reflects from a migratory perspective, specifically in terms of food security.

![Figure 5: Population breakdown by Race – Stellenbosch Municipality (IDP 2010)](image)

Economically, the 2007 census data also provides interesting clues as to the potential groups that would face vulnerability to hunger. The per capita income for Stellenbosch reflects the significant inequality that exists within the income strata of the region.
This inequality is reflected in figure 6 which depicts income per capita per race and presents a Stellenbosch that is struggling to shake the legacy of Apartheid with those subjected to racial discrimination in the past facing similar marginalisation today. Inequality is a key indicator of food insecurity. This was proposed by Amartya Sen who argued that “famines (or food insecurity) occur not only from a lack of food, but from inequalities built into mechanisms for distributing food” (1981). This reflects the insecure livelihoods, underpinned by unemployment, and a resultant lack of (economic) access to food in a largely non-food growing context. The disparity, which is reflected in Stellenbosch, depicts a livelihood challenge for a large component of the population.

The issue of livelihoods is often used in Stellenbosch as justification for the export oriented nature of the agricultural economy. The general it is argued that the export nature of the economy earns foreign capital that flows back into the economy to create jobs and therefore livelihoods. The inequalities in income per capita per race reflects a measure of livelihoods and forces one to question the nature and quality of the jobs provided. More importantly, it questions the inequality in the distribution of the value that is derived from the export-oriented economy.

Those with moderate to poor livelihoods would generally engage in some form of nutritional discounting, often times consuming carbohydrate and energy dense foods. The consequence of this for the Stellenbosch region is that it results in a number of overlapping challenges that undermine socio-economic development in general. Some challenges are immediately apparent, such as poor performance in primary and secondary educational institutions, school dropouts and general pathologies associated with this. Other issues, however, take far longer to manifest with malnourishment underpinning an unhealthy society with high rates of diabetes, heart disease, and
hypertension amongst others ailments. These challenges become a burden to society where health services are stretched beyond capacity and where productivity is severely curtailed, where the components of a healthy and prosperous region are significantly destabilised.

<table>
<thead>
<tr>
<th>Sector</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agriculture, forestry and fishing</td>
<td>6.90%</td>
</tr>
<tr>
<td>Mining</td>
<td>0.90%</td>
</tr>
<tr>
<td>Manufacturing</td>
<td>20.10%</td>
</tr>
<tr>
<td>Electricity and water</td>
<td>0.50%</td>
</tr>
<tr>
<td>Construction</td>
<td>7.70%</td>
</tr>
<tr>
<td>Wholesale and retail trade; catering and accommodation</td>
<td>16.20%</td>
</tr>
<tr>
<td>Transport and communication</td>
<td>2.00%</td>
</tr>
<tr>
<td>Finance and business services</td>
<td>8.30%</td>
</tr>
<tr>
<td>Community, social and other personal services</td>
<td>15.90%</td>
</tr>
<tr>
<td>Undetermined</td>
<td>13.80%</td>
</tr>
<tr>
<td>Unreported in IDP</td>
<td>7.70%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>100.00%</strong></td>
</tr>
</tbody>
</table>

Table 2: Percentage of workers employed in the different economic sectors (2007) (IDP 2010)

In terms of responding to inequality in accessing food and resultant nutritional discounting, local government and some NGOs have emphasised a “productionist” approach to the challenge, emphasising food gardens and growing schemes. This emphasis on “food availability”, although important, is often challenged as seeking to provide access to food as opposed to challenging the inequality in the income strata within the community, nor challenging the general societal inequality.

Some commentators may question the assertion that food insecurity exists in any real form within the Stellenbosch region, arguing that outwardly evident signs of malnutrition and food insecurity are not immediately apparent but are confined to limited cases and often driven by events where those vulnerable vacillate between moderate food security and insecurity. However, data points to high levels of vulnerability to hunger within the region. The notion of vulnerability within the Stellenbosch region is of particular importance if the economy of the region is taken into consideration. The Stellenbosch 2010 IDP presents a picture of an economy still immersed in the rural nature of the region with “manufacturing strongly linked to the agricultural activities of the region” (2010). This therefore presents a concerning issue that an estimated 25 per cent of the
Stellenbosch economy is linked directly to agriculture, an industry that is highly seasonal and typified by lower wages and uncertainty in the labour market: the lowest wage nationally goes to agricultural workers. If the tourism and leisure sector is added to this as potentially half of the specific category in which tourism and leisure is reported, this presents an estimated 32 per cent of the Stellenbosch workforce potentially being vulnerable to seasonality and low wages.

The net effect is that on aggregate, a family in one of the seasonally oriented industries may be deemed to have reasonable access to food, but the seasons without work exacerbate vulnerability. It is in these periods where these members of the Stellenbosch community are most at risk. If HIV and AIDS as well as TB are considered, as this is a segment of society which faces the double vulnerability of these health issues as well, the matter is compounded and treatment, which requires good nutrition for maximum impact, is compromised.

3.3 The Research Project

This document has been drafted drawing in information gathered from June 2009 to December 2010. The research process that has informed this document was part of the Hope Project of the Stellenbosch University, which has a vision for “the emergence of a resilient, sustainable food system for Southern Africa, by reconceptualising the food security challenge, and creating new models of practice in the food system, through the integration of findings from in-depth research on key issues in the food value chain, collaboration across disciplinary boundaries, capacity building, and systematic impact assessment” (SU-FSI, 2010). The Sustainability Institute was awarded a research grant to review the Stellenbosch food system and one of the deliverables of this was the development of a Food System Strategy. The research spanned a variety of food related areas within the Stellenbosch Food System. Due to the various complexities of this system, some areas of the research focussed on Stellenbosch town, while other research projects took on a more regional view. The delineation of these areas will be explained later in the text.

The strategic goal of the research was to identify ways in which the level of food security for Stellenbosch as a whole, and the poor in particular, could be increased. This need was premised on the need for deep sustainability and the building of resilience within the region. This was however, a short-term project, linked primarily to research. It recognised that actionable solutions would require far more detailed interrogation and review. The purpose of the research project was to identify possible sustainability and food security options and to then place these in the public domain for debate and discussion, ultimately leading to a formalised food system strategy. The central lenses through which the research project viewed possible interventions were as follows:
• Increased buying of locally produced food;
• Promoting agro-ecological science and practice in Stellenbosch across the research, agricultural and residential sectors;
• Identifying players within the Stellenbosch food chain that supported food security interventions;
• Understanding of the dynamics of specific components within the food system.

The various research conducted to date point to a food system that displays significant inequalities, is building in a manner that is resource intensive, unsustainable and generally serves to undermine greater food security imperatives. It is the opinion of this research that simply adopting a food security strategy within the context of a system that is currently faltering would serve to be nothing more than a proverbial “band-aid” and may address a few specific issues but could potentially mask far greater issues within the food system.

As part of the drafting process, a number of context relevant research projects were commissioned to provide greater clarity on some of the key food security focus areas. This information is presented in order to support the main arguments of this document in particular the focus on the five priority areas that have been identified as key for transforming the system. Elements of the research projects have been identified here to illustrate the trends and specific responses to the food and production challenges in the region. The projects also offer a variety of solutions to these challenges, which have been integrated into the emerging strategy detailed in the following section.

3.3.1 The Stellenbosch Food System | Understanding the Agricultural Economy

Food insecurity is high in Stellenbosch, despite a strong agricultural context. While the causes of local food insecurity are complex, it is clear that the effects of climate change and the end of cheap oil will worsen the situation. These factors are already revealing the fragility of global food system. This research compiled existing statistical information to present an overview of the current status of food production, consumption and distribution in Stellenbosch to determine key vulnerabilities and opportunities to strengthen resilience. It found that the region produces predominantly wine grapes and fruit for export, whilst relying on imported produce for consumption. When comparing food consumed and agricultural production figures a major challenge facing the Stellenbosch food system is revealed. These figures, illustrated in figures 7 and 8, show that agricultural activities are

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10 Research project was carried out by Jess Schulschenk and completed in 2010
responsible for over 80 per cent of land use and the predominant farming activity is wine production (Statistics South Africa (SSA), 2006).

Wine and stone fruit farming are the largest agricultural activities (both by land use and rand value) with vegetable and essential oil production on a smaller scale (SSA, 2006).

![Figure 7: Stellenbosch regional gross farm income by product (Schulschenk 2010)](image)

Wine grapes use the largest percentage of land (71.5 per cent), followed by peaches (9.6 per cent) (SSA, 2006). Both the local wine grape and fruit markets are export-oriented (Louw, 2009:40). Commercial vegetable production (5211 tonnes per annum) is predominantly cabbages, tomatoes, onions and green beans (SSA, 2006). Emerging farmers produce these as well as strawberries, butternut, carrots, spinach, celery, green peppers and other crops to a total of 1051 tonnes per annum. Smaller quantities of tea (43 tonnes) and nuts (25 tonnes) are also produced. The vegetable market is almost entirely locally orientated (Louw, 2009:50). The region is not considered suitable for sugar cane production and cereals and root crops are difficult to grow in the local climate. Formal livestock farming is relatively small, producing only 2158 tonnes per annum (over half being chickens) and using only 577ha of land (most for cattle) (Hoffman, 2009; Prinsloo, 2009). The current agricultural income sources are detailed in figure 7 and highlight the skewed nature of the agricultural production within the region.
A study was then undertaken to determine how current consumption patterns would compare with current production patterns, if a local food economy approach were to be pursued. Current consumption was inferred for the Greater Stellenbosch population from the National Food Consumption Report (Nel & Steyn, 2002) and compared with what a nutritionally optimal consumption by the Greater Stellenbosch residents might demand. Productive potential of the land and urban zones were translated into potential yield and compared with current and nutritionally optimal food demand. The findings suggest that Stellenbosch has the potential to produce enough food to meet all local requirements but this would require drastic shifts in land use and structure of the local food economy.

The main findings from the comparison of current versus nutritionally optimal consumption suggest that large shifts in both quantity and types of food consumed would need to take place. The research suggests less cereals and meat should be consumed, and considerably more vegetables, milk and fruit, as well as pulses, fish, nuts, vegetable oils and eggs. The volumes of food being consumed by weight should also increase. This has important implications on food security strategies, which should be linked to increasing local production of key nutritional crops such as vegetables.

Whilst wine production contributes significantly to GDP and employment (both directly and indirectly) in the region, the quality and security of the employment is less evident. There are a large number of unskilled (mostly female) labourers employed during pruning and harvesting seasons of grape and fruit production. This seasonal employment, with typically low and insecure wages, has
several negative impacts on rural communities that contribute to increasing pressure on social services and infrastructure (Louw, 2009:34).

Furthermore, prices received by wine producers have declined or remained constant since 2003 due to growing international competition which, when coupled with increasing costs in production and packaging, are resulting in reduced farm viability (Louw, 2009). These trends threaten both employment and the wider communities that depend on the wine industry for livelihoods (as discussed earlier).

The impacts of climate change on producing quality wines is a further concern, and the Helshoogte Pass is already experiencing impacts of climate change (Louw, 2009). In the context of peak oil, climate change and population growth, Stellenbosch will have to prioritise local food production to ensure resilience against future shocks. The transition from fossil fuel dependency to post-oil communities will carry significant social and environmental costs if preparations are not put into place now to promote resilient local communities. Such preparations will require small but strategic investments in the short term to avoid devastating human (as well as financial) cost in the long term.

In light of both the impacts of the modern food system and benefits of local food economies, Stellenbosch could become more sustainable, equitable and resilient through building a stronger local food economy.

3.3.2 The Stellenbosch Food System | Local Food Economies

This research study aimed to investigate practical approaches to growing sustainable food systems. The research was carried out in order to provide more market-oriented perspectives on the functioning of the food system. This study first established the condition of the global environment within which food systems function and critically assessed previous efforts to grow sustainable food systems. After applying these findings to a set of case studies on local food distribution in Stellenbosch, the study identified ways for the local-food distribution network to encourage the growth of a sustainable Stellenbosch food system.

The study usefully provides a global lens on finding practical ways of growing sustainable food systems. The issue of unequal distribution, rather than population growth or a lack of available food is clearly identified as the dominant cause of world hunger. Food distribution is not only an issue of food availability, but of access to food: the “[a]bility to be self-sufficient in food production through own production [or the] accessibility to markets and [the] ability to purchase food items” (Bonti-

Research project carried out by Anri Landman and completed in 2011
Ankomah 2001:2). The commercialisation of food systems has undermined this ability to be self-sufficient in accessing food at different scales and ultimately disembedded these systems from their contexts. Disembeddedness loosens the feedback loops that food systems require to effectively respond to contextual challenges and consequently hinders their sustainability. As an important reminder about how dominant value systems have affected food security, Fukuoka states, “the merchant has a role to play in society, but glorification of merchant activities tends to draw people away from a recognition of the true source of life,” (2009:113).

The critical overview of previous attempts to re-embed food systems provided insight into practical ways of growing sustainable food systems. The overview demonstrated that while localisation and the building of social capital should not be seen as the ultimate goals of sustainable food systems, they could be useful mechanisms for nurturing sustainability if applied carefully.

This research then focussed on the challenge of establishing a distribution network that tightens the feedback loops between the production and consumption phases of the food system. The goal of the research was to identify Stellenbosch’s local-food distribution network and the network’s strengths and blockages. In order to understand the network, a number of initiatives within the network were investigated and a framework for evaluating local-food distribution initiatives devised. The study framework compares three aspects of each of the reviewed initiatives:

**Vision:** Determined each initiative’s vision based on the interviewee’s stated motivations, future plans and response to the possibility of a collaborative sustainable Stellenbosch food system.

**Perceived reality:** Ascertained the initiatives’ perceptions of themselves within the Stellenbosch food system and investigated their views of the system and the biggest challenges they experienced within this context.

**Manifested actions:** While every initiative strives toward a vision, it’s perceived and experienced reality could present obstacles preventing the realisation of that vision. The research therefore investigated the initiatives’ procurement practices, customer relations and community involvement in order to gauge each initiative’s actual operations.

The purpose of the framework was to identify each initiative’s strengths and blockages, as well as any overlapping blockages and strengths in the local-food distribution network of which they formed part.

The research project investigated ten local food distribution initiatives to construct an overview of local-food distribution in Stellenbosch. Using a non-probability sampling method; the researcher designed a list of criteria to determine their suitability for the study. Each case study consisted of a
basic description of the initiative, followed by its vision (including the motivation behind the initiative, future plans and responses to suggestions about a collaborative future sustainable Stellenbosch food system), perceived reality (view of the current Stellenbosch food system, major challenges), and realised actions (procurement practices, customer relations, community involvement).

Figure: Stellenbosch Municipal Area with case study locations

**Case Studies**

**Living Tree:** Living Tree is a service that installs edible gardens for people living in urban environments. It operates mainly in the Franschhoek and Paarl areas, 24–30 kilometres outside Stellenbosch.

**Fyndraai:** Fyndraai is a restaurant specialising in heritage Cape food. It is located on the Solms-Delta wine estate, 27 kilometres from Stellenbosch.

**Divine Foods:** Divine Foods is a restaurant, deli and catering service. It is located in Stellenbosch. The deli also sells local and/or organic produce, baked goods and natural cleaning products, and runs stalls at both Saturday markets in Stellenbosch; the Fresh Goods Market and the Organic Farmers Market.

**Eight:** Eight is an ‘haute cuisine’ farm-to-table restaurant sourcing ingredients from local suppliers that use natural farming methods. It is located on Spier Wine Estate. Most of the restaurant’s
produce comes from Spier BD Farm, also situated on Spier, and it purchases supplementary ingredients from surrounding ethical producers.

**Vredenhof:** Vredenhof is a certified organic and family-run farm, located 13 kilometres outside Stellenbosch on the Bredell Road, off the R44. The research of this case study focussed specifically on the distribution channels of Vredenhof produce, which include a daily organic market on the farm, organic box schemes, local supermarkets, an organic grocery store and a local restaurant distributor.

![Figure: Divine Foods’ interior (Source: Meterlerkamp)](image)

**Three Peas:** Three Peas is a general fresh goods distributor for hotels and restaurants in Cape Town and the greater Boland area. Its offices and central distribution point are located in a pack shed on Roulou Farm, off the R44, 9 kilometres from Stellenbosch.

**Smouse:** Smouse is the term used to describe themselves by the vendors selling fresh fruit and vegetables in stands next to the Stelmark Centre on the corner of Andringa and Banhoek Streets in Stellenbosch. It is an Afrikaans word meaning ‘traders’. They form part of a larger Smouse community of stands and mobile distributors in Stellenbosch. The stands consist of three sidewalk stalls outside the Stelmark Centre and another two located at the taxi rank on Bird Street. Mobile Smouse drive around in ‘bakkies’ and sell produce in residential areas and to some restaurants in Stellenbosch.
Farm to Fork: Farm to Fork “is a sustainable food project that connects sustainable producers to a community of diners based at the Sustainability Institute” (Schrire 2010a). Farm to Fork was launched in February 2009 and operates from the guesthouse kitchen in Lynedoch EcoVillage, 10
kilometres outside Stellenbosch. The initiative provides meals to SI staff members, as well as students attending modules and participants of SI-based workshops. The initiative aims to teach the diners about sustainable eating by producing food that is fresh, balanced, healthy, tasty, affordable, seasonal, local and as ethical as possible. The project supports local, small and emerging food producers, and strives to generate new skills and opportunities based on an ethical food ethos.

**SI Community Supported Agriculture (CSA):** The SI CSA is a vegetable box scheme involving organic farmer Eric Swarts and clients affiliated with the SI. Eric’s farm, Farm 502, is located on the Annandale road between the R310 and the R44, 13 kilometres from Stellenbosch.

**Stellenbosch Organic Farmers Market:** Every Saturday, the Stellenbosch Organic Farmers Market brings together a group of 30 local and ethical producers at the Stellenbosch Waldorf School. The market is located 14 kilometres outside Stellenbosch on Spier.

**Network connections**

The process of growing sustainable food systems is deeply rooted in the interplay between community principles, participation and partnerships (Feenstra 2002), the building blocks of social capital. This research project reviewed both physical and conceptual connections.

Conceptual connections were observed in how the initiatives under review approached procurement criteria in similar ways. The research analysed the local-food distribution initiatives’ approaches to procurement based on the theoretical outcomes of a detailed literature review. This highlighted the fact that localisation can be a mechanism for growing sustainable food systems, but not the end goal. The literature highlighted that approaches for growing sustainable food systems must be constantly reflexive, more inclusive and positioned where the current system is weakest. Only Farm to Fork indicated a set of sustainability criteria and clear process when selecting suppliers, and Vredenhof insists on certified organic produce. Living Tree, Fyndraai, Divine Foods, Eight, the SI CSA and the Stellenbosch Organic Farmer’s Market all signalled intentions of procuring sustainable produce, but were unclear about criteria and processes followed when selecting suppliers. Their procurement criteria include a preference for any combination of the following:

- **Seasonality:** Produce must preferably be in season.
- **Location:** Produce must be locally produced or as close to the initiative as possible.
- **Source:** Produce must preferably come from small-scale farmers.
- **Production:** Produce must be certified or uncertified organic, or the product of some kind of naturally-orientated production initiative.
The Smouse base their procurement approach on the best price for farm-fresh produce, while Three Peas bases its procurement on the best price for first-grade produce.

While these procurement strategies were not always clearly articulated by the initiatives, they do to some extent include aspects of localisation, reflexivity and inclusivity, and are positioned where the current food system is weakest (their approaches are decentralised, slow and in a process of changing to become more sustainable).

The physical distribution connections between local-food distribution initiatives indicate the flow of local-food in that distribution network.

Conceptual connections include the types of local-food distribution initiatives, as well as their shared motivations, approaches to procurement, and consumer and supplier connections. Identifying these gave an indication of shared principles in the network.

Local food distributors and restaurants were the most prominent types of initiatives, of which only one distributor, Vredenhof, directly linked consumers to producers. Approaches to procurement were mostly unstructured, with some built on a single criterion (organics or the lowest price), and only one initiative, Farm to Fork, indicating a clear set of procurement criteria. More than half of the initiatives still operate as middle-people, where consumers pay for a service that collects produce from a producer and assembles it at the point of sale. This service loosens feedback loops and stalls necessary adaptation. The physical connections that emerged from the case studies indicated that the network was not being utilised to its full capacity.

Localisation proved to be an effective mechanism for establishing a network by fostering conceptual and physical connections. Along with the blockages and strengths influencing the network’s sustainability, these connections informed an overview of the local-food distribution network in Stellenbosch. It was concluded that in order for local-food distribution initiatives to grow a robust network, they must establish clear conceptual connections on which sustainable distribution connections can be built and increased. For this to happen, initiatives must dissolve the blockages and strengths that prevent and support sustainability, respectively.

The local-food distribution network can grow a sustainable food system if it is positioned to address the challenges of the global environment, as well as of the immediate Stellenbosch environment. As a system in the global environment, the local food distribution network must also address inequality, poverty, an urban future, degraded ecosystems, climate change, energy constraints and growing food demand. As a system in the Stellenbosch context, it must prevail over these challenges and overcome its dependency on external sources of food.
By responding to the conditions of the Stellenbosch food system’s operational environment, strategies using this local-food distribution network to grow a sustainable food system will need to be reflexive and rooted in its context. The network has already shown some signs of contextualisation that could be further developed. The process will be slow and difficult, but this should be used to the advantage of the local system by preventing co-option by the dominant food system.

A careful use of localisation also necessitates an inclusive approach. Strategies must be based on a food democracy that includes all members of the food system and makes space for them to voice their concerns. Initiators of the local-food distribution network in Stellenbosch can act as catalysts in the process, but should be wary of constructing an exclusive local-food system. Efforts must be made to dissolve the concentration of control and internal and external isolation currently present in the local-food distribution network.

The network can take action to expand social capital beyond what is already present as a first step for growing a sustainable Stellenbosch food system. The research findings indicated that the local-food distribution network need to define clear conceptual connections in support of sustainability, on which communication-based distribution connections can be built and increased.

Five recommendations for growing sustainable food systems are proposed by Feenstra (2007), which were adapted as five recommended projects for initiators and key role players in Stellenbosch’s local-food distribution network:

- Strategise with the community
- Gain an understanding of the food system in question
- Use multiple community resources for outreach and education
- Use food policy to support the sustainable food system strategy
- Create harmonious rural–urban links

The case studies showed that although a local-food distribution network exists in Stellenbosch, it is fragile and lacks defined conceptual connections. This in turn constrains the formation of physical connections and thus the food system’s progress toward sustainability.

The local-food distribution network in Stellenbosch could catalyse the growth of a sustainable food system because its initiatives already focus on localisation, but do not see it as a final objective. This shared focus indicates that localisation already constitutes a practical tool in the growth of a sustainable food system; however, the network’s lack of social capital still needs to be addressed.
Inclusive projects designed to create and protect intellectual, political and economic spaces for reflection within the food system could generate the social capital necessary to grow a sustainable food system. To act as a vehicle for growing a sustainable Stellenbosch food system, the local-food distribution network must build social capital. Initial projects should include strategising with the community; continued investigations to further understand the Stellenbosch food system’s context; outreach and education initiatives; supportive municipal policies; and the creation of harmonious urban-rural links. Stellenbosch has the capacity to grow a sustainable system, but its realisation depends on those with the capacity and resources, including the local-food distribution network, to initiate the necessary changes.

The Smouse network in Stellenbosch | An area requiring further study:

This study focused specifically on ten local-food distribution initiatives. Due to the time and resource constraints of the study, not all of these initiatives could be investigated. The Smouse network in Stellenbosch particularly requires further study. ‘Smouse’ is what the vendors selling fresh fruit and vegetables in stands next to the Stelmark Centre on the corner of Andringa and Banhoek Streets in Stellenbosch call themselves. It is an Afrikaans word meaning ‘traders’. They form part of a larger Smouse community of stands and mobile distributors in Stellenbosch. The Smouse also drive around with ‘bakkies’ (trucks), selling produce purchased from local farmers to some restaurants and in Stellenbosch’s residential areas. There are three such ‘Bakkie Smouse’: Doultyje Smith, Mr Burksted and Mr Van Graan (Linders 2010). The Smouse rely on the Epping Municipal Market (Part of the Cape Town Fresh Produce Market known as the People’s Market) for most of their produce. The market is located in Epping, 45 kilometres outside Stellenbosch. They supplement this with produce from a network of local small-scale producers. They pride themselves on the fact that their produce is often straight from local farms and is typically fresher than that of Stellenbosch supermarkets (Linders 2010). The study established that there was an intricate Smouse network that could be contributing significantly to local-food distribution and present opportunities for expansion of the local-food distribution network in the future. A mapping of this network, including where produce is sourced and to whom it is sold, would generate a better understanding the network’s functions. Future studies could then identify ways in which the Smouse network could be made more sustainable, and how they might be incorporated into strategies for a sustainable Stellenbosch food system. The Smouse network presents an ideal entry point to access key food system members who are positioned in such a way that they could catalyse the process towards a sustainable Stellenbosch food system with the necessary support.

Box 1: “Smouse” in the Stellenbosch food Economy (Landman, 2011)
The core research aim of this specific project was to understand the role played by civil society and specifically the non-governmental sector in the provision of food relief and food aid to the community of Stellenbosch. As a component of the larger research, the focused aim of the study conducted was to understand the coping strategy of acquiring food through civil society interventions that relate to food aid and food security projects. The research was focused on the greater Stellenbosch area. The responses were drawn from the Cape Winelands district municipality, however the survey focused on three town centres in the area, from two different local municipalities. The three town centres surveyed were Stellenbosch, Franschhoek, and Paarl.

One of the outputs of the research is a database of projects. A starting premise was that there are networks of projects in the area, and that key informants are aware of these networks. These networks were then used to expand the initial research sample and to establish a sample that was deemed representative of the area. It was however also recognized that the nature of the information is very dynamic as new projects arise and existing projects close all the time.

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12 Research project carried out by Wessel van den Berg, supported by Magdelien Spies & Katherine Hyman: completed in 2010
A research design was developed for the study that supported this dynamic nature of the database, and enabled the research team to continue growing the database and remain in touch with the latest developments in the networks. The study combined open-ended key informant interviews, an in-depth survey questionnaire and a short survey questionnaire. Key informant interviews happened before, during and after the conducting of the in-depth survey.

The research should be viewed in the larger context of the actual need for food aid, in the complex system of food security. The data should not be viewed as an isolated study of food aid. The reality is that all of the respondents function within a larger, complex system of flows of food.

<table>
<thead>
<tr>
<th>Meals per day</th>
<th>Projects</th>
<th>Average per project</th>
</tr>
</thead>
<tbody>
<tr>
<td>Paarl</td>
<td>13 343</td>
<td>33</td>
</tr>
<tr>
<td>Stellenbosch</td>
<td>9 014</td>
<td>31</td>
</tr>
<tr>
<td>Franschhoek</td>
<td>3 166</td>
<td>19</td>
</tr>
<tr>
<td>Other</td>
<td>1 519</td>
<td>11</td>
</tr>
<tr>
<td>Total</td>
<td>27 042</td>
<td>94</td>
</tr>
</tbody>
</table>

Table 3: NGO & FBO Meals provided per day per major town in region

An argument could be made that as society we want people to depend less on food aid, and more on food acquired through the economy, and that this will enhance food security. A recommendation is made that the results of this study are not only added to a larger study, but are actively integrated as a dynamic sector in the larger system of food flows in the area.
Some of the key findings from the study were the following:

- Each town that was studied has three sectors of networks. These networks are: a broad, general social development network, a set of food-security focused networks that support smaller projects and a wide network of small projects.

- Three types of organisations operate in the networks, more or less on all levels of the networks. These types are: large established NGO’s, diverse community projects and small projects.

- The main articulation with government on food aid occurs through collaboration with the department of education through school feeding schemes, the department of agriculture with food gardens and local municipalities with entire networks.

- A legitimization of informal relationships could support enhanced food security.

Although over a hundred projects were contacted for the study, the information required has only begun to be accessed. Further research into the food aid network should proceed along the avenue of including more projects, to improve and interrogate the findings of the study.

Figure 15: Child Nutritional Measurements combined (South Africa results)

The importance of school feeding and interventions in crèches and other centres where vulnerable very young people gather is critical. One of the key challenges faced by children under the age of 5 years is malnutrition. This malnutrition manifests in the form of stunting, wasting and with children
who are underweight. Research combining a number of data sets for the South African child nutritional status has been combined and is reflected in figure 15. The role played in the Stellenbosch region by the members of the faith based and NGO groups provide significant support and play a vital role in addressing the long term challenges that manifest as a result of these issues. These groups need formal support and recognition for the work that is done. Further support infrastructure needs to be put in place to broaden the impact and facilitate the role played by these organisations.

3.3.4 Research Project | Lynedoch Review\textsuperscript{13}

In an effort to understand the food system of the broader Stellenbosch region, gaining insight into the food patterns of a specific group or community was seen as one possible way of looking in detail at the food habits and aspirations of a specific group. While it is appreciated that this group may not necessarily reflect certain specific challenges experienced in certain communities, it is hoped that the review may offer some clues as to the food status of a large grouping of Stellenbosch residents. For this reason the Lynedoch site was selected as a sample site for the review.

The Lynedoch review was conducted at the Lynedoch EcoVillage, located just eight kilometres outside the town of Stellenbosch, located on one of the main arterial routes. The reasons for selecting the site were driven by the access that the reviewer had to the site as well as a perspective that the Lynedoch site, a mixed income, mixed race development, through which students and others move, was a site that best reflected the complex demography of Stellenbosch region.

Lynedoch is a seven hectare site, located on the R310. Baden Powell Drive. The site comprises a Department of Education Primary School, a crèche, a multi-purpose hall, seventeen residential homes (as part of the EcoVillage) of which seven of the households qualified for state subsidised housing. The site also has office space catering to four other entities, including private businesses and NGOs. Also located on the site is a student residence (operated as a guesthouse and thus not full time residence). The site also hosts the Sustainability Institute and the Stellenbosch University offices administering the degrees offered at the Sustainability Institute by the University.

The research was conducted through a process on one-on-one interviews with willing respondents. Each respondent was asked a set of predetermined questions from a structured questionnaire. As this is a small sample, reviewed via a rapid review process, the figures should not be deemed to be statistically valid but should rather be read as indicative of the food systems within the region.

\textsuperscript{13} Research project carried out by Marcela Gonçalves, Nadia Thorn and Gareth Haysom and completed in 2010
From within this sample, the average amount spent on food on a monthly basis including the highest and lowest spend respondents was R 999.95. What the research did highlight, although an accepted trend, was that as the average monthly income increases, the amount spent by the household on food does not increase at the same rate. This means that the lower the monthly income, the greater the percentage of that income is spent on food. The consequence of this is that should these poor households suffer from any form of food related shock such as the death of a breadwinner, drastic price increases (as experienced in 2008), the loss of employment (due to seasonality) or general downscaling of the economy, the lower LSM households would be extremely vulnerable. This vulnerability is a significant concern to the region and as such would need to play a significant role in the food system strategy of Stellenbosch.

As part of the research specific questions were asked as to diet, the quantity and frequency in consumption of certain food stuffs as well as what food stuffs were believed to be missing for the respondents diet. Also reviewed were the types of additional food that would be purchased if additional funds were available. Figure 16 illustrates the daily food mix and the frequency per week in consumption of specific food types.

![Figure 16: Dietary mix per week – frequency of meals consumed per day within the week](image)

The findings from this element of the research showed a relatively balance diet; although one that indicates a high carbohydrate intake. The diet was certainly far more balanced that that evidenced in poorer communities in Cape Town (Frayne et al, 2009). Additional indicators reflect a general view
that there is a broader purchase pattern in terms of food purchases, with alternative food procurement options being used. However, the dominant place from which food is purchased remains the supermarket, from which 70 per cent of the primary purchases are made. The purchases from local farmers of 20 per cent is unusually high and is influenced by the fact that local farmers live in the Lynedoch village and as a result access to food from this source on the part of the Lynedoch residents is made easier.

This access to locally produced vegetables from the local farmer served to both reduces in the cost of food acquisition and increased the vegetable consumption considerably. This provides interesting insights into alternative food production and acquisition interventions within the region.

The respondents had a sense of the deficiencies within their diets. When asked, respondents were clear as to what additional food groups needed to be present in their diets. Most respondents stated that they felt that their diets were deficient in fruit with additional deficiencies being vegetables and protein. It is unclear if the call for more protein is oriented towards a desire for increased meat in the diets associated with aspirations attributed to greater levels of urbanisation and increased wealth. In assessing what was understood to be absent from diet 47 per cent claimed to need more fruit in their diets and 27 per cent more protein and vegetables respectively being needed.

The findings of the research project highlight the challenges faced within the region, how the nutritional choices are skewed due to affordability, and possibly most challenging is the fact that most respondents expressed a desire to include greater quantities of fruit in their diet, limited largely due to the cost of buying fruit. A cause of great concern in a region that produces significant tonnages of fruit.

The review offers some insights into how food security strategies could be conceptualised. The review further provides insights into the risks associated with the Stellenbosch food system, particularly in respect of strategies needed in terms of emergency food plans.

From a strategic perspective, developing policies and interventions to insulate the lower LSMs from food related shocks, either at a regional scale, in the case of massive food price increases as well as at the household level, would need to form a core thrust of any food system strategy for the region.

Diet and nutrition are of fundamental importance to a healthy life and while the dietary diversity of the research site could be considered to be adequate, it is clear that more diversity in the diet is advisable, specifically in terms of fruits and vegetables. Due to the fact that the Lynedoch community has independent vegetable farmers living on the site, with mechanisms in place for community-supported agriculture, it is believed that the dietary diversity is potentially higher than
would be reflected in the overall region. Seeking ways to distribute more fruit and vegetables to the residents of the area would also provide for significant relief in terms of nutrition and dietary diversity.

While the Lynedoch case study reflects a slightly higher than expected dietary diversity, as discussed above and linked to the relationship with local farmers, this does point to a further strategy that offers one of the greatest opportunities to food security within the Stellenbosch region. Figures 7 and 8 highlighted a further threat to the food system, that of the significant reliance on imported foodstuffs to meet the food needs of the residents of the region. The Lynedoch dietary diversity, linked to local farmers, highlights how more localised and community oriented food acquisition strategies can add great benefits to dietary diversity and would also insulate the most vulnerable from food related shocks.

3.3.5 Potential opportunities | An agricultural shift in the region\textsuperscript{14}

A study was conducted to scientifically document agroecological farms in Stellenbosch and surrounding areas as groundwork for similar future initiatives to build upon. The core reason for focussing on these farms was linked to the issues described in respect of peak oil, the need to build local resilience to shocks, climate change adaptation and a new ethic in agriculture, one that seeks to play a restorative role in terms of land and its productivity, with a specific focus on soils.

The aim was to create a knowledge base of the agroecological farms that exist in Stellenbosch that would be accessible to land reform beneficiaries or other farmers who want to convert to more sustainable methods of agriculture in the future. It is believed that farmers learn best through observation and farmer-to-farmer education, and thus it was also the aim of this study to initiate the beginning of a network of agroecological farms, which could function as a space of interaction, innovation, dialogue, sharing and support for such farmers. Agroecology refers to an agricultural approach that is both socially and environmentally sensitive and attuned to the ecological cycles of the natural environment. It refers to the sustainable management of ecological cycles to produce more nutritious food while minimising additional external inputs and improving the natural environment. This includes the management of for example soil, water, biodiversity and pests. The agroecological methods encountered in this study include organic, permaculture and biodynamic methods.

The study was a first attempt to document some of the agroecological farmers and farms in and around Stellenbosch. It showed that there is increasing agroecological activity and innovations taking

\textsuperscript{14} Research project carried out by Anri Landman and Tarak Kate and completed in 2009
place in the region, but that these farmers are not benefiting from each other’s knowledge and lessons. A network between these farmers can become a powerful tool that could support them in their efforts. Advice and support could come from such a network and it could also function to capture valuable knowledge and data. It could also be an information hub for other farmers who wish to convert to more agroecological approaches (or for those who wish to become farmers). As part of the study, a freely available database has been constructed to provide information to other farmers wishing to seek out farmer knowledge as opposed to one of the most commonly used knowledge portals, that of the “gifsmouse”. The database is attached to this report as Annexure 1.

3.3.6 Farmer Learning Shifts | Changes in approach and philosophy

The farms engaged in the above mentioned shift may not necessarily be large farms and as such, questions are often asked from the traditional agricultural sectors, or those who are yet to fully understand the non-chemical input agricultural paradigm, as to the viability of shifts to agroecological agricultural practices.

While located just outside the Stellenbosch research region (area of review for this strategy report), in the Swartland region of the Western Cape, significant changes are emerging in how farming takes place, the farming practices and the underlying ethic associated with these shifts. A group of Swartland farmers are part of a revolutionary return to the of farming practices and principles of the past, but with paradigm shifting modern innovations, drawn from farmer experience, dependable instinct and farmer to farmer learning.

The changes taking place have been as a result of a number of drivers but the primary reason is that of financial constraints that have recently emerged as a result of resource scarcity, declines in productivity and significant increases in the costs of inputs. As a result of these threats, the farmers have engaged in significant and ground-breaking research and practice to revert to more traditional farming approaches such as organic composting and leaving crop residues on the land. This has been supported by innovations such a minimum tillage and precision tillage. These interventions were initiated largely for financial reasons and it would be incorrect to argue that the farmers’ experienced any fundamental shifts in environmental ethic. What has however occurred has been significant. As these farmers have started working with Nature, as opposed to the industrial input based practice of controlling and dominating these forces and processes, these farmers have developed a deep appreciation and view Nature as an ally in their farming enterprises, working to support her under the understanding that if she is in balance, it would work to support the farm.

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15 Research project carried out by Luke Meterlerkamp and completed in 2011
This symbiotic relationship is having a profound impact on these farmers and as such, the paradigms are shifting to seeing Nature and not the economy as the main focus of the agricultural enterprises.

The aim of the research was to determine whether or not examples exist of commercial grain farmers in the Swartland region of South Africa moving away from high-external-input agricultural production systems towards production systems based instead on ecologically restorative partnerships with soils and other natural systems. The research also sought to understand why these farmers were changing their approach to farming, as well as investigating the specific technologies and practices they were implementing in order to achieve these changes.

During the evaluation of the changes in practice and drivers thereof, Swilling and Annecke’s (2011) conceptualisation of a multifaceted global polycrisis was used as a conceptual reference point. This was done with the intention of providing an agricultural analysis, which looks beyond the farm gate and takes cognisance of the broader socio-ecological issues that affect and are affected by agriculture. With this in mind the research then sought to understand why progressive farmers were changing their practices. This was undertaken in order to establish whether or not the global challenges identified by Swilling and Annecke was being felt by Swartland farmers. A number of connections were established, an example of which can be seen in figure 13.

![Diagram showing indirect links between economic pressure on Swartland farms and the polycrisis](image.png)

*Figure 17: Indirect links between economic pressure on Swartland farms and the polycrisis*
In figure 17 the Primary Driver denotes the main challenge identified by the farmers, the Secondary Drivers were the reasons listed by the farmers for the existence of the Primary Driver. Links were then made between the Secondary Drivers listed by the farmers and the polycrisis: such as the connection between the risk of increased weather variability and climate change. Establishing these connections was important because agriculture has been identified globally as a significant driver of this polycrisis, but it is also being adversely affected by the polycrisis. This implies that in order to achieve long-term sustainability, agriculture needs to adapt to the impacts of the polycrisis while seeking to reverse the negative trends it helped to put in place. A review of the literature suggested that the best way in which existing commercial farmers could make this change would be to begin shifting towards lower-external-input (LEI) production systems that enhance beneficial partnerships with natural systems.

Having established the above, seven farmers were identified who were shifting towards LEI production methods, which focus on enhancing beneficial partnerships with natural systems. On-site interviews and observations with each of these farmers revealed that the degree to which these farmers were altering their practices varied significantly. However, four key technologies and practices were identified to be of greatest significance and common to all seven. These were: the increasing use of legume rotations, a reducing of tillage intensity, new styles of planters and increasing farm sizes. In addition to these four, thirty other recently adopted technologies and practices were also identified, most of which also indicated a shift towards LEI systems, which work in closer partnerships with natural systems. The list of practices included: increasing use of organic fertilisers, the retention of crop stubble on fields and the diversification of crops and livestock.

When aggregated for the seven farms, the overall effects of these changes have been an improvement in soil fertility and drought resistance, an absolute decoupling of a number of non-renewable farm inputs (such as diesel and synthetic nitrogen) from production levels and significant reduction in the financial risk profile of the farm enterprises.

With regard to food security, the research suggested that current changes in these farmers’ agricultural practices could assist in keeping food prices and food production levels more stable in future when compared to production using high-external-input practices previously employed by the farmers. This increased stability in both the price and production of foods could theoretically improve food access and availability in the region if the practices employed by the seven studied farmers were more widely adopted. The potential improvement in production stability was shown to result mainly from improvements in soil health, as these improvements give crops increased resilience to unfavourable weather conditions, greater disease-resistance and improved vitality. It
was also noted the while less wheat may be produced under these systems, increases in other outputs such as sheep and cattle were achieved. The potential improvement in price stability stemmed predominantly from increased input-use efficiency and the utilisation of natural fertility and pest-management practices which were less susceptible to monopolistic input sales structures, international shortages and the increasing cost of fossil fuels. Secondary data also strongly suggested that wheat produced under these methods could be produced at a significantly lower cost than under the traditional methods for the region.

In summary, these findings indicate that although commercial farmers in the Swartland may not have conceptualised the challenges of sustainable development in the same terms as Swilling and Annecke, the pressures of the polycrisis are reflected in many of the challenges these farmers are facing. In response to these challenges the seven case study farmers demonstrated that a growing body of promising knowledge and practices is developing within the commercial agricultural sector in the Swartland. This body of knowledge addresses some of the key sustainability issues raised, including peak oil, ecosystem degradation, climate change and food insecurity. This knowledge of how more sustainable and restorative agricultural practices can be applied to larger-scale farm systems in the Global South is likely to become increasingly valuable asset in addressing these four elements of the polycrisis. The challenge remaining for Swartland farmers is how they apply their ability for innovation to contribute to the resolution of growing poverty and inequality, rapid urbanisation and slums in order to avoid the negative impacts of these problems on their businesses.

Arguably, this paradigmatic shift in farming practices is not directly evident in Stellenbosch, certainly not in the competitive wine industry, which dominates agriculture in the region. However, a few farms have started making the shifts, often led by international customer demands for reduced carbon footprints or other such pre requisites to market access. Farms such as Backsberg, Reyneke Wines and Spier are such farms. These farms have also seen similar philosophical shifts taking place where farmers, winemakers and others in the farming operations now see themselves as custodians of Nature as opposed to controllers thereof.
4 A Food System Approach for Stellenbosch: Achieving the Vision

As discussed, a food system strategy is deemed to be an appropriate response to the evidence emerging from the various research projects, the national and regional food insecurity challenges and the anticipated challenges associated with the polycrisis. Section 2 clearly identified a vision for such an approach: local consumers who can afford, choose and understand healthy and sustainable food – whose demand is met by profitable, resilient and sustainable farming, all supported by first class research and development. In order to achieve this vision, five key priorities have been identified that systematically feed into each other to rebuild and adapt the Stellenbosch food system. These priorities are:

- Enabling and encouraging people to eat a healthy, sustainable diet;
- Ensuring an equitable, sustainable, and competitive food system;
- Reducing the food system’s environmental impact whilst increasing production sustainably;
- Reducing, reusing and reprocessing waste; and
- Increasing the influence and impact of knowledge, research and technology.

Most of these issues have been touched upon in the previous sections and elements highlighted within the research cited. This section will focus on each, providing an elaboration of the priorities and demonstrating how the research has informed the resultant response.

4.1 Enabling and encouraging people to eat a healthy, sustainable diet

**Improve healthy food access**

Access to healthy food and the promotion of a culture of healthy eating is considered to be one of the core components of a healthy population, as Paul Roberts states, “a city is what it eats” (2008).

**Zoning:** Local governments can decrease healthy food access in a variety of ways. Zoning regulations or operating permit requirements can unintentionally restrict farmers’ markets, spaza stalls, livestock areas, community gardens, produce trucks or other appropriate food markets. Zoning and

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16 A review was carried out of food system approaches adopted in other centres and while only international examples existed. Two core texts were used to inform this section. Specific local needs were added to the approach articulated within this section. The texts included:

Koc, M., MacRae, R., Mougeot, L. & Welsh, J. 1999. *For Hunger-proof Cities: Sustainable Urban Food Systems.* International Development Research Centre. Ottawa, ON, Canada

permits can also facilitate disproportional numbers of fast food restaurants, a concern that is specifically believed to be the case in Stellenbosch where healthy eating or food procurement options are limited and if present, are often focused to middle class markets. To address this, local authorities must strengthen zoning restrictions on the number or concentration of unhealthy food outlets. Zoning regulations that prohibit the development of new fast food outlets should specify if the prohibition is only within a particular area, such as neighbourhoods with disproportionately high numbers of existing fast food restaurants, or a minimum distance from facilities that serve children, such as schools. These restrictions require due diligence by the municipality to assess the current landscape of fast food, whether a restrictive ordinance would be beneficial, and the appropriate buffer distance. A Model Healthy Food Zone By-law is an example of no go zones in areas around schools.

Guaranteeing healthy food alternatives: Zoning restrictions on unhealthy food options can only be truly effective when combined with incentives for healthy food alternatives. For many residents of Stellenbosch, the first concern is access to food and the health considerations are often secondary. Strategies to increase affordable healthy food retail can assist in the creation of an environment that sees the creation of new food retail outlets, the improvement of healthy food options within existing food retail outlets, and the creation of alternative food outlets such as farmers’ markets or community gardens. The alternative markets and healthy food offerings require support through signage, marketing and promotion. Internationally, the focus on healthy eating has often served to positively reposition the brand of a number of centres, drawing tourism and new market opportunities.

Some examples of specific approaches include the development of a leasing process for community gardens that utilises a non-profit intermediary and outlines terms of use and short-term tenure. For farmers’ markets, general zoning bylaws can determine if farmers’ markets and street vending of food is a permitted or conditional use in particular areas, and further delineate where vending can take place, when exemptions can occur, if there is a cap on the total number of vendors, the vending area, and which entity is managing authorisation and compliance. In addition to zoning and other regulations, local governments can create standards for healthy food access such as a walkability standard and cycling areas.

Nutrition education: Other actions outside of planning and zoning include the enforcement of dietary guidelines for food services provided by public institutions. While school feeding plays a vital role and often provides the only full meal for many school children in the area, the quality and nutritional value of these meals need to be seriously considered. The forthcoming consumer
protection act will see fundamental changes in food product labelling. Access to safe, healthy and nutritious food is enshrined within the South African Constitution. Local authorities can play a critical role in this by calling for the creation of product-labelling requirements and specifically, if these are adopted at a national level, for the enforcement thereof. At a local level however, authorities should adopt bylaws that require restaurants and other food service outlets to provide nutritional information on menus and advertising so consumers are more aware of the health consequences of food choices.

Methods such as standards, dietary guidelines, and menu-labelling can be relatively cost-effective interventions with potentially high returns. These labelling bylaws should not serve to exclude emerging entrants’ into this market. The likelihood of the vendors at taxi ranks being able to provide nutritional information for certain traditional street foods would be challenging but this should not negate the need for some form of intervention nor should this result in the release of fast food and unhealthy food outlets from their responsibilities in the pursuit of healthy communities. Local governments can also leverage provincial and national food assistance programs to merge food access with healthy food options.

Figure 18: Enabling and encouraging people to eat a healthy, sustainable diet
Underlying any effort to increase healthy food retail is an initial analysis of communities that experience a lack of fresh food retail outlets and a higher prevalence of diet-related diseases. It is also critical that there be an initial assessment of stakeholders and an understanding of the business development process and the food retail industry. In South Africa supermarkets are far more dominant in the food economy than in many other countries with as much as 70 per cent of all food being sold through supermarkets. The local authority would need to work actively to encourage and if necessary direct supermarket chains to play a far more active role in both local procurement (as displayed by some Spar outlets in the region) and more importantly actively working to promote healthy dietary habits.

4.2 Ensuring an equitable, sustainable, and competitive food system

Encourage sustainable agriculture production

Throughout this strategy, a view is taken that sustainable agricultural production is the most viable approach to agriculture into the future. This view is informed largely by the polycrisis discussed earlier in the document, that is, the “multiple set of nested crises that tend to reinforce one another” described by Swilling (2009). These crises, detailed in table 1 will, play a profound role in the future of agriculture. An approach to food production that builds resilience, insulates farmers (and society) from future shocks and works to restore degraded agricultural lands is considered the most appropriate agricultural approach. It is for this reason that a specific approach to agriculture is proposed and promoted within this document, that of agroecological agriculture. Agroecological agriculture is described by Altieri as being “a systems approach to agriculture” (1995) arguing that “in contrast with conventional agriculture, grown out of an exclusive focus on reductionist methods to quantify the complexities of agricultural production is the realisation that the agro-ecosystem is a living system, with complex interrelationships between the elements, both natural and societal, has allowed a new focus on agriculture to emerge” (1995). Alteiri et al further argue that agroecological farming is a “scientific discipline that defines, classifies and studies agricultural systems from an ecological and socioeconomic perspective” (1998).

This approach to agriculture, one that differs from the current monocrop, external input, export oriented agriculture may not immediately be seen as being the most appropriate approach for Stellenbosch food production. However, it is believed that a fundamental review of the Stellenbosch food economy is required if food security and sustainability are to be achieved in the future. Local government needs to move to a stage where they play an active role in removing barriers to and creating incentives for producing food in more sustainable ways. Comprehensive Sustainable
Agriculture plans and zoning are two direct ways to affect land use and encourage more local food production. The current South African Comprehensive Plan for Agriculture sets the long-term vision and priorities for agriculture in South Africa. There is however an immediate need for more locally specific plans that focus on community needs and demonstrate local governmental commitment to working on food system issues. This is specifically relevant in the case of Stellenbosch where scale would make targeted interventions possible.

*Agricultural zoning and farm labour housing* are two tools that underlie and support larger-scale sustainable food production in rural areas. Effective agricultural zoning stabilises the land base and encourages agriculture as the preferred use for land. This would serve to retard the current gated village typology that is emerging in the region - at the expense of food production. The evidence of an absence of such a zoning regime is noted by the fact that as a result of the decline in export wine revenues land is being viewed as a bankable option for housing and golf estate development as opposed to a resource for future food production. Such zoning and land use approaches would also serve to stabilise land prices, reducing both speculation and potentially mitigate the issues associated with farm profitability. Current zoning restrictions should consider exceptions such as on-site retail and secondary businesses, e.g., the processing and beneficiation facilities. Restrictions can be more effective if they direct the growth away from agriculturally zoned areas to already developed or developing communities that are open to more development.

In the interest of supplementing agricultural zoning, right-to-farm provisions establish support for farming and create standards to ease tensions between farmers and non-farming neighbours. A further consideration, applied but not formalised, in the Stellenbosch area are Right to Farm or “Farm Codes”. Right-to-farm provisions allow farmers who apply good management practices to be protected from nuisance complaints for issues such as farm odour, noise, and traffic. A related tool is zoning for farm labour housing. Farm labour is important for larger-scale operations and zoning for farm labour housing ensures conditions are safe, fair, and consistent. Zoning conditions need to make clear the minimum standards for the application, development and maintenance of farm labour housing. Considerations need to include housing duration (temporary, seasonal, permanent), housing cost deductions, family residence conditions, water needs, sewage disposal, location, and erosion and drainage controls.

International trends are for local governments in both urban and suburban areas to consider the adoption of food-producing livestock by laws, often called “honey and egg ordinances”. These regulations outline the approval process and articulate requirements for keeping urban livestock. Some cities have allowed both owner-occupied residences and apartment-dwellers to raise chickens
and bees, with common restrictions on the number (e.g. “four hens, no rooster”) in order to address neighbour concerns.

In more urban areas, sustainable food production can be incentivised on a variety of spaces; vacant or municipally owned land, public parks, rooftops\textsuperscript{17}, backyards, open school fields and window boxes. Urban agriculture policy and zoning establishes standards for these efforts, including signage, parking and walkways, public space, fencing, height requirements, and structures, such as greenhouses, hoop houses, farmstalls, and composting bins. An urban agriculture policy is currently in place in Cape Town but does not necessarily address all the needs associated with urban agriculture. Stellenbosch has the opportunity to formalise urban agriculture and needs to identify the most appropriate way to facilitate this. Agriculture by laws and policies also consider the extent to which practices such as the spreading of manure, the use of tractors, or the application of chemicals (only if necessary) are allowed by right or on a conditional basis.

*Urban agriculture* does offer benefits in addressing food security issues within urban areas. However, this should not be seen as a one size fits all solution. The challenges associated with living in poor areas require careful consideration. These challenges often make food production difficult. Food gardens projects may serve to provide some relief but often these projects are engaged in without suitable understanding of the contextual challenges. Often the basics are not suitably considered, such as access to fresh water. Prior to food garden project interventions, suitable training and context specific knowledge needs to be a pre-condition for a successful and sustainable project.

Urban agriculture that is context relevant, correctly planned and coordinated, that operates within a supportive and enabling policy environment and that serves the needs of the community, not a few elites, is a key food security enabler and should be actively engaged in.

*Address land reform*

Land Reform in the Stellenbosch region provides great opportunities to support a local food system strategy. The challenge is that land in Stellenbosch is not about restitution by about redistribution and this brings a very different dynamic to the process; that of the application of the willing buyer-willing seller approach currently applied by the state. What this means in the context of Stellenbosch is that the state cannot afford the high land prices that are applicable in this region. This results in no land transfers taking place as interventions cost too much to be able to make a positive impact or to

\textsuperscript{17} An experiment conducted in the Stellenbosch area found that rooftop farming could provide real opportunities specifically for restaurants, offering fresh and “harvested that day” options in the outlets.
actually engage in the process at all. This view is however somewhat naïve as alternative approaches are not fully investigated. One such approach is the utilisation of Municipal Commonage as a means to unlock land for those denied access to productive land in the past.

The utilisation of municipal commonage is seen as being a far better intervention for a number of reasons; the first and primary reason is that it allows those being awarded land access to additional funds. The general understanding, as a rule of thumb, is that post settlement support should cost double the land purchase price. With the access cost being waived this could potentially facilitate a more suitable and outcomes-based resource stream that enables emerging farmers as opposed to hindering them, as the process did in the past.

Stellenbosch holds a significant amount of land as commonage and while the use thereof may be deemed controversial, leadership in this regard is required if the ownership landscape is to be transformed. A report (the so called “Wieg Report” commissioned by the Legal Resource Centre) has been conducted on this land and while contested in places, does form a starting point from which processes can proceed.

The issue of title to the land also requires additional perspectives. While certain land reform beneficiaries may have a specific interest in farming, experience in certain projects indicates that this is a resource intensive and tedious process that continues for a significantly long period of time. These farmers are also subjected to the vagaries of nature and the agricultural system and as such, fluctuate between periods of success and periods of failure. In these periods of failure, the susceptibility to buyout is high and this needs to be prevented as the net result of this is gentrification and the wealthy retaining ownership of the land albeit through different owners.

For this reason, tenure through guaranteed leasehold is seen as being a more viable and workable approach. This does however limit the farmers in that they are not able to utilise the land as collateral. This may or may not be a good thing (banks cannot access land in the event of default) but it does require the state to play a far more facilitative role in this process. This is the role that local municipalities need to engage in directly and ensure that funds flow through to the farmers.

The land reform issue is identified in the IDP of Stellenbosch where it is argued that: “In the case of Stellenbosch, with its peculiar history of dispossession and subjugation, coupled with vast land resources locked in municipal possession, land reform must receive focused attention in our IDP” (SM 2010). This recognition further argues that the municipality will “set out a policy and related programme for releasing and equipping identified areas for small-scale farming by previously disadvantaged persons. This will be done in concert with and assisted by resources available from
other agencies of government” (SM 2010) and recognises this in the context of needing to use land to address “the needs for food security”. The IDP does not articulate further on what this would entail, how this will be implemented and what the time frames would be. Critically, it does not directly designate a specific department accountable for this process. This is required and required immediately as leases are lapsing, infrastructure is being put in place on some of these lands while others are being exploited to a point of zero productivity.

The other critical aspect of the land reform challenge is that of tenure and rights to the land of farm workers residing on existing farms. A significant number of illegal evictions take place on an annual basis and this occurs uncontested and unchallenged with the evictees being highly vulnerable and moving into a food insecure state after a very short period of time. The migration from the farms is having a knock-on effect on a number of areas; it is accelerating the growth of informal areas in and around the main centres, it is impacting negatively on the transportation and education systems, it is significantly destabilising communities, many of whom know no other type of living, but most importantly, it is creating a group that very quickly becomes food insecure and highly vulnerable to shocks but a group that due to the dislocation, remains vulnerable as they do not have the social capital to develop coping strategies.

Figure 19: Ensuring and equitable, sustainable and competitive food system
This finding offers important insights into the “land question” in Stellenbosch and how local commonage land could be better utilised to support the vulnerable within the area. Current approaches on the part of officials from both the municipality and regional agricultural bodies to commercialise the commonage for cash crop agriculture, perpetuating the export oriented agricultural approach, need serious review. The need to address commonage as a land reform strategy with a specific focus on food production for local communities within the Stellenbosch region is an opportunity that requires top-level strategic focus within the governance of the region.

4.3 Reducing the food system’s environmental impact whilst increasing production sustainably

Supporting the local food economy

Food is not only a source of nutrients and calories but can also be a significant component of an economic development strategy. Food and agriculture businesses employ residents and produce valuable goods. This is none the more relevant than in the Stellenbosch region with wine and tourism being synonymous with what Stellenbosch represents. Local government can positively impact the local food economy by recognising that food and agriculture are components of economic development, and removing barriers to successful food businesses. Government can link their economic development and farm preservation and establishment (in the case of post settlement support) resources in order to ensure that farmers receive support in financing, business planning, site assembly, marketing, and transition planning. This is specifically relevant in the case of small and emerging farmers and specifically relevant in the case of land reform farmers. Land reform is a critical component of an effective food system strategy. If ignored, this has the potential to undermine not only the opportunities that these offer to the region but could potentially undermine existing agricultural activities, as has been seen in other parts of the country. The combination of preservation and economic development is often called a farm viability program. Internationally, programs often exist formally at a provincial level but the concept can also be applied by municipal governments. It is argued that considering the state of agriculture in South Africa, this approach should be adopted at a national level. However, from a Stellenbosch perspective, it is felt that this would form a core thrust of a strategy to preserve agriculture in the region and would be one of the most effective tools to address the context specific challenges of the Stellenbosch region.
Facilitating alternative markets for producers: Farmers benefit from the ability to operate on-site farmstalls, markets, and stores and small-scale value-added processing. Such farm based operations were evident a decade or so ago but have declined, largely due to the development of shopping malls, wine estates and other entities that have served to squeeze these micro enterprises (non-wine specific) out of business. Local government should seek to support the reintroduction of these services and facilitate on-farm direct marketing regulations that allow, and determine appropriate setbacks, accessory use structures, and signage. This approach often gives farms the opportunity to sell more of their product and increases residents’ access to and awareness of fresh, locally grown food. Again this is critically important to smaller scale farmers, specifically land reform beneficiaries, who are both farmer, marketer and sales person. Allowing the customer to come to the farm not only enhances the sense of rural within the area but builds a number of critical beneficial strands that are core to a successful local and sustainable food economy.

There is a growing trend for consumers, albeit from primarily the middle-income consumers (but this is not always the case) for fresh naturally grown food. Currently the guarantee that underwrites the “natural or organic” status of food involves a costly (often prohibitive) and administratively onerous guarantee system - the organic certification model. While there are specific benefits associated with this, this is prohibitive to small farmers. Evidence from Community Supported Agriculture projects within the Stellenbosch region have shown that when the farmer and customer are able to develop a relationship and engage directly, this often serves as suitable guarantee, negating the need for costly and administratively onerous certification approaches. However, in certain instances, certification is necessary. In this case, newly proposed approaches such as participatory guarantee schemes and group certification should be considered and actively pursued.

Appropriate siting of, and long-term access to, off-farm food retail locations is just as important as preserving farming and on-farm retail opportunities. Not all farmers’ market locations need to be permanent or housed in a structure, but all farmers’ markets should be appropriately sited - as should Community Supported Agriculture (CSA) and buying club pick-up locations.

Community Supported Agriculture or CSAs are networks comprised of a farmer or group of farmers who have directed access to, through agreement (generally informal and through fee payments), a group of customers who receive regular food packages. The packages may be delivered on a weekly, bi weekly, monthly or even product/produce cycle. The approach is one that seeks to ensure mutually beneficial relationships between the consumer and the farmer. One of the key tenants of this approach is the strategy where a collection of customers’ pre purchase a guarantee of delivery of a certain quantity/weight/range of fresh and/or processed produce from a specific site or
collection of sites. The pre purchase strategy means that farmers are able to acquire cash upfront for the preparation and planting of the crops. The customers then receive their regular deliveries in accordance with a predetermined and agreed value. The critical aspect with this is that the customer and the farmer are sharing in the risk of the enterprise. In addition, the structuring of such an arrangement generally means that the customer knows the farmer and this fundamentally changes the relationship, negating the need for costly external certification and guarantees (as discussed earlier). This model does require administrative capacity and an ability to deliver. It is in these areas where small emerging farmers often require assistance if a CSA approach is to be viable.

Managers and organisers of these programs could benefit from local government assistance in gaining access to sites that have appropriate lighting, parking, transit access, restroom facilities, and foot traffic and are coordinated with health regulations. Some governmental entities have also reduced or waived permitting fees for farmers’ markets and food vendors. An alternative is that the local authorities play a leadership role in facilitating access to existing business entities, such as wine farms and tourist establishments. These facilities, although private, could benefit greatly from increased traffic and customers.

**Preferential procurement**: Local authorities need to be able to establish preferential procurement policies for local food businesses, including farmers, processors, caterers, food service providers and local food distributors. These purchases have a multiplier effect of more money circulating within the local economy creating local jobs. The current job creation drive should not just be about facilitating the creation of increased agricultural jobs (although a specific aim of this strategy) but also about integrating job creation through the value chains of the food system. Examples of governmental institutions include schools, community colleges, prisons and a variety of other public institutions. In the Stellenbosch case, the two largest drivers of the economy are the municipality and the University of Stellenbosch. This provides a significant opportunity for the municipality to apply pressure on the University to actively engage in strategies to support the local food economy. While rewriting procurement policies may appear to be daunting, the greatest challenge is in the institutional arrangements put in place to support new entrants into this economy and also, unbundling the existing procurer/supplier relationships, some of these may have been in operation for long periods of time. Local authorities can also take the initiative to sponsor farmers’ markets and CSA pick-up sites, buy local food on an ad hoc basis for special events, and make public land available for land reform initiatives, community gardens and urban farms. This raises the importance of municipal support for land reform beyond just making land available – including accessing the municipal infrastructure grant available from the Department of Land Reform and Rural
Development for investment into the land, special arrangements around leasing to allow for flexibility of tenureship and reducing municipal fees for certain essential services. This is discussed in more detail in the subsequent section. All these need to be managed within the confines of the Municipal Systems Finance Act. This should however not become a hindrance to the unlocking of such opportunities and innovative approaches, partnerships and learning from other sites is critical.

**School feeding schemes**: A significant and unrealised opportunity is for local authorities to partner with the local school feeding schemes (as long as this does not hinder the schemes) or higher education institutions, such as the University of Stellenbosch, to start farm-to-school programs, which can include nutrition education, food-focused curriculum, on-farm visits, and school gardens. SEED, an NGO based in Mitchell’s Plain has played an active role in supporting school gardens for over 10 years. Partnering with such organisations should be a key strategy imperative.

A campaign needs to be launched against the current practice of teachers and neighbours of schools selling processed foods such as *windtjips* to pupils. These products are high in fats and salts, flavoured with monosodium glutamate (MSG) and provide no nutrition, while the negative consequences are dire.

Communities should be encouraged to participate in marketing programs such as “Buy Fresh, Buy Local” that advertise the location of farmers’ markets, agritourism opportunities, community gardens, and restaurants that buy from local farmers.

**Considering food and other community challenges**

Food, while the core focus of this strategy, is a component within a variety of other challenges faced by society. Food, it is argued is the “canary in the coalmine”. The converging sustainability oriented challenges faced by society are often viewed first and in the most severe form through the lens of food. If the challenges are viewed through food, food is often either part of the solution or a component of the approach. Food also manifests in non-food related challenges, for example, a family in Ekanini may live in an informal structure with not access to electricity. The result of this is that food cannot be bought in bulk and stored in the structure (due to poor security, a lack of space, no refrigeration or because there are multiple unrelated residents). As a result, the family are forced to purchase pre-prepared street food. This food comes at a significant mark-up if compared to the cost of preparing the food oneself. As a result, there is what is referred to as nutritional discounting. In order to appease hunger, predominantly carbohydrate and energy dense foods are purchased.

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18 Buy Fresh, Buy Local is a national program in the USA that provides adaptable and appealing marketing materials to local chapters, similar to a franchise. See [www.foodroutes.org](http://www.foodroutes.org).
This results in nutritional deficiencies, susceptibility to health issues and if there are pre-existing health issues such as TB or HIV, these are exacerbated.

In wealthier communities food challenges also exist with excessive food waste, non seasonal food demands and highly processed, refined, sodium and sugar dense food associated with excess packaging being an ever increasing and socially acceptable, if not demanded, orientation to food. The consequence of this is often hypertension, obesity (specifically in children), and diabetes, to name but a few being the health related consequences of such a food system. The link between non-food related challenges (mentioned in part above) are also seen where access to healthy and nutritious food are essential components in a treatment regime for illnesses such as TB and HIV/AIDS.

For this reason, food needs to be viewed not just as something that sits within the domain of the Department of Agriculture or the Food Security Directorate, emergency food packages cannot be seen as the responsibility of Social Development alone and medication cannot be seen as only the responsibility of health service workers. Food spans all areas and touches all, unequally, but touches all regardless. For this reason, it is deemed most appropriate that the entire food system be taken into consideration. What is required if the converging challenges of sustainability and the food crises are to be considered is a collective approach, one that spans directorates, spans sectors, included all stakeholders (equally) and responds to needs in a systematic manner. Such an approach would need to view certain needs above others, and yes, this calls for changes to the existing and comfortable (or at least known) food systems that are in place currently, but it is clear that a fundamental change is required in the food system. This has been referred to by some as food regime change. This is needed in Stellenbosch.

If Stellenbosch is to build resilience to the pending shocks, that are manifest with increasing regularity, changes are required. If Stellenbosch is going to be able to retain its relevance to society (defined differently by different sectors of society), it needs to transition as a society to an economy that is decoupled from its resource intensive approaches to food. Stellenbosch, as a society embedded within a predominantly agricultural economy, needs to stop simply mining nutrients and other resources that take far longer periods to restore than is currently allowed. Stellenbosch needs to facilitate social transitions to a more equitable and just society, one that is locally conscious but at the same time, regionally relevant. If this is a goal, understanding and effectively engaging in the food system is critical. It is for this reason that a food system strategy is required.
4.4 Reducing, reusing and reprocessing waste

Food waste is an often-neglected part of the food system. Food waste is rising significantly and in certain regions in South Africa, this has risen by as much as 10 per cent per annum since 1994. A further challenge is that wasted food in landfills produces substantial amounts of methane, a gas with more global warming implications than carbon. While some of this food is consumed by the pickers on the landfill site, this is negligible. There are also estimates that food accounts for as much as 36 per cent of municipal waste. Thus, reducing or reusing waste from food can save the municipal and ratepayers money in diverted landfill costs, supply inputs to community gardening and other food-growing efforts, while reducing emissions from landfills. Much of this food is still fit for consumption, as evidenced by the success of the FoodBank initiative, diverting food that would

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19 As part of the research process, regular visits were made to the Stellenbosch landfill site and the amount of wasted food is alarming. There are regular daily drop offs by the main retailers and food outlets, depositing waste food on the landfill. The pickers know which outlets the trucks are from. In addition, there is a daily dumping of a significant amount of eggs, mentioned as protein deficiency is a critical issue in cognitive development where the region displays a distinct challenge in this regard.
have gone to landfill to the needy. The need to work with all actors within the food chain to establish a Stellenbosch FoodBank is viewed as a critical action step of the strategy, one that will provide significant relief to the multitude of organisations currently feeding a great deal of the hungry in the region. Certain Stellenbosch feeding projects are supplied via the Cape Town FoodBank but locating a drop off and distribution or larger facility in Stellenbosch would address the needs of the Stellenbosch residents more directly.

Figure 21: Reducing, reusing and reprocessing waste

Composting is the most common way to reduce food waste. Municipal-supported composting programs can vary from the distribution of bins and composting classes to encourage household or backyard composting, to curbside pick-up of compostables from residences and larger businesses. The current operation at the landfill is one option but other activities as well as satellite waste sorting stations would serve a number of objectives, from job creation to reduced flows to landfill, to community level compost availability for needed inputs. Advocates say that composting not only creates a new product out of waste, but also leads to reductions in over-consumption as users are more aware of how much food is wasted through participation in composting.
4.5 Increasing the influence and impact of knowledge, research and technology

Inform decision-making processes

Needs assessment: Conducting a needs assessment that compiles information on food access, food production, diet-related health trends, and other information will illustrate the current state of the food system as well as identify opportunities for improvements. This report has done some initial work but more work is required. The needs assessment would need to be done and greater detail and in a more collaborative and transparent manner.

Food asset-mapping is one specific type of assessment that articulates community needs and identifies the vital social, physical, or natural resources of a particular geographic area and their connections to a local or regional food system. Items that can be spatially and conceptually mapped include incidences of food insecurity and locations of grocery stores, community gardens, food assistance programs, and community food partner organisations (an initial intervention in this regard has been done but a more integrated research process needs to take place). Food asset maps can inform policies about the location of farmers’ markets and other retail outlets such as small retail stores and buying clubs. Mapping would also need to consider other community interventions such as stokvels and other such food coping interventions. Maps also identify areas where financial assistance and economic development tools can be introduced to meet identified needs, create market demands, or raise consumer awareness.

Food asset-mapping can be an independent effort or incorporated into a larger Community Food Assessment process. Community Food Assessments are focused on collaboration and participation by a broad range of stakeholders looking at a cross-section of issues, including food access, food availability, land requirements and agricultural production trends. They are meant to result in a successful framework for action just as much as they produce hard data. This is critical to the Stellenbosch region.

Land inventories identify land currently and potentially used for food production, urban agriculture, and community gardens. An inventory can identify land that is publicly or privately held and is usually combined with an analysis of barriers and opportunities for transitioning vacant or underused land into cultivated spaces. Deliverables commonly include databases, sets of maps, recommendations outlining collaboration with public, private, and non-profit partners, and policies for land access and lease agreements. Land inventories have often been completed through collaborations with local universities or non-profit groups. This is a great opportunity for partnerships between the University and other role players in the Stellenbosch region.
Figure 22: Increasing the influence and impact of knowledge, research and technology

Figure 23: Stellenbosch Food Choices per community segments (Photos: L Meterlerkamp)
Belo Horizonte Food System Approach

In attempting to address the combined challenges of food and nutritional security, Belo Horizonte launch a food system approach in 1993 that is argued to have had a profound impact on providing access to healthy and nutritious food to the vulnerable within the city. Belo Horizonte is a town located within the Southern region of Brazil and has a population of over 2.5 million. In the early 1990’s malnutrition in children under 3 years of age was estimated to be 20% (GIZ, 2011). One of the key strategic interventions in Belo Horizonte was the creation of a municipal directorate to respond to the food security challenge, the Secretariat for Food Policy and Supply (Secretaria Municipal Adjunta de Abastecimento—SMAAB) which has centralized the policy and programmes related to food in the city. This work consisted of the following programmatic interventions aimed at assisting food access while supporting small family farm and community producers:

**Popular Restaurant:** A restaurant serving food at drastically discounted prices (all three meals a day but with lunch the main meal). Key ethic in the facilities (1 initially but now 4) is to serve quality, nutritious food in a quality environment. Located in poor and vulnerable areas of the city but all residents may visit and all residents (from a variety of LSMs make use of the facility equally)

**Popular Big Basket:** city also sells subsidized non-perishable food items - restricted to low-income families who must be included in a registry. This includes mostly fruit and vegetables but other staples and hygiene products as well.

**School Meals** (Merenda Escolar) Programme: State subsidises school meals with R$0.22 per child per day for food only, the city provides funding for facility, staff and other needs but see school feeding as a critical element within the food security strategy and thus subsidises this through food support. Schools are ideal areas for local procurement. Every school has its own kitchen. Ethic of dignity and respect maintained and often children dish up for themselves taking as much as needed.

**Food Bank** (Banco de Alimentos): This operates in a similar manner to the SA FoodBank programme but with more fresh produce. The core difference is that this is not NGO led but a programme of the City Government.

**Abastecer** (‘To Supply’) Programme: Formal retailers are awarded concessions, via a tender and licence process, to sell foodstuffs from a designated list at a subsidised price in designated public space outlets. Also open to all with focus on fresh foods specifically fruit and vegetables.

**Worker’s Convoy** (Comboio do Trabalhador) programme: Mobile sales units also selling subsidised products taking these to areas where the poor have limitations placed on accessing markets.

**Straight from the Country** (Direto da Roca) programme and ‘The Country Store’ (Armaze’m da Roca) programme: Initiative to allow small family farmers and community farms direct access to city market opportunities thus eliminating middle men and other market restrictions, current 34 such facilities in operation.

**Basic Basket Research** (Pesquisa da Cesta Ba’sica) programme: A weekly research project providing market price comparisons on 45 essential household goods from supermarkets and other markets within the city.

All these programmes have been supported through city interventions to support local enterprise participation in these programmes such as local procurement conditions in procurement (30% from
local farmers – may seem low but this figure remains challenging due to capacity and seasonal challenges).

The Belo Horizonte food system approach has 6 key areas of focus aimed at supporting the city communities in improved access to healthy and nutritious food. These activities include:

- Subsidized Food Sales;
- Food and Nutrition Assistance;
- Supply and Regulation of Food Markets;
- Support to Urban Agriculture;
- Education for Food Consumption; and
- Job and Income Generation (including Professional Qualification).

In Belo Horizonte, the food and nutrition support programme has never cost the city more than 2% of the operating budget. This low cost figure has been facilitated through partnerships and effective and skilled use of state funds for state led projects and programmes.

The introduction of these programmes and the associated success led to the promotion of the head of the SMAAB to a position at in the National Government. This resulted in policy, resources and programmes being applied in other cities within Brazil. Local governance influenced how these programmes were managed but the success of these programmes were ultimately elevated to the national level and formed a key component of the Zero Hunger or ‘Fome Zero’ Strategy of the Lula Government.

Belo Horizonte viewed access to food and food security as a basic right and thus approached this from a rights perspective.  

**Belo Horizonte Indicators 2009**

- 60 % fewer children are dying compared to 10 years ago
- 25 % fewer people live in poverty
- 75 % fewer children under 5 are hospitalised for malnutrition
- 40 % of the population benefit directly from the programme
- 40 % of people in Belo Horizonte report frequent intake of fruit and vegetables; the national average is just 32 %
- 2 million farmers have access to credit, 700.000 for the first time in their lives

(From Göpel, M. 2009)

Box 2: Case study: Belo Horizonte Food System Approach

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5 Implementation

5.1 Responsibility

Local level responsibility and accountability for the leadership role within the food system strategy will remain a contentious issue as a result of the divergent interests and power relations that characterise the system. A significant challenge is that some of the work needs to be addressed at the local level, some at the regional level, other work at the provincial level. It is essential that a body is directed to take overall accountability for the entire management of this system. Not only are the areas of accountability diffused within the public structures but effective management of such a structure requires a great variety of skills. Those accountable would also need to be able to manage and respond to a variety of needs, vested interests and existing paradigms, as well as specific context relevant crises and emergency situations whilst also strategically building on a long-term vision. This means that the leadership of such a body would need to be able to facilitate a number of divergent and different perspectives, understand the need for and value of different knowledge sources and most importantly, be able to take accountability for specific tough decisions.

While they play an important role in the region, the two largest employers and land-holders within the town of Stellenbosch are the University of Stellenbosch and the Stellenbosch Municipality. The role played by these two entities within the food system, while important, is not as strategic as other players, such as the farming community, the food retail industry and the various bodies who are engaged full time in food provision, such as the NGO and Faith based groups. However, the inordinate power vested in these two institutions, in the form of consumers, can be harnessed to fundamentally reform the food system.

These challenges mean that the responsibility of managing the food system strategy needs to be carefully thought out, correctly resourced, effectively empowered, led in a non-partisan and non-political manner and needs, above all, to appreciate that the primary role is long term food system sustainability and not immediate band aiding of the food system. The group needs to be able to traverse all areas of the food system, from the public realm, to the private retail space, to the agricultural sector and the other stakeholders within the food system.

Possibly the greatest challenge in structuring such a body is that those responsible for facilitating the management of a regional food system strategy need to be able to act in the interests of the constituents within the region. As such, the group needs to be representative of the various stakeholders within the region. The net effect of this is that the group could become large and unmanageable, resulting in much debate and little action. To this end, extreme caution needs to be
applied in structuring a body that understands its representivity obligations and facilitates processes to ensure that voices are heard and considered, but the group also needs to be structured in such a manner that action can be taken, decisions arrived at timeously and acted on as needed.

For this reason, a three stage process is proposed:

Food System Strategy | **Stage 1 – Conceptualisation and consultation**

This process would be initiated through a workshop held with the various stakeholders identified in this research and drafting process. These stakeholders would be asked to identify key Food System Stakeholders not identified within this process. In addition to this stakeholder identification process, additional key stakeholders would be invited to provide input and perspectives on who should best play a role in this process.

It is envisaged that for the Stage 1 part of the process, leadership and strategic direction would be provided initially by the director of social development.

It is felt that in order to facilitate the stage 1 process, the director of social development should appoint a small (no more than 5) task team to manage this process. This task team would be accountable to the Director – Social Development.

Once all the stakeholders have been identified, it is felt that it would be best for a facilitated process to commence where the various identified stakeholders as consulted on the draft food system strategy and asked to provide input and critique. A final document will then be adopted by the group, a group who, if the process has been correctly structured and facilitated, speaks for their constituents in the Stellenbosch region.

Once there is a document and an agreed strategy, the implementation phase will take place.

Food System Strategy | **Stage 2 – Structure and Leadership**

The effective leadership of a regional food system is potentially one of the most challenging elements in the implementation of the strategy. For this reason, the governance of the group delegated the responsibility for the overall leadership role is critical. As critical is how the group is structured and the commitment of those involved to actively participate in the process.

As a multi stakeholder process, it is envisaged that a small core team be appointed through an abridged electoral process. The reason for the abridged process is that it is felt that there should be a select number of permanent seats within the leadership group, appointed without a democratic
vote and then the remainder of the team would need to be voted or volunteer to the various positions. The reason for this is that there are those within the structures that have a constitutional responsibility to ensure food security within the region and as such, need to be included in this process. As such, it is felt that there should be two permanent municipal delegates on the steering committee. This would be one official and one political appointee. In addition, there would be one advisory position which would be from the provincial food security directorate.

Thereafter, there would be five seats reserved for specific sectors. These sectors would elect/appoint representatives to sit on the steering committee. The five seats would be held for the following groups:

- NGO and Faith Based groups
- Organised Agriculture
- Food Retail Sector
- Organised Labour
- Stellenbosch University

An additional five seats would be available making a steering group of 13 representatives. This size is deemed suitable in terms of representivity but also suitably large for divergent views to be held and thus for debate and process to emerge.

It is believed that there should be an advisory group, formed to support the steering committee. The advisory group would have no authoritative powers but would serve as a resource and a support to the group. If necessary, the advisory group could mediate on issues should there be a specific need. The advisory group would be of no more than 6 persons and would include key role players and specialists such as the representative from the food security desk within the provincial structures, specialists in food systems and food security, individuals thought to represent a large body of the population, etc. The advisory group would be made up of a mix of specialists and society champions.

The Steering Committee would elect a leader who would be responsible for the overall management of the committee and the process. It is envisaged that the management role and that of administrative support may need to be paid roles but this may need to emerge once the structures and potential funding options can be finalised and agreed.

For this process to work effectively, this does need to be the role of an individual who “wakes up every day and worries about this”. Someone needs to be held accountable by both the steering committee and by society at large for this process.
As a potential option, it is felt that a request should be made to the capacity development programme of the Development Bank of Southern Africa for two well-resourced and skilled deployees to be delegated the task of facilitating this process in the start-up phases, one deployee suitably skilled to run the process and another skilled to manage the administration of such a process. Initially, funds for such a process could be requested from the Development Bank of Southern Africa. This process is a first for South Africa and as such a process such as this could provide valuable lessons for the development of similar processes in other centres. It is felt that once the initial structures are in place, once the systems are up and running and once delivery becomes evident, resources for such a structure could be raised through local systems. It is felt that in the initial stages, funding would need to be “independent” so as to eliminate the likelihood of conditionality’s and vested interests taking control of the process.

Within this period, the steering committee would need to play an active role in sourcing and securing funding for the continual operation of the Food Security Steering Committee and the process.

Implementing body structure

![Implementing body structure diagram](image)

Figure 24: Proposed structure of Implementing team
Food System Strategy | Stage 3 – Implementation

This is arguably the most critical part of the process but one that would prove to the stakeholders that such a strategy is in the interests of all Stellenbosch residents’. Being able to deliver on the needs of a diverse and at times fragmented society would require critical and astute leadership but it is believed that the benefits of this would far outweigh the challenges that would be faced in the implementation.

As Stellenbosch would be the first municipality to initiate such a process, many other towns and centres would be keenly observing this process, making it all the more stressful for those accountable to the process. This is however believed to be a hidden blessing as these other centres could be tapped for ideas and input. The other advantage with Stellenbosch being the first to initiate such a process would be that funding sources for such a process could be provided, as discussed above, not only to Stellenbosch but also to the process so that Stellenbosch is viewed as a pilot site for a broader roll out.

Regardless of the proposed structures, the institutional arrangements that facilitate the effective roll out of the proposed process would be just as critical to the long term viability of the proposed strategy.

5.2 Institutional Arrangements

In understanding the region and the variables at play, the following items would be critical in the planning of the actual implementation of the Food System Strategy. These have been divided into contextual parameters and organisational variables. The ability to appreciate both the variables and parameters and to be able to act within these is deemed critical for the success of such a process. The two tables below are drawn from international experiences in the establishment and running of food system strategies and provide valuable insights into the processes and structures required. These institutional arrangements will play a critical role in the success of a Stellenbosch Food System strategy.
## Key contextual parameters

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Comment/Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. <em>Scale</em></td>
<td>Need to find and show the area covered, plus its total population. These affect the prospects for intervention (distances to be travelled to meetings, numbers and types of people or organisations that need to be involved, etc.).</td>
</tr>
<tr>
<td>2. <em>Landscape patterns</em></td>
<td>Any work with an urban–rural spectrum suggests that landscape patterns provide very little insights about the patterns of people and land use important to local food systems. More useful descriptors and typologies are required.</td>
</tr>
<tr>
<td>3. <em>Population patterns</em></td>
<td>These vary considerably between communities and even in reporting by various authoritative bodies. Certain areas may be dense, others mixed, while other areas may be dispersed, while area may be partly dispersed but with an element of major population concentration. The question to ask in connection with this parameter is what types of organising approach these variations suggest.</td>
</tr>
<tr>
<td>4. <em>Socioeconomic patterns</em></td>
<td>These include the role and importance of the general economic structure of the community (whether it is diverse and to what degree it is autonomous), agriculture, various food enterprises, and social structures (patterns of race, class, poverty, informality, culture, etc.).</td>
</tr>
<tr>
<td>5. <em>Food organisation patterns</em></td>
<td>Need to examine such patterns in both food-system and other food-related organisations in the community. One also needs to assess the linkages among them.</td>
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</tbody>
</table>

Table 4: Key contextual parameters
Key organizational variables

<table>
<thead>
<tr>
<th>Variable</th>
<th>Comment/Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Leadership</td>
<td>It is helpful to work with more than one recognised community leader when dealing with food issues. When several leaders come from different sectors (public, private, non-profit), they need to be aware of each other’s orientations and work styles. Ideally, leaders can work together over a long enough time to develop collaborative leadership, where tasks can be rotated or delegated with relative ease.</td>
</tr>
<tr>
<td>2. Work styles of groups</td>
<td>These can be seen across three somewhat-overlapping spectrums. One of these ranges from an emphasis on ad hoc responses to one on strategic planning; another shows the relative emphasis given to specific projects versus developing a process to pursue change; finally, the last ranges from a project emphasis to a policy or policy-development emphasis. Experience suggests that the more community workers that pursue planning, process, and policy, the more effective they will be.</td>
</tr>
<tr>
<td>3. Staff funding</td>
<td>Virtually all other food system plans implemented internationally agree that it is crucial to have funding for full- or part-time staff exclusively devoted to food-systems work. Without this, staff time tend to be consumed in dealing with other, more immediate issues of employment.</td>
</tr>
<tr>
<td>4. Administrative approaches</td>
<td>The administrative approaches of key staff (and their location) are important. In some cases, key staff are also key leaders. In others, they may be different people. Administrative questions include the degree of centralisation and the types of delegation preferred. Relations between leaders and staff are of obvious importance.</td>
</tr>
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</table>

Table 5: Key organizational variables

5.3 Communication and Reporting

Just as accountability and governance are critical, a key aspect of the process would be communication and reporting. This is understandably critical as the process of developing a Food System Strategy is essentially one of Food Regime Change and as such, there will be net losers in this process. However, the losers are arguably those that are currently deriving unjustifiable benefit from the system, either financially, socially or even through resource access. A critical component of the process of ensuring food security and an equitable food system is to be able to ensure fairness within the system. In addition to this need, there also exists a need to allow those that are currently excluded from the system, or those that are unable to access the system fully, greater access. This may be deemed to be unfair by some. This process would result in tensions, rumour and misinformation (either deliberate or perceived) and as such an effective communication and reporting strategy is essential and critical for the success of such a process.
For this reason, structures need to be established, from the outset, to ensure effective and deliberate communication. In Stellenbosch, there are a variety of stakeholders from various communities, cultures and organisations who all have a vested interest in the food system. For this reason, it is recommended that a three pronged strategy is applied in the reporting of the food system strategy process.

This first element of this process is to contract a media and publicity specialist to develop a communication strategy for all external communications. This part of the process would be to formulate a strategy for communication about the process and then later of the progress. This communication strategy would need to be two way, not just to stakeholders but would need to facilitate a means with which media based communication solicits and then responds to feedback within the process.

A second aspect of this process would be a set of discussions with the key stakeholders identified in this process. These meetings would need to be with the entire group so as to eliminate and concerns as to collusion and exclusivity within this process.

Lastly, a strategy would need to be devised to formally report on the process but also on the lessons learnt in order to debate and discuss these so as to allow for learning and further dissemination of the lessons to ensure that the Stellenbosch process feeds into a larger national process.
6 Recommendations

Food security and the food system are issues that affect all. To ensure that Stellenbosch becomes a viable, liveable and vibrant settlement, it needs to consider the food system as one of the key development pillars on which the town and region rest. This is currently not the case with the food system functioning along lines that were relevant a long time ago but today, are not sustainable. Socially, ecologically and financially, the current food system within the Stellenbosch region is showing signs of extreme stress.

It is therefore deemed to be critical that a drastic revaluation of the food system takes place. In addition to this the accountability for the structuring of the food system needs to come under serious review. To simply allow for the privatisation of this system and to expect the market to take care of the most critical aspect of society is naive and potentially dangerous. The consequences of such decisions are already being felt by society, arguably, the poorest members of society.

The research projects that have informed this process were initiated as a result of a variety of indicators of food insecurity, coupled with a sustainability questions associated with the embedded and intersecting polycrisis. The approach of linking sustainability and food insecurity as a single projects links a variety of development challenges and attempts to articulate what could be seen as the beginnings of a food system strategy.

Food system strategies, as discussed, are emerging as effective ways in which to address multiple food challenges within a region. Food is also the lens through which other development issues can be examined and addressed. The approach that has been adopted within this report has been to attempt to combine the successes of a variety of case study centres from both developing and developed cities and regions. What is clear from these various cases is that there are three essentially different approaches that can be applied when developing a food system strategy. One being a citizen led approach, where civil society and local level activism come together to develop strategies that are then held by local authorities (such as Toronto, Canada21). A further approach is for the local authority to play a leading role using a food system approach as a key developmental vehicle, assisting citizens in a variety of food related programmes (such as Belo Horizonte22, Brazil). Then there are others that are driven through a partnership between the local authority and civil society where citizen participation in the decision making processes vary in terms of how active various groups may be (such as Portland23, Oregon). The last is potentially the most challenging as it

21 http://www.toronto.ca/health/tfpc_index.htm
22 http://www.unesco.org/most/southa10.htm
requires the facilitation of a variety of different views with different levels of authority and different stakeholder expectations. The option that most reflects the recommendations contained within this programme is this last option, one of partnerships between the municipality and other stakeholders within the region. The reason for this is due to the nature of the current food system, the challenges faced and the resources of a small municipal area to affect what is arguably fundamental change in the food system. However, the critical role played by the city in the Belo Horizonte model does offer significant opportunities. The key question needs to be who is accountable for the enactment of the right to food within a town or region. While the answer may be all citizens, the reality is that this responsibility rests of the local authority. As such, Stellenbosch should consider the Belo Horizonte model seriously and assess which elements of this model it can, with its limited resources and multiple priorities, address and what aspects of the challenge does it need to actively partner with other entities, some active in this space, to ensure food security within the system.

In Stellenbosch, a wide variety of role players are feeling the impact of food related challenges and the more encompassing approach articulated within this document serves to address not only food related issues but also development and sustainability issues. These are issues that, in the future, will play a key role in decisions, governance and the viability of the region. It is therefore seen to be an issue of regional importance and thus, something in which all in the region should engage.

As potentially the first local authority to engage in such a process, Stellenbosch will have a great advantage in being able to draw in funding and support for such interventions. The link to Stellenbosch University would further serve to provide additional opportunities in this regard. For his reason, it is argued that Stellenbosch should engage with other towns that have participated in such processes in the past, learn their lessons and select the most Stellenbosch appropriate responses to the needs of the region. Further, in partnership with the University, Stellenbosch should utilise the research and action learning capacity of a wide variety of universities, both within South African and internationally to assist in building a research capacity that could feed into the critical research and knowledge component of this process.

Lastly, leadership is critical to the success of such a venture. All international examples reflect this. The international recognition of both the Belo Horizonte and Portland initiatives were driven personally by the mayors in order to ensure that the effective multidisciplinary and interdepartmental cooperation was in place in order to facilitate the effective roll out of the food system strategies of these centres. Who would play this leadership role in the Stellenbosch case would be a critical question.
6.1 **Action Steps**

In order to facilitate this process, a detailed schedule would need to be agreed in order to accelerate the implementation of the Food System Strategy development process. This document serves as a draft document delineating a number of steps that may be required in order to ensure both the consultation and ultimate rollout of the process. The information contained within this report serves both as a set of recommendations but also serves to ground those recommendations in an initial assessment of the vulnerability within the region. It is critical that more research is done to further appreciate the specific contextual challenges that exist. For this reason, a detailed set of initial action steps have been suggested with the intention of provoking discussion in this regard. A number of these suggested steps are informed by the current research and perspectives offered here but these are open to discussion and debate. The most critical aspects of this process remain the acceptance of this as a real need whilst at the same time; this is a real opportunity for the residents of Stellenbosch. See Table 6 for a detail of the proposed steps.

6.2 **Programme Planning**

In an effort to plot out a proposed plan, a draft programme implementation schedule has been included in the report in order to accelerate implementation and to delineate timelines that, if adopted, would bind the various parties to an on-going process.

<table>
<thead>
<tr>
<th>Programme Plan</th>
<th>2011</th>
<th>2012</th>
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<tbody>
<tr>
<td></td>
<td>June</td>
<td>July</td>
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<tr>
<td>Presentation to Academic Group</td>
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<td>Internal Peer Review Process</td>
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<td>Meeting with Director Social Dev.</td>
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<td>Consultations and Review Process</td>
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<td>Preliminary Adoption of Interim Process</td>
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<td>On-going Municipal Consultation</td>
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<td>Commission of Additional Research</td>
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<td>Funding Application Meetings</td>
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<td>Funding Application Process</td>
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<td>Appointment of FSS Task Team</td>
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<td>Facilitated Consultation Process</td>
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<tr>
<td>Structure and Leadership Formalisation</td>
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<tr>
<td>Appointment of Leadership Group</td>
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<td>Identification of Process Leader</td>
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<td>Selection of Steering Committee</td>
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<td>Implementation &amp; Adoption of Strategy Steps</td>
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Table 6: Draft Food Security Strategy Programme Plan
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<thead>
<tr>
<th>Strategy Step</th>
<th>Detail</th>
<th>Responsible</th>
<th>Notes</th>
</tr>
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<tbody>
<tr>
<td>Inform decision-making processes</td>
<td>Conducting a needs assessment that compiles information on food access, food production, diet-related health trends, and other information to illustrate the current state of the food system as well as to identify opportunities for improvements. Will include deliverables such as:  - Food asset-mapping, land inventories and databases, sets of maps, recommendations outlining collaboration with public, private, and non-profit partners, and policies for land access and lease agreements.  - Conduct a Community Food Assessment. The end result would be a detailed framework for action supported by a collection of regionally focussed and applicable data sets.  - Agreed actions and accountable role players</td>
<td>Mayor supported by Social Development, Agriculture and LED</td>
<td>Land inventories have often been completed through collaborations with local universities or non-profit groups</td>
</tr>
<tr>
<td>Conduct Food System Stakeholder Mapping</td>
<td>There are a variety of stakeholders within the food system. This strategy has identified a set of stakeholders but there are far more present in the various communities. A full audit of all such activities needs to be conducted so that there can be necessary representivity through the strategy development process. The mapping process would need to work at a variety of levels, one would be to innumerate all known service providers. During that process, new providers will be identified and these would need to be drawn into the process</td>
<td>Mayor Rector Forum</td>
<td></td>
</tr>
<tr>
<td>Document Food Support Providers</td>
<td>The detailing of all groups working to support food access and production. This would include all groups deemed to be active in promoting food security.</td>
<td>FSI Initiative/Social Development</td>
<td>This grouping would be outside of the group detailed below as food service providers which would include the commercial food providers</td>
</tr>
<tr>
<td>Adopt an interdisciplinary and interdepartmental approach</td>
<td>Critical to the effective development of a Food System Strategy is to ensure that the silos present in municipal structures do no undermine the adoption of the strategy. Leadership must ensure that structures/systems are in place to ensure interdisciplinary &amp; interdepartmental collaboration</td>
<td>Mayor</td>
<td></td>
</tr>
<tr>
<td>Document and map Food Service Providers</td>
<td>This group is made up of all commercial food providers, both at the distribution and retail level. Retail level to include all formal retail outlets as well as all informal traders. This mapping would list occasional and seasonal retailers. Included in this would also be all farmstall and farmers markets. Groups would need to be recorded in accordance with the various categories in which they operate.</td>
<td>SU/Department of Economic Development (LED)</td>
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<tr>
<td>Conduct Food Security Assessment (FANTA) or similar</td>
<td>Food security includes three fundamental elements: adequate food availability, adequate access to food, and appropriate food utilization/consumption. Separate indicators and data collection methods are needed to assess each element, and comparative data are useful to inform decisions. This needs to be carried out for what would be deemed a suitable, diverse and representative sample with the region</td>
<td>SU/MRC</td>
<td>FANTA - The Food and Nutrition Technical Assistance</td>
</tr>
<tr>
<td>Conduct Full Regional Nutritional Review</td>
<td>While costly, understanding the nutritional status of the community of Stellenbosch is a critical part of the process of understanding the nature of</td>
<td>SU/MRC</td>
<td>This grouping would be outside of the group detailed below as food providers</td>
</tr>
</tbody>
</table>
the food security situation.

- Understanding the nutritional status is critical in planning adequate and appropriate responses to the needs of the region.

| Encourage sustainable agriculture production | Play an active role in removing barriers to, and creating incentives for, producing food in more sustainable ways. Comprehensive Sustainable Agriculture plans and zoning are direct ways to affect land use and encourage more local food production and need to be developed. | Department of Agriculture/Local Farmers Union/SI |
| Improve healthy food access | Local authorities must strengthen zoning restrictions on the number or concentration of unhealthy food outlets. This however needs to be combined with incentives for healthy food alternatives. Restrictions need to be enforced on restricting unhealthy food outlets near schools and other educational facilities. Alternative markets and healthy food offerings require support through signage, marketing and promotion. Actions outside of planning and zoning include the enforcement of dietary guidelines for food services provided by public institutions. Adopt bylaws that require restaurants and other food service outlets to provide nutritional information on menus so consumers are aware of the health consequences of food choices. | Mayor and Councillors |
| Conduct Food Mapping Exercise | Following detail by Ericksen (Fig 3) the food system needs to be mapped to enable effective and clear understanding of the system and interaction between components within the system. | SU/FSI/Department of Social Development |
| **Support the local food economy** | Recognition that food and agriculture are components of economic development, and removing barriers to successful food businesses.  
Ensure farmers receive support in financing, business planning, site assembly, marketing, and transition planning (Specifically land reform farmers).  
Seek to support reintroduction of on-farm sale services to facilitate on-farm direct marketing through regulations that allow and regulate this (specifically land reform beneficiaries).  
Appropriate siting of, and long-term access to, off-farm food retail locations.  
Local authorities need to establish preferential procurement policies for local food businesses, including farmers, processors, caterers, food service providers and local food distributors.  
Local authorities take the initiative to sponsor farmers’ markets and CSA pick-up sites, buy local food on an ad hoc basis for special events, and make public land available for land reform initiatives, community gardens and urban farms.  
Partner with the local school feeding schemes (as long as this does not hinder the schemes) or higher education institutions to start farm-to-school programs, which include nutrition education, food-focused curriculum, on-farm visits, and school gardens | All/LED/Social Development/Mayor Rector Forum |
| **Reduce or reuse food waste** | Food waste is an often neglected part of the food system, much of which is still fit for consumption (evidenced by the success of the FoodBank initiative).  
Need to work with all actors within the food chain to establish a | Department of Health and Department of Sanitation |
Composting is the most common way to reduce food waste and provide valuable inputs to local food production.

**Address land reform**

Land Reform in the region provides great opportunities to support a local food system strategy.

Utilisation of municipal commonage is seen as being a far better intervention than the conventional South African route of direct land reform – **this requires urgent attention and action**.

A critical aspect of the land reform challenge is that of tenure and rights to the land of farm workers residing on existing farms – A regional approach to this needs to be developed and enforced.

**Consider food and other community challenges**

Food is the proverbial “canary in the coalmine”.

- Food needs to be viewed as a multi-ministerial and multi-accountability issue. Food is not just something that sits within the domain of the Department of Agriculture or the Food Security Directorate, emergency food packages cannot be seen as the responsibility of Social Development alone and medication cannot be seen as only the responsibility of health service workers.

Food spans all areas and touches all, unequally but touches all.

**Constitute a Food System Steering Committee**

It is essential that a body is convened and directed to take overall accountability for the entire management of the Food System.

Responsibility of managing the food system strategy needs to be carefully thought out, correctly resourced, effectively empowered, and led in a non-partisan and non-political manner.

Authorities need to appreciate that the primary role is long term food...
system sustainability and not immediate band-aiding of the food system.

A three stage process is proposed:

Stage 1 – Conceptualisation and consultation
Stage 2 – Structure and Leadership
Stage 3 – Implementation

| Establish a Communication and Reporting Strategy | Effective and clear communication of the process is essential. Requires the establishment of an effective communication and reporting strategy to ensure that all in the region are informed and participate in the process. | Mayor Rector Forum |
| Consider Implementing Belo Horizonte-type programmes | Review and consider the adoption of specific Belo Horizonte programmes within the food system. Focus on Nutrition and Securing Food Access are critical and this model offers significant opportunities – feeds into national food security plans | SM |
| Establish as Stellenbosch FoodBank | Review and consider the operational requirements associated with the establishment of a Stellenbosch FoodBank operation. FoodBank does deliver to Stellenbosch but with a localised system of distribution, this could play a vital role in supporting local feeding initiatives. | FoodBank FBOs and NGOs |

Table 7: Proposed Actions Steps for the Implementation of Stellenbosch Food System Strategy
<table>
<thead>
<tr>
<th>Farm</th>
<th>Farmer</th>
<th>Contact Details</th>
<th>Location</th>
<th>GPS</th>
<th>Size</th>
<th>Products</th>
<th>Certificated</th>
<th>Livestock</th>
<th>Compost</th>
<th>Mulch</th>
<th>Cover Crops &amp; Green Manures</th>
<th>Additional Techniques</th>
<th>Descriptive techniques</th>
<th>Permanent</th>
<th>Casual</th>
<th>Water</th>
<th>Soil Type</th>
<th>Structures</th>
<th>Roads</th>
<th>Irrigation</th>
<th>External Inputs</th>
</tr>
</thead>
<tbody>
<tr>
<td>De Zalze</td>
<td>François Malan</td>
<td>081 665 4357</td>
<td>De Zalze Estate, Stellenbosch</td>
<td>33°58′2″ S 18°48′5″ E</td>
<td>60 ha</td>
<td>Organic but awaiting certification</td>
<td>Organic</td>
<td>Cows, Sheep, Chickens, Ducks</td>
<td>Legumes and others</td>
<td>Yes - large manure component</td>
<td>Kasuteria Trees used in BD preps, BD preps used extensively, BD water activation</td>
<td>0 modne</td>
<td>0 modne</td>
<td>Dam on site</td>
<td>Sandy Soils above a Clay Base</td>
<td>Main House</td>
<td>Good Condition, mostly paved or gravel</td>
<td>Micro and Drip Irrigation</td>
<td>600kg Chicken feed per season, used for Green Manure, Vegetable seeds and seedlings</td>
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<tr>
<td>Farm 502</td>
<td>Eric Swartz</td>
<td>078 212 1715</td>
<td>R410, Stellenbosch</td>
<td>33°59′1″ S 18°47′1″ E</td>
<td>10ha</td>
<td>Beans, butternuts, small Japanese pumpkins, gourd, squash, corn, tomatoes, onions, cucumbers, peppers, basil and broccoli, cabbage, broccoli, beans, peas and kale</td>
<td>Bean, Oats on Farm for normal Fractree and other agroecological activities</td>
<td>Yes, mostly own compost made with high quantities of animal manure. Also uses Sanjeevaks and Vermicompost</td>
<td>Yes, when affordable</td>
<td>Yes, a mix of fixing crops and cover crops. Also uses weeds as cover crops. Also plants green manures</td>
<td>Sanjeevaks is one of the main additions but also uses weeks and EM. Using animal tractions has also added dynamics to the farm and supports production</td>
<td>0 modne</td>
<td>0 modne</td>
<td>Sandbagging scheme</td>
<td>Thin layer of sandy soil above a thick clay base. Soil is highly depleted</td>
<td>Saw permits permanent structures, temporary pack shed, toilet and nursery</td>
<td>Very poor and eroded</td>
<td>Sprinkler irrigation</td>
<td>60l folio spray monthly and 50l compost through the year, 2l of EM per year</td>
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<tr>
<td>Spier Biodynamic Farm</td>
<td>Angus Macintosh</td>
<td>082 680 9978</td>
<td>Spier Estate Accessible off R410, Stellenbosch</td>
<td>33°58′2″ S 18°48′0″ E</td>
<td>10ha</td>
<td>Biodynamic beef, sheep, pigs, wine grapes, wine, vegetables (mixed) and legumes</td>
<td>BD certification pending</td>
<td>Angus and Bernardus Cattles, Broiler Chickens, Bushveld Chickens</td>
<td>Yes, large compost production also services the farm. Also uses EM vermicompost and vermeia</td>
<td>Yes, used extensively, particularly in conversions and cover crops in the vineyard</td>
<td>Extensive use of BD techniques but also permaculture design in the vegetable garden. A number of natural remedies applied and Holistic Management applied in grazing</td>
<td>0 modne</td>
<td>0 modne</td>
<td>Access to Theewater but harvest rainwater 150000l capacity, also have access to dam if dam is required</td>
<td>Sandy soils but significant improvements already noted in vineyards and vegetable areas improving gradually</td>
<td>Housing, pack shed, office facilities, additional housing, livestock nursery, abattoir</td>
<td>All in good condition, some paved</td>
<td>Yes, using most applicable irrigation for crop</td>
<td>BD preparations, molasses, compost, seeds and seedlings</td>
<td></td>
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<tr>
<td>Uitsicht</td>
<td>Johan Neynke</td>
<td>022 813 3517</td>
<td>Spier Estate, Stellenbosch</td>
<td>33°57′2″ S 18°45′9″ E</td>
<td>55 + 10ha</td>
<td>Wine and Grapes</td>
<td>Oats, Cows, 20 chickens, 2 pigs and ducks</td>
<td>Compost produced on site with large amounts of animal manure. Vermicompost post also used</td>
<td>Yes, used extensively and cover crops also filled in situ to support this</td>
<td>Full BD techniques applied. Animals form a critical part of the farm system</td>
<td>Focus on soil enrichment through animal integration. Simple working with nature as a philosophy</td>
<td>0 modne</td>
<td>0 modne</td>
<td>Theewater scheme and on farm rainwater catchment for BD preps &amp; wine</td>
<td>Top 60cm sandy loam, 20cm gravel &amp; clay base</td>
<td>House, 4 cottages, office building, laundry room and celler</td>
<td>Good gravel roads</td>
<td>Lucerne and brassgro, help and allowed quantities of copper and sulphur</td>
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<tr>
<td>Villiera</td>
<td>Erik Barzel</td>
<td>083 676 4545</td>
<td>Kraaifontein Area adjacent to Villiera</td>
<td>33°51′4″ S 18°44′3″ E</td>
<td>1.5ha</td>
<td>lettuce, rocket, spout,-coloured potatoes, sweet potatoes, peppers, tomatoes, spring onions, carrots, beetroot, cabbage, cauliflower and broccoli</td>
<td>Organic</td>
<td>29 goats, Nguni cows, 2 bulls and 7 chickens</td>
<td>Compost made with low dung and goat droppings, chicken manure and green</td>
<td>Feriliser tea made with green organic materials, chilies, garlic, coffee bags, tubers and cigarette butts and mixed into water and left to ferment. Erick also</td>
<td>0 modne</td>
<td>0 modne</td>
<td>Makes use of Villiera dam water</td>
<td>Predominantly sandy soils but self generated soil through a permaculture process in specific beds</td>
<td>Cement slabs from old chicken batteries for pathways on the farm</td>
<td>Gravel road adjacent to the farm</td>
<td>Water from Villiera and biodegradable plastic bags</td>
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<tr>
<td>Area</td>
<td>Contact Information</td>
<td>Address/Location</td>
<td>Notable Features</td>
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<tr>
<td>Gums Tree</td>
<td>Marianne</td>
<td>021 873 6677; 082 600 5689</td>
<td>34°01’4”S 18°55’5”E</td>
<td>Organic farming techniques: No specific information provided.</td>
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<tr>
<td></td>
<td>Fehlmann</td>
<td>marianne@f oxenbut g.co.za</td>
<td>34°02’1”S 18°54’9”E</td>
<td>grown vertically. Specific planting strategy: (not detailed)</td>
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<td></td>
<td>Sky滨海</td>
<td>burst.co.za</td>
<td>34°01’3”S 18°58’4”E</td>
<td>Maximum space is used with crops grown vertically. Specific planting strategy: (not detailed)</td>
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<td></td>
<td>Lilje</td>
<td>wailje@telk</td>
<td>34°01’3”S 18°58’4”E</td>
<td>Beneficial nontoxic, edible crops planted to attract insects.</td>
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<td>Fehlmann</td>
<td>madeleinea @avondala mine.co.za</td>
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<td>Maximum space is used with crops grown vertically. Specific planting strategy: (not detailed)</td>
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<td>Fehlmann</td>
<td>madeleinea @avondala mine.co.za</td>
<td>34°01’3”S 18°58’4”E</td>
<td>Beneficial nontoxic, edible crops planted to attract insects.</td>
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<td>Sky滨海</td>
<td>burst.co.za</td>
<td>34°01’3”S 18°58’4”E</td>
<td>Maximum space is used with crops grown vertically. Specific planting strategy: (not detailed)</td>
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<td>Lilje</td>
<td>wailje@telk</td>
<td>34°01’3”S 18°58’4”E</td>
<td>Beneficial nontoxic, edible crops planted to attract insects.</td>
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<td>Farm Name</td>
<td>Contact Details</td>
<td>Location Details</td>
<td>Farm Details</td>
<td>Compost Details</td>
<td>Organic Certification</td>
<td>Livestock</td>
<td>Predator Control</td>
<td>Monitoring &amp; Control</td>
<td>Irrigation Systems</td>
<td>Pest Control</td>
<td>Other Notes</td>
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<td>Waterkloof Farm</td>
<td>Tomke Heeren</td>
<td>Wellington</td>
<td>33°39'18&quot;E 18°53'0&quot;S</td>
<td>30ha</td>
<td>Pre-ordered medicinal herbs and plants processed at the Parceval factory in Wellington and pre-orders and six pack 60 seedling trays (mixed)</td>
<td>Yes – not detailed</td>
<td>Yes when needed</td>
<td>Yes (specific recipe is also used)</td>
<td>Cement mixer used to mix compost and seedlings growth is managed to ensure sufficient light and warmth</td>
<td>Good gravel roads</td>
<td>Straws to use as mulch</td>
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<tr>
<td>Tulbach Mountain Vineyards</td>
<td>Rebecca Tanner &amp; Kazik Nicholls</td>
<td>Tulbach District</td>
<td>33°15'2&quot;E 19°10'4&quot;S</td>
<td>180ha</td>
<td>Wine grapes with wines almost exclusively sold to Woolworths. Vegetable production mostly for on farm use</td>
<td>No livestock but encourage natural raptor predators</td>
<td>Yes, straw</td>
<td>Nitrogen fixers and wheat between the vineyard rows.</td>
<td>Raptor perch posts between the vineyard to entice raptor hunting and gas guns making massive noise to scare baboons away</td>
<td>Vineyard, a few houses and a work shed</td>
<td>Organic pesticides, fertilizers and seeds are bought from external sources and include earth from Biogro. Many seed varieties are not available organically in the local market and thus farms import these</td>
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