

**Growing sustainable food systems:
A study of local food distribution initiatives in Stellenbosch**

by
Annie Petronella Landman

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at the University of Stellenbosch

The crest of the University of Stellenbosch is centered behind the text. It features a shield with various symbols, including a book and a torch, and is topped with a crown. The shield is divided into four quadrants with different colors and patterns.

Supervisor: Candice Kelly
School of Public Management and Planning
Sustainability Institute

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Declaration

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Abstract

This thesis investigates practical approaches to growing sustainable food systems. It first establishes the condition of the global environment within which food systems function and critically assesses previous efforts to grow sustainable food systems. After applying these findings to a set of case studies on local-food distribution in Stellenbosch, I recommend ways for the local-food distribution network to encourage the growth of a sustainable Stellenbosch food system.

The literature review provides an overview of the global environment in relation to food systems and lists certain contextual challenges that food systems must address to become sustainable. These challenges are social inequality, an urban future, degraded ecosystems, climate change, energy constraints, a growing global population and food insecurity. The literature review also describes how commercialisation has disembedded food systems from their contexts. This disembeddedness loosens the feedback loops food systems require to effectively respond to contextual challenges and consequently hinders their sustainability.

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

The case studies describe ten local-food distribution initiatives in Stellenbosch, and are informed by numerous in-depth semi-structured interviews. My conceptual framework contrasts each initiative's self-reported vision, perceived reality, and realised actions; this highlights the conceptual and physical network connections between various local-food distribution initiatives, as well as the factors preventing and promoting their sustainability. The case studies show 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 can catalyse the growth of a sustainable food system because its initiatives 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 can generate the social capital necessary to grow a sustainable food system. The realisation of a sustainable Stellenbosch food system therefore depends on those with the capacity and resources to initiate the necessary changes.

Opsomming

Hierdie tesis ondersoek praktiese benaderings waarmee volhoubare kossisteme bevorder kan word. Dit stel eerstens die toestand van die globale omgewing waarin kossisteme funksioneer vas en oorweeg krities vorige pogings wat volhoubare kossisteme probeer bevorder het. Na ek hierdie bevindings toepas op 'n stel gevallestudies van inisiatiewe wat plaaslik-geproduseerde kos in Stellenbosch versprei, kom ek met voorstelle vorendag vir dié verspreidingsnetwerk om die groei van 'n volhoubare Stellenbosch-kossisteem aan te moedig.

Die literatuurstudie omskryf 'n oorsig van die globale omgewing met betrekking tot kossisteme en lys sekere kontekstuele uitdagings wat kossisteme moet aanspreek om volhoubaar te wees. Die uitdagings is maatskaplike ongelykheid, 'n verstedelike toekoms, verswakte ekosisteme, klimaatsverandering, energiebeperkings, 'n groeiende globale bevolking en voedselonsekerheid. Die literatuurstudie bepaal ook dat kommersialisering kossisteme uit hulle omgewings ontwortel. Hierdie ontwortelling verswak die terugvoerbane wat kossisteme benodig om effektief op kontekstuele uitdagings te reageer en verhoed hulle volhoubaarheid.

Die kritiese oorsig van vorige pogings om kossisteme nuwe wortels te laat skiet gee insig tot praktiese maniere om volhoubare kossisteme te bevorder. Die oorsig wys daarop dat terwyl lokalisering en die bou van maatskaplike kapitaal nie as die slotsom van volhoubare kossisteme beskou moet word nie, albei nuttige tegnieke kan wees vir die aankweek van volhoubaarheid indien hulle met sorg aangewend word.

Die gevallestudies beskryf tien verspreidings-inisiatiewe van plaaslik-geproduseerde kos in Stellenbosch en is ingelig deur verskeie in-diepte, semi-gestruktureerde onderhoude. My konsepsuele raamwerk kontrasteer elke gevallestudie se self-verklaarde visie, veronderstelde realiteit en gerealiseerde aksies. Dit lig die begrips- en fisiese-netwerkkonneksies tussen die inisiatiewe uit en stel 'n aantal faktore bloot wat die netwerk se volhoubare groei positief en negatief beïnvloed. Die gevallestudies wys daarop dat alhoewel 'n verspreidingsnetwerk van plaaslik-geproduseerde kos in Stellenbosch bestaan,

dié netwerk swak is en omskrewe begripkonneksies kort. Om die beurt verhinder dit die formasie van fisiese konneksies en weerhou die kossisteem se vordering na volhoubaarheid.

Die verspreidingsnetwerk van plaaslik-geproduseerde kos in Stellenbosch kan die groei van 'n volhoubare kossisteem kataliseer omdat die inisiatiewe waaruit dit bestaan deur 'n gemeenskaplike fokus op lokalisering verbind word, maar dit nie as hulle einddoel beskou nie. Hierdie gedeelde fokus wys daarop dat lokalisering reeds 'n bruikbare tegniek vir die groei van 'n volhoubare kossisteem is, maar die tekort aan maatskaplike kapitaal binne die netwerk moet steeds aangespreek word.

Inklusiewe projekte wat saamgestel word om intellektuele, politiese en ekonomiese ruimtes vir besinning binne die kossisteem te bevorder en te bewaar, kan die nodige maatskaplike kapitaal kweek om 'n volhoubare kossisteem te vestig. Die verwesenliking van 'n volhoubare Stellenbosch-kossisteem hang dus van diegene af wat die kapasiteit en hulpbronne het om die nodige veranderinge in te lei.

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List of Acronyms and Abbreviations

BBBEE	Broad-Based Black Economic Empowerment
BWI	Biodiversity and Wine Initiative
CSA	Community Supported Agriculture
CSIR	Council for Scientific and Industrial Research
CFS	Community Food Security
FAO	Food and Agriculture Organisation of the United Nations
FSI	Food Security Initiative
GHG	Greenhouse Gas
HEI	High External Input Farming Practices
IAASTD	International Assessment of Agricultural Knowledge, Science and Technology for Development
IEA	International Energy Agency
IFAD	International Fund for Agricultural Development
IPCC	International Panel on Climate Change
MEA	Millennium Ecosystem Assessment
ODAC	Oil Depletion Analysis Centre
OECD	Organisation for Economic Co-operation and Development
OSP	Overarching Strategic Plan
PAR	Participatory Action Research
PEGS	Permanent Edible Garden Service
SI	Sustainability Institute
UN	United Nations
UNEP	United Nations Environment Programme

UNDP	United Nations Development Programme
UN-HABITAT	United Nations Human Settlement Programme
WCED	World Commission on Environment and Development
WFS	World Food Summit
WFP	World Food Programme
YES	Youth Encounter on Sustainability

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Chapter One: Introduction

1.1 Background

Life as we know it is only possible within the thin 13-kilometre hemispherical casing surrounding the earth's core. Spaces beyond its boundaries lack adequate quantities of water and oxygen, and receive too little or too much sunlight to sustain life. We must draw all the resources we need from this exceptional and life-supporting atmosphere, and discharge all wastes back into it for recycling. This delicate balance has existed since our species' origin, but has been disrupted in the Industrial Era (Council for Scientific and Industrial Research 2006).

In the early 1970s, a book titled *The Limits to Growth* was commissioned by the Club of Rome. A group of scientists, statesmen and businessmen from around the world reported that if the human population continued with 'business as usual', development (economic growth, as it was understood at the time) would one day be constrained by resource mismanagement and unchecked population growth (Meadows, D.H., Randers & Meadows, D.L. 2004). Its findings were not taken seriously; at the time, people still operated within the earth's capacity to deliver resources and absorb generated wastes and felt no need to change. A repetition of the study in 1992 indicated that the initial warnings proved correct, and that human resource use had surpassed the earth's capacity to regenerate. The most recent update in 2002 also indicated that nothing has changed to disprove the findings from the 1970s (Meadows et al. 2004).

According to Wackernagel, Schulz, Deumling et al. (2002), human activities surpassed the biosphere's capacity (biocapacity) to regenerate consumed and polluted resources in the 1980s. Where we were once living off the earth's interest, we are now eating into its capital. In 1961 we were using 70 per cent of the biosphere's capacity, but by 1999 this figure reached 120 per cent. Technology has enabled humans to accelerate extraction processes to the point where demand exceeds supply and the amount of waste consequently produced surpasses the earth's capacity to absorb and recycle it.

Humanity's unsustainable development has contributed to a set of multiple crises in the world that are self-reinforcing (Morin 1999; Swilling 2009). The human race can only continue if we overcome these crises. We must change the systems that extract the resources we depend on—transport, energy, water and food systems, for example—as well as the ways in which we consume, waste and return these resources to the earth, so that they work in harmony with the systems nature has developed over billions of years (Millennium Ecosystem Assessment – MEA 2005).

‘Sustainable development’ has become a popular term to refer to ways of developing within the earth's biocapacity. The Brundtland report¹ defines it as development that meets the needs of the present without sacrificing the ability of future generations to meet their needs (World Commission on Environment and Development – WCED 1987). However, natural systems' regenerative abilities have been impaired to the point that they no longer have the capacity to supply sufficient services and absorb our discharged toxins, and they continue to deteriorate today (Wackernagel et al. 2002).

According to Birkeland, “biophysical sustainability” can no longer be achieved through “bargaining, pay-offs ... trade-offs” (2008:8), “offsets” or “less bad” development orientated toward only reducing the negative impacts of standard development (2008:15). Developing within the earth's limits is no longer an adequate solution; we must first repair the damage done and then implement systems that work with nature. Moving beyond sustainable development, Birkeland advocates ‘positive development’, where development “becomes the solution instead of the problem ... [by providing] infrastructure for nature to regenerate, flourish and deliver ecosystem goods and services in perpetuity ... a lever for social transformation as well as better environmental management” (2008:4).

Food is one of our most vital extractions from the earth. The global food system consists of an elaborate network that enables the production, distribution and consumption of food. The food system produces an equivalent of 2720 calories per person per day, against an estimated minimum daily energy requirement of 2200 calories per day (Food and Agriculture Organization 2003). An intricate distribution network of motorised transport,

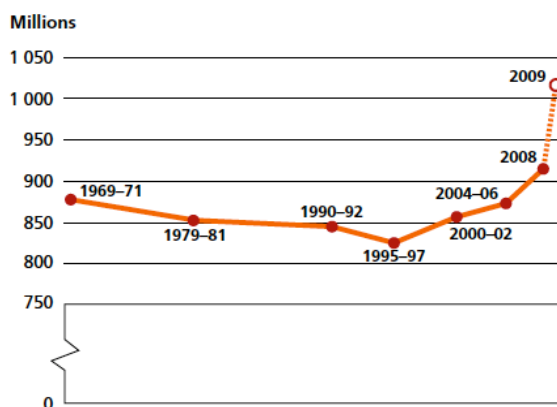
¹ *The Limits to Growth*, published by the Club of Rome, generated increased environmental awareness and provoked international debate, as well as the publication of key documents in which the term sustainable development began to take centre stage. The Brundtland report, originally named *Our Common Future*, was among the first of these documents (Mebratu 1998).

trains, shipping and, increasingly, airfreight, is responsible for the mass movement of food across the world (Paxton 1994). Food choice appears to be unlimited, as supermarkets everywhere offer foods from across the globe at seemingly cheap prices (Patel 2007). However, the food system has failed to feed the global population and is increasingly contributing to and constrained by environmental degradation.

In 1996, representatives from 185 countries attended the five-day World Food Summit (WFS) at the United Nations' Food and Agriculture Organisation (FAO) headquarters in Rome. 112 heads of state and 70 high-level officials from other countries signed the Rome Declaration on World Food Security and the WFS Plan of Action, which pledged to halve the number of hungry people in the world by 2015 (FAO 1996). At the time, the number of people suffering from hunger was estimated at more than 800 million people (FAO 2009).

The WFS's definition for 'food security' has since become common in food security literature. Food security exists when all people, at all times, have physical and economic access to sufficient, safe, and nutritious food to meet their dietary needs and food preferences for an active and healthy life (FAO 1996)². Since the 1996 WFS, the number of hungry people in the world has risen to 1,02 billion, as shown in Figure 1 (FAO 2009). This statistic, measured only 6 years before the WFS 2015 deadline of reducing the number of hungry people in the world to 400 million, has now reached its highest level ever.

Figure 1: The number of undernourished people in the world 1969–2009



Source: FAO 2009

² This definition is marked by an emphasis on consumption, demand and the issues of access by vulnerable people to food, most closely identified with the work of Amartya Sen in *Poverty and Famines* (1981) (FAO 2003).

In addition to global food insecurity, the food system contributes to and is increasingly constrained by environmental destruction. According to the MEA (2005), the food system currently uses 70 per cent of all fresh water and 25 per cent of the earth's land surface for food cultivation. Another 10–20 per cent of grassland and forest is expected to be cropland by 2050. If these resources had been used sustainably and continuously replenished, our resource use would not pose a problem today.

However, during the 1970s Green Revolution, agricultural production methods focusing on mass food production swept across the world (Lang & Heasman 2004). These high external input farming practices (HEI) (Madeley 2002) used hybrid seeds, monocropping, chemical inputs, mechanisation and fossil fuels to minimise labour and deliver large quantities of 'cheap' food. These practices were also most appropriate to large-scale farms (Rosset 2000). Significant rises in productivity and yields—grain yields, for example, doubled over a 25-year period—bolstered faith in HEI (Pretty, Guijt, Scoones & Thompson 1995). In recent years, the negative effects of HEI have become apparent; the increase in yields and absolute yields in various areas practicing HEI are dropping (Pretty et al. 1995; Rosset 2000), and HEI severely damaged the natural environment on which it depends.

According to Lang and Heasman (2004), HEI viewed vital ecosystem services as a free and limitless input, and the environment as an ideal waste absorber; this minimised immediate monetary costs. HEI have consequently been responsible for excessive pollution of natural water sources, loss of biodiversity and ecosystem functions, as well as 30 per cent of all greenhouse gas emissions (GHGs) (International Assessment of Agricultural Knowledge, Science and Technology for Development 2008). By disregarding the importance of these services, unsustainable food production has contributed to a set of self-enforcing crises, which constrain the future production of food.

My thesis aims to assess the current crisis-wrought global environment and to establish how food systems can operate sustainably within it. I begin with an overview of the global environment, framed by a food system lens and then move on to investigate the realities of growing sustainable community food systems.

1.2 Motivation

My interest in the research topic is motivated by an increasing personal awareness that our global system is in crisis. I understand that the challenges facing our generation are complex and interrelated, and that addressing them requires nuanced approaches.

Growing up on a citrus farm in South Africa's Limpopo Province meant that my first life experiences were embedded in a food system context, and I developed this general interest in food systems throughout my life. My 2007 final year dissertation for my undergraduate BA (Hons) degree in Visual Communication Design examined how South African identities are linked to food cultures. It was titled *Swallow: A culinary consideration of self-materialisation in contemporary South Africa*.

At the end of 2008, I realised that the food system of my childhood was only one of many models. Working on an organic farm called Buddha Garden in the Indian city of Auroville, I saw that the monoculture design of my childhood farm, along with its use of chemicals to produce sufficient quantities of standardized produce for an export market, represented a first-hand experience of the global food system's destructive practices. This realisation sparked my desire to learn more about alternative food system models.

This interest continued throughout 2009, while I pursued a BPhil degree in Sustainable Development Management and Planning with modules in the Sustainable Agriculture stream. Several experiences that year proved to me that alternatives to the destructive global food system not only existed, but could be effectively applied: workshops on sustainable food systems in Switzerland³ and New York⁴, and discussions with Jess Schulschenk, a fellow student who produced a pioneering food system study of Stellenbosch in 2009. This motivated me to further analyse how the food system I grew up in could be sustainably reoriented.

³ In Switzerland, I attended a two-week sustainability workshop called the Youth Encounter on Sustainability (YES). Its facilitators introduced practical ways of adjusting current human development to become more sustainable. Particular attention was given to food system changes.

⁴ In New York, I attended the 'It Takes a Region' conference organised by the Northeast Sustainable Agriculture Working Group. Sustainable food system advocates, policymakers, planners, researchers, educators, farmer groups, food businesses, farm support organizations, consumer groups and students met in Albany to discuss the future of the food economy of America's north-eastern states. Workshops were themed around extending the local food economy to a regional scale, as local boundaries were unable to supply local communities (i.e. New York City) with food.

I chose the Stellenbosch food system as a case study because I have lived in the town for several years and became familiar with the region's food challenges during my BPhil year⁵. After submitting my research proposal, I was accepted to participate in Stellenbosch University's Food Security Initiative (FSI), one of 21 projects forming the University's Overarching Strategic Plan (OSP). The OSP is committed to realising five key themes: promoting human security, human dignity, democracy and environmental sustainability, and combating poverty (Sustainability Institute 2010b). The Sustainability Institute (SI), where I am registered for my MPhil degree, was awarded FSI funding to research food security in the greater Stellenbosch area. I benefited directly from this funding, as it was partially allocated to bursaries for students researching food security.

It is clear from Schulschenk's FSI study (2009) that urgent structural changes to the current Stellenbosch are needed to ensure its future sustainability, and my research establishes practical ways to promote a sustainable and food secure future for Stellenbosch.

1.3 Research objectives and questions

My research objective is to establish how to grow sustainable food systems. I will do this by first investigating how food systems can operate sustainably within the global environment; secondly, by applying the outcomes of this investigation to local-food distribution initiatives in Stellenbosch; and finally, by making practical recommendations of how these initiatives can nurture a sustainable Stellenbosch food system. These objectives can be translated into two research questions:

- A. How can food systems operate sustainably within the current global environment?
- B. How can local-food distribution initiatives in Stellenbosch grow a sustainable food system?

A 2009 module in Complexity and Systems Theory greatly influenced the way in which I refined my initial ideas to formulate this research problem. I present an overview of relevant complexity concepts in 1.6; for the time being, it is enough to state that to investigate any system, it is necessary to consider its operational environment. As

⁵ After a BPhil module on Biodiversity, I worked on a research project with its presenter, Dr. Tarak Kate. We spent two months recording sustainable agricultural production initiatives in and around Stellenbosch, further exposing me to the challenges faced by sustainable food initiatives in the area.

Masanobu Fukuoka states in *The one-straw revolution*, “An object seen in isolation from the whole is not the real thing” (2009:26).

1.4 Clarification of concepts

I use the following key concepts throughout this thesis.

A commercialised food system is a food system structured for the principal purpose of making profit.

Disembeddedness refers to the spatial and social disconnection of a food system from its environment. I provide a theoretical foundation for this definition in 3.3, where I also discuss the characteristics of a disembedded food system.

Food distribution refers to the movement of food between all the other components of a food system for example production, consumption and waste.

Food security exists when all people at all times have access to sufficient, safe, nutritious food to maintain a healthy and active life (WFS 1996).

A food system is the assembly of all components and activities that produce, distribute, consume and waste food. The boundaries of a food system can move from including only the Stellenbosch food system, to the South African food system and eventually to the global food system. A food system can also consist of smaller food systems for example how the global food system comprises of various smaller systems.

Local-food refers to food that is produced within an immediate geographic area. I use ‘local-food’ instead of ‘local food’ because the latter could also refer to imported food that is simply distributed, processed or consumed in a local region. Different communities will define a local region’s boundaries differently. For the purpose of this study, local-food constitutes food that is procured and distributed within the borders of the Stellenbosch Municipal Area (see Figure 3 in Chapter 5), or closely neighbouring its borders.

A local-food distribution initiative refers to any enterprise that purposefully chooses to distribute local-food within a local region.

A local-food distribution network refers to the organisation of distribution initiatives around the concept of local-food.

A sustainable food system ensures food security for its population within the capacity of its social and natural environments.

1.5 Significance of the study

In a vulnerable global environment of food insecurity and environmental degradation, this study is a valuable contribution to a larger body of scholarship that is working toward the creation of alternative conceptual frameworks using a new and more useful sustainability language. It contributes findings with specific reference to the necessary steps for initiating, promoting and advancing sustainable food systems. By critiquing oversimplified approaches to growing sustainable food systems (3.4), my goal is to inform a more holistic approach to practically growing sustainable food systems (3.5).

The practical application of this study will better connect local-food distribution initiatives in Stellenbosch, forming a network that can sustainably direct the flow of food in the larger food system and contributing to food security. It builds on Schulschenk's 2009 research of the food system. She identified the following area of further study:

There are opportunities for further investigation into current local food economy initiatives (including local markets or farmers' cooperatives) operating in the Stellenbosch region as well as surrounding communities. In-depth research of the case studies highlighted to document business models and key findings would also contribute to a better understanding of the growing local food movement in the Stellenbosch region.

(Schulschenk 2009:131)

I am optimistic that my recommendations will support future sustainable food policies in Stellenbosch. As discussed in 5.3, Stellenbosch Municipality recognises food insecurity as a regional challenge, but does not have a strategy to address it. Together with Schulschenk's research findings, this study could inform a municipal food security strategy for Stellenbosch.

Although my research findings are bound to the Stellenbosch context, the research approach and process I adopted during my research can be useful to future scholarship investigating similar challenges in other regions.

1.6 Overview of research strategies and methodology

Complexity theory, as explained to me in Professor Paul Cilliers' 2009 Complexity and Systems Theory module, greatly influenced my conceptualisation of this study. Because I consider the food system to be complex, I cannot help but investigate it from a complexity theory perspective. Before presenting an overview of my research design and methodology, I must clarify some key complexity concepts that underscore my research.

Cilliers (1998; 2009) presents a list of characteristics of complex systems, but emphasises that any list is problematic, as it generalises and thus reduces the complex nature of a system. He therefore cautions that his list is incomplete and does not contain all characteristics of a complex system, but is useful if we are aware of its limitations and use it responsibly. My discussion of the elements he describes will be mostly limited to those that I explicitly apply to my study.

According to Cilliers' list (1998; 2009), a system is complex when a) it consists of a large number of often-simple components that b) interact dynamically, exchanging energy or information. c) This interaction is quite rich with d) multiple feedback loops that could also be e) non-linear. f) Components do not have to be directly linked to have an impact on each other, as intermediate components can mediate energy and information, which obviously would also have an effect on how the energy and information changes between components.

Consider the example of a local-food market, consisting of a local organic farmer, his strawberries, and a local-food consumer. Other components in this network might include the local climate, the organic farm, the produce, money, means of transport, the media and so on. For now, the components I use to describe the network also constitute its boundaries, but these boundaries can shift. For our purposes, imagine that the local-food consumer has read in the local newspaper that the market is offering a special price on strawberries that Saturday. She decides to make a trip to the market, where she meets the organic farmer who produced the strawberries; he tells her that the special offer will only

last for one weekend, and so she buys a greater quantity of strawberries. On returning home, she processes the strawberries she did not already consume into jam. She visits the market again the following Saturday and takes a jar of jam as a gift for the farmer who sold her the strawberries, telling him that she used less sugar than usual because of the strawberries' sweet taste.

In this scenario, media, consumer, farmer, strawberries and money constitute some of the food system's simple components that interact as detailed in a)–f) above. It also demonstrates that g) the food system is open to interact with other systems, forming feedback loops that shape the food system (Cilliers 1998; 2009). At this point it is important to note that the sustainability of a system depends on its interacting with and receiving feedback from other systems in order to self-regulate and adapt to its environment. The consumer, hearing that the special offer on strawberries will only last for one weekend, changes her behaviour to adapt to an unexpected change in her environment by buying more strawberries and turning them into jam. As Macy and Young-Brown (1998) explain, a system can only change its behaviour to adapt to its environment (which is also a system) if it receives feedback from that environment; a system can also only receive feedback if it is open to it. Because a system is connected to its environment, it can detect environmental changes and adjust itself accordingly. The consumer gave the farmer feedback on the taste of the strawberries, which, depending on his reaction, may or may not influence his compost management, because the sweetness of fruit is directly linked to soil health. For the farmer to sustain his farm, he must be open to his market's feedback and adapt his actions accordingly. The 'sustain-ability' of a system depends on its 'adapt-ability'.

h) A system also operates under conditions far from equilibrium. Complete stability, like perfect symmetry and separation from its environment, is instant death for a complex system. Imagine a market with no consumers. A system can only change, grow and evolve with a constant flow of information or energy (Cilliers 1998; 2009). A system is a process, defined by what it is doing rather than by its components (Cilliers 1998; 2009). There would no system to speak of without interaction between the media, consumer, farmer and strawberries.

i) The history or memory of a system also influences its behaviour (Cilliers 1998; 2009). This history is not constant, and constitutes a collection of pieces or events distributed over system patterns that are open to multiple interpretations. It is impossible to interpret the present without including the past and future; history is always present and influences the way systems behave at any given moment (Cilliers 1998). Perhaps the farmer remembers the consumer's wonderful strawberry jam during the peak of the following year's strawberry season. Having a surplus of strawberries, he asks her to process it into jam for sale at the market and offers her a percentage of any profit. His memory of her strawberry jam changed the system by introducing a new product into the market.

j) The behaviour of the food system as a whole is an emergent property. Because single components cannot hold the complexity of a system, they can never fully represent or control it. A complete picture is only created when components interact with each other (Cilliers 1998). The strawberry jam emerged as a new market product or as a property of various components interacting in complex ways.

I investigated the research problem with these complexity notions underscoring my study, applying a qualitative methodology to answer my research questions and a combination of research designs and methods to gather the required data. For Research Question A (How can food systems operate sustainably within the current global environment?), I used a non-empirical literature review. For Research Question B (How can sustainable food distribution initiatives in Stellenbosch grow a sustainable food system?), the literature review's outcomes provided the basis for designing a set of ten empirical case studies. Chapters 2 and 4 justify these decisions and provide detailed descriptions of my research designs and methods; a summarised version follows.

To answer Research Question A, I undertook a comprehensive literature review that informed the various challenges converging to grip the global environment in a polycrisis. My familiarity with the literature and the conceptual framework used by Swilling and Annecke (forthcoming) to explain the polycrisis allowed me to evaluate its implications specifically for the food system. In 3.2.10, I present the first part of the answer to question one as a list of polycrisis challenges the food system must address. I then use the literature review to expand Question A's answer and assemble a theoretical foundation for answering Question B.

First, I examine why the food system has failed to adapt to its environment and overcome challenges related to the polycrisis; following this, I introduce ‘disembeddedness’ as a key cause of the food system’s inherent weaknesses in 3.3. Disembeddedness loosens feedback loops in the food system, preventing it from receiving feedback from other systems that would inform necessary adjustments to changes in its environment. A critical overview of oversimplified attempts to re-embed the food system through localisation then demonstrates that localisation should not be seen as a final goal in growing sustainable food systems. If used carefully, however, it can be one useful mechanism for growing sustainable food systems (3.4). This critique informs a final part of the literature review focusing on practical ways to grow sustainable food systems (3.5). I give particular attention to the concept of social capital; like localisation, it is a useful tool for nurturing sustainable food systems when applied carefully. Chapter 2 presents a more detailed discussion of the research design and methods that inform the answer to my first research question.

To answer Research Question B, I required a meticulous case study design. The outcomes of the literature review informed three phases of a set of ten case studies in Stellenbosch: sampling, data gathering and analysis. I used a non-probability judgement sampling method to select key case studies and snowball sampling to locate hard-to-find cases. For each case study, I identified key informants to conduct semi-structured interviews with. An interview guide (5.4), with questions based on a conceptual framework that could answer the second research question, framed the interviews. The questions gained information about the vision, perceived reality and realised actions of each initiative.

In addition to the handwritten notes and voice recordings I took during the interviews, I subsequently used follow-up e-mails to interviewees and other key informants to write up an account for each case study. Based on the conceptual framework I then analysed the write-ups. I juxtaposed the vision, perceived reality and realised actions of each initiative to identify any network connections between initiatives (5.5) and the overlapping blockages and strengths influencing the sustainability of the local-food distribution network (5.6). My findings informed an overview of local-food distribution in Stellenbosch, which in turn determined the recommendations and answer to Research

Question B (6.3). A detailed discussion of the research design and methods used for case studies is presented in Chapter 4.

1.7 Thesis outline

Chapter 1 provides an introduction to my research: the study's background and motivation, a summary of research objectives and questions, clarification of key concepts, the significance of the research, an overview of the research designs and methodology, and this outline.

Chapter 2 introduces and rationalises my overall research process, focus and questions, as well as the research design and methodology used to answer Research Question A. Because the literature review was used outside of its usual application to answer Question A, its applicability as research design and the process and methods used for it, had to be justified. The answer to Question Research A, contained in the literature review in Chapter 3, informs the research design applied to answer Question B. For greater clarity the design and methodology used to answer Research Question B are presented in Chapter 4, after the literature review.

The literature review in Chapter 3 gives an overview of the global polycrisis, introduces the concept of disembeddedness and critically considers oversimplified approaches to re-embedding the food system, concluding with practical ways to grow sustainable food systems.

Informed by Chapter 3's outcomes, Chapter 4 outlines the research design and methodology of ten local-food distribution initiatives in Stellenbosch. Chapter 4 justifies the use of a set of case studies as a research design to investigate Question B and gives an overview of the process and methods used. It focuses on the conceptual framework for the case study design, and the applied sampling and data collection methods, as well as the analysis of the gathered data.

Chapter 5 presents ten local-food distribution initiatives in Stellenbosch and gives an account of each initiative's vision, perceived reality and realised actions. It also discusses how these initiatives connect conceptually and physically as a local-food distribution network. Together with an overview of the blockages and strengths influencing the

network's sustainability trajectory, the discussions on network connections inform an overview of local-food distribution in Stellenbosch.

The final chapter summarises and discusses salient points according to the answers given to the first and second research questions. I discuss how the research results relate to the literature and theory outlined in Chapter 2 with particular reference to localisation, social capital and practical projects that could be implemented to grow sustainable food systems. The answer to Research Question B is presented in 6.3. I also outline opportunities for future scholarship that would improve and expand on my research endeavour.

Chapter Two: Research Methodology, and Design and Methods I

Above all...one should not wish to divest existence of its rich ambiguity.
(Nietzsche in Flyvbjerg 2006:237)

Nature as grasped by scientific knowledge is a nature which has been
destroyed; it is a ghost possessing a skeleton, but no soul.
(Fukuoka 2009:125)

2.1 Introduction

This chapter introduces and justifies my overall research process, the research focus and questions, as well as the literature review design and methods informing the answer to Research Question A. The outcomes of the literature review inform the design and methods I use to answer Research Question B; for greater clarity, I outline these separately in Chapter 4.

2.2 Overall research process

Blalock, A. and Blalock, H. describe the research process as “a set of procedures and guidelines designed to increase the probability that the information gathered in investigating questions will yield relevant, reliable, unbiased, and valid answers” (1982:8). This goal is never fully attainable, but a dedicated approach comes closer to it than no or an ill-defined approach (1982). Presently and in Chapter 4 I intend to demonstrate that although parts of my research process are not replicable, I approached the research problem with a rigour that validates my findings.

In 1.6 I explained that a system’s sustainability relies on its ability to adapt to changes in its environment. Schratz and Walker (1995) argue that this adaptability depends on how well a system works with the knowledge at hand, which comes in the form of feedback from other systems, including its environment. Adapting to changes in an environment inherently implies changing. Robson asserts that a ‘real world’ situation “only permits or encourages enquiry if it ‘helps’ in some way, usually to assist in deciding on some kind of change” (1993:430). Research can highlight environmental changes and investigate suitable ways of adapting to them. My research focused on increasing food systems’ adaptability by highlighting changes in the global environment and investigating practical

ways to adapt to them. The particularities of my investigation were refined to local-food distribution initiatives in Stellenbosch in the Western Cape, South Africa.

Robson (1993) also acknowledges that issues of ethics, values and objectivity are raised when research moves from understanding and explaining to initiating change. However, because change is currently informed by other problematic factors—political dogma, personal whim, managerial fiat and majority vote, among other things—he maintains that research can play a valuable supporting role in decisions about change. He does not see research as having any final say, and stresses that research does not always imply change; it could also indicate that no change is required (Robson 1993).

The human food system infiltrates many aspects of our social reality. The ‘real world’ complexities of how to grow (changes in) sustainable food systems within this reality called for a qualitative, rather than quantitative approach. I could not risk stripping the research of its complexities, which were key to exhausting alternatives to achieve comprehensive research outcomes. Marshall (in Marshall & Rossman 1999) argues that qualitative research is most appropriate for investigating systems, complexities, processes and linkages, all in a real-life context.

I also would like to specify that I conducted this research on the Stellenbosch food system as one of its members. Robson explains that “someone attempting to carry out a form of enquiry into the situation in which they themselves are working or living will find that the change aspects become virtually impossible to separate out from the enquiry itself” (1993:7). I was aware that my interaction with other participants in the system might spark changes, and even purposefully introduced ideas to observe their potential for initiating change.

Robson (1993) also notes that some might highly doubt the likelihood of an ‘insider’ carrying out any “worthwhile, credible or objective enquiry” (1993:7) into a situation, while others would argue that ‘outsider’ research is ineffective in bringing about development and change. Giddens leans toward the latter group and says, “the condition of generating descriptions of social activity is being able to participate in it. It involves ‘mutual knowledge’, shared by observers and participants whose action constitutes and reconstitutes the social world” (in Flyvbjerg 2006:237). I committed to this research effort

fully conscious of these opposing poles, determined to conduct my research meticulously and with nuance.

Rossman and Rallis (1998) provide advice for conducting research from the inside. They maintain that the qualitative researcher, aware of her personal biography and beliefs, continuously and systematically reflects on who she is during her inquiry. Consequently, it is important that I relate some relevant aspects of my own biography and beliefs as a means of establishing what personal elements I bring to the research process. I grew up on a citrus farm in Limpopo Province that was managed chemically and produced fruit mainly for export markets. The financial strain and ecological degradation that I observed on this farm motivated my search for alternative food systems. I later completed a BA (Hons) in Visual Communication Design, which led me to appreciate creative and critical approaches to social sciences. My ideas about life-sustaining systems were also shaped by my BPhil degree in Sustainable Development Management and Planning, which I completed in 2009. I strongly advocate sustainability, which I understand as the equal redistribution of resources within the earth's biocapacity. I am convinced that achieving sustainability entails extensive, global systemic changes.

2.3 Research focus and research questions

Manstead and Semin (in Robson 1993) use the analogy of crossing a river to illustrate the difference between the research focus, questions, strategy or design, and methods. If finding the best way to cross the river is the research focus, then the research questions would ask, for example, how many people want to cross and how frequently. The research design would be walking, swimming or flying, and the methods would be building a bridge, taking swimming lessons or obtaining an aircraft.

Mouton stresses the necessity of thoroughly conceptualising a study before focusing on the methodology or the more technical aspects of the methods. The conceptualisation of a study includes clarification of the research focus and the research questions (Mouton 2010).

This study's conceptualisation began during my BPhil in Sustainable Development studies. The study was drafted during the writing of my research proposal at the end of 2009 and continued to develop throughout my research process in 2010. After engaging with

sustainable food systems theories at length in the Sustainable Agriculture stream of my BPhil degree and experiencing various approaches to growing sustainable food systems during visits to India, the United States and Switzerland, I refined my research focus to the practical changes required for food systems to become more sustainable.

My research questions emerged from a similarly continuous process which closely matched Campbell et al.'s (in Robson 1993:25) approach: "the selection of innovative research questions is not a single act or decision, [but] a process, an attitude, a way of thinking". I revised and adjusted my research questions a number of times as I became more familiar with the issues at hand, finally formulating them as:

- A. How can food systems operate sustainably within the current global environment?
- B. How can local-food distribution initiatives in Stellenbosch grow a sustainable food system?

Complexity theory (1.6) taught me that to understand any system, it is necessary to consider its environment. In Question A I first investigated the global environment, how food systems operate within it and how they could become more sustainable. The outcomes of this investigation then informed Question B. In order to investigate this second research problem, I required a closely related case study. Schulschenk's 2009 thesis and my physical location made Stellenbosch a suitable region for study. I motivate my selection of individual local-food distribution initiatives in 4.2.2(c).

According to Robson (1993), research design links a study's research questions, collected data and conclusions; for this reason, he stresses the importance of choosing the most applicable design for threading different parts of the research process together. As will be outlined in 2.4, I chose a non-empirical literature review as the design for answering Question A and used the outcome of this literature review to design a practical and empirical case study in response to Question B (outlined in Chapter 4).

2.4 Research design and methods for Research Question A

No one who aspires to change the way we think about and understand the world can do so under circumstances of their own choosing. Everyone has to take advantage of the raw material of the intellect at hand.

(Harvey 2001:vii)

2.4.1 The literature review as research design

According to Mouton, a standard literature review “is essentially an exercise in inductive reasoning, where you work from a ‘sample’ of texts that you read in order to come to a proper understanding of a specific domain of scholarship” (Mouton 2001:179-180). Marshall and Rossman (1999) propose similar broad functions for a typical literature review:

- To establish the underlying research paradigm of the research questions and refine the questions within their larger empirical traditions.
- To show an understanding of the research and the intellectual traditions supporting it.

Extensive engagement with the literature enabled me to situate my research within a theoretical framework of sustainable development (see 1.1) and to refine the research questions accordingly, thereby performing the aforementioned functions of a literature review. In keeping with the rest of my research process, the literature review took on a more creative function, and I applied secondary data (literature) to answer Research Question A (How can food systems operate sustainably in the current global environment?). The literature review also provided the theoretical groundwork necessary for answering Research Question B (How can local food distribution initiatives in Stellenbosch grow a sustainable food system?).

While the literature review enabled me to acquire a thorough understanding of the issues, debates, theories and definitions in sustainable food systems (Mouton 2001), it had an important limitation. According to Mouton, a literature review can summarise the literature in an organised manner, but cannot prove the insights it generates. He argues that only empirical studies can test these insights (2001), hence the necessity of my empirical study of local-food distribution initiatives in Stellenbosch.

2.4.2 Process and methods

Mouton (2001) asserts that the literature review can be structured according to themes; I divided my search for literature into two phases. Question A called for an analysis of available literature on the state of the global environment. This was framed by the global ‘polycrisis’, “a multiple set of nested crises that tend to reinforce one another” (Swilling 2009). My analysis of polycrisis literature helped me determine what specific challenges

food systems must overcome to achieve sustainability; I present these in 3.2.10. In the second phase, an investigation of food systems' disembeddedness (3.3) explained their inability to overcome these challenges. I also critically assessed the characteristics of oversimplified attempts to re-embed food systems (3.4) and used these critical considerations to inform practical ways of growing sustainable food systems (3.5). The literature I found in this second phase assembled the theoretical groundwork that informed my research design for Question B.

a) The polycrisis literature search

During the Sustainable Development module in my BPhil year in February 2009, Professor Mark Swilling introduced the polycrisis concept to frame the state of the global environment. He supported his claims with findings from internationally recognised research reports: *Human Development Report 1998: Overview*⁶ (United Nations Development Programme – UNDP 1998), *State of the World's Cities 2006/7* (United Nations Human Settlement Programme – UN-Habitat 2006), *The Challenge of Slums: Global Report on Human Settlements* (UN-Habitat 2003), *Ecosystems and Human Well-being: Synthesis*⁷ (MEA 2005), *Climate Change 2007: Synthesis Report, Summary for Policymakers*⁸ (IPCC 2007), documents on oil peak from the Oil Depletion Analysis Centre (ODAC), and the *International Assessment of Agricultural Knowledge, Science and Technology for Development (IAASTD): Global report* (IAASTD 2008). Together with his wife Eve Annecke, Professor Swilling has started work on a book that employs the same conceptual framework, *Just Transitions: Explorations of Sustainability in an Unfair World* (Swilling & Annecke forthcoming).

As I was already acquainted with the basic findings of these documents, I decided to reassess them through a narrower food system lens and screened the six documents for food system-related words (such as food, agriculture, farming, hunger, diets and nutrition). This process enabled me to create a picture of the current global environment in relation to the food system and its challenges. To provide a comprehensive account of the global context's influence on the food system, I included literature on global population growth,

⁶ This is an overview of the Human Development Report and the document I consulted.

⁷ For this study I consulted this synthesis report of the 2005 MEA.

⁸ This is a summary of the fourth report from the IPCC and the document I used in for my research.

the food crisis that started in 2006 and the economic recession that continues to persist in 2010.

b) The sustainable food system literature search

The second part of my literature search was informed by the first phase and provided a theoretical foundation for answering Question B (How can local food distribution initiatives in Stellenbosch grow a sustainable food system?). Schulschenk's 2009 thesis already covered an extensive body of literature on sustainable food systems and I did not want to simply duplicate her work. My objective of producing a list of practical suggestions for growing sustainable food systems also demanded a practical orientation.

When discussing these objectives and concerns with Schulschenk, she mentioned how she had been unable to expand on the concept of 'embeddedness', due to time constraints. Using her comment as a starting point, I began my literature search on the university library's e-journal page with key words related to food systems' embeddedness: 'food systems/economies', 'localisation', 'regionalisation', 'embeddedness' and 'disembeddedness'. This initial search yielded unimpressive results, which nevertheless convinced me that further research could deliver the theoretical groundwork necessary for compiling concrete ways to grow sustainable food systems. I continued my search on the library's e-journal page, in its online catalogue and on the bookshelf in the SI's Sustainable Agriculture office. I made relevant notes as I read and noted additional literature from works' bibliographies, including that of Schulschenk's thesis. After some time I was referred back to literature I had already covered, at which point I began to thread my notes together.

The most recent literature on sustainable food systems incorporates various critiques on the promotion of local-food systems as the ultimate goal of sustainable food systems. The literature emphasises it must instead be recognised as only one tool among many, and so I dedicated a large part of my literature review to an outline of critiques of localisation. I also traced the concept of social capital, as the literature often refers to social economics and stresses the importance of building social capital.

I then turned my attention to approaches to growing sustainable food systems. Various international food communities have compiled manuals promoting sustainable food

systems, but few adopt a critical stance in their approach. Most view the creation of local-food systems as the final goal and hardly any are mentioned in academic literature. Gail Feenstra, however, has written extensively about sustainable food systems, discussing how to grow them and the reasons attempts often fail; her articles have also been published in academic journals. The literature review's final section provides an overview of her writing, supplemented by additional information on social economic concepts.

I used the outcomes of my literature review—the global challenges faced by the food system, the concept of embeddedness and a discussion of tangible ways to grow sustainable food systems—to design a set of case studies of local-food distribution initiatives in Stellenbosch. I outline this process in Chapter 4.

2.5 Conclusion

This chapter introduced and provided a rationale for my overall research process, focus, questions, and the design and methods I applied to answer Research Question A (how can food systems operate sustainably in the current global environment?).

There was enough literature available to answer Question A using a non-empirical literature review. Already familiar with polycrisis literature, I reviewed it with specific reference to the food system. I summarise the first part of Question A's answer in 3.2.10. 3.6 reviews the second phase of my literature review, which expanded on this answer and assembled the theoretical groundwork to answer Question B (How can local food distribution initiatives in Stellenbosch grow a sustainable food system?). This second phase proved more challenging, as I found very little academic writing that could inform practical ways of growing sustainable food systems. I therefore adopted a creative approach, starting with an investigation into food systems' failure to adapt to their environments and a critique of overly simplistic adjustments to food systems. My final list of practical ways to grow sustainable food systems is largely based on the work of Feenstra (1997; 2000; 2002), and the literature leading up to this list demonstrated that her suggestions were sound. The lack of literature with which to compare her work was, however, a constraint.

Chapter Three: Literature Review

The state of the system at any given time is thus the result of conditions in the environment, the history of the system and the effects that the system must have on its environment to perform its functions.

(Cilliers 1998:125)

3.1 Introduction

From an anthropocentric perspective, food systems function to feed people. Effective food systems would produce and equally distribute sufficient quantities of nutritious food among the global population. If the continued operation of these systems relies on basic ecosystem services such as biological diversity, freshwater, climate regulation, pollination and pest control, we can expect them to operate within nature's capacity to provide these services. Such food systems would operate sustainably. This, however, is not the reality we face. Even though there is currently sufficient quantities of food in the world, the commercialisation⁹ of global food system mechanisms—production, processing, distribution, retail, consumption and waste—has failed to secure universal access to nutritious diets, and is increasingly contributing to and constrained by environmental and social degradation.

In this literature review, I aim to answer Research Question A (How can food systems operate sustainably within the current global environment?). In section 3.2, I assess the general state of commercialised food systems by examining the conditions of the global environment within which they operate. I analyse these global conditions, henceforth referred to as 'the polycrisis', in relation to key internationally recognised documents and two important events occurring from 2006 onward. The outcome of this investigation is presented as a list of challenges that food systems must overcome to be sustainable, and is presented in 3.2.10.

Informed by section 3.2.10, the second part of the literature review also answers Research Question A, while assembling the theoretical groundwork for answering Research Question B (How can local-food distribution initiatives in Stellenbosch grow a sustainable

⁹ 'Commercialised food systems' refers to those that operate predominantly to make profit.

food system?). In 3.3, I investigate why food systems have not prevailed over the polycrisis challenges presented in 3.2.10. I discuss ‘disembeddedness’ as a major inherent weakness of commercialised food systems, but also explain how it can become a space of resistance to position alternatives. In 3.4, I explore how disembeddedness has been addressed in the past, critically evaluating oversimplified solutions and highlighting key considerations. In 3.5, I offer practical suggestions for growing a sustainable food system, rooted in these critical views. This will provide the theoretical tools I use to design and analyse case studies in Chapter 4.

3.2 The global polycrisis

A polycrisis is “a multiple set of nested crises that tend to reinforce one another” (Swilling 2009), and is applied here to describe existing global conditions. Swilling borrowed the term and its meaning from the French philosopher Edgar Morin (1999). I will briefly discuss the various crises insofar as they affect the food system, based on a conceptual framework used by Swilling and Annecke (forthcoming) in *Just Transitions: Explorations of Sustainability in an Unfair World*, and by applying several key documents: *Human Development Report 1998: Overview* (UNDP 1998), *State of the World's Cities 2006/7* (UN-Habitat 2006), *The Challenge of Slums: Global Report on Human Settlements* (UN-Habitat 2003), *Ecosystems and Human Well-being: Synthesis* (MEA 2005), *Climate Change 2007: Synthesis Report, Summary for Policymakers* (IPCC 2007), reports on oil peak from ODAC, and the *IAASTD: Global report* (IAASTD 2008).

These documents describe various global conditions that are converging to aggravate the polycrisis, including inequality and food insecurity, an urban future, an increase of slums in cities, degraded ecosystems, climate change, oil peak and unsustainable agricultural methods. I also include discussions on how the polycrisis is worsened by the effects of global population growth, the international food price hike of 2006–2008 and the global economic crisis. Population growth is often misunderstood in terms of its implications for the food system. I argue that although it is not a major contributing factor to the food system’s current malfunctioning, it remains a critical dynamic for the future that must be closely observed. Two additional events with direct implications for the food system also require attention: the food price hike that peaked in 2006–2008, and the continuing global economic crisis that emerged in late 2008.

Throughout the polycrisis discussion, I will refer to ways in which food systems have been shaped in the past and the reciprocal effects it had on the environment. In a final section on the polycrisis, I will draw up a list of challenges that food systems must overcome to be sustainable.

3.2.1 Human Development Report (1998)

While more than a decade old, the findings of the UNDP's *Human Development Report* are arguably more relevant today than they were in 1998. Questioning whether the six-fold increase in real consumption expenditure from the 1950s–1998 contributed positively to human development, it reports that consumption has been characterised by extreme inequality and environmental degradation that further undermine livelihoods (UNDP 1998).

The report states that the wealthiest 20 per cent of the global population (situated in developed countries, henceforth referred to as 'minority countries')¹⁰ accounted for 86 per cent of all consumption, while the poorest 20 per cent (situated in developing countries, henceforth referred to as 'majority countries')¹¹ accounted for a mere 1,3 per cent (UNDP 1998). With respect to food, it reports that 20 per cent of the global population consumed 45 per cent of all meat and fish, while 80 per cent consumed only 5 per cent (UNDP 1998). The report demonstrates that economic growth does not automatically result in equal positive human development. Instead the report promotes development strategies that intentionally address inequality through redistribution from high-income to low-income consumers. Redistribution also implies promoting goods that empower poor producers (UNDP 1998).

The report also states that current production methods and use of consumed goods deplete and degrade renewable resources, pollute and destroy ecosystems, and increase greenhouse gas (GHG) concentrations and solid wastes (UNDP 1998). To stay within the carrying capacity of the natural environment, the report calls for a shift to cleaner production

¹⁰ Using the term 'minority' instead of 'developed' emphasises the unequal distribution of global resources that benefits the minority of the global population. The term 'developed' does not carry these implications.

¹¹ Using the term 'majority' instead of 'developing' emphasises the unequal distribution of global resources to the detriment majority of the global population. The term 'developing' does not carry these implications.

technologies and goods, as well as a movement away from “consumption for conspicuous display to meeting basic needs” (UNDP 1998:1).

Increased global consumption has thus degraded the environment and currently benefits a minority, while the majority of the global population disproportionately bears the cost. For future sustainable development shifts must take place. These shifts must also be evident in the development of sustainable food systems. Sustainable food systems must meet basic human needs by addressing social inequality, looking for answers beyond economic growth, and promoting systems that empower poorer producers and operate within the carrying capacity of the natural environment.

3.2.2 State of the World's Cities 2006/7 (2006)

State of the World's Cities 2006/7 (UN-Habitat 2006) reports that the global population exceeded the 50 per cent urbanised mark in 2007. This means that there are now more urban than rural people in the world. It further states that 80 per cent of the global urban population will be concentrated in majority countries by 2030, and the largest cities located in majority countries in Asia, Latin America and Africa (UN-Habitat 2006). These larger cities will have populations greater than 20 million people, but the majority of the population will be located in towns and cities with less than 1 million people (UN-Habitat 2006).

The implication for food security is that there are increasingly fewer people who must produce food for increasingly more people (Scotcher 2009). Various studies (Hussain 1990; Solomons & Gross 1995; Ruel, Haddad & Garrett 1999) have shown that urbanisation generally leads to less nutritious diets as a result of involuntary lifestyle changes, especially for the poor. Lifestyle changes include a greater dependence on cash income to buy food (instead of producing it), weaker informal community food safety nets, and increased numbers of women dedicating more time to work, with negative consequences for child care (Ruel et al. 1999).

Despite these challenges, an urban future consisting mostly of smaller urban systems might be more easily reconfigured to be sustainable (Swilling & Annecke forthcoming). Accordingly, sustainable food systems must be configured around the realities of an urban

future by identifying opportunities that could provide the momentum necessary to effectively initiate sustainable food systems.

3.2.3 The Challenge of Slums: Global Report on Human Settlements (2003)

The Challenge of Slums, produced by UN-Habitat, is mainly concerned with the shelter conditions of the global urban poor. It states that in 2001 31,6 per cent of the global urban population—almost 1 billion people—lived in slums. 6 per cent of the urban population in minority countries lived in slums, compared with 43 per cent in majority countries (UN-Habitat 2003).

The report calls the concentration of global poverty in slums the “urbanisation of poverty” (UN-Habitat 2003:xxvi) and projects that the number of slum dwellers in the world will double by 2030. In 2001, 78.2 per cent of the urbanised population in the poorest majority countries already lived in slums (UN-Habitat 2003).

Future sustainable development should thus not only be concentrated in cities, but also specifically in slums (UN-Habitat 2003). *The Challenge of Slums* argues that simply improving the physical environmental conditions in slums is not a solution, because poverty is responsible for the low quality of life in these areas. Attempts to address slum conditions must therefore include growth in urban informal sectors and link slum dwellers with these income-generating opportunities (UN-Habitat 2003). Sustainable food systems must be built around this reality and aim to create income-generating opportunities in slums.

3.2.4 Ecosystems and Human Well-being (2005)

Human survival depends on ecosystem services for food, freshwater, timber, fibre, fuel, and other life-essential services like climate regulation (MEA 2005). From 2001–2005, 1 360 experts from 95 countries assessed the consequences of ecosystem change on human wellbeing and established a scientific platform from which to respond to environmental degradation (MEA 2005).

The MEA found that to meet increasing human demand, 60 per cent of all ecosystem services have either been degraded or used unsustainably (MEA 2005). The doubling of the population between 1960 and 1990 necessitated a 250 per cent increase in food

production, which in turn generated a 200 per cent increase in water usage, increased land conversions to cropland and encouraged the adoption of the Green Revolution's intensive high-input production methods (MEA 2005).

Today, agricultural production accounts for 70 per cent of freshwater consumption and 38 per cent of total land use (United Nations Environment Programme – UNEP 2010). Another 10–20 per cent of grassland and forestland, concentrated in majority countries, is expected to be cropland by 2050. A minority of the global population has gained from exploiting ecosystem services, while the majority disproportionately bears the consequences of a degraded environment (MEA 2005).

For sustainable future development, including the development of sustainable food systems, past damages to ecosystems must be repaired and then conserved for the future. Their benefits must also be equally distributed among the global population.

3.2.5 The fourth IPCC report (2007)

The IPCC is an intergovernmental scientific panel established by UNEP and the World Meteorological Organization in 1988. The panel is responsible for evaluating the risk of human-enacted climate change by reviewing and assessing international scientific, technical and socio-economic information relevant to its understanding (IPCC n.d.).

The fourth IPCC report brought out in 2007 was the first climate change report to indicate that human activities are responsible for climate change. Some GHG concentrations measured in 2005 exceeded the natural range of those gasses over the previous 650 000 years, which could indicate the effect of human activities on climate change. GHGs cause climate change by retaining excess heat in the atmosphere (IPCC 2007). Majority countries have contributed the least to increased GHG emissions because of being less industrialised and thus less dependent on fossil fuels, but will suffer the most due to their low adaptive capacity (IPCC 2007).

The report identifies fossil fuel use, land-use change (the destruction of rainforests and conversion of rural to urban areas) and industrial agriculture as the main human activities contributing to GHG concentrations (IPCC 2007). It is clear that the food system, by employing industrial food production, has contributed greatly to climate change. The

report also projected growing GHG emissions despite current mitigation policies and sustainable development measures (IPCC 2007).

Food production is projected to increase in colder regions and decrease in warmer regions if average temperatures increase by 1–3°C, but to decrease overall if temperatures rise more than 3°C (IPCC 2007). Higher average temperatures will increase insect outbreaks and the risk of wildfires, while more heavy precipitation events will complicate food production by damaging crops and increasing soil erosion and water logging (IPCC 2007).

Future development of food systems must therefore decrease GHG emissions and prepare infrastructure and systems for climate change, especially in the most vulnerable majority countries.

3.2.6 Reports on oil peak

Since the Industrial Revolution, the world has become dependent on abundant supplies of cheap fossil fuel to power industrialisation, mostly obtained from conventional oil (IPCC 2007). The total global oil reserve, however, is finite and in decline due to physical limitations (Sorrel, Spiers, Bentley et al. 2009). While dependence on cheap oil continues to increase as the world further industrialises, projections supported by strong evidence endorse the notion that most oil producers (United States, Russia, Iran, Venezuela, Nigeria, Libya, Norway and Britain) have already reached ‘peak oil’ (Bentley 2001; Attarian 2002; ODAC 2002). Peak oil refers to the stage during the production of a group of oil fields that “comes close to the midpoint of depletion, when half the total has been consumed” (Campbell 2002:200).

If peak oil has been reached, and the demand for oil is expected to increase a further 45 per cent by 2030 (International Energy Agency 2008), the price of oil will rise. This has major implications for the global economy as a whole, which is dependent on oil for 40 per cent of its energy supply (Attarian 2002), but particularly for the food system (Steel 2008). As Bartlett puts it, “Modern agriculture is the use of land to convert petroleum into food” (in Attarian 2002:283). Conventional agriculture uses fossil fuels for machinery and transportation, to pump water and irrigate land, and as an input to fertiliser production (Attarian 2002).

The rest of the food system—processing, distribution, consumption and waste—also depends on a steady supply of oil (Patel 2007; Steel 2008; Holt-Gimenez & Patel 2009). A recent report from the Economic Research Service of the United States Department of Agriculture found that even though per capita energy use in the United States declined by 1,8 per cent between 1997 and 2002, per capita food-related energy use increased by 16,4 per cent (Canning, Charles, Huang et al. 2010). Total food-related energy use increased by 22,4 per cent. The increase was explained in part by population growth, but mostly by the food system's shift from human labour to more energy-intensive technologies (Canning et al. 2010). High labour costs, a lack of time for food-related household activities, and declining affluence have forced people to turn to the mass-produced industrial foods conveniently available in fast food culture (Canning et al. 2010).

Swilling argues that development initiatives should concentrate on adjusting current global infrastructures and systems to work independently of oil. The longer this transformation is postponed, the more expensive it will become (forthcoming)¹². A report by ODAC and the Post Carbon Institute recommends that local authorities “[f]ind ways to encourage local food production and processing [and] facilitate reduction of energy used in refrigeration and transportation of food” (2008:32).

The development of future food systems must thus incorporate strategies that would allow the most efficient use of energy in the system and reduce a dependency on oil as fuel.

3.2.7 IAASTD: *Global report (2008)*

Produced by 400 agricultural experts and reviewed by a panel of stakeholders comprised of 30 governments and 30 civil society representatives, this report assesses the state of global agriculture from 1950–2008, and investigates future development alternatives for the next 50 years. It aims to assess the impacts of agricultural knowledge, science and technology on the reduction of hunger and poverty, as well as sustainable development and the improvement of rural livelihoods and human health. The World Bank and the FAO commissioned the report in 2002 (IAASTD 2008).

¹² One alternative to fossil fuels is biofuels. Biofuels enjoyed special attention from President George W. Bush's administration, but are already having major implications for the food system in terms of land use and food prices (Patel 2007; IAASTD 2008; Holt-Gimenez & Patel 2009). The problem, then, is how to create human systems that are oil independent without burdening other systems.

The Green Revolution in the 1970s gave rise to chemical and industrial agriculture, with major environmental and social implications (IAASTD 2008; Lang & Heasman 2004). More than half of all synthetic nitrogen fertilisers have been applied since 1985. Together with pesticides and concentrated sources of livestock wastes, this has severely damaged water sources (aquifers, rivers, lakes and oceans) and contributed 30 per cent of all global GHGs (IAASTD 2008). Furthermore, monocropping has reduced agricultural biodiversity and ecosystem functions, resulting in decreased ecological resilience (IAASTD 2008). Due to their energy-intensive nature, and the high requirement of external inputs such as hybrid seeds and chemicals, the methods introduced during the Green Revolution proved highly inefficient (Steel 2008)¹³.

Moreover, the high costs involved with conventional agriculture tend to benefit “better resourced individuals and firms ... sometimes at the expense of the poor and landless” (IAASTD 2008:109). The IAASTD findings highlight present food systems’ inequitable distribution of costs and benefits, as well as the undue influence of agribusiness and unfair trade policies that negatively affect communities in majority countries (IAASTD 2008). Holt-Gimenez and Patel refer to it as the Industrial Agrifoods Complex¹⁴ (2009).

The IAASTD calls for a global conversion to sustainable agriculture, as smallholder agroecological farming is accessible to the poor and based on lower external input systems. The organisation goes to great lengths to take into account the agricultural links between poverty reduction and environmental change (2008:4). Responding to critics who argue that such a model is unable to feed the global population, the IAASTD refers to a study comparing conventional and organic agriculture in different parts of the world. It found that organic agriculture could feed the current and future global population without needing to increase agricultural land (Pretty, Noble, Bossio et al. in IAASTD 2008). “Despite having lower labour efficiencies than (highly mechanised) industrial farming and experiencing variable economic efficiency, latest calculations indicate a capability of producing enough food on a per capita basis to provide 2 640–4 380 kcal per person per

¹³ Richard Heinberg, speaking at the Soil Association One Planet Agriculture Conference in January 2007, is quoted as saying that conventional agriculture produces only 1 calorie of (food) energy for every 10 calories of (fuel) energy that it consumes (in Steel 2008).

¹⁴ For an extensive discussion on the Industrial Agrifoods Complex, see Holt-Gimenez and Patel (2009:23-59).

day (depending on the model used) to the current world population” (Badgely, Moghtader, Quintero et al. in IAASTD 2008:67).

A sustainable food system must therefore be configured in such a way that those who need it most will benefit from it and be able to maintain it without external inputs, and within the carrying capacity of the natural environment.

3.2.8 Population growth

Since the commitment to halve the number of hungry people in the world was made at the 1996 WFS in Rome, the global population has increased from 5,7 billion to 6,7 billion people and is likely to stabilise at approximately 9 billion people in 2050 (U.S. Census Bureau 2010). The population doubled between 1960 and 2000 (MEA 2005), with the last billion arriving over a mere 12-year period—a net increase of nearly 230 000 people per day, all of whom require shelter, food and other natural resources (UNEP 2008). In 2001, over 1 billion people were surviving on less than US\$1 a day, 70 per cent of whom lived in rural areas, mostly in majority countries, and depended on agriculture, grazing and hunting for subsistence (MEA 2005).

In a world where hunger persists, global population growth often leads to the misconception that there is a lack of food in the world. However, various studies have found that there is enough food in the world today to feed everyone¹⁵. Taking into consideration the findings of the 1998 *Human Development Report* on the unequal distribution of resources, it makes sense that “although food availability for direct human consumption grew by 19 per cent between 1960 and 1994–6, to 2720 calories per day (against an estimated minimum daily energy requirement of 2200 calories per day), availability is still very uneven” (FAO 2003). World hunger is not the result of population growth or a lack of food, but of unequal food distribution. The mere existence of enough food does not ensure universal access to it. Food distribution networks must therefore work toward the food system’s optimum function of equally feeding the global population. A

¹⁵ Many claims are made in the literature: “The food is there: world agriculture produces 17 per cent more calories per person today than it did 30 years ago, despite a 70 per cent population increase. Work in FAO shows that world agriculture can produce enough to feed humanity in the future without putting excessive pressure on prices or the environment” (FAO, International Fund for Agricultural Development – IFAD and the World Food Programme – WFP 2002:9), and “each person today has 25 per cent more food compared with 1960. However ... it varies regionally. In Africa ... food production per person is 10 per cent lower today than in 1960” (Hine & Pretty 2008:1).

sustainable food system suggests that a population has the ability to be self sufficient through its own food production, or to access and purchase food from markets (Bonti-Ankomah 2001).

With that said, the global population is growing and a steady increase of incomes in majority countries (Organisation for Economic Co-operation and Development – OECD and FAO 2009) will likely cause a shift toward more meat-based diets¹⁶ (UNEP 2009). A combined 2009 research effort by the OECD and the FAO reports that food production must increase by more than 40 per cent by 2030 and by more than 70 per cent by 2050 to accommodate population growth and the changing diets of people with increasing incomes. The MEA projects a 70–85 per cent increase in food demand and a 70 per cent increase in water demand by 2050. Production, however, will be increasingly restricted by environmental limits and degradation (2005).

To feed the future global population, sustainable food systems will have to increase production without increasing strain on the environment. However, it cannot be overstated that increased food production is futile if global food distribution networks are not first realigned to ensure equal access to food for everyone (Badgely et al. 2006).

3.2.9 The food price hike and economic crisis

Converging elements of the polycrisis triggered food price inflations in 2006, which peaked in June 2008. According to Holt-Gimenez and Patel (2009), these elements included increased cereal demand for biofuels and grain-fed beef, higher oil prices, drought conditions in major wheat-producing countries in 2005 which decreased yields, and low global grain reserves (lasting less than 54 days). As food prices began to rise, speculation in food stocks caused further food price inflation, in some cases by 100 per cent (Holt-Gimenez & Patel 2009).

¹⁶ It takes an average of 3 kilograms of cereal and 16 000 litres of virtual water to produce 1 kilogram of meat. Furthermore, livestock currently occupies 33 per cent of all cropland. If the cereals used as animal feed were put toward human consumption, an additional 3,5 billion people could be fed (UNEP 2009). Many critics also oppose the accommodation of a shift to meat-based diets, as they argue that it plays a major part in the diet-related diseases of minority countries fed on meat-based diets (Soil Association 2010).

The food price hike added an estimated 75 million people to the ranks of the hungry and triggered food riots in Mexico, Morocco, Mozambique, Mauritania, Senegal, Indonesia, Burkina Faso, Cameroon, Yemen, Egypt and Haiti. These protests were due to price increases, not a lack of food (FAO 2008; Holt-Gimenez & Patel 2009; UNEP 2009).

The global financial and economic crisis of 2008 overlapped with these food price hikes. With majority countries more integrated into world markets than ever before, the economic crisis affected the whole world simultaneously, but only minority countries had the capacity to somewhat absorb the shock (UNEP 2009). Very little or no help was extended to majority countries (UNEP 2009).

Although the economic crisis relieved some high food prices, they remained volatile and were on average 17 per cent higher in real terms than in 2006 (UNEP 2009), and are not expected to drop below pre-2007 prices in the near future (Holt-Gimenez & Patel 2009). Domestic prices have also been slower to fall (FAO 2009). The economic crisis also increased unemployment figures and decreased real incomes, forcing the most vulnerable groups (the rural landless, female-headed households and urban poor in majority countries) (FAO 2009) who were already spending 70–80 per cent of their income on food (UNEP 2009) to cut expenditures such as food diversity, education and health care, simply to survive (FAO 2009).

The food price hike and economic crisis have increased the number of hungry people in the world to 1,02 billion (FAO 2009). Although these two events intensified the food crisis, they also drew public attention to commercialised food systems' inability to absorb shocks and adjust to environmental changes. A root cause of these weaknesses is explored further in 3.3.

3.2.10 Conclusion

How, then, can food systems operate sustainably within the current global environment? It is clear that for the food system to fulfil its optimum function of feeding all people within the carrying capacity of the earth's ecosystems, now and into the future, it must adjust to interact with its environment in such a way that it overcomes the various challenges of the polycrisis. According to Holt-Gimenez and Patel (2009), challenges can also be viewed as opportunities for change. Based on the outcomes of my literature review of the global

polycrisis, food systems must address the following overlapping challenges to become sustainable:

- Inequality: Food systems must redistribute resources in order to meet the basic needs of the global population equally, and so be reconfigured to empower the poorest producers.
- An urban future: Food systems must adapt to supply an increasingly urbanised population with food, and pay particular attention to the urbanisation of poverty, ensuring access to food for people living in slums.
- A degraded natural environment: Food systems must repair the damage caused to the natural environment and conserve ecosystems for the future.
- Climate change: Food systems must reduce its GHG emissions and prepare to adapt to changing climates.
- Energy constraints: Food systems must become increasingly more energy efficient and oil independent.
- Growing food demand: Food systems must increase food production for the future within the carrying capacity of the earth's ecosystems.
- Food insecurity: Food systems must secure food sources for all, either by establishing self-sufficiency through own food production or access to markets and the ability to purchase food from them.

Food systems that constitute the global food system currently have integral weaknesses that prevent them from overcoming these challenges. These weaknesses stem from the way food systems interact with their natural, social and economic environments. The following section will give an overview of what many writers consider the root of their weak state: the disembeddedness of food systems. This discussion will also begin to establish a theoretical groundwork from which to answer Research Question B (How can local-food distribution initiatives in Stellenbosch grow a sustainable food system?).

3.3 The disembedded food system

Extravagance of desire is the fundamental cause which has led the world into its present predicament. Fast rather than slow, more rather than less – this flashy ‘development’ is linked directly to society’s impending collapse. It has only served to separate man from nature....When the farmer began to grow crops to make money, he forgot the real principles of agriculture.

(Fukuoka 2009:110-113)

O'Hara and Stagl (2001) argue that production and consumption in commercialised food systems have become spatially and culturally disconnected. They state that commercialised food systems are held together principally, if not exclusively, by economic activities (profit). Production, consumption, processing, distribution and retail have been homogenously shaped by the requirements of the food industry¹⁷ and retailers chasing profit, rather than by the environmental and social contexts in which they are embedded. Commercialised food systems are thus disembedded from their contexts (Hinrichs 2000). This can be recognised by four fundamental characteristics (O'Hara & Stagl 2001):

a) A disembedded food system overcomes time and spatial constraints.

Hendrickson and Heffernan (2002) explain that the compression of space and the acceleration of time are key components of accumulation (including that of profit) evident in today's society. Technologies have been implemented in commercialised food systems to increase the lifespan of products and enable their distribution beyond their contextual boundaries. Examples include seeds specifically produced to grow longer-lasting fruit and vegetables, while certain processing techniques improve foods' transportability (Patel 2007). Produce is also shipped across borders in the search of better prices. Whether producers are exporting to collect a higher price, or processors and end consumers are importing for a lower price, food distribution now entails a mass movement of food across the globe (Henderson & Van En 2007).

b) A disembedded food system relies on industrialisation and concentration of food production, processing, distribution and consumption.

Sundkvist et al. (2005) argue that in order to transcend time and space, food systems required agricultural technologies and extensive transport that led to the industrialisation of food systems and a dependency on oil for fertilizers, pesticides, irrigation and fuel for machinery (Patel 2007; Steel 2008; Holt-Gimenez & Patel 2009). By providing an unprecedented source of 'cheap' energy, oil enabled food systems to churn out 'cheap' food (Steel 2008).

¹⁷ The varieties of fruits and vegetables sold in supermarkets today have been chosen specifically because they withstand the value chain processes which are required for mass production, rather than for their flavour, nutritional value, adaptability to the region of production or place in local food cultures (Patel 2007).

In addition to their industrialisation, food systems' vertical integration—from seed to production, harvesting, technology- and energy-intensive processing, packaging, retailing and consumption—has led to a small number of companies controlling food systems (Holt-Gimenez & Patel 2009). Hendrickson and Heffernan (2002) argue that the food and agriculture firms that most effectively overcome space and time constraints hold the power and enjoy the benefits of disembedded systems. These clusters of food firms employ several strategies during their development to overcome space and time constraints, including horizontal, vertical and global expansion. These strategies increase the concentration of ownership and power, resulting in the unequal distribution of food systems' economic benefits and of the food itself.

Today, just four companies control world seed distribution: Monsanto, Syngenta, DuPont and Aventis (Hendrickson & Heffernan 2002; Sundkvist et al. 2005; Holt-Gimenez & Patel 2009). Similarly, a small number of retail giants dominate food distribution, with 30 supermarket chains controlling an estimated 33 per cent of all global food sales (Burch & Lawrence 2007).

c) A disembedded food system depends on symbols to communicate trust.

According to O'Hara and Stagl (2001), these symbols typically supersede information about the production or distribution of food, including quality standards and money, because they lift transactions out of particular social, cultural and interpersonal contexts of exchange. Consumers no longer need to know a food's origins, because a label they trust has graded it. Halweil (2004) states that this disconnection between consumers and their food has destroyed the human connections, transparency, traceability and responsibility of food production that were once embedded in our food consumption patterns.

d) A disembedded food system depends on expert advice for successful operation.

According to Sundkvist et al. (2005), the effective operation of homogenous production and consumption patterns in commercialised food systems rely on expert systems. External bodies of specialist advice might provide a sense of security and remove the element of risk for those seeking profit (O'Hara & Stagl 2001), but they replace and degrade local knowledge and social networks (Sundkvist et al. 2005) and increase a loss of sovereignty over food systems (Shiva 2005; Holt-Gimenez & Patel 2009).

A disembodied food system has various advantages, of which the most obvious is increased quantities of cheap food (O'Hara & Stagl 2001; Kneafsey 2010) and increased economic profit (O'Hara & Stagl 2001; Hendrickson & Heffernan 2002) for a select few (Holt-Gimenez & Patel 2009). A food system functioning beyond space and time, however, moves beyond our ability to effectively manage it. Its constructed knowledge systems, governing rules, flows and tastes are no longer embedded in its original context (Hendrickson & Heffernan 2002). Sundkvist et al. (2005) argue that the disembodiedness of food systems has loosened or cut feedback loops between producers and consumers. There is a delay in consumers' realisation that the manner in which their food is produced causes environmental harm, and producers don't directly experience the impact of their production methods on consumer health.

Giddens calls this "reflexive modernisation", which is "the idea that the consequences of our knowledge have outstripped our ability to deal with them" (in Hendrickson & Heffernan 2002:347-8). The mechanisms that have disembodied food systems—intensification, specialisation, distancing, concentration and homogenisation—also constrain the tightening of feedback loops and block reform (Sundkvist et al. 2005).

The gains of the global food system have been made possible by externalising some of the (non-monetary) environmental and social costs in food processes (O'Hara & Stagl 2001; Lang & Heasman 2004). Environmental costs include increased pollution and unsustainable resource use, as is evident in the polycrisis. Social costs include diminished social capital in the form of civic involvement, informal communication networks and context specific norms (O'Hara & Stagl 2001), as well as the loss of traditional knowledge, traditions and livelihoods, and persistent malnutrition and hunger (Kneafsey 2010).

The commercialisation of food systems sacrificed diversity, adaptability and resilience in exchange for widespread efficiency and increased profits (O'Hara & Stagl 2001). According to Hendrickson and Heffernan (2002), the disembodied state of food systems reinforces their weaknesses: it destroys the social and natural environment food systems depend on, causes food systems to struggle to differentiate, have extreme difficulties adapting to changing consumer demands, and have to work harder to gain consumer trust. However, these weaknesses can also be seen as opportunities and spaces of resistance where the development of new alternative food systems should be positioned (Hendrickson

& Heffernan 2002; Holt-Gimenez & Patel 2009). I do not reject profit as an outcome of food systems, but merely suggest that it should not be the principal purpose of food systems. In 3.4, I critically consider some of the strategies that have been applied in the past in an attempt to re-embed the food system.

3.4 Carefully re-embedding the food system

[A system's] survival and self-propagation needs to be understood from the inside – a formidable task, likely to be repeatedly undertaken and unlikely to be fulfilled in anything approaching a lastingly satisfactory manner.

(Bauman 1992:xxv)

...if people merely become caught up in reacting, moving to the left or the right, depending on conditions, the result is only mere activity. The non-moving point of origin, which lies outside the realm of relativity, is passed, unnoticed. I believe that even 'returning-to-nature' and anti-pollution activities, no matter how commendable, are not moving toward a genuine solution if they are carried out solely in reaction to the overdevelopment of the present age.

(Fukuoka 2009:21)

The sustainable food system delivers enough nutritious food to equally feed its population. This population, in turn, regulates the system with the knowledge that its continuation relies on basic ecosystem services—biological diversity, fresh water, climate regulation and pollination, for example—and manages these services to operate within nature's capacity to provide them. This ideal system emphasises and respects the links food creates between ecologies (nature) and communities (people). It is rooted in its operational context and makes the best use of available environmental and social resources. Place-based food systems feed communities, but also regulate them. Communities that are determined by the carrying capacity of interacting systems in their surrounding environment do not weigh down the environment, but support and conserve it.

As stated in 3.2 and 3.3, the achievement of this ideal rests on the food system's ability to overcome the challenges of its environment, which is currently in polycrisis; the food system's disembeddedness is a major weakness that prevents it from overcoming these challenges. In this section, I will explore the literature to see how disembeddedness has been addressed and critically evaluate previously applied strategies in order to provide thoroughly considered recommendations for growing sustainable food systems in 3.5.

Various writers have suggested a re-embedding, re-connection and re-localisation of the food system to re-internalise costs and tighten feedback loops. Plenty of literature is dedicated to the ways in which the production and consumption sides of the food system can accomplish this through various initiatives. These initiatives include Community Supported Agriculture (CSA)¹⁸, farmers' markets, public procurement initiatives¹⁹, ethical grocers and community gardens/urban agriculture, all limited to a local or regional scale (Feenstra 1997, 2002; Hinrichs 2000; O'Hara & Stagl 2001; Norberg-Hodge, Merrifield & Gorelick 2002; Lang & Heasman 2004; Patel 2007; Fonte 2008; Chiffoleau 2009; Field, Masakure & Henson 2010; Kneafsey 2010; Sundkvist et al. 2010). However, an oversimplified acceptance of localisation as the all-encompassing solution to the polycrisis is dangerous and many writers have warned against it (Allen 1999; Campbell 2001; Hendrickson & Heffernan 2002; Hassanein 2003; Hinrichs 2003; DuPuis & Goodman 2005; Born & Purcell 2006, Field et al. 2010). Instead, they critique the very idea of 'local' to scrutinise its power and potential pitfalls; the following paragraphs will provide an overview of their arguments.

DuPuis and Goodman (2005:361) argue that localisation does not automatically solve problems caused by global industrial agriculture, nor does it secure environmental sustainability or social justice. They call localisation based on utopian standards "unreflexive localism" and argue that it is based on a "politics of conversion", where "a small, unrepresentative group decides what is best for everyone and then attempts to change the world by converting everyone to accept their utopian ideal" (Childs in DuPuis & Goodman 2005:361).

Questioning the white, male and upper-class dominance of what sustainable food systems often encompass, Balasubramanian (2010) states, "While we would like to think the ...dream of social communion around food is a universal one, this assumption glosses over the very real differentials in gender, class, race, ethnicity, and nationality that were enabled and exacerbated by specific communities (white plantation owners, for example) through

¹⁸ CSAs aim to ensure a better and fair price for the farmer, and fresh, affordably-priced organic produce for the consumer. Members pay a fee upfront or buy a share in a harvest at the beginning of the season, which then provides the farmer with the necessary input capital to grow their food. In return, members receive a weekly delivery of produce (Henderson & Van En 2007). See the SI Staff CSA in 5.4.9 for a practical example.

¹⁹ Public procurement initiatives involve contracts between farmers and public institutions that insure a regular supply of produce for the institutions and a stable market for farmers.

the use of food”. As a result, the local diversity of food experiences has been denied and overly simplistic solutions have become vulnerable to corporate capture.

Instead, Du Puis and Goodman promote “an inclusive and reflexive politics in place [that] would understand local food systems not as local ‘resistance’ against a global capitalist ‘logic’ but as a mutually constitutive, imperfect, political process in which the local and the global make each other on an everyday basis” (2005:369). Growing sustainable food systems must therefore be more reflexive and inclusive.

Hinrichs agrees that unchecked localisation can become “defensive localisation”, which disregards local politics and removes local diversity in the name of some “local good” (2003:37). She asserts that defensive localisation creates rigid boundaries around a region, causing it to withdraw from the outside world to avoid problems. “Diversity receptive localisation” (2003:37), on the other hand, promotes a greater awareness and incorporation of the multiple meanings and struggles that defensive localisation tends to reject. She calls it a “politics of difference” and states that it allows the boundaries between the local and non-local to become “borders, rather than barricades ... [borders that constitute] the rich edges between contiguous places [that are] permitted and expected to be different” (2003:37). Born and Purcell support this view, stating that scales are not ontologically permanent, but produced through social struggle ... constantly in the process of being made and remade” (2006:197).

However, Hinrichs (2003) also asserts that diversity-receptive localisation contradicts attempts to set the local apart as something particular. She therefore calls for a more nuanced analysis of the relationship between the global and the local, as with Wolfgang Sachs’s concept of “cosmopolitan localism” (2003:37) and systems theory, cultural studies and actor network approaches. A nuanced approach that avoids extremes is therefore necessary to the growth of sustainable food systems.

Allen (1999) writes about the incompatibility and contradictions between establishing food security for a region and regionalising its food economy. He focuses specifically on Community Food Security (CFS), which concentrates on the community before the individual. Allen emphasises the importance of establishing food self-reliance for low-income people, but states that agroecologically-produced local foods are often higher

priced because they tend to be fresher and represent a specific social status for which some will pay a premium. Consequently, local food systems can become exclusionary even to those who live within the system (Allen 2010). Once again, a more reflexive, inclusive and nuanced approach is necessary to allow sustainable food systems to take shape; it might also be useful to take a community approach in which we see ourselves as members or components of a larger system.

Hassanein (2003) expands on the problems of power and of who decides what within a new, supposedly sustainable system. There is no single objective and/or independent authority to which we can turn for an answer. The sustainability of food systems involves conflicts of values and uncertain outcomes, and as such is a contested subject that must be defined socially and politically.

Selecting sustainable solutions from various options means making choices that affect everyone, and in that context, conflict is inevitable. Politics is the arena in which we deal with disagreements over values. Such conflict is not something to shy away from; conflict leads to change ... The best hope for finding workable solutions ... is through the active participation of the citizenry ... and political engagement to work out our differences.

(Hassanein 2003:79)

Hassanein (2003) calls for a 'food democracy' (a term coined and developed by Lang in the 1990s) to act not only as a means of moving toward a sustainable agrofood system, but also as a transformation of societal values and practices in itself. She states that it could be a valuable tool for CFS, which brings together a wide range of local public and private food-system representatives who do not often engage in discussion or collective and constructive action. Continuous discussion and active participation would develop our collective understanding of a sustainable agrofood system over time. Hassanein's argument goes beyond merely including community members on the periphery and calls for the creation of a space where everyone can meaningfully voice their concerns.

Lang's concept of food democracy is related to Pimbert's discussion of "a newly emerging food sovereignty policy framework" primarily driven by civil society (2008:3). Pimbert defines 'food sovereignty' as "a transformative process that seeks to recreate the democratic realm and regenerate a diversity of autonomous food systems based on equity, social justice and ecological sustainability" (2008:3).

Born and Purcell (2006) echo critiques of oversimplified localisation, stating that food system research often uncritically promotes local-scale systems as being desirable. They present scale theory (the study of the relationship between scales and development) as a mechanism to engage with the contextual realities of areas and critically assess the agendas of powerful players behind localising strategies. “[T]he outcomes produced by a food system are contextual: they depend on the actors and agendas that are empowered by the particular social relations in a given food system” (Born & Purcell 2006:195-196). Grounded in actual food struggles, they believe that scale theory can assist the development of sustainable food systems (Born & Purcell 2006).

Campbell warns that oversimplified solutions to the disembeddedness of the food system can lead to co-option, and states that deeply rooted social change “requires political credibility and work with diverse partners” which creates a tension between the conviction (dedication to the cause) and credibility (profitability) of the change (2001:353). This often leads to co-option where elite-dominated political and economic establishments superficially deal with active protest by bending without breaking. Co-option strategies include the creation of programmes that include protest leaders in the system (Dye & Zeigler in Campbell 2001) and establishments claiming protest issues as their own, but treating them superficially (Buttell in Campbell 2001). The basic structures of establishments therefore remain unchanged. One example of co-option is the way organic food has been treated by supermarkets. Supermarkets aware of consumer demand for organic produce have incorporated it into their original chains; however, including a seemingly sustainable initiative in an unsustainable system does not by extension make the system sustainable.

In Campbell’s view, co-option is not necessarily a problem. If these tensions are made clearer, movement leaders can build the capacity to “craft middle-range strategies that adapt to political circumstances while retaining attachments to core values and constituencies” (2001:362). In this way, an awareness of the risks of co-option can foster democratic sensibilities in movement leaders and sustain organisational vitality, broadening a movement’s impact for change (Campbell 2001).

In 3.3, I stated that new alternatives to the current food system would be strategically positioned in the spaces where the system is weakest (Hendrickson & Heffernan 2002;

Holt-Gimenez & Patel 2009). Hendrickson and Heffernan further argue that the major limitations of these alternatives—decentralisation, and the difficulty and slowness of change—could in actual fact counter the risks of co-option (Hendrickson & Heffernan 2002). They explain that new alternatives must be based on sound social and ecological decisions, build networks of trusting relationships embedded in communities, and rely on time and holistic management instead of capital (2002). By positioning food system alternatives to address the weaknesses of the current food system, it is possible to gain advantages and avoid co-option.

A final criticism of oversimplified localisation, raised by Field et al. (2010), is that it is primarily a phenomenon of high-income minority countries challenging industrial agrifood production. Consequently, it is not necessarily relevant to majority countries with different logistical, political, social and economic contexts. Field et al. (2010) also argue that local food systems in majority countries exist as the primary systems of food distribution, not out of revolt but out of necessity. Their argument draws attention to the fact that perspectives of sustainable food systems in minority countries dominate the literature, as well as the importance of basing sustainable food systems on the particularities of different contexts.

I present these critiques of oversimplified localisation not as arguments against localisation as a means of growing sustainable food systems, but to promote further critical perspectives. Confining a food system to a region will not necessarily make it environmentally or socially sustainable, but when applied with care, localisation can be one of many useful mechanisms. In sum, transitioning food systems seeking to be sustainable must:

a) Be constantly reflexive.

Strategies cannot be fixed to imposed extremes like localisation, and should instead be rooted in their particular contexts. The particularities of different regions will determine how sustainable food systems in those regions are shaped over time, if they remain reflexive.

b) Be more inclusive.

The actors and beneficiaries of sustainable food systems must not only be included in the process of growing them (participation), but also be given voice that is sincerely heard (discussion), as in the case of food democracy. A community approach recognises members and fosters the concept of shared food systems, rather than privileging individuals and consolidating power in food systems.

c) Position new alternatives to address the weaknesses of the current food system.

Certain features of transitioning food systems—decentralisation, slowness and the process of change—can increase the system’s resilience if used by actors and beneficiaries for the benefit of the system. By positioning it against the weaknesses of the current food system (for example, centralisation and disconnection from time), new alternatives can simultaneously gain momentum and avoid co-option.

With these critical considerations in mind, I now turn to a discussion of practical ways to nurture sustainable food systems.

3.5 Practical ways to grow sustainable food systems

One of this thesis’ aims is to compile a list of practical suggestions that move beyond sustainable food systems theory into active application. The work of Gail Feenstra (1997; 2000; 2002) has proved most useful in this regard. In her capacity as Food Systems Analyst at the University of California’s Sustainable Agriculture Research and Education Program and the Agricultural Sustainability Institute in Davis, California, Feenstra has compiled various documents and guides on how to make food systems more sustainable.

3.5.1 The process

Feenstra’s work is enthusiastic, but careful not to mistake localisation as the final goal. Keenly interested in the establishment of self-reliant community food systems, she makes five broad suggestions to communities interested in growing sustainable food systems (1997):

a) Strategise with the community.

Using the help of a trained facilitator, devote time to planning a sustainable food system strategy. Communities must be clear about their goals in order to gather information in an

organised way (Feenstra 1997). Strategies must include methods for data collection, the development of resources and project infrastructure, project implementation and recurring evaluation (Feenstra 2000).

b) Gain an understanding of the food system in question.

Strategies could include: gathering data on historical production in the region and evaluating its self-reliance; identifying local and seasonal foods; developing a food guide in accordance with any findings; investigating distribution channels and supply and demand issues; and examining existing opportunities for urban agriculture initiatives (Feenstra 1997).

c) Use multiple community resources for outreach and education.

For the widest possible reach, include key role players in the community. These players should have extensive networks and outreach potential in the food system, and might include agricultural organisations, educational institutions, health services, nutrition workers and religious communities. It is important to include these actors from the strategising phase (Feenstra 1997).

d) Use food policy to support the sustainable food system strategy.

The government's role in creating sustainable food systems is crucial, as policy can be orientated to protect prime farmland, coordinate land use, encourage entry level farmers and food-related entrepreneurs, promote the preservation of topsoil and coordinate access to quality food (Feenstra 1997).

e) Create harmonious rural-urban links.

The most successful sustainable food systems address both rural and urban concerns, as they are seen as being shared by the whole community. These concerns range from land access to environmental and community health. Three key features can assist in this process: strong leadership; collaboration between diverse representatives on boards, advisory committees and planning groups; and civic renewal through citizens struggling together to restore a sustainable food system (Feenstra 1997).

3.5.2 Building social capital

Feenstra's suggestions are deeply rooted within the community and cannot function without community principles, values, participation and partnerships (Feenstra 2002). As she 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.
(Feenstra 2000)

The concept of social capital is useful for understanding the first step of any process toward a sustainable food system. According to Portes (1998), social capital emphasises the influential power of social networks, even though it is non-monetary. Without community consensus, any food system runs the risk of disembeddedness, and so social capital must be built up in order to initiate sustainability. As Feenstra asserts, "the solution involves citizens in particular places putting their creative energies together to come up with their own solutions" (2002:101).

'Social capital', as coined by Pierre Bourdieu, is "the aggregate of the actual or potential resources which are linked to possession of a durable network of more or less institutionalised relationships of mutual acquaintance or recognition" (in Portes 1998:3). Coleman further develops the concept as "a variety of entities with two elements in common: They all consist of some aspect of social structures, and they facilitate certain action of actors – whether persons or corporate actors – within the structure" (in Portes 1998:5).

Putnam (1993) argues that social capital underscores good governance and economic processes by fostering robust norms of generalised reciprocity. It facilitates coordination and communication, strengthening trust within a community; and because it embodies past successful collaborations, it also creates useful templates for future actions. "[F]eatures of social organisation, such as networks, norms, and trust ... facilitate coordination and

cooperation for mutual benefit. Social capital enhances the benefits of investment in physical and human capital” (Putnam 1993:2).

Portes (1998) cautions that social networks are not a natural given, but must be intentionally created with strategies that strengthen useful group relations for future benefit. Feenstra suggests that social capital can be created through multiple opportunities for social interaction and constructive dialogue around sustainable food systems within a community. These opportunities should impart a common vision, celebrate successes and allow enough time for groups to shoot roots (2002). Portes (1998), however, points out that although social capital is a powerful mechanism, it is not a remedy for social problems and requires a considerable amount of work.

Portes and Sensenbrenner (1993) discuss three possible negative consequences of social capital. One is that unequal distribution of community resources could be justified as a sacrifice in the name of the greater community’s welfare. It might also restrict individual freedoms by demanding conformity, or result in downward levelling norms to keep members of a particular group in the same situation. Portes (1998) adds that it can lead to the exclusion of outsiders. In all of these cases, social capital becomes social control. Portes therefore stresses that a dispassionate stance to the capacity of social capital is necessary.

3.5.3 Creating and protecting political, intellectual and economic spaces

Feenstra (2002) also points to the importance of creating and protecting space for political, intellectual and economic spheres to build social capital and develop sustainable food systems. She argues that a political space should be defined from the outset of a sustainable food system process to include discussions on policy-making, democratic participation and the institutionalisation of pilot projects. This stabilises activities, allowing them to mature and become independent of particular people and/or funding.

Although she considers intellectual space to be difficult and risky, Feenstra (2002) argues that it is essential for bringing together multiple disciplines and community perspectives in the rationale and vision for a sustainable food system. It can assist community members to conceptualise and voice their initiatives within a local context, link them with published works and other initiatives, and ground the project when changes inevitably occur.

Intellectual space also benefits from sustainable food system processes as opportunities to strengthen interdisciplinary connections arise, for example between biological and social sciences, food production and consumption, academic research projects and community initiatives.

With respect to the economic sphere, Feenstra (2002) asserts that sustainable food systems must find ways of re-circulating local financial capital within the region. She identifies four important factors to take into consideration: ways to leverage local resources, the provision of start-up funding for sustainable food initiatives, financial support during vulnerable phases until initiatives reach stability, and the appointment of capable financial managers.

3.6 Conclusion

The environment on which food systems depend is experiencing a polycrisis. The real and worsening conditions of this environment include inequality, poverty, the challenges of an urban future, degraded ecosystems, climate change, energy constraints and growing food demand. The food system's construction over time has contributed to the polycrisis in various ways and continues to constrain the system.

Several writers have pointed to inherent weaknesses of the food system that developed as a result of the way it interacts with its environment. The literature explains that these weaknesses are rooted in the food system's disembeddedness from its environment. In order to produce great quantities of cheap food and make profit, the food system overcame space and time constraints while depending on symbols to communicate trust and expert advice to eliminate the risks involved in the intensification, concentration and industrialisation of the food system. Although it succeeded in the quest to profitably produce large quantities of cheap food, these strategies uprooted the food system from its original context and involved the externalisation of non-monetary costs. The externalised social and environmental costs of the disembedded food system are evident in the polycrisis and are now burdening the food system's ability to adapt to its changing environment, creating a negatively reinforcing feedback loop.

Various attempts have been made to re-embed the food system, but are marked by oversimplification. Promoting localisation as the ultimate solution to re-embed the food

system and make it more sustainable has various unintended negative implications. Localisation could be one valuable mechanism for growing sustainable food systems, but must not be mistaken as the final goal. New alternatives should be established in spaces where the food system is currently weakest in order to gain the momentum required to grow a sustainable food system. The current food system works beyond space and time; alternatives must be contextualised and slow-paced to allow sustainable adjustments. A sustainable food system is rooted in the particularities of its context, but is flexible enough to adapt to changes. 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. Building social capital as groundwork is vital, and can be done through the creation and protection of political, intellectual and economic spaces for reflection.

In Chapter 5, I will apply these findings to ten case studies of local-food distribution initiatives in Stellenbosch and establish how they could grow a sustainable Stellenbosch food system. I will identify the connections that link these initiatives in a network and outline the strengths and weaknesses influencing the network on its sustainability trajectory. I will present practical ways in which the local-food distribution network in Stellenbosch can grow a sustainable food in 6.3.

Chapter Four: Research Design and Methods II

4.1 Introduction

This chapter explains how I used my literature review's outcomes to inform the research design and methods to answer Research Question B (How can local-food distribution initiatives in Stellenbosch grow a sustainable food system?), expanding on my discussion of the overall research process in Chapter 2.

4.2 Research design and methods for Research Question B

Case studies take the reader into the setting with a vividness and detail not typically present in more analytic reporting formats.

(Marshall & Rossman 1999:159)

4.2.1 The case study as research design

To answer Research Question B, I had to investigate contemporary phenomena of local-food distribution initiatives within their social context in Stellenbosch. According to Mouton (2001) such an empirical study could apply at least two different designs including ethnographic studies and participatory action research (PAR). He distinguishes between participant observation studies and case studies in ethnographic studies. The case study design was most applicable and will be justified and outlined in the following sections. My reason for not using participant observation as a design was because Mouton (2001) explains it as the study of a community, whereas the case study design focuses on cases. Even though my investigation incorporated some of the key principles of PAR such as a “commitment to the empowerment of participants and to changing the social conditions of the participants” (Mouton 2001:151), I was not willing to risk the outcome of my research process on the condition that research subjects' input formed an integral part of the design. At the time of choosing a research design, my knowledge of the research subjects was too limiting.

According to Robson (based on Yin 1989), the case study is “a strategy for doing research which involves an empirical investigation of a particular contemporary phenomenon within its real life context using multiple sources of evidence” (1993:146). ‘Phenomenon’ here refers to the case, which could be different things such as an individual, a relationship

or an event. Robson (1993) points out that it is also possible to study multiple cases having some feature in common. The investigated local-food distribution initiatives in Stellenbosch formed a set of ten cases. Their common feature was that they intentionally distributed local-food in the local community, even though for different reasons.

It is important to distinguish here between a set of case studies and a sample of a larger population. Multiple case studies do not represent a larger population (Robson 1993); my case study research outcomes are only therefore representative of the case studies within their investigated context. They inform an overview of the local-food distribution network to which they belong, but not of overall local-food distribution or general food distribution in Stellenbosch.

The case study strategy's greatest strength is its flexibility. According to Robson (1993), the strategy is defined exclusively by its concentration on the specific case in its context, and thus by the nature of the study. Because there was no previous research on local-food distribution in Stellenbosch, my investigation was exploratory rather than confirmatory. A formal pre-structured case study strategy would have eliminated valuable opportunities of data collection (Robson 1993). Nevertheless, some structure was essential in order to capture important information; a balance had to be struck between efficiency and flexibility. I continually revised and adapted my case study design during the research process, so that the design fit the research context and took shape progressively.

Although the case study strategy was the most appropriate for answering Research Question B, it had limitations. Kane and O'Reilly de-Brun (2001) list several disadvantages:

- Case studies are more time-consuming than expected.

I did not expect the process (from identifying initiatives to the final report) to take so long and was unable to understand each case at the in-depth level that I initially intended to. Time constraints were part of the reason I consciously decided to construct a more comprehensive overview of the local-food distribution network the initiatives formed part of, rather than produce an exhaustive study of few initiatives while neglecting others.

- Case studies require a mix of research skills for data collection and analysis.

As this study was my first large-scale research effort, I was familiar with the theories but not the practices of semi-structured interviewing. I learned a lot during the actual interviewing process and noticed that as I gained more experience, interviews became easier. Similarly the analysis of the research results was my first interpretation of such a large amount of data and I had to refine my analytic skills during the process.

- Case studies are context-bound.

Literature considers the fact that a case study strategy's research outcomes cannot be generalised to a larger population to be its biggest drawback. Case study results cannot be generalised because the investigated case(s) are not synonymous with a representative sample of the larger population (Robson 1993). I selected my set of cases specifically to inform an overview of the local-food distribution network the cases formed part of, as they could better answer Research Question B than cases that could be generalised to the region's larger food distribution network. I did not intend for it to represent a larger population. In the literature review I established that the generalisation of food systems has led to their disembeddedness; conducting research that is supposed to be generalised runs contrary to these theoretical findings.

Robson (1993) suggests a flexible list of tools for designing a case study that would answer a particular research question: (a) a research question, (b) a conceptual framework, (c) a sampling strategy and (d) data collection methods and instruments. To this list I add (e) analysis of research findings.

a) Research Question B (How can local-food distribution initiatives in Stellenbosch grow a sustainable food system?) determined my case study design. I elaborated on this in 4.2.2.

b) Robson (1993) states that a study's conceptual framework covers the main features of a case study and their potential relationships. The conceptual framework is generally informed by the research intentions, previous research on similar cases, theory, the researcher's orientation and any information that exists about the cases before the start of the investigation. The framework must be constantly revised and adapted to initial research findings, always aiming for simplicity.

The conceptual framework for my research was initially informed by the theoretical outcomes of the literature review, practical time and resource constraints²⁰, my orientation (as discussed in 2.2) and information I had already gathered about the initiatives as a member of the Stellenbosch food system. I continuously revised the framework to fit the research context and adapted it to the research findings of the first case studies. The framework proved useful in bringing the various elements of the investigated cases together. I will discuss the actual conceptual framework in greater detail in 4.2.2.

c) To identify local-food distribution initiatives in Stellenbosch, I had to choose appropriate sampling methods. While non-probability sampling cannot be representative of a larger population, it may be used in research of social phenomena (Bernard 2000). This is because key, articulate informants can better inform research about lived experiences than probability sampling, although the latter might be representative of a larger population (Robson 1993; Bernard 2000). The particular non-probability strategy I used is called ‘purposive’ or ‘judgement sampling’, and entails deciding what “purpose you want informants (or communities) to serve”, then finding informants who can fulfil this purpose (Bernard 2000:176). Judgement samples are usually small and intentionally biased to obtain answers to questions of practical importance, for the reason that “[i]t would be pointless to select a handful of people randomly from a population and try to turn them into trusted key informants” (Bernard 2000:177). I discuss the sampling process in 4.2.2.

d) To gather data from the qualifying distribution initiatives that would inform an overview of local-food distribution in Stellenbosch, I had to find the most appropriate data collection method. According to Bernard (2000), the semi-structured interview is the best method for data collection in situations where you will likely only have one chance to interview somebody. It works well when respondents have busy schedules and expect their time to be used efficiently, because the interviewer appears prepared and competent without being excessively controlling. Since three of the identified key informants were initially reluctant to agree to interviews and two others emphasised that they had limited time available for the interviews, it was crucial that I gather as much information as possible in what might be our only meeting.

²⁰ I had only three months to design and conduct my case study, and had no assistance with conducting interviews or transcribing recordings of interviews. I initially intended to study six cases, but realised that ten case studies focusing on well-defined areas of investigation would be more valuable than six in-depth case studies in the creation a comprehensive overview of local-food distribution in Stellenbosch.

According to Bernard (2000), the semi-structured interview is less structured than a questionnaire in a structured interview, but more structured than informal and unstructured interviews. It is based on an interview guide used during the interviewing process to structure the conversation. This guide is a written list of questions, topics and probes for use during the interview (Bernard 2000). It does not predetermine the interview, but guides the interviewer in steering the conversation toward specific topics. The development of the interview guide and the general approach I used for semi-structured interviews are detailed in 4.2.2.

e) Bernard asserts that an analysis of research findings is the “search for patterns in data and for ideas that help explain why those patterns are there in the first place” (2000:419). Robson (1993) describes qualitative data analysis as a systematic process of organising the data, reducing it and displaying the findings. He emphasises that it is usually an ongoing process during data collection, which was certainly the case in my study. The analytic process I followed to interpret the interview results are discussed in 4.2.2.

4.2.2 Process and methods

In 4.2.2 I discuss the process and methods of my case study design based on the theory outlined in 4.2.1 a)–e).

a) Research Question B: How can local-food distribution initiatives in Stellenbosch grow a sustainable food system?

I chose to focus on Stellenbosch because Schulschenk’s research (2009) had identified malfunctioning parts of the Stellenbosch food system; as a result, I knew that the system required systemic changes to be more sustainable. As a participant in the Stellenbosch food system, I was also ideally positioned to investigate it further.

I noticed that certain local initiatives (covering production, processing, distribution, consumption and waste components) had taken steps toward sustainability. My literature review (3.4) had determined that a calculated focus on local geographies incorporates aspects of sustainability, and that localisation is one means of growing sustainable food systems. I also felt that investigating and connecting the parts of the system already moving toward sustainability would be more effective than imposing an uncontextualised

sustainable food system blueprint on the region. With this in mind, I decided to use localisation as my entry point and structure my research to gain an understanding of how it could function as a mechanism for nurturing a sustainable food system in Stellenbosch.

My reason for choosing to work specifically with distribution initiatives stemmed from a principle in complexity theory (1.6) stating that the dynamics of a system emerge from the relationships between various components of the system and not from the components themselves. In addition to being a system component, distribution acts as an interactive link between the various other system components, including production, processing, consumption and waste. Even if a production or consumption component becomes completely sustainable, it cannot ensure a sustainable food system without a sustainable distribution network already in place. In *The one-straw revolution*, Fukuoka explains:

The other farmers in my neighbourhood realise that they are working very hard only to end up with nothing in their pockets. The feeling is growing that there is nothing strange about growing natural food products, and the producers are ready for a change to farming without chemicals. But until natural food can be distributed locally, the average farmer will worry about not having a market in which to sell his produce.

(2009:91)

As mentioned in 5.3, most consumed food in the Stellenbosch food system is currently imported. Even if the area's residents decide to eat exclusively from sustainable producers, the current distribution network would most likely continue to import food from elsewhere, as current local organic production is insufficient (Schulschenk 2009), and so not contribute to the overall sustainability of the food system. Similarly, if all local production initiatives were to become sustainable, there is no distribution network in place to move locally produced food through the system.

One of Schulschenk's (2009) major recommendations was that Stellenbosch establish a local distribution network to directly link small-scale agroecological farmers with consumers. In her research, she found that the dominant distribution model in Stellenbosch—the supermarket—was forcing small-scale farmers using more sustainable methods out of the system. Establishing a local distribution network would ensure that small-scale farmers receive support and increase Stellenbosch's food security, while giving residents greater access to sustainable food sources (Schulschenk 2009).

It is also important to note that, as discussed in 3.2.8, world hunger is the result of unequal distribution, not population growth or a lack of available food. 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-Ankomah 2001:2). 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 challenge is thus to establish a distribution network that tightens the feedback loops between the production and consumption phases of the food system.

Although this study focuses specifically on local-food distribution initiatives, similar investigations directed toward local-food production and consumption initiatives would contribute to an understanding of the wider Stellenbosch local-food system and are opportunities for future scholarship; I elaborate on this in 6.4.4.

b) Conceptual framework

The first section of my literature review (2.6) explains how food systems can operate sustainably within the global environment. For a distribution system to contribute to the sustainable operation of the food system, it must promote its own sustainability alongside that of the food system. A distribution system might have inherent strengths and blockages that enable or prevent sustainability. By identifying these blockages and strengths, it is possible to determine what adjustments the distribution system requires to operate sustainably, and consequently the actions needed for growing a sustainable food system.

With this goal of identifying the Stellenbosch’s local-food distribution network’s strengths and blockages, I devised a framework for evaluating local-food distribution initiatives. This framework compares three aspects of each initiative:

- Vision

I 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

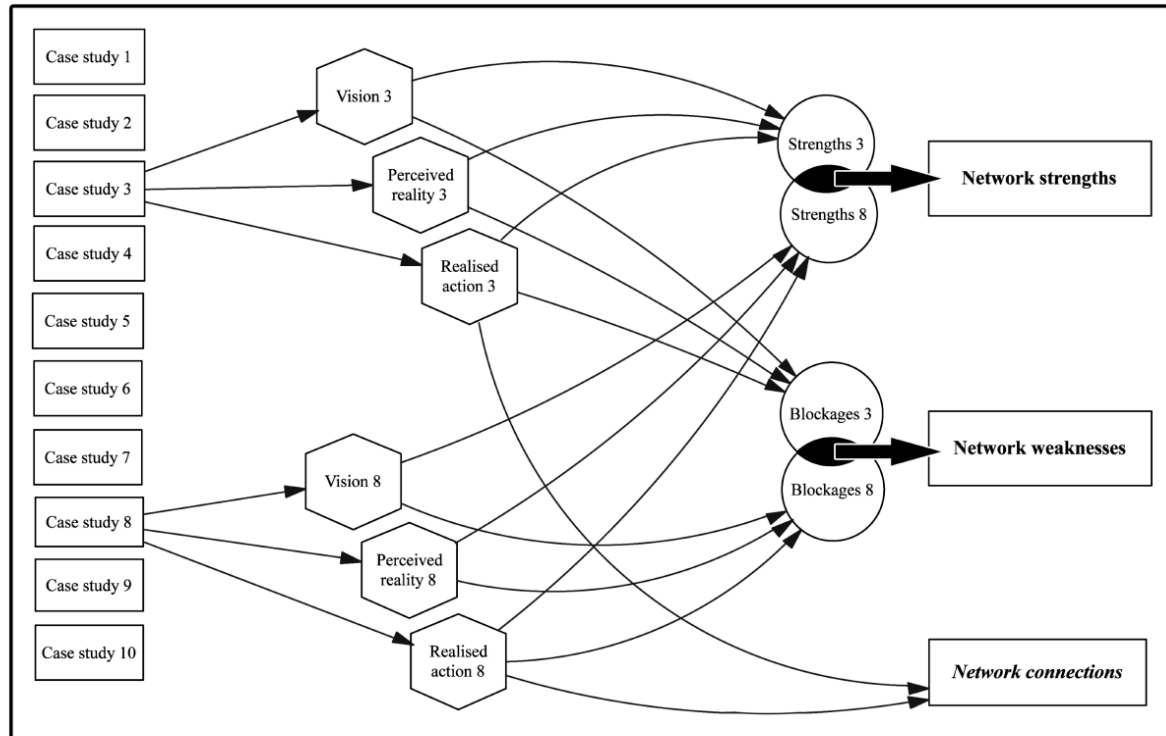
To ascertain the initiatives' perceptions of themselves within the Stellenbosch food system, I investigated their views of the system and the biggest challenges they experienced within this context.

- Manifested actions

While every initiative strives toward a vision, its perceived reality could present obstacles preventing the realisation of that vision. I investigated the initiatives' procurement practices, customer relations and community involvement in order to gauge each initiative's actual operations.

The purpose of this framework was to identify each initiative's strengths and blockages, as well as any overlapping blockages and strengths in the local-food distribution network they formed part of. Figure 2 represents my conceptual framework; Cases 3 and 8 in the diagram explain what actions were carried out in each case study.

Figure 2: The conceptual framework



I investigated ten local food distribution initiatives to construct an overview of local-food distribution in Stellenbosch. Using a non-probability sampling method, I located as many relevant initiatives as possible; I then designed a list of criteria to determine their suitability for the study.

c) The sampling methods

The process of locating possible initiatives to measure against criteria during the non-probability judgement sampling was relatively simple. As I was based in Stellenbosch and biased toward sourcing food from sustainable sources, the process became part of my own food experience. I committed to regionalising my own diet and started a blog²¹ called *The Regional Buffet*²² to record my progress, discuss critical food system issues as they emerged from my research, and to get input from readers, some of whom were based in Stellenbosch.

I applied the criteria in Table 1 to screen the located initiatives for those that might be edging toward sustainability. While determining criteria for the selection of local-food distribution initiatives, I was busy completing my literature review. The answer to Research Question A determined that sustainable initiatives must be distributing local-food; addressing the challenges of the polycrisis (3.2.10) and including notions of reflexivity and inclusivity (3.4) constituted more advanced steps toward sustainability. If the initiatives showed any intention of addressing these challenges, or reflexivity or inclusivity, they were moving in a sustainable direction.

Table 1 indicates the sections in the literature review that explain the ideal criteria for evaluating initiatives' sustainability. Neither in Schulschenk's research nor as a member of the Stellenbosch food system biased towards sourcing my food sustainably did I detect any intentional community efforts that promoted a sustainable Stellenbosch food system and so had to adjust the ideal criteria to accommodate this lack. To be eligible for further investigation, each initiative had to meet at least two of the adjusted criteria. I judged whether or not the initiatives met these criteria by visiting their official websites (if

²¹ A blog is a sort of website with an ongoing chronicle of personal thoughts and information. It usually provides links to other blogs or websites that are relevant to the topics discussed and a space for readers to leave comments or ask questions.

²² *The Regional Buffet* can be read on www.regionalbuffet.blogspot.com; a screenshot of the blog is included in Appendix A.

available), having informal conversations with their clients or staff, and visiting the initiatives myself to purchase food.

Table 1: Selection criteria for local-food distribution initiatives

Section in Chapter 3 underscoring the criteria	Ideal criteria The initiative:	The final (adjusted) criteria The initiative:
3.2.10	Addresses the challenges facing the global food system	A. Addresses some of the challenges facing the global food system (intentionally or unintentionally)
3.3	Is particularly adjusted to the Stellenbosch context, addressing the challenges facing the Stellenbosch food system	B. Is located within the Stellenbosch Municipal Area (see Chapter 5, Figure 3), constructed specifically for the Stellenbosch context and/or addresses some of its food system challenges outlined in 5.3 (whether intentionally or unintentionally)
3.4	Indicates a comprehensive understanding of sustainable food systems that goes beyond mere localisation by being reflexive, inclusive and positioning itself where the current food system is weakest (by being decentralised, slow and/or in a process of changing toward sustainability).	C. Shows at least one of the following (intentionally or unintentionally): <ul style="list-style-type: none"> - Constant adaptation to changes in the environment - Accessibility to all, investing in community development and/or involving community members - A dedication to becoming more sustainable

To cover as many initiatives as possible, I built snowball sampling into my data-collection method. At the end of each interview, I asked the participants if they knew of any initiatives similar to their own. Bernard states that snowball sampling is used to locate difficult-to-find key informants in studies of social networks (Bernard 2000). This method delivered only one relevant initiative, but I never investigated it due to time-constraints²³. Future scholarship could examine this initiative, as discussed in 6.4.3.

The sampling methods produced a select number of qualifying initiatives that were close together geographically. Table 2 lists the selected initiatives and the final criteria (as

²³ In an interview with Gurshwen, one of the ‘Smouse’ (5.4.7), he mentioned a distribution initiative where Smouse drive around with ‘bakkies’ (trucks) to ‘broke’ (deal/trade/negotiate) in residential areas in Stellenbosch and to some restaurants. They only sell produce that they buy from local farmers. He mentioned three ‘Bakkie Smouse’, including Smith, Burksted and Van Graan (Linders 2010).

specified in Table 1) that qualified them to inform an overview of local-food distribution in Stellenbosch. Figure 3 in Chapter 5 locates them on a map of the Stellenbosch Municipal Area.

Table 2: Selected initiatives and their qualifying criteria

Distribution initiative	Qualifying criteria
Living Tree (edible garden service)	A, B, C
Fyndraai (restaurant)	A, B, C
Divine Foods (restaurant and food store)	A, B, C
Eight (restaurant)	A, B, C
Vredenhof (farm and distributor)	A, B, C
Three Peas (restaurant distributor)	A, B
Smouse (daily market)	A, B, C
Farm to Fork (institutional kitchen)	A, B, C
SI CSA (weekly vegetable bag delivery)	A, B, C
Stellenbosch Organic Farmer's Market ²⁴ (weekly)	A, B, C

My next step was to set up interviews with key individuals from each initiative; this proved the most difficult part of the sampling process. Key informants were not always willing to offer time to a student's research project that might not yield any immediate benefits. Numerous e-mails, phone calls and visits to the initiatives eventually led to ten interviews.

d) Data collection methods

The content of the interview guide that I used during the semi-structured was informed by the same criteria used during the 'judgement sampling'. I wanted to obtain a more in-depth understanding of each initiative to establish their sustainability and by extension the status

²⁴ I found a similar school-based community market in Mitchell's Plain called Rocklands Community Market. It is organised by a permaculture NGO called SEED, which gives students of Rocklands Primary School the opportunity to learn about market operations as part of learning about permaculture. It also creates a platform for the surrounding community to become more involved with the school, and for the school to generate extra income (Oldjohn 2010). I did not include Rocklands in my case studies report because it was geographically isolated from Stellenbosch and had too few network connections with the other cases.

of the local-food distribution network they formed part of. I started the interview guide design by listing all of the questions that could possibly generate responses required to answer Research Question B. I then organised them according to themes: basic information about the distribution initiative and the interviewee; the initiative's history and philosophy; its procurement, customer information, staff and finances; and the Stellenbosch context.

While critically evaluating the first set of questions, I decided to eliminate unnecessary questions that might make the interviewee reluctant to answer further questions; these included queries about staff and finances. While these answers might have yielded interesting information, they fell outside the scope of my study and were not worth risking more crucial information. Unnecessary questions would also lengthen the interview and discourage the interviewee from giving complete answers toward the end. Table 3 presents the final interview guide.

Questions in the 'Basic information' sections aimed to obtain contact information about the initiative and interviewee, as well as establish the interviewee's background. The 'History and motivation behind the initiative' section probed for information on the intent behind the distribution effort, and the interviewee's understanding of this intent. It also meant to establish whether the initiative was still an emerging effort or had been established for some time.

The next sections aimed to find out whether the intentions behind the initiatives translated into action. 'Procurement' sought to investigate the initiative's economic embeddedness; namely, whether it was committed to recirculating money in the local economy. I designed 'Customer information' to ascertain the initiative's social embeddedness and its commitment to food democracy (as discussed in 3.4), and included 'Community involvement' to learn more about the initiative's social embeddedness by allowing respondents to discuss their involvement with external social projects, if applicable.

Table 3: The interview guide

<u>Venue and time of interview:</u>	
BASIC INFORMATION ABOUT THE DISTRIBUTION INITIATIVE:	
Name of initiative:	
Physical address:	
Distance from Stellenbosch town:	
Contact information: Telephone number E-mail address Website	
Business hours:	
BASIC INFORMATION ABOUT THE INTERVIEWEE:	
Name of interviewee:	
Relation to distribution initiative:	
Contact information: Telephone number E-mail address	
Years experience in the food industry:	
<u>INTERVIEW QUESTIONS:</u>	
Please note that questions can be adapted to suit specific situations.	
HISTORY AND MOTIVATION BEHIND THE INITIATIVE	
1. How would you describe your initiative?	
2. When did you start this initiative?	
3. Why did you start?	
PROCUREMENT	
4. What kinds of food do you work with?	
5. How do you choose your suppliers?	
6. On average, how far away are your suppliers?	
7. Do you know the producer if s/he is not also the supplier?	
8. Do you add any value to raw products?	
9. Do you package or repackage products?	
CUSTOMER INFORMATION	
10. Who are your main customers?	
11. Are they loyal/regular customers?	

12. Do you know where they come from?
13. Do you know how many customers visit you on a daily/weekly/monthly basis?
14. How do you build up your customer base?
15. Do you use any specific marketing strategies?
16. Do you have a system that can accommodate customer feedback?
17. What role does customer feedback play in the management of your initiative?

COMMUNITY INVOLVEMENT

18. Do you participate in any community/social projects? Food related or otherwise.

THE STELLENBOSCH CONTEXT

19. How would you describe the food system in Stellenbosch?
20. In what way do you consider yourself a part of it?
21. Are there any official organising bodies looking after your concerns?

MAJOR CHALLENGES

22. What are your biggest challenges?
23. What would support you to face these challenges?

FUTURE PLANS

24. How do you think your initiative is going to look in five years?
25. What would you need to make this vision a reality?

SUGGESTIONS FOR A SUSTAINABLE STELLENBOSCH FOOD SYSTEM

26. What would you expect to gain from a Food Conference on the regional food economy?
27. This conference will be an event where experts in sustainable food address the food producers and buyers in Stellenbosch about food-related issues in the area. It will also provide both sides with the opportunity to voice some of their challenges and concerns, and be an ideal platform to meet others in the food system and network.
28. What would you expect to gain from a Stellenbosch Market that provided food distributors with the opportunity to buy and sell regional produce? This market will be a frequent (and eventually daily) public market that caters organic, regional food.
29. Would you work with institutions like restaurants, schools or hospitals in Stellenbosch on a contract basis to supply them with food produced in the region?
30. How would you envision such a relationship?
31. Could you name any other food distribution initiatives in your area similar to yours?

To gain information about the interviewee's understanding and knowledge of the Stellenbosch context, I formulated questions about challenges the initiative was facing in Stellenbosch. The purpose of 'Major challenges' and 'Future plans' was to determine what

blockages were impeding the initiative's self-imposed goals, and to find out how they thought these blockages might be overcome; I also intended for it to establish whether the initiative's challenges related to those faced by the larger Stellenbosch food system (as summarised in 5.3). Finally, I used 'Suggestions for a sustainable Stellenbosch food system' to make suggestions about initiatives for promoting a network of sustainable initiatives and to test the interviewee's response.

The interview guide was a useful tool and helped me on multiple occasions to steer an interesting, but tangential conversation back to the key issues. It also structured the information I gathered and simplified my process of analysis. However, my inexperience with the interviewing process may have caused me to rely on the guide too much when my attentiveness to the process decreased. At the end of interviews that continued for longer than 90 minutes, for example, I would find myself relying entirely on the interview guide.

In addition to these questions, I used probes to encourage respondents to share more information. Bernard (2000) suggests that probes can be the key to successful interviewing, as they allow the interviewer to obtain more information without putting herself in the answers. For my purposes, the silent probe and the 'tell-me-more' probe worked well. The silent probe involves remaining silent for some time after each answer, allowing the respondent more time to share information. The 'tell-me-more' probe involves making noises—'uh-huh' or 'hmmm', for example—to indicate that the interviewer is listening and interested in what the respondent is sharing, encouraging the latter to speak more (Bernard 2000). I did not plan to use these probes beforehand, but they came naturally as I grew more familiar with the semi-structured interview as a data collection method.

I used a tape recorder and took notes during the interview process. I usually waited until I had obtained the basic information before taking the recorder out and asking permission to use it. This approach allowed the respondents to first become more comfortable with me, and all interviewees agreed to be recorded. I listened to the recording after each interview to supplement my notes and ensure that the questions in the interview guide were answered fully, and also to note any significant comments I might have missed during the interview. Bernard (2000) refers to this transcribing approach as 'partial transcription'.

There were several benefits to this face-to-face interview process. I could clarify any misunderstandings of questions on the spot, and extract more information if the respondent did not fully answer the question; interviewees did not know the questions ahead of time, and so did not have time to rehearse answers; and my presence encouraged respondents to finish the process, which required a substantial time commitment.

Bernard (2000) mentions these same benefits, but also points to several limitations of face-to-face interviews. It can be intrusive and reactive, and requires skill. I very seldom experienced situations where respondents felt I had overstepped boundaries or offended them, but they tended to be more selective with their answers in the beginning of interviews. Robson (1993) also states that interviews are often costly in terms of time and money, because of the difficulties in scheduling dates, times and suitable venues. Fewer people are interviewed as a result. This was a definite drawback of my research process; arranging interviews with key informants from qualified initiatives was challenging and time-consuming. I conducted the interviews over a period of 11 weeks.

A final limitation of interviews is that interviewees can give inaccurate information because of response effects (Bernard 2000), which include:

- Acquiescence effect: when respondents tell you what they think you want to hear.
- Distortion effect: when participants (including the interviewer) see what they want to see in the question or answer, regardless of whether it is there or not.
- Inaccuracy: when respondents lie or for some reason choose to give uninformed answers rather than admitting that they don't know the answer.

Whenever I sensed that the respondent's information might be inaccurate, or became conscious of a personal bias that might lead me to interpret information in a particular way, I checked with respondents to see if I had correctly understood their answer. I would also sometimes ask the same question in a slightly different way later in the interview to test whether it generated the same answer.

Unfortunately, there was not enough time to schedule a second round of interviews with the same respondents to clarify or add to information from the first interviews. Consequently other data collection methods included asking questions by e-mail and

telephone. These methods were very time-consuming and ineffective, as respondents did not always interpret the questions correctly and often responded belatedly or not at all.

My final data collection method was a small group feedback session. I wanted to test whether an interim summary of my findings up to that point (Robson 1993) (see Appendix B) was grounded in the context investigated. All interviewees were invited to attend a feedback session where I presented my initial research results, conducted a structured conversation about the findings and asked participants for feedback. Seven interviewees attended, and while the structured conversation with a formal discussion guide was useful, the informal conversations between interviewees were even more interesting. It was the only occasion on which I observed initiative stakeholders interacting with each other, and allowed me to verify my findings on the operation of local-food distribution initiatives as a distribution network. I discuss these observations in more detail in Chapter 5, Figure 3.

e) Analysis of the research findings

In addition to answering Research Question B (How can local-food distribution initiatives could grow sustainable food systems?), I used my findings to make adjustments to my case study design and keep it grounded in the research context. An example of this was my decision to include ten rather than six cases. The findings from the first four cases indicated that because of time constraints, producing an in-depth study of each case was unfeasible and would sacrifice a more thorough overview the local-food distribution network the initiatives formed part of. I decided that incorporating a greater number and variety of distribution initiatives would solicit a broader range of perspectives on their local-food distribution network, thereby producing a more comprehensive overview. I discuss the potential for further future scholarship on one or several of the case studies in 6.4.2.

I combined my interview notes and partially transcribed recordings of interviews in a write-up that I then analysed to answer Research Question B. My conceptual framework required that I identify initiatives' overlapping blockages and strengths to construct an overview of the blockages and strengths of local-food distribution in Stellenbosch. For the

write-up analysis I used coding²⁵, which involves applying a symbol to a group of words to classify or categorise them. These symbols “are typically related to research questions, concepts and themes” (Robson 1993:385).

My first code was ‘blockages’. I read through my write-up several times and, based on the outcomes of my literature review, marked elements that seemed to be preventing the cases from being more sustainable (see Appendix C); I then repeated this process for ‘strengths’. A useful tool while reading was to continuously ask: ‘What is this about?’ Various texts on the analysis of qualitative data (Strauss & Corbin 1998; Bernard 2000; Charmaz 2005) recommend this tactic for the coding process. It moved my thinking to a more abstract level and helped me to avoid getting lost in the particularities of each individual case. The blockages I identified included unawareness, system limitations, internal and external isolation, and concentration of control. Strengths included contextualisation, social networking, knowledge and adaptability. I define and discuss these blockages and strengths further in 5.6.

One unexpected outcome of this blockages and strengths analysis was my identification of various network connections between the initiatives. Reading through the write-up continuously enabled me to scrutinise my findings from different perspectives. I expected the initiatives to operate as a network, but realised this might not be the case. After realising that my strengths and blockages analysis was built on the assumption that these initiatives formed a network, I decided that it was necessary to conduct a preliminary analysis of how these initiatives possibly operated as a network. I identified a number of connections that could be separated into conceptual connections and physical connections (5.5 discusses the most prominent of these). ‘Conceptual connections’ refers to abstract connections, and included the types of local-food distribution initiatives, overlapping motivations behind initiatives, procuring approaches and approaches to connecting with customers. These connections indicate shared values in the local-food distribution network.

²⁵ Grounded theory, which was developed by the sociologists Barney G. Glaser and Anselm L. Strauss, incorporates extensive coding (Strauss & Corbin 1998). The literature on grounded theory greatly assisted me in understanding the coding process, but I was unable to apply the theory in its entirety. I only discovered it toward the end of my research process, which by then had been structured in a way that was incompatible with grounded theory principles. Grounded theory is based on the principle that theory must emerge from the data, and so rejects pre-specified themes (like blockages and strengths). The literature review is usually completed after the analysis so as to avoid influencing the researcher (Bernard 2000). In contrast, my empirical investigation and analysis of its findings were built on the outcomes of my literature review, and in accordance with how Robson (1993) explains coding.

‘Physical connections’ refers to distribution connections created by trade between initiatives.

The next step in my analysis involved memoing. Memos are notes about the codes and the conceptual relationships that might exist between them (Robson 1993; Bernard 2000). Having identified the network’s conceptual and physical distribution connections as well as its strengths and blockages, I was able to construct an overview of the initiatives’ local-food distribution network in Stellenbosch (5.7).

The final step in my analysis involved comparing the overview of the local-food distribution network to my answer to Research Question A (How can food systems operate sustainably within the current global environment?), summarised in 3.6. I then answered Research Question B (How can local food distribution initiatives in Stellenbosch grow a sustainable food system?) by identifying steps that could be taken to adjust the local-food distribution network to be sustainable and act as a catalyst to grow a sustainable Stellenbosch food system. These steps are included as recommendations in 6.3.

4.3 Conclusion

My strategy for answering Research Question B involved using the non-empirical literature review’s outcomes as a theoretical foundation for the design of an empirical case study of ten local-food distribution initiatives in Stellenbosch. The case study’s purpose was to establish an overview of the local-food distribution network to which the initiatives belong, and to determine how it might be used to grow a sustainable food system. I summarise my answer to Research Question B in my research recommendations (6.3). Due to time and resource constraints, there were gaps in the research design that I present as opportunities for further scholarship in 6.4. These include similar investigations of local-food production and consumption initiatives, more in-depth investigations of one or more of the identified cases and the detection of other local-food distribution initiatives not included in this study.

Chapter Five: Local-food Distribution Initiatives in Stellenbosch

5.1 Introduction

Informed by the outcomes of my literature review, this chapter describes the findings of the empirical investigation I conducted in response to Research Question B (How can local-food distribution initiatives in Stellenbosch grow a sustainable food system?). To contextualise these accounts, I briefly review my literature review's findings on how food systems can operate sustainably within their environments and how localisation and social capital can be used as mechanisms to promote sustainable food systems (5.2). I then summarise the main research findings of Schulschenk's baseline study of the Stellenbosch food system (2009) in 5.3.

In 5.4, I present the findings of my empirical study of ten local-food distribution initiatives, with the aim of establishing how they can contribute to a sustainable food system in Stellenbosch. I outline how the cases interact as a network in 5.5, and discuss the major overlapping blockages and strengths influencing the sustainability trajectory of local-food distribution in Stellenbosch in 5.6.

5.4, 5.5 and 5.6 inform an overview of the local-food distribution network in Stellenbosch in 5.7. I define a 'network' as systems of interrelated elements around a shared concept, in this instance the distribution of local-food. All of the investigated cases participate in the distribution of local-food to some degree.

5.2 Sustainable food systems

My literature review argues that the global environment is experiencing a polycrisis, which presents current food systems with a variety of challenges (3.2.10). Food systems must address their disembeddedness (3.3), the root cause of the weaknesses preventing them from overcoming these challenges. For food systems to transition toward sustainability, they must be constantly reflexive, more inclusive and position new alternatives to address challenges in their environments (3.4). Sustainable food systems ensure food security for their populations within the capacity of their social and natural environments.

Localisation and social capital (3.5) are important for growing sustainable food systems, but with strings attached: they should be recognised as mechanisms and not mistaken as the final goal of sustainable food systems.

To apply the outcomes of my literature review to reality, I investigated ten local-food distribution initiatives in Stellenbosch. 4.2.2 outlines my reasons for selecting Stellenbosch as an area of investigation. Complexity theory (1.6) states that to understand systems, it is necessary to examine their operational environments; in this thesis, the global environment is the Stellenbosch food system's largest operational environment. I do not disregard the fact that it is also embedded in African, South African and Western Cape Province environments, but my focus is how challenges particular to the Stellenbosch context relate to global challenges. Future scholarship might investigate how challenges in Stellenbosch relate to those in the African, South African and Western Cape Province environments; I discuss this further in 6.4.1.

5.3 The Stellenbosch food system

Schulschenk gives the first extensive account of the Stellenbosch food system and its security status in her 2009 baseline study. Since then, no other significant published studies have advanced our understanding of the system or its food security. Schulschenk's work was among the first contributions to the FSI; this study is part of the same project. The FSI is currently the only food security research endeavour of note in Stellenbosch.

Stellenbosch Municipality is a key stakeholder in regional food security, but has not shown any intention of devising a comprehensive food security strategy for the region. The 2010 Integrated Development Plan (IDP) for Stellenbosch recognises food insecurity as a challenge in the Stellenbosch Municipal Area, 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 (Stellenbosch Municipality 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 one community garden in November 2008 as part of a national food security initiative. The garden can support three families (Stellenbosch Municipality 2009). The Local Economic Development Strategy also recognises food insecurity as a challenge but assumes that successful land reform will begin to address it (Stellenbosch Municipality

2008). The Municipality's report for the 2008/9 fiscal year names three community gardens that were established as part of urban greening projects in Groendal, Idas Valley and Kayamandi (Stellenbosch Municipality 2010).

With no substantial government food security initiatives to consider, I turned to grassroots initiatives. Schulschenk's findings persuaded me to investigate ways in which these organisations might be supported to grow a sustainable food system and increase long-term food security in Stellenbosch. I intended to expand on her work by identifying initiatives that might be moving in the direction of a sustainable food system and suggesting practical ways to support them. These findings could also be incorporated into a regional food security strategy.

Due to a lack of available secondary data, Schulschenk (2009) evaluates the status of food security in Stellenbosch using the findings of a national food consumption report compiled by Nel and Steyn (2002); the Stellenbosch census findings in Statistics South Africa's national community survey (2007); and data collected by the Department of Human Nutrition at Stellenbosch University as part of an effort to map food insecurity in the Western Cape. Integrating these studies' findings, she reports that Stellenbosch is food insecure. Its population has an unbalanced and deficient diet, proportionally consuming too much wheat and meat and not enough vegetables, fruit, milk, pulses, fish, nuts, vegetable oils and eggs.

Schulschenk argues that although food security is a serious regional challenge, Stellenbosch's agriculture is mainly export-orientated and dominated by conventional viticulture (grape production for wine). This contributes to environmental degradation and leads to local distribution of food from external sources. However, she argues that the region does in fact have the capacity to produce sufficient quantities of diverse foods to supply its population with a nutritionally balanced diet. She makes three important recommendations for establishing a sustainable food system. The first is to increase local production; the second, to establish a local distribution network linking small-scale agroecological farmers with consumers; and the third is to engage consumers, particularly with respect to nutrition (Schulschenk 2009). Her second recommendation is particularly relevant to Research Question B in this thesis (How can local-food distribution initiatives in Stellenbosch grow a sustainable food system?).

Schulschenk states that studying the flow of food in Stellenbosch is particularly challenging with limited existing or publically available statistics, and therefore examines the existing distribution network's complexities. She finds that it is dominated by large retailers who dictate and determine the flow of food in Stellenbosch to benefit their distribution system; in order to achieve economies of scale and meet consumer demand for diversity, locally produced food is often sent out of the area to central distribution points, only to be brought back to retail outlets in Stellenbosch. The system is thus structured to achieve low prices for consumers and efficiency for retailers (Schulschenk 2009).

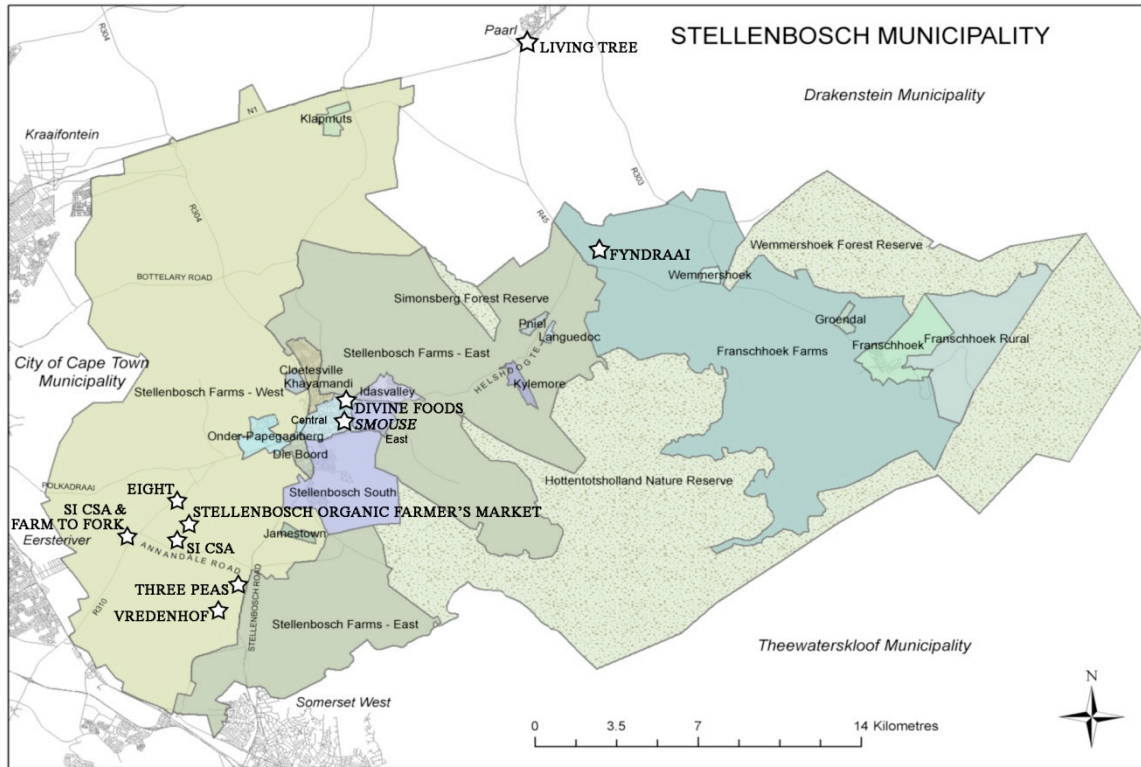
Small-scale farmers do not fit into this profile and are often left out of the mainstream food system. Markets outside Stellenbosch guarantee sale of their produce, but not at fair prices. They can get better prices by selling produce locally, but lack a local-food distribution network to secure a local market. For this reason, Schulschenk (2009) argues for a local-food distribution network. My objective is to build on her work by establishing a profile of a local-food distribution network and opportunities to expand it. I use case studies of ten local-food distribution initiatives to inform this profile.

I explain my case study process and methods, including the investigation's conceptual framework, in 4.2.2. By comparing the vision, perceived reality and realised actions of each case study (5.4), I identify local-food distribution network connections (5.5) in Stellenbosch and the strengths and blockages in each case that either promote sustainability or hinder it (5.6).

Each case study consists of a basic description of the initiative, followed by its vision (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 3 shows a map of Stellenbosch Municipal Area with stars indicating locations of the various initiatives.

Figure 3: A map of Stellenbosch Municipal Area with case study locations



Source: Adapted from Stellenbosch Municipality 2009

5.4 Case studies

These sustainable community food systems are ... few in number, unevenly distributed, often small – generally involving less than the majority of the community; they are precarious and many fail to sustain themselves over time. If we are looking to these community food system initiatives as solutions to the current unsustainable state of affairs in the dominant food system, one might wonder whether we can really depend on them. Are they really making a difference? The answer from my perspective is ... yes, although perhaps not in the ways we might have expected.

(Feenstra 2002)

5.4.1 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, off the R45 (see Figure 3). Jean du Plessis and Lisa Steyn founded Living Tree in March 2009, and Lisa has since become its sole owner. She installs custom-designed edible gardens for clients, who can then pay for maintenance by Living Tree or have Lisa teach them how to look after it themselves. After conducting a site visit, Lisa

incorporates the clients' needs and locally available resources into several site-specific edible garden designs based on permaculture²⁶ and other natural farming principles. Clients then choose a design for installation; Lisa currently plants seasonal vegetables and berries, and hopes to include fruit trees in the near future. Installation is followed by routine maintenance and/or training sessions (Du Plessis 2010; Steyn 2010). Lisa manages Living Tree from her home in Paarl, with clients based in Paarl and Franschhoek. She works 08:00–17:00, Monday to Friday, with two full 'garden days' on Tuesday and Thursday (Steyn 2010).

This account of Living Tree was informed by an interview with Jean and Lisa.

Figure 4: Lisa getting ready to work in a Living Tree client's vegetable garden



Source: Photo by the author 2010

²⁶ Bill Mollison coined 'permaculture' by combining the words 'permanent' and 'agriculture'. It is "the conscious design and maintenance of agriculturally productive ecosystems which have the diversity, stability, and resilience of natural ecosystems. It is the harmonious integration of landscape and people providing their food, energy, shelter, and other material and non-material needs in a sustainable way ... a system of assembling conceptual, material and strategic components in a pattern which functions to benefit life in all its forms" (Mollison 1988:ix).

5.4.1.1 The vision

a) Motivation behind the initiative

Lisa and Jean come from an environmental education background, having completed a six-week field guide training course with the Field Guide Training Association of South Africa at the Antares Field Guide Training Centre on Grietjie Nature Reserve in Phalaborwa, Limpopo²⁷ (Steyn 2010). Jean also undertook two years of environmental education training and at the beginning of 2010 decided to focus his efforts on regional youth environmental education (Du Plessis 2010).

Lisa and Jean founded Living Tree after undergoing permaculture training with Beau Horgan in Noordhoek. Beau has extensive permaculture experience and has been running a similar initiative called PEGS (Permanent Edible Garden Service) in Noordhoek since 2006 (Steyn 2010). Beau's work resonated with Jean and Lisa's environmental training and personal values, and they saw it as an ideal opportunity to change destructive food systems and increase awareness of sustainable food practices (Du Plessis 2010).

Lisa sees her role in the food system as being primarily educational. She believes that the gardens she installs are too small to produce sufficient food for her clients' sustenance, but rather supplement their diets. She does, however, feel strongly that edible gardens are powerful educational tools for explaining to people where their food comes from and promoting more informed food choices (Steyn 2010).

b) Future plans

Ideally, Living Tree's clients would manage their own gardens so that Lisa could install more gardens for new clients. Living Tree's maximum operational capacity for managing gardens is 40 clients, because of Lisa's commitment to personal involvement in each garden (Du Plessis 2010). She would prefer to see similar initiatives taking shape to meet the demand for regional edible garden services and expressed a willingness to share her knowledge with other initiators (Steyn 2010).

The ultimate edible garden would function in harmony with other systems around clients' homes by incorporating the organic waste cycle of each home into the vegetable garden's

²⁷ See <http://www.antares.co.za/> for more information on the field guide training course.

composting process. Lisa also wants to teach clients how to harvest their own seeds so the gardens can become self-sufficient and cyclical (Steyn 2010).

One new Living Tree innovation, suggested by a client, will involve dividing an area of land into smaller plots for vegetable gardening and leasing these plots out to clients without access to land. Clients will be free to visit and work on their plots at any time, but Living Tree will be responsible for their preparation, planting and maintenance. This idea has already taken off in Italy and Germany²⁸. Jean mentioned that Riaan and Helen van Zyl (the initiators of the Stellenbosch Organic Farmer's Market in 4.10) offered Living Tree a piece of their land in Jamestown for this purpose, and that Living Tree needed to enter into discussion with them to explore the offer (Du Plessis 2010; Steyn 2010).

c) Responses to suggestions about a collaborative sustainable Stellenbosch food system

Lisa expressed a keen interest in participating in a regional vision for a sustainable food future. She would like to see dedicated individuals or groups in different areas taking responsibility for specific, practical projects in support of this vision (Steyn 2010).

5.4.1.2 Perceived reality

a) View of the Stellenbosch food system

Lisa's limited participation in the formal food sector, which she defined as conventionally-produced food distributed through supermarkets, limits her opinion about the Stellenbosch food system. In her view, the Stellenbosch food system constitutes the formal food sector, whereas she considers herself part of an alternative food system. Lisa purchases food from ethical suppliers like the Stellenbosch Organic Farmer's Market (4.10), only buying the odd supply at supermarkets (Steyn 2010). Jean and Lisa also stated that the alternative food scene in the area and especially Cape Town was incorporating more ethically informed food practices faster than in other parts of South Africa (Du Plessis 2010; Steyn 2010).

b) Major challenges

For Lisa, identifying specific challenges is difficult, as Living Tree is still a young business. The initiation phase of the business was a difficult process during which she had

²⁸ See Brones (2010) for more information on these initiatives.

to learn quickly. She also stated that she expected the learning journey to be a continuous one, but that she was ready for it (Steyn 2010).

5.4.1.3 Realised actions

a) Procurement practices

Lisa obtains uncertified organic vegetable and berry seedlings for the installation phase from Kuikenvlei in Somerset West. She buys herbs from St. Omer's in Paarl because of their large variety. St. Omer's is not organic, but according to Lisa, they have showed interest in buying organic seeds in the future. After the initial installation, Lisa prefers to work with seeds that she plants on-site in seedling beds in order to teach clients where their food comes from. She has also started her own seed bank, as it is difficult and expensive to purchase organic seeds in South Africa (Steyn 2010).

She buys most other garden ingredients and equipment from AgriMark. Lisa tries to choose natural options, but does not trace the producers of all the products she uses. Jean stated, for example, that they use bone meal rather than quarry-mined rock phosphate as a soil supplement, as the latter has devastating environmental impacts (Du Plessis 2010).

b) Customer base

To promote Living Tree, Lisa and Jean initially distributed flyers and posters at local fresh goods markets, sent out e-mails and placed advertisements in local newspapers. Today Lisa mostly relies on word-of-mouth advertising in her clients' social networks. She has ten clients in Franschhoek and Paarl, with an additional four pending (Steyn 2010). Her client profiles range from smallholding owners with guesthouses looking for a new marketing angle, to middle class people who see it as a valuable investment in their sustainable food futures, despite the initial financial strain (Du Plessis 2010).

Lisa's personal relationship with most clients provides her with direct customer feedback. In the few cases where she does not directly interact with the client, but through their employees, she keeps a maintenance book to record everything she does in the garden (Steyn 2010).

c) Community involvement

Lisa's business is still relatively young, so she has not yet participated in community projects. She intends to eventually share her knowledge and experience with communities on a pro bono basis, and help them to set up edible gardens that will improve their livelihoods (Steyn 2010).

5.4.2 *Fyndraai*

Fyndraai is a restaurant specialising in heritage Cape food. It is located on the Solms-Delta wine estate, 27 kilometres from Stellenbosch, off the R45 (see Figure 3). Renate Coetzee, a renowned expert in traditional South African cuisine, was a consultant during the 2008 planting of the 2-hectare Dik Delta Fynbos Culinary Garden (henceforth called 'Dik Delta') on Solms-Delta. Dik Delta is an edible fynbos garden designed to supply Fyndraai with indigenous ingredients (Coetzee, R. 2010), and forms part of the larger 15-hectare fynbos and Renosterveld conservation park currently under development on Solms-Delta (Solms-Delta 2009c).

Fynbos is the main component of the Cape Floral Kingdom, which is smallest of the world's six floral kingdoms. It is uniquely adapted to the region's sandy soils, strong winds and frequent fires (Cowling 1992). Renosterveld is the second component of the Cape Floral Kingdom, and Strandveld the third. South Africa's Cape Floral Kingdom is the only kingdom confined to a single country, and consists of 9600 species (Cowling & Richardson 1995). It has earned recognition both as an international biodiversity hotspot²⁹ and as the country's newest UNESCO³⁰ World Heritage site (Biodiversity and Wine Initiative – BWI 2010).

Dik Delta's first fynbos harvest took place at the end of June 2010. As the garden grows, it is expected that Fyndraai's head chef, Shaun Schoeman, will have access to a greater

²⁹ The world's 34 biodiversity hotspots hold more than 50 per cent of the world's plant species and 42 per cent of all terrestrial vertebrate species on only 2,3 per cent of the Earth's land surface. These hotspots have been identified as vulnerable and critical areas of conservation (Conservation International 2010).

³⁰ UNESCO is the acronym for United Nations Educational, Scientific and Cultural Organisation. World Heritage sites are places identified for their special cultural or physical significance. The World Heritage site list is maintained by the international World Heritage Programme, which is administered by the UNESCO World Heritage Committee (UNESCO 2010).

variety of ‘veldkos’³¹ for use in his increasingly regional menu, appropriately named the ‘Hiervandaan’³² or ‘Heritage’ menu (Coetzee, R. 2010). The restaurant is open every day of the week from 09:00–17:00; the kitchen closes at 16:00 (Coetzee, R. 2010).

Figure 5: A corner of Dik Delta



Source: Photo by the author 2010

While the restaurant currently serves a variety of local traditional dishes, this case study focuses mainly on the relationship between Dik Delta and Fyndraai. Renate shared her thoughts on the initiative with me in an interview. Her comments are supplemented by information from Solms-Delta’s website and e-mail correspondence with Cathy Macfarlane, the general manager of Solms-Delta.

³¹ ‘Veldkos’ is a local Afrikaans word used to refer to indigenous wild foods, including edible fynbos (Coetzee, R. 2010).

³² ‘Hiervandaan’ is an local Afrikaans word that means ‘from this place’, and is used in this context to explain the restaurant’s commitment of the restaurant to serving dishes from the Cape’s various food traditions of the Cape, influenced by Dutch, German, French, Slave and Khoi practices (Coetzee, R. 2010).

Figure 6: Fyndraai's interior



Source: Photo by the author 2010

5.4.2.1 The vision

a) Motivation behind the initiative

Professor Mark Solms, the custodian and two-thirds owner of the 320-year-old Solms-Delta estate, is a renowned neuroscientist (Solms-Delta 2009a, Macfarlane 2010). In 2002 he returned from London, where he was furthering his studies in neuropsychology and psychoanalysis, to restore his family's farm, Solms-Delta to its former glory (Macfarlane 2010). When he arrived, the farm's 80 hectares had become the local dumpsite for neighbouring housing developments and farms. His intention was to re-establish the vineyards and cellars, and to re-embed the project in the true history of the farm (Solms-Delta 2009a; Coetzee, R. 2010). Fyndraai was opened in 2009 to re-establish the true food heritage of the farm and surrounding region (Solms-Delta 2009a).

Before starting any research on the culinary traditions and food history of the region, and especially of the mostly Khoi employees on his farm, Professor Solms came across Renate. Renate originally trained as a food scientist in the United States, and has worked as a lecturer in various universities, an entrepreneur, a writer and as Anglo American's food manager, where she was responsible for 250 000 meals per day all over South Africa. Renate has written three books on South Africa's indigenous food cultures: *The South African culinary tradition: The origin of South Africa's culinary arts during the 17th and 18th centuries, and 167 authentic recipes of this* (1977), *Funa food from Africa, Roots of traditional African food culture* (1982) and *Koekemakranka: Khoi-khoin-en kultuurgoed en kom-kuier-kos* (2009) (Coetzee, R. 2010).

The motivation behind Dik Delta was to recover and preserve the lost knowledge of edible fynbos in the Khoi culinary traditions that were once part of Solms-Delta. It is based on Renate's latest book, which she refers to as *Koekemakranka*. The book aims to capture the food culture of the Khoi, which Renate regards as one of the oldest civilisations on earth, if not the oldest. Her original idea was to help the Khoi woman in the Rigttersveld who had taught her about edible fynbos species to start guesthouses with fynbos food gardens, thereby increasing their income through sustainable tourism. She believed that they could market it as 'the oldest food culture in the world'. However, at the age of 81 she now feels she is too old to start another project and was happy Professor Solms gave her this opportunity to apply her knowledge. She will also train Shaun, the head chef of Fyndraai, to use fynbos in dishes adapted to contemporary palates (Coetzee, R. 2010).

Shaun was born and raised in the region (Coetzee, R. 2010). Aged 29, he already has extensive experience in the restaurant industry. He started his career at Haute Cabrière restaurant in Franschhoek, where he did in-service training for three years and received his international chef qualification. He then moved to Cape Town and worked with Harold Bresselsmidt at Aubergine restaurant for over two years, after which he returned to Franschhoek for a sous chef position at the Franschhoek Countryhouse and Villas. After three years there he joined the Mont Rochelle Hotel and Mountain Vineyards as an executive sous chef (Macfarlane 2010). When he accepted the position at Fyndraai, the Heritage menu limited his inputs to indigenous ingredients (Solms-Delta 2009d), but he saw it as an opportunity to broaden his horizons and run his own kitchen (Macfarlane 2010).

b) Future plans

Renate's vision is that Dik Delta will become the sole responsibility of the Khoi community on Solms-Delta; she hopes they will manage it and share their knowledge with the regional community. She also believes that the re-introduction of fynbos as a food source could contribute to the region's food basket, and that Fyndraai could play a key role in achieving this (Coetzee, R. 2010).

Cathy expressed the hope that the project would supply most of the produce for the restaurant's menus. Fyndraai must become a place where people can learn, see and taste some of the area's natural heritage. If, eventually, there is a surplus of certain plants, they will be processed (preserved/packaged) and sold to customers. The overarching intention is to reintroduce fynbos into the food system and valorise something that might otherwise die out (Macfarlane 2010).

c) Responses to a collaborative future sustainable Stellenbosch food system

Cathy believes that a sustainable food culture in the area is very important, and that making use of indigenous plants is ideal. Education is the most important factor in teaching people about edible indigenous plants, as nothing is possible without the knowledge and skills to cultivate fynbos. The process should incorporate a culture of food gardens, originating in local schools so that children can take their knowledge and enthusiasm home. The schools would have to be supported and a knowledgeable, organised and energetic person must be appointed to lead the process (Macfarlane 2010).

5.4.2.2 Perceived reality

a) View of the Stellenbosch food system

Renate is a member of the Slow Food movement and doesn't often eat out. She expressed an annoyance with the fast food culture in Stellenbosch and the fact that poorly-executed foreign foods are replacing the region's own food heritage. She also shared an experience from her own life as an example of how indigenous food cultures are suppressed by major companies. She previously owned a factory that processed some of the indigenous foods that she wrote about in *Funa*, but after it became too big for her to manage she sold it to Royco in 1992 with the expectation Royco would take the business further. They didn't continue with her initiative and she suspects that they only bought it so that their

competition couldn't. When she sold the company's recipes to Royco, she signed a contract prohibiting her from passing them to anyone else and consequently lost much of the indigenous knowledge she recovered for *Funa* (Coetzee, R. 2010).

b) Major challenges

Cathy said that initially setting up Fyndraai was a major challenge because they wanted the farm community, consisting mostly of unskilled labourers, to install it. The process involved a lot of patience and training (Macfarlane 2010). Renate echoed this, stating that she struggled to get the Khoi community on the farm to take ownership of Dik Delta and fully utilise the opportunity at hand (Coetzee, R. 2010). Their biggest challenge at present is to introduce the restaurant and its use of fynbos as a food to an uninformed customer base (Macfarlane 2010).

Specific challenges between the Dik Delta and Fyndraai include that the 'veldkos' has strange flavours and tastes, for which new recipes have to be developed. This takes time and effort and is not always successful. The garden's output is still unpredictable, which makes planning difficult; Shaun can never be sure of what he will have to work with. Communication between the garden and kitchen is of utmost importance to make the project run smoothly. Shaun needs to understand the garden and the garden needs to understand the restraints of the kitchen (Macfarlane 2010). Renate also said that although Shaun is a brilliant chef with an extraordinary talent for combining different flavours, his primary interest is the foods' tastes, while hers is reintroducing a lost culinary tradition. It is very difficult to produce a menu that will satisfy customer expectations with inconsistent goals (Coetzee, R. 2010).

5.4.2.3 Realised actions

a) Procurement practices

The fynbos species planted in Dik Delta were chosen with care. In *Koekemakranka*, Renate lists 30 out of more than 200 edible indigenous fynbos species that the Khoi used to eat. She deliberately omitted endangered plants, because she is of the opinion that when the craze for fynbos dishes starts, people might harvest endangered species. While researching her book, Renate took two specimens of each plant from the women in the Rigtersveld: one to prepare for tasting, and the other for a horticulturist who propagated them for her. The book also contains recipes that she put together from fynbos ingredients, adjusted for

today's palates. She is teaching the recipes to Shaun so he can incorporate them into his own dishes (Coetzee, R. 2010).

Some vegetables and herbs have also been planted in Dik Delta to supply the Fyndraai kitchen, with the hope that all of Fyndraai's fresh produce will eventually be sourced from Dik Delta. Cathy said that Fyndraai currently still buys most of its produce from local markets, but did not specify which markets (Macfarlane 2010).

b) Customer relations

Although they have been serving food to the public since 2009, Fyndraai only had their official opening weekend several weeks before my interview with Renate in 2010 (Coetzee, R. 2010). Cathy said that Fyndraai's opening was marketed through local newspapers and magazine articles, digital newsletters, and online networks such as Facebook and Twitter. It was also featured on the South African conservation television programme 50/50 (Macfarlane 2010).

Renate was moving at the time of the opening and not as involved as before with the details of the restaurant, but understood that the fynbos menu would become one of Fyndraai's main attractions. She expected a set Heritage menu (see Appendix D) to be introduced the weekend after our interview that would include dishes from the Dutch, German, French, Slave and Khoi food cultures (Coetzee, R. 2010).

She commented that Fyndraai's customer base would most likely consist of local customers or people having a keen interest in food histories (Coetzee, R. 2010). Judging from the prices on the menus (see Appendix D and E), Fyndraai will attract middle- to high-income clients.

c) Community involvement

Renate stated that the whole Dik Delta project was designed to support the community of mostly Khoi employees living on the farm and re-establish their lost culinary traditions. She explained that they were responsible for Dik Delta and that they could generate extra income by giving tours of the garden and making fynbos products such as rubs, liqueurs, jams and pickles to sell in a future deli on the farm. The project might also supplement the region's food basket in the future (Coetzee, R. 2010).

Fyndraai is embedded in a larger restoration process. The Wijn de Caab Trust was established as one-third owner of Solms-Delta in 2007, and the labourers working and living on the farm are the sole beneficiaries of the trust (Solms-Delta 2009b; Coetzee, R. 2010). The trust manages 33 per cent of profits from Solms-Delta wine sales to improve and support labour housing, education (up to tertiary level and including adult education) and medical care for workers on the farm (Solms-Delta 2009b). A social worker was also appointed on a fulltime basis (Macfarlane 2010). The estate has opened the Museum van de Caab, which shows artefacts that were unearthed during archaeological excavations that started in 2005. Music van de Caab was initiated in 2007 to preserve the musical traditions of the Cape winelands (Solms-Delta 2009a). Solms-Delta is also a member of the Biodiversity and Wine Initiative (BWI) (Macfarlane 2010), which is a partnership between the South African wine industry and the conservation sector aiming to promote biodiversity in the winelands, and is endorsed by the World Wildlife Federation (BWI 2010).

5.4.3 Divine Foods

Divine Foods is a restaurant, deli and catering service. It is located on the corner of Andringa and Banhoek Streets in Stellenbosch (Coetzee, L. 2010). Divine Foods opened in May 2006 to serve ethical, balanced and nutritiously prepared meals to the Stellenbosch public. 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 (4.10). Prepared meals and produce are always fresh, seasonal, organically grown and local where possible. Divine Foods can also prepare meals for people with unique dietary requirements (Divine Foods 2009). Divine Foods is open from 09:00–17:00, Mondays to Saturdays.

I interviewed Lynette Coetzee, who was standing in during owner Sanet Brundyn's holiday. Lynette is married to the owner of a local distributor of certified organic goods called Coetzee and Coetzee. Most of the produce Coetzee and Coetzee distributes is imported, owing to a lack of certified organic produce in South Africa (Coetzee, L. 2010). The Divine Foods website, an article in the *Green Times* and e-mail correspondence with Sanet supplement this description of Divine Foods.

Figure 7: Divine Foods' interior



Source: Metelerkamp 2010

5.4.3.1 Vision

a) Motivation behind the initiative

With a passion for good food and health (Coetzee, L. 2010), Sanet completed a Home Economics degree at Stellenbosch University and in her Honours year researched Monosodium Glutamate (MSG)³³. Her research findings concluded that MSG was not as harmful as commonly thought, but indicated that processed foods contained more additives than consumers might expect. The study pushed her to educate people about healthy food choices. She encourages people to read product labels carefully and to teach children from a young age to understand what their food contains. She believes that consumers should not buy products with labels listing unknown ingredients, and avoid eating food that cannot be reproduced in their own kitchens (Divine Foods 2009; Pollard 2009).

³³ MSG comes from glutamic acid, an amino acid. Amino acids are the building blocks of protein and so our bodies contain natural levels of MSG. However, because of its flavour-enhancing capabilities, it is often added to processed foods. Various studies have tried to establish why MSG enhances flavour and what the negative effects of high levels of MSG in the body are (Brundyn 2010).

Sanet started Divine Foods after realising that the current food system does not benefit human health. Her background in Home Economics and her husband's butchery (previously located in the space where Divine Foods now operates) (Brundyn 2010) made her realise that there was no legislation protecting the consumer from unknown chemical additives in mainstream food (Pollard 2009; Brundyn 2010; Coetzee, L. 2010). Divine Foods is her attempt to provide the public with a trustworthy and transparent food source (Brundyn 2010).

b) Future plans

Sanet's original vision was to open a store where local and ethical producers could rent shelf space to display and sell their produce. Her intention was to take a 10 per cent mark-up on their price, in addition to a small renting fee for maintaining and managing the store. She made 200 flyers to introduce her idea and personally distributed them among ethical and local suppliers at food markets in the region, but received no responses. Her original vision is thus unrealised, but she opened the store with the idea of eventually integrating this model. Today she sells local and ethical produce based on a general food store model, buying produce from producers and then selling it to consumers in the store. She still hopes to one day transform the store into a daily everything-under-one-roof local and ethical market, and would like to open more branches nationwide to educate South Africa about sustainable food choices (Brundyn 2010). Lynette also said that Sanet had expressed the desire to hold seminars for teaching people about healthy organic food, if she ever decided to sell Divine Foods (Coetzee, L. 2010).

Based on its growth over the past two years, Lynette thought it likely that the business would double in size in five years. She felt that Divine Foods' growth was proof of an increased number of people in the region supporting the organic movement, and argued that repeated exposure to the better taste and health benefits of organic food is necessary to spread consumer awareness (Coetzee, L. 2010).

c) Responses to a collaborative future sustainable Stellenbosch food system

Sanet felt that a collaborative sustainable Stellenbosch food system would be possible if people adopted a more holistic approach to food. To ensure the wellbeing of current and future generations, the food system must simultaneously maintain healthy soils, animals and people. To understand the larger picture, consumers must appreciate the finer

workings of the system; for example, that agricultural chemicals actually increase pests in the long term, because pests become resistant to these chemicals. A balanced, natural approach prevents crop sicknesses and requires no chemicals. A sustainable food system must therefore focus on rebalancing nature (Brundyn 2010).

Lynette said that a platform where people can come together around organics would support a more sustainable system. It would be important to start small, choose one proposed project after a first meeting and to follow through. Too often, groups propose too many projects and fail to carry them out. She felt that something on a grassroots level would be easiest, because it is simpler to teach a hungry person about organic food than a rich person with established tastes. Another suggestion she made was to help the ‘Smouse’ (5.4.7) across the road become more organic and local, thereby transforming an already established business. Lynette said that one problem was that people do not want to work together—they want to win alone, but do not realise that this also means failing alone. She felt that if people worked for a common goal, no one would lose (Coetzee, L. 2010).

5.4.3.2 Perceived reality

a) View of the Stellenbosch food system

Sanet said that very few restaurants in Stellenbosch are tuned into sustainable practices because they choose the cheapest options above everything else, especially in the fast food industry (Brundyn 2010). In Lynette’s view, Stellenbosch residents do not value good food enough to pay a fair price for it, and as a result, few places deliver the same level of service and food quality as they did in the past. Our values have become more material: people would rather pay for the plate than the food on it. Nevertheless, we eventually pay for cheap food with ill health (Coetzee, L. 2010).

b) Major challenges

According to Lynette, Divine Foods’ biggest challenge is the fast food culture in Stellenbosch, which offers cheap, ‘tasty’ and unhealthy junk food. Increased publicity around organic food is therefore crucial. An educated public already conscious of organic foods’ benefits would make business much easier. She also felt that the facts being communicated to the public must be scientifically proven (Coetzee, L. 2010). Sanet confirmed Lynette’s comments in a later interview, adding that people buy from the

monopolistic supermarkets and take-away franchises because of cheaper prices and a lack of awareness surrounding the health implications of conventional food (Brundyn 2010).

5.4.3.3 Realised actions

a) Procurement practices

Divine Foods' restaurant kitchen serves daily lunch buffets prepared with the same ingredients for sale in the deli, including fresh vegetables, dried fruit, nuts, pulses, rice, oats, flour, eggs, chicken and milk. The catering service also uses these ingredients. Biodegradable household cleaning products and body care products are available in the deli as well. Most of the biodegradable products are made in South Africa (Coetzee, L. 2010).

Sanet sources whatever she can locally, always favouring producers who incorporate sustainable principles and are located nearest to Divine Foods. She also prefers to cut out any unnecessary middlemen and buy directly from small-scale producers who are making a living instead of chasing huge profits. In Stellenbosch she sometimes buys produce from a local small-scale farmer, Eric Swarts (5.4.9). Divine Foods greatly values organic produce, but unfortunately some kinds of organic produce are not available locally or nationally; stock is then imported to fill these gaps (Brundyn 2010).

b) Customer relations

Stellenbosch families from middle to high-income communities purchase groceries from the deli, while many local professionals and students support the daily organic lunch buffet. Most clients are from Stellenbosch, Paarl, Franschhoek and Somerset West (i.e. the greater Boland area) and are either working in Stellenbosch or visiting. Guesthouses, Stellenbosch University and other Stellenbosch institutions hire the catering service on a regular basis (Coetzee, L. 2010).

Sanet does not formally market Divine Foods, except through its website and menu pricelists available in-store. Her customer base grows mostly through word of mouth. Lynette believes that clients are loyal to Divine Foods because they can see Sanet's passion for her work (Coetzee, L. 2010).

c) Community involvement

Sanet is responsible for managing the tuck shops at Eikestad Primary School and Stellenbosch High School in Stellenbosch (Coetzee, L. 2010). She designed a tuck shop menu (see Annexure F) to include options that contribute to children's health and thus indirectly to a better education, in addition to teaching them good food choices. She gives regular talks at the schools and also distributes a newsletter among the children with healthy food information (Coetzee, L. 2009). The tuck shops are not operated to make a huge profit, but to deliver a service to parents and children (Coetzee, L. 2010).

5.4.4 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, 9 kilometres outside Stellenbosch, off the R310 (see Figure 3). Eight opened on 8 December 2009. Most of the restaurant's produce comes from Spier Biodynamic³⁴ Farm (Spier BD Farm), also situated on Spier, and it purchases supplemental ingredients from surrounding ethical producers. When Spier BD Farm eventually operates at full capacity and offers a great enough variety of supplies, Eight will ideally obtain all its ingredients from the farm. The restaurant also runs an organic box scheme (similar to 5.4.9) that distributes excess produce from the biodynamic farm to the public. The first box costs R100 and is then refilled on a weekly basis for R50. Eight is open from 10:00–16:00, Tuesdays to Saturdays (Heyns 2010).

Eight's head chef, Lorraine Heyns, shared her experience of the initiative with me in an interview that informs this description of Eight. Her information is supplemented by an interview I conducted in 2009 with the owner of Spier BD Farm, Angus Macintosh.

³⁴ The biodynamic approach is similar to permaculture in the sense that it promotes a self-contained ecosystem. In Biodynamic agriculture, the farm is considered an individual organism. Its various elements (soil, plants and animals) have to be balanced in order for it to be self-nourishing. Fermented herbal preparations are used to make compost and compost teas, and it is also used in field sprays. An astrophysical calendar is used for sowing. The biodynamic approach was founded by Rudolf Steiner, who created the philosophy of 'anthroposophy' and shared it with the world in his 1924 Agriculture Lectures (Proctor & Cole 2008).

Figure 8: Eight's interior



Source: Gow 2010

5.4.4.1 Vision

a) Motivation behind the initiative

After completing an Honours degree in Management Accountancy and working in London as a stockbroker, Angus returned to South Africa with his wife Mariota to ‘slow down’ their lifestyle. Mariota is a daughter of the family owning Spier, the Enthovens³⁵. Over the last 30 years, tobacco, vegetables and grapes have been cultivated on Spier. Before then, the farm was mined for gravel used to tar roads in and around Stellenbosch. Of the farm’s 600 hectares, 300 hectares are conventionally farmed vineyards, while the other 300 hectares were left fallow from 2003–2009. Angus and Mariota began their new life by

³⁵ Gareth Haysom, one of the Sustainability Institute’s Sustainable Agriculture stream coordinators, explained in e-mail correspondence that Spier is held by Capricorn Holdings. It is registered in Luxemburg but the controlling ownership of Capricorn Holdings is held by Spier Holdings, of which the Enthoven family holds the controlling shares. Dick Enthoven, the family’s father, has two sons, Robbie and Adrian, and a daughter, Mariota. Mariota and her mother Angie Enthoven are involved in a number Spier’s ‘special’ projects. Mariota is also on the boards of some of their companies. Mariota was directly involved in the building of her cob house and the founding of Spier Biodynamic Farm. Gareth is of the opinion that she and her brother Adrian, the chairman of Spier Holdings, are mostly responsible for Spier’s sustainability trajectory (Haysom 2010).

building a cob house on the fallow 300 hectares. Inspired by Nicolas Joly's³⁶ books and their research into sustainable home design principles, they started Spier BD Farm in early 2009. Joining Spier's overarching goal of being completely self-sustainable by 2017, Angus began to transform the fallow 300 hectares into Spier BD Farm (Macintosh 2009). Eight was the next logical step in this process: introducing biodynamic produce to the public in the form of a healthy, delicious and sophisticated farm-to-table menu (Heyns 2010). The restaurant was obviously also established as a secure buyer of Spier BD Farm's produce.

After 11 years of working in cutthroat haute cuisine restaurants, Lorraine also decided that it was time for a change and joined Spier on 1 October 2009. She was initially attracted to Eight not for its sustainable philosophy, but because she would be able to work less than 17 hours a day and have a guaranteed day off every week (Heyns 2010).

b) Future plans

The restaurant already recycles 80 per cent of its waste and 100 per cent of its water as part of the larger Spier sustainability initiative. They also plan to eventually use solar energy to generate heat and electricity, biogas for cooking and biodegradable storage containers. In accordance with the greater Spier vision, Eight aims for complete self-sustainability by 2017 and plans to source all of its ingredients from Spier BD Farm (Heyns 2010).

c) Responses to a collaborative future sustainable Stellenbosch food system

Lorraine expressed an interest in a regional stakeholder conference where front-runners of the sustainable food movement in Stellenbosch could share their knowledge, experience and challenges with each other. She also believes that it would be useful to form a group that could meet on a more regular basis to discuss the challenges, solutions and opportunities its members face. It would also provide members with the opportunity to build a better network and share information on everything from surplus local produce to sustainable packaging ideas (Heyns 2010).

³⁶ Like Angus, Nicolas Joly left an overseas position in finance to manage a conventionally farmed family vineyard and transform it into a biodynamic farm. He has written various books on biodynamic wine farms (Joly 2007).

5.4.4.2 Perceived reality

a) View of the Stellenbosch food system

Although Lorraine lives in Stellenbosch, she did not feel entitled to comment on its food system, as she spends most of her time at Eight and also eats there. She did, however, say that her experience of working with local food has been very different to the environment that she first trained and worked in. Previously, she would not have hesitated to import ingredients for reasons of quality and she had access to whatever she needed. At Eight, she is lucky if she has more than five ingredients to work with (Heyns 2010).

b) Major challenges

Eight is still a young initiative and is experiencing several challenges: debt³⁷, uninformed public perception, procurement limitations, a lack of staff commitment and limiting regulatory measures (Heyns 2010).

Diners have misconceptions about what constitutes healthy, organic food, and often go to one of Spier's other restaurants because they don't feel like eating 'just a salad'. Lorraine wants to change these notions by offering a varied menu with delicious, sophisticated organic meals (Heyns 2010).

As a chef with a conventional haute cuisine background, Lorraine finds it extremely challenging to work with a small number of basic ingredients that are limited by seasonal changes and local availability. She was trained to never repeat an ingredient on a menu, but now might have pumpkin soup, pumpkin mash and pumpkin fritters on the same menu, because it's what's available that day. Some days, she has to design up to nine dishes using only four basic ingredients (chicken, pumpkin, sweet potato and spinach). She had to learn to work completely outside of her comfort zone and has even served a basic dish like chicken pie, something she would have never done in her previous job (Heyns 2010).

Eight's single biggest challenge remains finding suitable local suppliers. Ideally all ingredients, including meat, could be sourced from Spier BD Farm (Heyns 2010). At the time of my interview with Lorraine, Spier BD Farm had already built an abattoir and was in the process of resolving legal technicalities.

³⁷ Lorraine mentioned that Eight was in 'die rooi', which is an Afrikaans idiom for 'in debt' (Heyns 2010).

Eight has a staff of 15, comprised of people from radically different cultures who have never previously encountered aspects of sustainability and must now run a restaurant based on sustainable principles. Lorraine has struggled with a lack of staff commitment from the beginning. Many resigned because of the long working hours, but she feels that 8-hour days are extremely reasonable for the restaurant business (Heyns 2010).

A final challenge is health and safety measures requiring Eight to use things like plastic wrap in the kitchen. There are no sustainable alternatives for these kinds of products at the moment, and Lorraine feels that such technicalities greatly limit their self-sufficiency (Heyns 2010).

5.4.4.3 Realised actions

a) Procurement practices

Eight uses everything that Spier Biodynamic Farm currently produces: vegetables and chickens. All other ingredients are bought from surrounding natural producers and suppliers that offer delivery. Their main supplier, Three Peas (a restaurant fresh goods distributor discussed in 5.4.6), has assured Lorraine that it will only deliver regional organic produce (Heyns 2010). Three Peas sources most of its produce for Eight from Pleasant Valley Farming (Francois Malan; see 5.4.10) and Vredenhof (Isabella Blench; see 5.4.5) (Heyns 2010), both certified organic producers within a 15-kilometre radius of the restaurant (Blench 2010; Malan, F. 2010). Granadillas are harvested from a Spier staff member's own garden and delivered on a weekly basis. Pastas and breads are made from uncertified organic Eureka Mills³⁸ flour. An ethical supplier from Gordon's Bay delivers pork; Airport Meats delivers free-range Karoo lamb; and Fair Cape delivers free-range milk for the whole of Spier, including Eight. Olive oil is certified organic, from Foxenburg (Heyns 2010).

Some ingredients, such as pineapples, are sourced from the northern regions of South Africa. Lorraine stated that Three Peas brings in some essential ingredients from other parts of the country, but that she then prefers organic produce (Heyns 2010). When organic produce cannot be found, Three Peas informs Lorraine; she then decides whether to take a

³⁸ Eureka Mills is located between Heidelberg and Swellendam, 200 kilometres from Stellenbosch. For more information about Eureka Mills see Eureka Mills (2010).

non-organic non-local alternative based on the urgency of the ingredient (Heyns 2010). When ingredients are neither local nor organic, they must come from Broad-Based Black Economic Empowerment³⁹ (BBBEE) companies or Fairtrade⁴⁰ suppliers. Eight's coffees and teas are not organic or locally sourced, but come from Fairtrade companies. Some of the restaurant's dishes contain South American quinoa, partly because it is a complete protein source for vegetarians, and also because it is one of Mariota's favourites (Heyns 2010). Lorraine did not say whether the quinoa was organic or Fairtrade certified. She also did not inform me whether Eight uses an established list of criteria when sourcing produce.

b) Customer relations

Before Eight's 2009 launch, Spier's Marketing Department advertised the restaurant in local newspapers and with posters on the estate's grounds. Since its opening, the restaurant has been featured in two well-known national magazines, *Taste* and *Top Billing Magazine*. Despite this advertising, Lorraine still feels that their strongest marketing tool is word of mouth (Heyns 2010).

Eight's busiest time is over lunch. The restaurant is visited mainly by locals and especially by staff from Spier's Wine Department. Lorraine is always in the restaurant and willing to talk to customers; there is also a visitor's book for comments at the main entrance and an e-mail address where clients can send feedback (Heyns 2010).

c) Community involvement

The restaurant is not yet involved in any community projects, but intends to set up internships for Kayamandi High School learners who might want to become chefs. Lorraine also wants to start a feeding scheme for street children in Stellenbosch and do free cooking classes in poorer communities to encourage healthy food preparation and

³⁹ The BBBEE Act of 2003 aims to address inequality in the South African economy by promoting economic transformation that enables the meaningful participation of black people (South Africa 2004). It includes a sector-wide generic scorecard that measures companies' black empowerment progress according to seven elements: ownership, management control, employment equity, skills development, preferential procurement, enterprise development and socio-economic development (Warby 2007).

⁴⁰ Fairtrade consists of 24 international organisations that work together to establish fair trade conditions for producers and traders in majority countries. Fairtrade certified suppliers and products meet Fairtrade standards, which "are designed to address the imbalance of power in trading relationships, unstable markets and the injustices of conventional trade" (Fairtrade 2009).

balanced diets. She stated that Eight must become more established before it can focus on community projects (Heyns 2010).

5.4.5 Vredenhof

Vredenhof is a certified organic and family-run farm, located 13 kilometres outside of Stellenbosch on Bredell Road, off the R44 (see Figure 3). This account focuses specifically on the distribution channels of Vredenhof produce, which include a daily organic market on the farm that started in June 2009, organic box schemes, local supermarkets, an organic grocery store and a local restaurant distributor (Blench 2010). Vredenhof is a 27-hectare smallholding, of which 6 hectares are under organic cultivation. Isabella Blench, Vredenhof's owner and farmer, manages the market from 10:00–13:00, Monday through Friday. Isabella also manages deliveries and pick-ups of Vredenhof produce through its other distribution channels.

I originally interviewed Isabella to find out about the farm-based market, but our conversation quickly revealed that Vredenhof's distribution network extends far beyond the farm.

5.4.5.1 Vision

a) Motivation behind the initiative

Isabella grew up on a 2-hectare smallholding in Ceres, 100 kilometres from Stellenbosch. Her mother comes from a farming background, and Isabella's family farmed organic peach trees and vegetables because it was just the way people farmed back then. In the early 1980s, Isabella moved to Switzerland. She is an enthusiastic gardener, and after 17 years of living in a fifth-floor apartment in Geneva, she convinced her husband to move back to South Africa. She wanted a house with a smallholding, so they bought Vredenhof together in 2002 (Blench 2010).

Isabella has been farming organically since 2003. She had some gardening experience, but decided to hire farm manager Hugh Gordan, who has 17 years of experience in organic farming. Isabella has two sons; one is responsible for the farm's physical infrastructures, and the other is a chef. Her husband is a financier and tends to Vredenhof's financial management. Their main goal is to supply people in the region with healthy, certified organic food (Blench 2010).

Figure 9: The Vredenhof pack shed



Source: Gow 2010

Figure 10: Vredenhof onions



Source: Gow 2010

b) Future plans

Isabella wants to run the best organic farm in the region, producing a wide variety of good quality, ‘pretty’ fruits and vegetables at the most affordable prices. She also intends to get some chickens and milking cows for eggs and dairy for home use and to use in products sold at a future farm stall. Isabella’s elder son is busy constructing a farm stall next to Bredell Road, where there will also be a coffee shop and nursery. In addition to managing the coffee shop, her younger son will provide baked and processed goods to sell. The farm stall will only sell certified organic produce from the farm. According to their certification body, they are not allowed to sell non-Vredenhof produce unless they process or re-package it. They hope to finish the farm stall by the end of 2010. Rather than sell her produce through other distribution channels, Isabella wants to increase the number of customers coming directly to the farm. She did, however, state that she would continue to supply distributors that supported her from the beginning (Blench 2010).

c) Responses to a collaborative future sustainable Stellenbosch food system

Isabella stated that any attempts to grow a sustainable Stellenbosch food system had to increase consumer awareness about the benefits of organic food. Get-togethers with likeminded individuals could be pleasant and give her the opportunity to market the farm. She also stated that it would be best if distribution initiatives (whether box schemes or markets) were certified organic (Blench 2010).

5.4.5.2 Perceived reality

a) View of the Stellenbosch food system

Isabella said that she didn't feel informed about the conventional food system in Stellenbosch, as she doesn't participate in it. She lives mostly off the farm, picking her own fruit and vegetables and sourcing meat from the farm's cattle. She buys her dried goods from Coetzee and Coetzee⁴¹ (Blench 2010).

From her experience with market customers, it seems few people understand why it is important to eat organically. Many have the misconception that it is expensive and not regularly available. There is also a lack of organic production in the region; for these reasons, she considers it a bad system (Blench 2010).

From a consumer's point of view, she is of the opinion that it is not important to have certified organic food as long as it is grown naturally. From a producer's point of view, she considers certification by a respectable overseas body to be essential. People who are not certified cannot sell their produce as if it is organic, because it gives certified organic producers a bad name when non-certified producers introduce sub-standard produce into the organic market (Blench 2010).

b) Major challenges

Consumers who are generally uneducated or misinformed about organic food do not buy it from supermarkets. At the moment, organic food suffers a lot of stigma: people believe that organic production cannot feed the world; that organic produce is too expensive and inaccessible; or that it is just a marketing strategy used to charge more for conventional

⁴¹ I interviewed Lynnette Coetzee about Divine Foods (5.4.3), as she was standing in for her friend and the owner of Divine Foods, Sanet Brundyn, while she was on holiday. Lynette's husband owns Coetzee and Coetzee (Coetzee 2010).

food. Isabella feels that people would learn more about the benefits of organics if the press offered their support instead of undermining the movement's efforts (Blench 2010).

She also thinks that people who sell conventional produce as organic contribute to organic food's poor reputation. It was recently found that a regional middleman had been selling conventional vegetables as organic. When asked for the person's name, she said that because some informants had faced legal prosecution, she preferred not to comment further. She added that the news had spread in the organic circles, so that those who needed to know did. Because of this situation, she emphasised the need for producers to be certified by a credible international certification body (Blench 2010).

Isabella also expressed disappointment that Eight (5.4.4) had contacted her about buying fresh produce, but she never heard from them again. She said that although they claimed to be regional, they often brought in produce from Johannesburg when it was not available in the region. She was aware of this because Eight also uses the distributor Three Peas (5.4.6), which—Isabella knew—brings in produce from other parts of South Africa. Even though Isabella was selling lettuce to Three Peas, who in turn sold produce to Eight, she was under the impression that Eight would buy directly from her in order to access a wider variety of organic produce (Blench 2010).

5.4.5.3 Realised actions

a) Procurement practices

Vredenhof sells seasonal vegetables based on consumer demand, and everything they sell comes directly from the farm. Lettuce is currently her best seller. Three Peas (5.4.6) buys most of the lettuce for its quality and year-round availability, not because it is organic. Her son occasionally uses Vredenhof produce to make small quantities of jams, pestos and olive pastes to sell at the market. Isabella is also experimenting with apricots, plums, figs, eating grapes and strawberries (Blench 2010).

b) Customer relations

Isabella supplies various box schemes (Organic Zone in Retreat, the Ethical Co-op in Cape Town and one in Gordon's Bay), five supermarket outlets (three Spars: Gourmet Foods in Stellenbosch, Lion's Square in Somerset West and the Gordon's Bay Spar; a Family Pick 'n Pay at Stellenbosch Square and The Wellness Centre on Kloof Street in Cape Town), an

organic grocery store (Organic Zone in Retreat) and a restaurant distributor (Three Peas; see 5.4.6). She used to supply The Wellness Centre in Cavendish, Cape Town and a Spar in Seapoint, Cape Town but their mark-ups were too high and they were difficult to work with. Isabella is very particular about the stores that stock her produce and assesses them herself before selling to them. She delivers only to the local Pick 'n Pay and Spars; distributors from Cape Town must pick up their orders on the farm (Blench 2010).

Isabella determines the selling price for supermarkets by pricing produce when she packages it (see the barcode on the packaged onions in Figure 9). The final selling price is a maximum 30 per cent mark-up on the price supermarkets pay Isabella. She also does the ordering for the Spars in Stellenbosch and Somerset West, which are owned by the same person. She controls what goes onto the shelves and takes back produce that is not selling. This system worked well when she had to build a customer base, but she is now rethinking it. She prices her produce very closely to conventional competitors, and sometimes even lower (Blench 2010).

Visitors to the Vredenhof market include elderly people wanting to buy farm-fresh produce and young people who consider it important to educate their children about eating organically. On a good day, the market receives up to 30 visitors, and the 'bread days' on Wednesday and Friday are popular. Her son bakes the bread using organic flour from Coetzee and Coetzee (Blench 2010).

The market is a platform for building relationships with new customers and because Isabella personally runs it, she is always there to speak to her customers. She also offers free organic waste as animal feed during the market hours, and so has gained favour with many of her neighbours (Blench 2010).

Isabella is not marketing Vredenhof at the moment. She has flyers that she gives to people who ask for more information, but she does not actively distribute them. People who are interested in her produce usually approach her first. She has a complaints form as part of an organic certification requirement, but in seven years she has had only one form filled in. When customers have a problem, they speak to her directly. She has rarely had to refund or replace produce (Blench 2010).

c) Community involvement

Isabella believes that farming builds communities. If a worker has a problem, s/he goes to Isabella. She sees workers' wellbeing on the farm as her responsibility. They are divided into various groups, and every Friday a group receives all of that week's unsold produce (Blench 2010).

5.4.6 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 (see Figure 10) are located in a pack shed on Roulou Farm, off the R44, 9 kilometres from Stellenbosch (see Figure 3). Tony Nunez started Three Peas in 2004. The business provides a convenient service for food and beverage, and procurement managers in hotels and restaurants, who can get everything they need from one supplier. The business prides itself on the fact that they can get whatever customers require, "even though it might be out of season" (Nunez 2010). Three Peas also does a lot of vegetable peeling and preparation work (cutting potato chips, for example) and makes vegetable packets and stir-fry mixes on request. The business operates Monday to Friday, from 04:00 until the last delivery of the day, which is usually between 16:00–18:00. On Saturday they start at 06:00 and finish at 13:00–14:00 (Nunez 2010). This description of Three Peas was informed by an interview with Tony.

5.4.6.1 Vision

a) Motivation behind the initiative

Tony Nunez worked as a procurement manager in the restaurant industry for 18 years before he decided to start Three Peas. He felt that the hours spent working for restaurants were too taxing and did not allow him enough time to spend with his family. Using his experience and knowledge from the restaurant industry, he founded Three Peas in 2004 (Nunez 2010).

b) Future plans

Tony thinks the business' turnover will double over the next five years. However, he also said that it would take a lot of hard work and a continuation of his current method of delivering good quality produce for the best price to his customers (Nunez 2010).

Figure 11: Three Peas' offices and central distribution point



Source: Gow 2010

c) Responses to a collaborative future sustainable Stellenbosch food system

Tony said that a meeting of key players in the food system would provide a good networking opportunity for smaller local producers to meet potential buyers. However, because he needs to deal in volume and quality, these will always be the prerequisites of his relationships with producers. With respect to client relationships, he requires that they follow the right ordering procedure, order sufficient quantities per delivery and pay on time. Three Peas will try to source organic produce at the client's request, but Tony finds it is often quite a challenge. If they are unable to find organic produce, Three Peas informs the client. Consumers must also understand that organic produce is more expensive than conventional produce (Nunez 2010).

5.4.6.2 Perceived reality

a) View of the Stellenbosch food system

According to Tony, the Stellenbosch food consumer buys food based on a combination of criteria including service, quality and price. Second-grade produce will obviously be cheaper, but Three Peas only sells first-grade produce and prices it accordingly. Tony feels

that one must move fresh produce quickly to deliver quality. The fresher the produce, the happier the client, and the more room to expand his business (Nunez 2010).

b) Major challenges

At the time of the interview, Tony's biggest challenge was collecting customers' payments, especially in the 18 months prior to the interview. The other considerable challenge was to continue sourcing produce at the best quality and price (Nunez 2010).

5.4.6.3 Realised actions

a) Procurement practices

Three Peas procures only fresh produce, most from regional suppliers; whatever they cannot find regionally, they seek nationally. Three Peas procures whatever customers request. The selection process for suppliers is mainly based on their service, availability and the quality of their produce. These conditions always go hand in hand (Nunez 2010).

Vredenhof (5.4.5) is the only certified organic farmer Three Peas deals with, but it is because of the produce quality, not their organic status. Three Peas buys lettuce from Vredenhof. Some of the emerging farmers on Farm 502 on the Annandale Road are uncertified organic; Three Peas buys produce from some of them, but has had difficult experiences in the past where these farmers provided poor quality produce or couldn't supply the quantities they had committed to (Nunez 2010).

On average, suppliers are about 50 kilometres away. The furthest suppliers are located 1 500 kilometres away in Limpopo. Bananas and pineapples are not available in the Western Cape and have to be brought in from Limpopo, as well as watermelon, sweet melon, winter melon, kiwi fruit, granadilla, asparagus and garlic. Produce is transported to Three Peas by truck. In winter, 20–30 per cent of produce is brought in from Limpopo; in summer, this figure drops to 5–10 per cent (Nunez 2010).

Tony knows 70–80 per cent of the producers he buys from. He does not deal directly with producers from Limpopo, but typically uses an agent who is familiar with Tony's quality expectations. Three Peas works with agents rather than the Cape Town Market (where produce is also brought from Limpopo) because their prices are better (Nunez 2010).

Figure 12: Three Peas' trucks at the central distribution point



Source: Gow 2010

b) Customer relations

Three Peas' customers consist mainly of restaurants and hotels in the Boland region and some in Cape Town. Three Peas does not work on a contract basis; customers base their loyalty on prices and the business could easily lose a customer because of a 50-cent price difference. Clients would not support them if their prices were too high, and Three Peas does not work with customers who have failed to pay in the past. They deliver to their customers by truck on a daily basis (Nunez 2010).

Tony was not comfortable sharing how many customers Three Peas had, but said that fewer than ten restaurants (constituting less than ten per cent of his business) preferred organic produce. For Tony, this is not enough to merit shifting the business toward sourcing more organic produce. He said that based on his experience in the fresh goods distribution business, he does not envision such a shift anytime soon (Nunez 2010).

Three Peas is not advertised or marketed. So far, its customer base has grown through word of mouth only. To maintain customer relations, Tony speaks to customers on a daily

basis when they call him to place orders, or at least once a week if they place weekly orders (Nunez 2010).

c) Community involvement

Three Peas sometimes donates food to local schools at the schools' request. Three Peas assesses food needs on a case-by-case basis and donates food if they feel that the school will not stretch them beyond capacity. Tony also intends to sponsor sporting equipment for a school in the Rathby area, where many of his employees live (Nunez 2010).

5.4.7 Smouse

'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 stands consist of three sidewalk stalls outside the Stelmark Centre and another two located at the taxi rank on Bird Street. The mobile Smouse drive around in 'bakkies' (trucks) and sell produce in residential areas and to some restaurants in Stellenbosch. Some mobile Smouse include Doultjie Smit, Mr van Graan and Mr Burksted. Doultjie has been trading in Stellenbosch for the longest period of all the Smouse and is known for the exceptional quality of his produce (Linders 2010).

The Smouse rely on the Epping Municipal Market for most of their produce. The market is located in Epping, 45 kilometres outside Stellenbosch. They supplement this with produce from an intricate 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).

I interviewed Gurshwen Linders at the fruit and vegetable stand closest to the main opening of the Stelmark Centre. He manages the stand for his father, Jeremy Linders, from 07:00–18:00, Monday to Friday and 06:00–15:00 on Saturdays (Linders 2010).

Figure 13: Gurshwen at his father's stall outside the Stelmark Centre



Source: Metelerkamp 2010

5.4.7.1 Vision

a) Motivation behind the initiative

Jeremy opened his first stand at the taxi rank in 1988. He later took over the space at the Stelmark Centre when, after managing a stand for 20 years, his brother decided to go into the wood business. Gurshwen studied at Boland College in Strand before he started working for his father in 2006 at the age of 16. He took over the management of his uncle's stand in 2008 (Linders 2010).

Trading fruit and vegetables has been in the Linders family for many generations and so it was natural that Gurshwen would do so as well. His ancestors owned farms in Jamestown in Stellenbosch and sold their harvests in much the same way as Gurshwen does today. Jamestown was one of the first areas in Stellenbosch to grow strawberries, but has since been transformed into a residential area. The Linders family no longer owns a farm, but continues to support the local-food economy by buying produce from local farmers (Linders 2010).

b) Future plans

Gurshwen wants to continue with the family business. He is busy learning as much as possible from his father by observing how Jeremy procures and sells fresh produce. If he can find trustworthy people to manage the stand he is currently responsible for, he would like to start more stands all over town and oversee them as well. He believes that he would have to be more mobile to achieve this (Linders 2010).

c) Responses to a collaborative future sustainable Stellenbosch food system

Gurshwen said that they would be willing to change their procurement practices to include more organic produce if it means better business; but because their initiative is embedded in a social network of other Stellenbosch Smouse, Gurshwen felt that he already knew most of the people he needs to know to run a successful business (Linders 2010).

5.4.7.2 Perceived reality

a) View of the Stellenbosch food system

Referring to Pick ‘n Pay in the Stelmark Centre and Friendly Farmer (a fresh produce trading store on the other side of the parking lot), Gurshwen stated that because these stores buy in such large quantities, they get discounted prices and can therefore offer cheaper prices. He said that the ‘kleiner ouens’ (smaller players) like themselves could not do the same. At the time of our interview, Gurshwen was selling 10-kilogram potato bags for R30, while Friendly Farmer had a special of R20 for the same quantity; both traders had bought the potatoes from the Epping Municipal Market. He said that Pick ‘n Pay does not necessarily buy from the Epping Market, but suspected that Friendly Farmer and Fruit and Veg (another fresh produce trading store in town) did. He therefore felt that the food system was biased against smaller players (Linders 2010).

b) Major challenges

Gurshwen listed several challenges, including competition from nicer-looking produce in neighbouring stands and lower supermarket prices. However, he considers competition part of the business and does not see it as a threat (Linders 2010).

The real limitations to growing the Linders’ business are inadequate stand space and bad weather conditions. In winter, boxes often tear and their regular customers go into Pick ‘n Pay to buy fresh produce. The Smouse would appreciate a larger sheltered space to pack

produce more appealingly and to be protected on bad weather days. They have asked Stellenbosch Municipality to take action, because they feel that they are paying for space without receiving any benefits. Gurshwen explained that they must buy a daily stand permit from the Municipality for R45. The stands at the taxi rank had recently been upgraded to a complex consisting of small concrete-built stalls, and Gurshwen indicated that a similar shelter would be satisfactory (Linders 2010).

5.4.7.3 Realised actions

a) Procurement practices

Gurshwen's stand sells only fresh fruit and vegetables. Smouse often buy in bulk so that customers can choose how much they want to buy and they provide small plastic bags for packaging.

Most produce (avocados, pears, bananas, apples) comes from the Epping Municipal Market, but they procure as much as possible from regional farms to guarantee farm-freshness. Jeremy buys cabbage, broccoli, lettuce and carrots from Vorentoe Boerderye, a farm just before Kuilsrivier that is run by the Visser brothers. His stands' potatoes come from Clanwilliam, their oranges from Citrusdal, and naartjies from Franschhoek. Jeremy employs pickers to harvest the guavas from wild trees next to the Swart River on George van der Westhuizen's wine farm, Swarttrivier, on the Bottelary Road. Some of these are then sold at his stands; the rest at the Epping Municipal Market, but the buying price was very low at the time of our interview and he was hoping it would pick up near the end of the season, around August. Gurshwen identified the guavas as organic and when I asked him what that meant to him, he said that no poison had been sprayed on the fruit (Linders 2010). He did not advertise the guavas as organic and charged only R5 per kilogram for them.

The Smouse know all the local farmers they buy from and some of the ones selling produce at the Epping Market. They also know some of the names of farmers they haven't met, because it is usually indicated on the packaging (Linders 2010).

b) Customer relations

People who buy other things at Pick 'n Pay tend to buy their produce from the stalls because it is fresher and sometimes cheaper. The fruit is particularly fresh and never comes

from cold storage. Their customers visit them on a daily basis, and are mostly local. He also added that they have many university students as customers (Linders 2010).

Jeremy also supplies and delivers to Neetlingshof, a wine farm, and to the SI (5.4.8). Gershwin did not explicitly name the SI, but said that the place where his father delivered produce on a Tuesday worked with young people and was located at Lynedoch. His contact at this place was a lady named June (Linders 2010). I knew June Stone (personal assistant to Eve Annecke, the Director of the SI) from my studies there and was able to ask her about the Smouse. In an informal conversation, she stated that she always saw the Smouse in the parking lot and decided to support them rather than Pick 'n Pay. June told Gershwin that to do business with the SI, he needed a receipt book. It took some time for him to obtain one, but when he did they started deliveries immediately and have been bringing fruit to the SI ever since (Stone 2010).

c) Community involvement

According to Gurshwen, the Smouse always talk to customers and make sure that they are happy. A good and friendly service sells their produce, and socialising is a big aspect of the business (Linders 2010).

My observations during our interview confirmed his claims. A policeman arrived demanding to see their permit, which Gurshwen's helper took out without deviating from his task of helping a lady bag guavas. A municipal official passed by some ten minutes after the policeman and made some jokes with Gurshwen and his helper. They seemed to have a friendly relationship. A beggar also visited the stall and tried to sell Gurshwen a cell phone gadget that appeared to be illegal. Gurshwen refused, but then gave the man two oranges and sent him on his way before continuing with our interview.

5.4.8 Farm to Fork

In the words of project coordinator Kate Schrire, Farm to Fork "is a sustainable food project that connects sustainable producers to a community of eaters based at the Sustainability Institute" (2010a). Farm to Fork was launched in February 2009 and operates from the guesthouse kitchen in Lynedoch EcoVillage, 10 kilometres outside Stellenbosch, off the R310. Lynedoch EcoVillage is South Africa's first ecologically designed, socially mixed intentional community. The SI is based within Lynedoch

EcoVillage and focuses on learning for sustainable living, combining practice with theory in a way that integrates ecology and equity. It offers BPhil, MPhil and PhD programmes in Sustainable Development Management and Planning, training in Early Childhood Development and various other programmes related to sustainable community capacity building and development (Annecke 2010).

Farm to Fork provides meals to SI staff members, as well as students attending modules and participants of SI-based workshops. The initiative aims to teach the people it feeds 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 (Schrire 2010b). Farm to Fork serves mostly vegetarian meals, except during some SI workshops (not modules) when sustainable free-range chicken is available from Spier BD farm (5.4.4). During university modules and other workshops run by the SI, Farm to Fork operates from 08:00–17:00 (Schrire 2010a).

This report on Farm to Fork is based on an interview and e-mail correspondence with Kate and e-mail correspondence with the Director of the SI, Eve Annecke.

5.4.8.1 Vision

a) Motivation behind the initiative

Together with her husband Professor Mark Swilling, Eve established the SI in 1999⁴² (Annecke 2010). Ten years later, Eve felt that it was time for the SI's food culture to reflect its sustainability ethos (Schrire 2010a). Eve sees food as our first human-nature connection and felt that an SI-based catering service using local and ethical food could foster an awareness of that connection. Another motivation was that Farm to Fork could become a stable support for Eric Swarts (5.4.9), an organic farmer closely affiliated with the SI, by sourcing ingredients from his farm (Annecke 2010).

According to Kate, one probable catalyst for Eve's decision was the creation of the SI's separate programme for Sustainable Agriculture several months earlier. By the beginning of 2009, the Sustainable Agriculture programme had started to focus on small-scale

⁴² For more information about the development of the SI see SI (2010a).

farmers and sustainable farming methods in the region. At the Sustainable Agriculture programme coordinator Candice Kelly's (5.4.9) suggestion, Eve hired Kate to launch the Farm to Fork project. Candice had met Kate when they started a Cape Town-based CSA together. Kate explained that she works mostly with Candice, but that Eve has the final say about major Farm to Fork decisions (Schrire 2010a).

Kate has a degree in International Relations from Brown University in the United States, and a Chef and Pastry Arts Diploma from the South African Chefs Academy. After working with Slow Food⁴³ Berkeley in California, she joined Slow Food Cape Town in 2007 and served on their committee for one year before leaving to form Slow Food Mother City in December 2009. Since then she has acted as chair for the latter (Schrire 2010b).

b) Future plans

Farm to Fork's planning ends with its funding in February 2011. Its future depends on new sponsors, how the SI grows and what its food needs will be. Farm to Fork will adapt accordingly, but the basic idea has always been to provide sustainable, healthy and affordable meals for a small number of people at the SI. It is always in a process of finding more local and ethical suppliers and will continue to do so for as long as it operates. If the project continues, Kate considers sharing information about sustainable food with other initiatives a part of her job. She would love to educate others on how to set up Farm to Fork projects in other institutions (Schrire 2010a). Eve is hopeful that the project will inspire ethical eating in the larger region around the SI (Annecke 2010).

c) Responses to a collaborative future sustainable Stellenbosch food system

Kate responded positively to the suggestion of a regional food conference and offered plenty of advice. She said that it would be great to have talks by people on the front line of the sustainable food movement in Stellenbosch to show that it can work and to share information about how it works. The newly renovated SI student café, A Green Café, could help schools to transform their cafeterias; Eight (5.4.4) could help other restaurants to become more sustainable. Workshops should cater for both informed and uninformed people and consist of digestible bits of information. The conference needs to be elective so

⁴³ Slow Food is an international non-profit and member-supported organisation that uses events and initiatives to spread taste education, connect ethical food producers with ethical consumers and promote biodiversity in the world food system (Slow Food 2010).

that the big decision makers will attend sessions of their choosing, rather than sending representatives who lack the authority to make important decisions. It would be crucial to bring in regional food buyers who are unfamiliar with the concept of sustainable food systems. Regional and ethical suppliers must only present what they can offer and shouldn't bring products to simply test their ideas. They must also have enough produce and information about what they can deliver and when. It is essential that the contact persons who deal with buyers be available for discussions (Schrire 2010a).

She did not share the same enthusiasm for a daily organic market, as it would be of little use to Farm to Fork without a delivery service (Schrire 2010a).

5.4.8.2 Perceived reality

a) View of the Stellenbosch food system

Because she lives in Cape Town, Kate felt she couldn't give an informed opinion of the Stellenbosch food system. Based on what other people say, however, she thinks that the people working at the SI have a greater awareness of what sustainable food entails. They are exposed to SI initiatives like Farm to Fork and A Green Café that teach more ethical eating behaviours. However, how uninformed workshop participants and even students can be sometimes surprises her. Younger students from middle-class backgrounds who have been exposed to sustainable food in the media and are interested in the SI because of ethical reasons tend to be more informed about ethical food systems. Older students are more interested in furthering their academic training, and less aware and/or interested in applying what they are learning to their own lives (Schrire 2010a).

b) Major challenges

Kate considers her biggest challenge to be a very tight budget, which forces her to strike a balance between ethical food and affordable food. She often has to compromise on expensive ethical foods like cheese that would allow a greater variety of menus. If she charged more for meals, fewer people would support the initiative (Schrire 2010). Eve also stated that "making cheap food that is also fantastic – i.e. covering costs" is Farm to Fork's biggest challenge (Annecke 2010).

A significant structural challenge is that the number of eaters is always fluctuating. The Farm to Fork team is never sure how many people they will have to cater for. This makes it difficult for them to plan, grow and upgrade the facilities (Schrire 2010a).

Lack of staff is another challenge, but more staff can only be justified if the initiative grows. Because Farm to Fork serves a closed market based at the SI, they can only grow as large as the number of people they are feeding (Schrire 2010a). The main team consists of a coordinator, Kate; a cook, Coleen; and a kitchen assistant and baker, Christelle. Kate is responsible for the general management of the project. Colleen organises menus in consultation with Kate, does all the necessary shopping, keeps receipts and works out which money paid for which meal. As baker, Christelle bakes breads and pastries; as kitchen assistant, she prepares vegetables, serves the food (see Figure 13), keeps an equipment inventory and cleans the kitchen. Christelle lives in Lynedoch EcoVillage. Casual staff are hired when Farm to Fork has to serve unusually large groups (Schrire 2010b). Eve also mentioned that “developing staff to really take to heart Farm to Fork values and ethos” has been a major challenge (Annecke 2010).

Figure 14: Christelle serving lentils



Source: Metelerkamp 2010

Figure 15: A typical Farm to Fork lunch



Source: Metelerkamp 2010

5.4.8.3 Realised actions

a) Procurement practices

In the beginning, Kate phoned around to find as many local ethical suppliers as she possibly could (Schrire 2010a). She wanted to establish a supplier network consisting of ethical, local and small-scale producers that could deliver seasonal produce (Schrire 2010b). They also had to offer a relatively stable supply, affordable prices and delivery. Kate eventually found most of the suppliers through social networks (Schrire 2010a).

Not all ingredients used in Farm to Fork meals are ethically or locally sourced yet. The project procures a lot of dried goods from the supermarket. Supermarket prices are affordable and produce can be bought regularly, which is necessary because the guesthouse kitchen does not have the storage capacity for bulk supplies (Schrire 2010a). Farm to Fork does not buy organic produce from supermarkets as it is often too expensive, with the exception of free-range milk and eggs that are affordable and currently not directly available from local and ethical suppliers (Schrire 2010b).

Nevertheless, Kate is always looking for new local and ethical suppliers and hopes to eventually avoid buying anything from supermarkets. Solutions to current procurement challenges could include doing without some ingredients (e.g. imported rice), substituting with alternatives (e.g. using yogurt instead of mayonnaise) and using less of some ingredients (e.g. expensive cheese) (Schrire 2010b).

Farm to Fork pragmatically evaluates new suppliers on a case-to-case basis. All of their suppliers must at least make an effort to farm naturally; some are de facto organic but can't afford certification. Kate prefers to speak to producers directly, as she believes it creates a sense of accountability. She also created a questionnaire based on their sustainability targets, so that anyone on the Farm to Fork team can assess whether suppliers are suitable and make an informed choice between different suppliers providing the same product. She found it difficult to translate sustainability values and Farm to Fork's requirements of affordability, deliveries, regular supply and good quality into a comprehensive and easy-to-use questionnaire. Because they communicate directly with suppliers and have few local and ethical suppliers to assess, they have not yet used the questionnaire. Kate is willing to make it available to other initiatives on request (Schrire 2010a) (see Annexure G) (Schrire 2010b).

Kate currently aspires to having all of Farm to Fork's fresh produce requirements met by produce from small-scale local suppliers. Johan Myburgh is a farmer who makes regular deliveries and also acts as a merchant for local sustainable producers who do not deliver (Schrire 2010). Farm to Fork always buys produce from Eric when he can supply it, which is usually once a month or less (Schrire 2010a). They occasionally use a biodynamic farm in Wellington, Bloublommetjies⁴⁴, for cheese, honey and jams. Their furthest known supplier of dried goods is Eureka Mills, which supplies Farm to Fork with flour. The team also picks herbs and produce from a vegetable garden at the SI (Schrire 2010a).

b) Customer relations

SI staff members, students and workshop participants constitute the entire customer base of Farm to Fork. The number of clients can vary between 10 and 70 people per day, but averages between 20 and 40. Students are encouraged to book and pay for their meals on a Monday. Food costs vary between R6,50 and R10,50 per lunch, so costs are balanced out over a week. The SI subsidises student lunches as part of the learning process and lunch is always charged at R15. In good months, the project covers labour costs (Schrire 2010a).

In the week prior to SI modules, Kate e-mails staff members with next week's lunch menus. Lately staff numbers have fallen, which Kate suspects might be due to cost or the newly renovated A Green Café which is closer to the offices and offers a variety of choices. Sometimes Farm to Fork caters for staff get-togethers, and provides meals for students and workshop participants in guesthouse accommodation (Schrire 2010a).

c) Community involvement

Farm to Fork is currently not involved in any projects other than feeding the SI community. Kate feels this is because food preparation at the SI is decentralised, with various units based in different SI locations. She shares recipes, supplier details and deliveries with other SI food-preparing units, but can't monitor their operations. She feels that a shared SI food ethos is important if more than one initiative will be preparing food (Schrire 2010a).

⁴⁴ For more information about Bloublommetjies see Urban Sprout (2010).

5.4.9 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. Eric delivers vegetable bags to the SI foyer in Lynedoch EcoVillage (see Figure 15), off the R310, 10 kilometres outside Stellenbosch (see 5.4.8 for more information on Lynedoch EcoVillage). The farm and delivery location are 4 kilometres apart (see Figure 3). Eric has been supplying vegetables to the residents of Lynedoch EcoVillage and the SI staff since in 2002, when he started farming by himself on Farm 502 (Swarts 2010). Because he was struggling to collect payments for the deliveries, he asked the Sustainable Agriculture programme coordinator, Candice Kelly, to administer the payments for him in 2009 (Kelly 2010; Swarts 2010). This account focuses on the initiative since 2009, when the structure of his distribution initiative changed. Members can now pick up their weekly vegetable bags from the SI foyer every Tuesday after 13:00 (Kelly 2010).

Figure 16: CSA bags in the SI foyer (bottom left corner)



Source: Photo by the author 2010

Interviews with Candice in 2010 and with Eric in 2009 and 2010 inform the account that follows.

5.4.9.1 Vision

a) Motivation behind the initiative

Eric received his diploma in agriculture from Kromme Rhee⁴⁵ in 1993⁴⁶. Eric's negative experiences with conventional farming before 1999 motivated him to endure and make organic farming work for him. It has taken him ten years and plenty of trial-and-error to bring the soil of Farm 502 to its current condition. He feels that he is only now beginning to see returns on his investment (Swarts 2009). The SI has taken responsibility for his water costs, which Eric estimates to be around R14 000 annually, as part of their agreement to use his farm for research and other educational purposes (Swarts 2010).

The SI employed Candice as Sustainable Agriculture programme coordinator in 2009, after she completed her MPhil in Sustainable Development Management and Planning at the SI. She also has a Bachelor of Business Science degree (Hons) in Finance from the University of Cape Town. Since her appointment, she has helped initiate the Farm to Fork programme (5.4.8) and encouraged students to take on the student café and transform it into the more sustainable A Green Café. She and Kate Schrire (5.4.8) also started a Cape Town CSA with Eric, based on the North American CSA model. Following this, she agreed to help Eric on a volunteer basis when he approached her at the end of 2009 (Kelly 2010).

Although Eric and most of the initiative's members refer to it as a CSA, its structure does not resemble a CSA as introduced in the literature review (see Footnote 16). According to Henderson and Van En, the essence of the relationship between a CSA farmer and its members is mutual commitment: "The farm feeds the people; the people support the farm and share the inherent risks and potential bounty" (2007:3). What differentiates the SI CSA from this description is that Eric does not expect CSA members to share the risk of crop failure. If Eric's crops fail, the members will not receive vegetables, but they are credited for when Eric can supply vegetables again (Kelly 2010). At this stage, if Eric has a supply problem, he tries to cancel the deliveries ahead of time so as to avoid inconveniencing members (Swarts 2010).

⁴⁵ Eric explained that Kromme Rhee was Stellenbosch's agricultural college for black students during apartheid. Kromme Rhee merged with Elsenburg, the college for white students, under the University of Stellenbosch's Department of Agriculture in 1994 (Swarts 2010).

⁴⁶ Farm 502 is a piece of commonage connected to Spier (5.4.4). According to the Crown Lands Disposal Act of 1878, commonage is land granted to a municipality by the state to keep in the public interest and make available to poor or disadvantaged residents for agricultural production, in combination with financial and other guiding support (Pienaar 2009).

The SI CSA resembles a CSA by directly connecting an organic farmer with consumers. Members pay for a month's worth of deliveries at the beginning of each month, as Candice has found that pre-payments simplify her administration responsibilities. This has also been the main motivation behind the structural change of Eric's vegetable deliveries from payment on delivery to pre-payments. A final CSA feature is that members cannot choose what goes into their bags, but receive whatever is in season on the farm. They may also sometimes receive fewer than five vegetables or less of a particular vegetable (see Figure 16), depending on Eric's harvest. Eric believes his cash flow improved after incorporating these aspects of a CSA into the structure of his SI vegetable deliveries (Swarts 2010).

b) Future plans

Candice said that Eric must be the one to decide whether the CSA is a lucrative market and if he wants to grow it as a distribution initiative. He had a lot of hope for the first Cape Town CSA and initially considered only doing CSAs; his excitement has since faded (Kelly 2010). He felt that the market for the Cape Town CSA with Kate and Candice was too demanding. People wanted a variety and consistency of supply that he did not have the capacity to deliver. The way the SI CSA has been set up is more manageable for him. He knows most of the members and feels he has greater control over the initiative (Swarts 2010).

If Eric wants to expand the CSA, Candice thinks he would have to advertise it in the centre of Stellenbosch town. Eric needs to tend to matters on the farm, so the ideal setup would include an online system that could send Eric weekly orders by SMS, and two or three collection points in town. Demand for this service would be high, because Stellenbosch does not have as many box schemes as Cape Town and is therefore still a fairly open market. If Eric branded himself and hosted farm visits⁴⁷, he could create quite a following; people connected with Eric tend to remain loyal to him. He could get into the market before it becomes flooded with similar initiatives (Kelly 2010).

Alternatively he can take part in a collaborative Stellenbosch CSA with other organic small-scale farmers. According to Candice, such an initiative would require a very capable

⁴⁷ Eric used to host one farm visit per CSA season when he was still supplying the Cape Town CSA with Kate and Candice, and later for a student CSA that only lasted two months (Swarts 2010).

coordinator and farmers who don't mind working together and scheduling when they will have certain produce ready. The ideal managing strategy would be a sophisticated one like that of Harvest of Hope, a box scheme in Cape Town. Harvest of Hope plans small-scale farmers' planting and then monitors them. About 20 different farmers grow exclusively for them, along with another few approved farms that deliver part of their yield to Harvest of Hope. They deliver between 100 and 150 boxes a week (Kelly 2010).

c) Responses to a collaborative future sustainable Stellenbosch food system

Candice responded to the suggestion of a regional food conference by saying that it would have to be done in stages, with a first stage designed to provoke people into thinking differently and show how other regions around the world are addressing food and sustainability challenges (Kelly 2010).

She thought that a daily organic Stellenbosch farmers market would face difficulties due to a lack of awareness in Stellenbosch of what constitutes sustainable food. Residents also have little commitment to supporting local and organic producers, and opt for the lower prices and convenience offered by supermarkets. She thinks that South Africa is generally starting to move in the right direction, but slowly. To first make residents feel part of a local-food system, food stores could for instance display pictures of their producers and organise events to actually meet the farmers. Organic and local food should not however become elitist. A heavy focus on organic food will probably result in exclusivity, and so it is important that the emphasis rests on 'community food' (Kelly 2010).

Furthermore, money and sufficient supplies are required for a market to work, which entails finding a dried goods producer. A market must be able to supply all basic goods or be located near a supermarket so that people can conveniently buy items not available at the market (Kelly 2010).

Eric responded to the same suggestion of a daily organic farmers market in Stellenbosch by saying that he wants people to buy directly from producers, and such a market would provide this opportunity. He said that produce at the market should be sold unpackaged. The market could secure a customer base for local farmers and encourage them to explore different crop varieties. Selling directly to the public would also increase local farmers' profits, reduce risk, and provide cheaper food for Stellenbosch households. A market

would also connect the Stellenbosch community with the people growing their food (Swarts 2010).

5.4.9.2 Perceived reality

a) View of the Stellenbosch food system

Because she doesn't live in Stellenbosch, Candice feels that her opinion of the Stellenbosch food system is limited to the food she eats at the SI. She also recognises that it is not sustainable to organise initiatives unless you are part of the food system; as soon as she finishes working at the SI, her connection and direct influence on the food system will come to an end. She remarked that the food system in Stellenbosch is most likely similar to everywhere else in the country; there is food available that people can't afford. Her salary is large enough that she need only spend a small percentage of it on food; she can therefore choose to buy good quality, nutritious food. She suspects that many people in Stellenbosch do not enjoy salaries affording them the same quality of food (Kelly 2010).

Candice felt that it is easier to make the link between the environment and food production in a rural area like Stellenbosch. Local viticulturists, for example, use problematic quantities of pesticide—something Candice experienced first-hand when suffering from sinus allergies after she first started work at the SI—and Stellenbosch residents aware of the situation started Tatib⁴⁸ to protest such practices. Candace also noted that monoculture vineyards producing for export markets dominate the area's agriculture, and that the entire food system creates a lot of waste that weighs down the already full landsite instead of being composted. For all of these reasons, she considers it a completely unsustainable and unbalanced food system (Kelly 2010).

Eric commented that except for vegetables that he picks on his farm and the meat, olive oil and cheese that he buys from the Stellenbosch Organic Farmer's Market (5.4.10) on rare occasions, his family eats food from supermarkets. This is mainly because of the supermarkets' low prices and diversity of products. He also said that most people he knows buy food from supermarkets, especially if they are low-income earners. The attraction to supermarket food seems to be that produce is uniform in shape and size, and attractively packaged, all for a very affordable price. These aesthetics give consumers the idea that all

⁴⁸ For more information on Tatib, see <http://tatibfoundation.blogspot.com/>.

produce should have such an appearance, making it difficult for Eric to sell them his crops. He stated that people do not understand that supermarkets have to select and package fresh produce to look good; they do it so well that consumers do not even notice if produce was picked more than a week ago. He observed that his produce is usually harvested on the same day as delivery, but is seen as inferior because it is locally produced and informally packaged. He said that the people in his community have more trust in supermarkets than in local growers and believed it might be a ‘status thing’ (Swarts 2010).

b) Major challenges

Because the CSA is not Candice’s first priority, its administration can become intensive and frustrating. Eric currently relies on her administrative assistance and will face difficulties when she leaves (Kelly 2010).

Eric’s biggest challenge is to supply a wide variety and large quantities of produce. He is unsure whether the prices he charges cover his costs, but feels that they should be less expensive than other farmers’ produce, as he is not financially responsible for his land lease or the cost of water. He increased labour salaries in August 2010 and was aware that prices might have to be adjusted accordingly (Swarts 2010). Eric also had a problem when a porcupine destroyed all his carrots and potatoes; he was forced to cancel delivery for August 2010, because buying in large quantities of vegetables from other farmers to supplement the bags did not make financial sense. Before the porcupine incident he charged R35 a bag, but has increased the price to R40 as of September 2010 (Kelly 2010).

5.4.9.3 Realised actions

a) Procurement practices

When Eric does not have sufficient or a wide enough variety of produce, he buys in vegetables from other farmers. He requires bought-in vegetables to be relatively inexpensive, organic or at least in transition to organic (not necessarily certified). So far he has bought vegetables from other small-scale farmers including Spier (5.4.4) labourers who farm their own small plots in the Spier Gardens, and small-scale farmers from the other part of Farm 502, across the Annandale Road (Swarts 2010).

Figure 17: CSA bag contents on 19 October 2010



Source: Photo by the author 2010

Eric does not process any of his products. He keeps packaging to a minimum for the SI CSA, tying most things in bunches or adding tougher vegetables like butternuts and potatoes to the large brown bags as they are. He only uses small plastic bags for tomatoes, lettuce and green beans. For strawberries he uses conventional Styrofoam packaging, because it effectively protects the fruit. Biodegradable plastic bags are too expensive and mostly imported, putting their sustainability into question (Swarts 2010).

b) Customer relations⁴⁹

The SI CSA members consist mostly of SI staff members and students, and occasionally people living nearby. It is not an exclusive CSA, but it is not advertised. Anyone can take part on the condition they pay the full month's fees before the first delivery and pick up their own vegetables from the SI foyer on a Tuesday afternoon. Most of the SI CSA members live in Stellenbosch, but some are also from Franschhoek and Cape Town. The number of monthly members varies between 7 and 13. The largest group had 15 members (Kelly 2010).

Most members are loyal and know Eric personally. Candice believes they are supporting a friend rather than making a purely economic decision. She also encourages people to sign on permanently to lessen administration and provide Eric with a more stable customer base. When it becomes too inconvenient for people to come and fetch their vegetables, they discontinue their membership. One new member did not understand the principles of a CSA; Candice explained the process to her and she stayed on for a few months, but eventually decided to cancel her membership (Kelly 2010).

c) Community involvement

Candice pointed out that the SI CSA contributes to the Lynedoch community by linking a local farmer to local consumers. Eric lives in Lynedoch EcoVillage, and so do some of the SI CSA members—this builds community links and spirit. Eric also makes use of the community bank, SACCO, allowing the bank to have more cash moving through it, which in turn increases its liquidity for lending to other poorer members of the bank (such as local farm workers) (Kelly 2010).

5.4.10 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, where they set up stalls

⁴⁹ Other than the SI CSA, Eric supplies box schemes for Abalimi Bezekaya, Duck Pond Restaurant, Greengate Deli, Divine Foods (5.4.3), Eight (5.4.4) and his own stall at the Stellenbosch Organic Farmer's Market (5.4.10). Lindsay Small, Spier's procurement manager, has also contacted him and seems interested in buying produce in the future. Lindsay requires a weekly availability list from Eric from which he can order according to different Spier chefs' requirements (Swarts 2010).

and sell their produce to local customers. The market is located 14 kilometres outside Stellenbosch on Spier (5.4.4), behind Farm 502 (5.4.9), off the Annandale Road between the R310 and the R44 (see Figure 3). The market was previously held at the Waldorf School's old location off the R44, but this report focuses on the market in its new location. It moved to the new premises at Spier on 1 May 2010 (Malan, H. 2010). The market is rooted in a community building effort and operates on local and ethical food principles (Malan, F. 2010). The bulk of its profits are put into a bursary fund for students at the Waldorf School, but some of it is reinvested in the market (Malan, H. 2010).

Francois Malan, one of the market's local organic farmers and a Waldorf School parent, and Maria van Zyl, the market's youngest vendor and a pupil at Cape Town's Constantia Waldorf School, shared their experiences with me in two separate interviews. Their comments are supplemented by e-mail correspondence with market administrator Henriette Malan, and the Stellenbosch Waldorf School website.

5.4.10.1 Vision

a) Motivation behind the initiative

The Stellenbosch Waldorf School started as Honeybush Nursery School in January 1993. It has since grown into a full primary school and a high school up to grade 9, with more than 170 learners (Stellenbosch Waldorf School 2010). The Stellenbosch Waldorf School is part of an international school movement with more than 800 schools around the world (Stellenbosch Waldorf School 2010). The Waldorf School approach to education is based on Rudolf Steiner's philosophy, which also informs the principles of biodynamic agriculture (see Footnote 32) (Malan, F. 2010).

Many Waldorf schools incorporate local organic markets as part of a school fundraising strategy and to promote organic and biodynamic agriculture in their areas (Malan, F. 2010). I was not able to establish how long the market had operated in its previous location, but Henriette stated that the new premises had revitalised the market (Malan, H. 2010). For the first time, a market committee and administrator were appointed. The committee consists of Helen and Riaan van Zyl, and Chris and Margaret Loubsher. Both couples have children attending the school. The Van Zyls were heavily involved in the Honeybush Nursery School's founding and have remained active in its development into

the Stellenbosch Waldorf School. In addition to being the market's administrator, Henriette is Francois' wife (Malan, F. 2010).

Francois stated that in addition to raising funds for school bursaries, the Stellenbosch Organic Farmers Market is a community-building effort that aims to directly connect local and ethical producers with local consumers. He observed that the moment you re-establish a personal connection between producers and consumers, they become mutually aware of their ethical responsibilities toward each other (Malan, F. 2010).

Henriette added that another major motivation behind the market was to establish a stable customer base for local and ethical producers (Malan, H. 2010). The market's objective is to give producers, who often struggle to distribute their produce in the area for fair prices, the largest possible proportion of money paid by consumers. By cutting out middlemen who usually take the biggest cut of consumer spending, farmers receive a fair price for their produce and can act as custodians of the land used to produce food (Malan, F. 2010).

b) Future plans

Francois believes that the market is growing very healthily at the moment, but that it requires more focused marketing. He thinks that the market could grow by up to 1000 per cent by 2015. It might then be held twice a week, perhaps with a Wednesday afternoon or evening market. A mid-week market would benefit both consumers and producers; producers could sell crops that have to be harvested twice a week, while consumers could get fresher produce. Producers currently harvest on Fridays and sometimes even Saturday mornings to have the freshest produce possible at the market (Malan, F. 2010).

Henriette stated that the market had grown from only 14 to 30 stall owners in just five months; she hoped it would double in size by the end of 2010. Other market-based initiatives being realised include a CSA and a farmers' cooperative called Afrikara. The cooperative will pool farmers' and consumers' skills and resources for the benefit of its members (Malan, H. 2010).

c) Responses to a collaborative future sustainable Stellenbosch food system

Francois believes that the Stellenbosch Organic Farmer's Market will become the main organic market in Stellenbosch. To accelerate this process, the current organic system

needs to be better coordinated. Local and ethical producers need to know who is producing what and where in order to identify future production opportunities. He feels that organic producers in Stellenbosch need to drastically develop if they want to keep up with the growth of the organic movement he is experiencing at the market. They must particularly address seed saving, weed control and fertility management (Malan, F. 2010).

On the subject of farmers' complaints that Eight (5.4.4) does not support them even if they are local and organic, Francois commented that it is not the restaurant's fault if local and organic producers do not supply diverse food in sufficient quantities. If Eight commits to sourcing seasonal produce, it should be able to find it locally. If such produce is not available, it cannot be faulted for buying in from elsewhere (Malan, F. 2010).

5.4.10.2 Perceived reality

a) View of the current Stellenbosch food system

According to Francois, less than 10 per cent of food consumed in Stellenbosch is farmed in the area; this small amount is produced by vendors at the Organic Farmers Market, several regional small-scale farmers, Vredenhof (5.4.5) and Wynland, a conventional strawberry farm. He believes that the local production capacity for fresh goods, eggs and milk should preclude importing these commodities from other areas. Other things like grains, which are not grown locally, should be brought in from as close as possible (Malan, F. 2010).

Francois also said that *Landbou Weekblad*, an Afrikaans agricultural magazine, has reported that 96 per cent of all South African food is distributed through supermarkets. He views supermarkets as the culprit for disconnecting consumers from their food sources. As a producer, Francois feels that he provides people with healthy ethical food, and that the market is both a way to distribute the food and educate people about sustainable food choices (Malan, F. 2010).

b) Major challenges

Although the market was founded to give local producers the opportunity to sell their goods, there are not yet enough local suppliers, and consequently some producers are from relatively far areas such as Wolsley, Ladysmith and Riviersonderend. The market currently needs these outside producers to retain its customer base and continue to grow (Malan, F. 2010).

The limited number of producers at the market also means that there is a limited diversity of produce available. In addition to selling his own produce, Francois currently buys in from non-local organic farms. He feels strongly that it cannot be their long-term business model, as local farmers—himself included—must produce a greater diversity of produce in greater quantities. Everything he buys in from outside the region is certified organic, except for pineapples from the Eastern Cape. The bananas come from Lebombo; potatoes and sweet potatoes from Patrysvlei; guavas from Camphill; and vegetables from Esperanza in Riviersonderend. Though it represents a big challenge, maintaining a constant and diverse supply of produce is essential as they have learned that diversity ensures profitability. Most people buy one of each product, which means that the more diversity you have on the stall table, the more products you will sell (Malan, F. 2010).

Another difficulty is the general public's misconceptions about organic food, such as the belief that it is more expensive than conventional produce. The market's reasonable food prices are designed to change such assumptions (Malan, F. 2010). I completed a small study of prices at the market, comparing them to corresponding produce prices in two Stellenbosch supermarkets. I was unable to find organic produce in the two supermarkets to match everything available at the market, and so compared some organic market produce with conventional equivalents. The market had the highest price for only 28,6 per cent of the produce; most of its prices were comparable to conventional prices. Only one of the three organic vegetables I found in the supermarkets was cheaper, by just 5 cents (see Appendix A). My limited study therefore supported Francois' claims.

Community awareness of the food system's need for radical change is fundamental to the market's growth and success. Francois stated that because Stellenbosch is an academic town with Elsenburg, an established conventional agricultural department, people's minds are often set a certain way and might prove difficult to change. Nevertheless, he is confident the situation is starting to shift, because conversations like those we had during our interview would not have happened ten years ago (Malan, F. 2010). Henriette mentioned that the market committee is busy planning a campaign to increase consumer awareness of ethical food choices. They will be showing food-related education DVDs at the market from the first weekend in October 2010 (Malan, H. 2010).

A final difficulty is managing the market without knowing how many visitors will attend; even so, increasing consumer numbers is one of the market's most urgent challenges. In the end, the market can only grow if visitor numbers increase (Malan, F. 2010).

5.4.10.3 Realised actions

a) Procurement practices

Vendors at the market sell eggs, yogurt, fruit, vegetables and baked goods, among other items. Produce must be grown as naturally as possible, and there must be an available niche in the market (Malan 2010). All vendors must complete applications and undergo a selection procedure before selling their goods at the market (Malan, H. 2010).

The market's ethos enforces practices that circulate money in the local economy. Processed goods must be made with locally available and organic ingredients. If other vendors at the market sell some of the ingredients used in processed goods, the makers of the processed goods must source these ingredients from the market. On average, places of production are located 2,5–100 kilometres from the market. However, ethically processed wild honey with unique health benefits is imported from Kenya, and biltong vendors from Somerset West import beef from ethical suppliers in Namibia. The market's organisers are acquainted with all local producers, but not with those from outside the region (Malan, F. 2010).

Maria van Zyl, the market's youngest vendor and Helen and Riaan van Zyl's daughter, was very comfortable explaining where she sources ingredients for her stall, Mixing Bowl. She sells breakfast (oats or bircher muesli with various toppings) and baked goods (including polenta and spiced pear tarts, chocolate brownies, almond semolina cakes, and wheat-free nut and chocolate cakes). Maria tries to use only local and organic ingredients: wine that her father makes himself, pears from Elgin Organics, flour from Eureka Mills, nuts from a man in Gordon's Bay, and eggs from Organic Zone in Retreat. She is still searching for local organic polenta (or a substitute) and affordable local organic chocolate. She has met most of her producers, and her pecan nut supplier has asked her to develop a biscuit range using his nuts and dried figs. She has not yet met the producers of the grain used in Eureka flour, but she has met the man who does Eureka flour's quality control tests (Van Zyl 2010).

b) Customer relations

The market's committee has recently started work on a definite marketing plan. So far news of the market has spread through word of mouth, signage indicating directions to the market and advertisements in local papers. The market's face-to-face nature means that someone is always available to listen to customer suggestions. Suggestions are usually from people who care and want to help develop the market (Malan, F. 2010).

Figure 18: Maria van Zyl at the market



Source: Gow 2010

Local customers are mainly from Somerset West and Stellenbosch, and can reach numbers up to 400. School parents make up only about 10 per cent of visitors, as they tire of driving to and from the school. The most loyal customers are usually retired people who come to buy farm-fresh produce and participate in a community event (Malan, F. 2010).

c) Community involvement

The market has a community-building foundation and contributes to the community on various levels. Francois explained that vendors pay 10 per cent of their profit as a market fee, benefiting students reliant on bursary funds and smaller vendors paying only a

percentage of their profit instead of a fixed amount. This makes it easier for smaller traders to get into the market, and also allows people who simply want to offer a community service to cover their costs (Malan, F. 2010). Maria initially started Mixing Bowl because there were no baked goods sellers at the market. Her intention was never to make a profit, but to support the market by attracting more visitors. Since the fourth market, she has however been making a small profit that she is saving for future studies and/or travelling (Van Zyl 2010).

By purposely creating opportunities for emerging small-scale farmers to sell their produce (Malan, H. 2010), the market assists vulnerable low-income groups and contributes to increased community food security (Malan, F. 2010). At this point, the market has to increase visitor numbers before it can accommodate more vegetable producers. There are currently two emerging vegetable farmers at the market, Eric Swarts (5.4.9) and Erick Zanzele (Malan, F. 2010).

Figure 19: A notice board at the market entrance



Source: Gow 2010

Maria also shared how she translated her love for organic, regional baking into a final-year social practical project at the Waldorf School in Constantia. She ran a baking course for 12 women at the Legacy Centre in Kayamandi. Participants each had to pay a course fee of R10, half of which was refunded if they completed the course. After finishing the course, participants received recipes (illustrated by Maria's friend), a certificate, and a photograph. Maria plans to work with five of the participants—four women and one man—who expressed an interest in starting a small business supplying restaurants with local, organic baked goods on a contract basis. She said that their main challenge in realising this was transport (Van Zyl 2010)⁵⁰.

5.5 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. Fostering these connections is a valuable first step toward growing sustainable food systems; this section aims to establish which connections already exist among the local-food distribution initiatives described in 5.4. It is important that I establish these initiatives as a network in order to support my discussion of blockages and strengths influencing the sustainability trajectory of local-food distribution network in Stellenbosch (5.6), and inform my overview of the network's current position (5.7).

Box 1 provides an account of my feedback session with seven interviewees two months after conducting my final interview. The purpose of the feedback session was to establish whether my findings up to that point were still contextualised. It was also a final opportunity to obtain feedback from the group and identify possible shared blockages and strengths influencing their initiatives' sustainability. I present this account because the session contradicted my original impression of multiple disconnected initiatives and confirmed them as a network.

⁵⁰ After meeting Maria, I introduced her to Jess Schulschenk, who is responsible for the Youth Program at the SI. Maria then participated in the SI's Keep them Safe programme. The programme was a Stellenbosch Municipality initiative to keep children in the area safe during the 2010 Soccer World Cup by organising various activities around culture, sport, entrepreneurship and social wellness (Janse van Rensburg 2010). Maria offered schoolgirls cooking lessons. Jess also asked her to give baking lessons to the SI's student café manager, Mathilda Daniels.

Box 1: An account of a small group feedback session on 21 September 2010 at Divine Foods, Stellenbosch

I initially thought that the feedback session was unsuccessful because it did not play out according to my expectations. See Appendix B for a copy of the memo handed to attendees. After presenting my initial research findings, I hoped to obtain feedback from the group and to hear some of their suggestions for moving forward. I did get some feedback and comments from the structured discussion, but the informal group conversation was the session's most valuable output.

Unfortunately not all of the interviewees could attend the session. Gurshwen Linders confirmed that he would be there, but never arrived. Renate Coetzee apologised for not being able to attend, as she was on the set of a television program documenting her work at Solms-Delta that day. Both Isabella and Tony did not respond to my e-mail invitation to the session, but declined due to work duties when I phoned them. The attendees included Sanet Brundyn, Francois and Henriette Malan, Candice Kelly, Eric Swarts, Lorraine Heyns and Lisa Steyn. Candice, Eric and Lorraine also had to leave for work before the session ended.

Everyone knew at least one other person around the table, and while we waited a few more minutes for Gurshwen to arrive, the network spontaneously played out in front of me. The group's energy lifted as likeminded individuals engaged in informal conversation about their shared passion: local-food. However, it was also obvious from the conversation that the network was relatively weak and not deliberate. To give an example, Sanet said that she would have taken Francois' surplus market produce to sell in Divine Foods, if she had only known about it. She also shared her unrealised initial vision for Divine Foods as an indoor market with shelves where local producers could display and sell their produce. Eric and Francois, both local producers, immediately indicated that they were interested in such a concept. Perhaps her personal approach to introducing the idea elicited a different reaction than the 200 flyers she handed out 6 years ago to advertise the concept, to no response. In any case, this indicated that the network still had plenty of room to grow.

Two network connections mentioned in the informal conversation that I did not identify during the individual interviews, were that both Divine Foods and Eight on occasion bought vegetables from Eric.

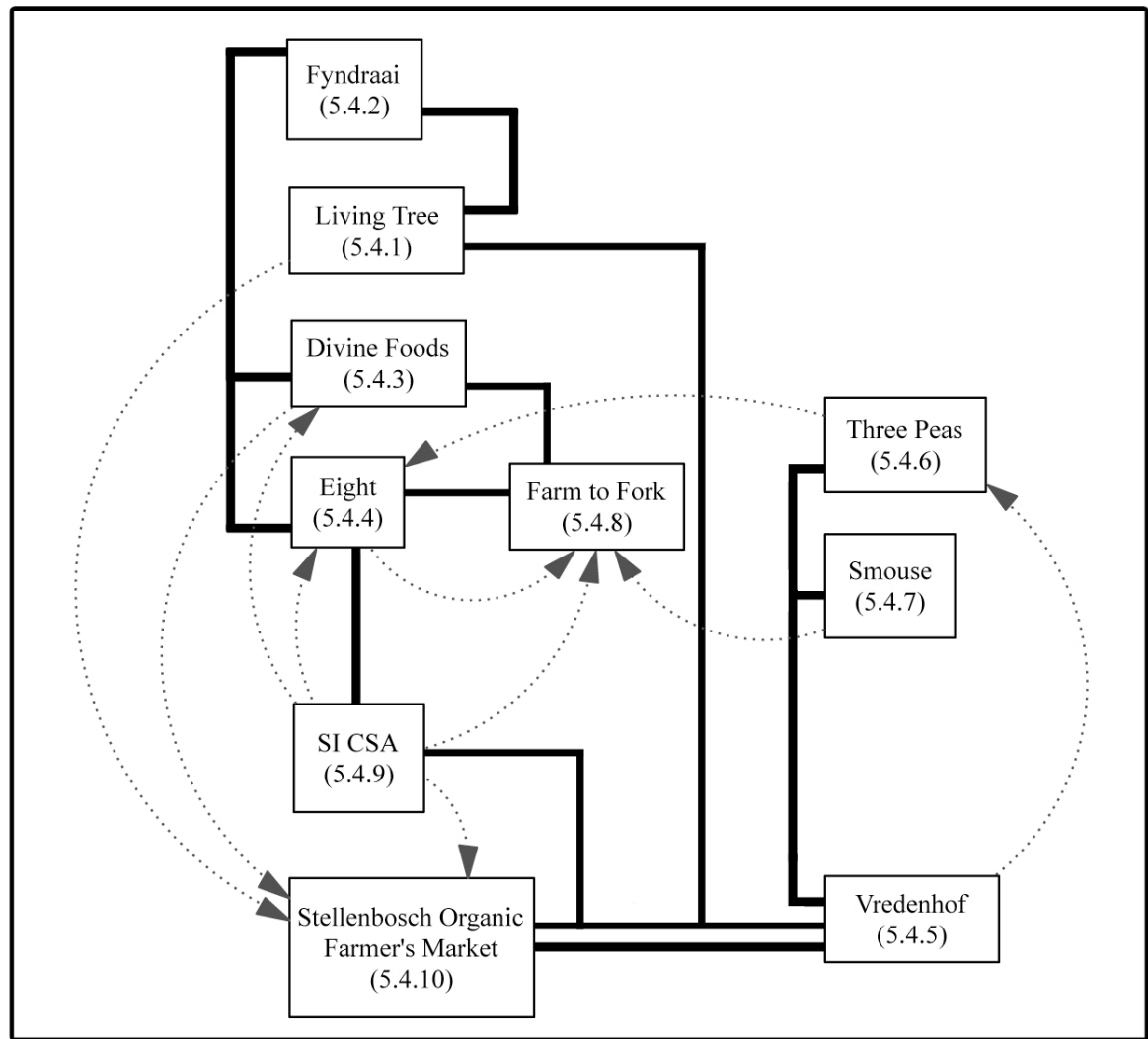
After observing and listening to their conversation for some time, I began the session by presenting the outcomes of my literature review and the blockages I had identified after writing up the interviews. Attendees were asked to respond to the findings and to identify blockages and strengths as indicated on the last page of the memo in Appendix B. At the time of the feedback session, I had not yet identified strengths according to the methods explained in 4.2.2. Some valuable comments made during the session included:

- Eric indicated that focusing heavily on distribution is difficult while production in Stellenbosch remains such a big limitation.
- Lisa shared her view that a distribution network should be a network of communication that links producers and consumers more directly, rather than a network of middlemen adding their share to the food price.
- Francois stated that Stellenbosch's uneducated consumer base is conditioned to mindlessly slot into an unsustainable system, making change very difficult. Eric agreed, stating that the way young farmers are trained also 'prepares' them to be placed in a food system dominated by chemical agriculture and supermarkets.
- Lisa acknowledged that they were only marketing their initiatives in a 'sustainable bubble' and not influencing mainstream food systems. She recognised that they would remain 'only an alternative' with such an approach.
- There was general agreement that the group would require someone who could facilitate a more integrated approach to a sustainable food system in Stellenbosch.

My discussion of network connections concentrates specifically on connections that establish the initiatives as a sustainable network. I evaluate the network's sustainability throughout, concluding my argument in 5.7. I divide connections into two categories:

conceptual connections (5.5.1) and physical connections (5.5.2). Conceptual connections are abstract connections that may not be physically observable, yet are important to identify in order to understand the sustainability principles shared by the network. Physical connections are distribution connections between initiatives enabling them to trade with each other; their partnerships; and their collaborative participation in the network to distribute local-food. Figure 19 is a visual representation of these network connections. The solid lines indicate conceptual connections and the dotted lines indicate physical connections.

Figure 20: Network connections between local-food distribution initiatives



5.5.1 Conceptual connections

These conceptual connections include types of local-food distribution initiatives, shared motivations for starting said initiatives, comparable procurement approaches, and the nature of relationships with suppliers and customers.

5.5.1.a) Types of local-food distribution initiatives

The first emerging conceptual connection is the various types of local-food distribution initiatives. These include edible gardens, ethical restaurants, local-food catering services, local-food markets, local-food distributors, farm to institution initiatives and local-food box schemes. Table 4 categorises 5.4.1 to 5.4.10 according to which types each incorporates. A conceptual connection exists between initiatives of the same type.

Table 4: Types of local-food distribution initiatives

Type	Local-food distribution initiative
Edible garden The installation of an edible garden to supply produce to a personal or institutional kitchen.	Living Tree (5.4.1), Dik Delta (5.4.2)
A local-food restaurant A restaurant using local ingredients and possibly incorporating ethical principles in its menu.	Fyndraai (5.4.2), Divine Foods (5.4.3), Eight (5.4.4)
Local-food catering service A service using local ingredients and possibly incorporating ethical principles in the preparation and delivery of catered meals.	Divine Foods (5.4.3), Farm to Fork (5.4.8)
Local-food market A market that brings local and possibly ethical producers and consumers together to trade.	Vredenhof (5.4.5), Stellenbosch Organic Farmer's Market (5.4.10)
Local-food distributor A distributor of local produce from producer to consumer or to another distribution initiative.	Vredenhof (5.4.5), Three Peas (5.4.6), Smouse (5.4.7)
Farm to institution initiative An initiative linking local and possibly ethical farmers to institutions as a stable market.	Eight (5.4.4), Farm to Fork (5.4.8)
Local-food box schemes The delivery of a weekly box of local organic produce to a fixed delivery point.	Eight (5.4.4), SI CSA (5.4.9)

Some local-food distribution initiatives fall into more than one category. It is important to note that Dik Delta is the edible garden for the local-food restaurant, Fyndraai (5.4.2). Divine Foods (5.4.3) is a local-food restaurant, but also runs a local-food catering service.

Vredenhof (5.4.5) operates a daily-food market, but also acts as distributor of local-food to various stores and other distribution initiatives in the region. Eight (5.4.4) is a local-food restaurant, a farm to institution initiative and also operates a local-food box scheme. Farm to Fork is a local-food catering service, catering to staff and students at the SI, and also a farm to institution initiative.

5.5.1.b) Motivations for starting local-food distribution initiatives

Some initiatives also had similar motivations behind their beginnings⁵¹. These included personal values, institutional values, community building and education. Table 5 categorises initiatives according to their motivation.

Table 5: Motivations for starting local-food distribution initiatives

Motivation	Local-food distribution initiative
Personal values The initiative was started because of a personal belief or orientation ⁵² .	Living Tree (5.4.1), Divine Foods (5.4.3), Eight (5.4.4), Vredenhof (5.4.5), Three Peas (5.4.6)
Institutional values The initiative started as the next logical step in the development of the institution it is embedded in.	Fyndraai (5.4.2), Eight (5.4.4), Farm to Fork (5.4.8), Stellenbosch Organic Farmer's Market (5.4.10)
Community building The initiative is an investment in community development, set up as a possible livelihood opportunity for the community.	Fyndraai (5.4.2), Farm to Fork (5.4.8)
Education The initiative is part of a strategy to educate the public about a particular approach to sustainable food practices.	Living Tree (5.4.1), Fyndraai (5.4.2), Divine Foods (5.4.3), Eight (5.4.4), Vredenhof (5.4.5), Farm to Fork (5.4.8), Stellenbosch Organic Farmer's Market (5.4.10)

⁵¹ An interesting conceptual connection (not shared by any other initiative and so not indicated in the table) is the motivation behind the Smouse (5.4.7). The Linders family has always traded produce, and used to own farmland in Jamestown. They have since stopped farming and do not plan on returning to the production of local-food as a livelihood. Instead they choose to distribute local-food. Completely unaware of this, Lisa from Living Tree (4.1) mentioned how her newest edible gardening idea involved setting up plots and maintaining them for people who would not otherwise have access to gardens. She was offered land in Jamestown to realise her plan. This narrative connection indicates that food production might return to Jamestown, which is a re-embedding (3.3.4) of the Stellenbosch food system.

⁵² Even though I did not further pursue it in this study, all interviewees indicated the role of personal beliefs or orientation in their decision to start sustainable initiatives. Only those who verbally reported it are mentioned here, but future scholarship could be directed to investigate this aspect in more detail. See 6.4.5 for an explanation of how future scholarship could focus on this subject.

Once again, a conceptual connection exists between initiatives with the same initial motivation, as these suggest shared values essential to building social capital (3.5.2). Some initiatives also fall into more than one category as they have more than one motivation.

5.5.1.c) Comparable procurement approaches

Another conceptual connection is how initiatives approach procurement criteria in similar ways. I analysed the local-food distribution initiatives' approaches to procurement based on the theoretical outcomes of my literature review: localisation can be a mechanism for growing sustainable food systems, but not the end goal; approaches for growing sustainable food systems must be constantly reflexive, more inclusive and positioned where the current system is weakest (3.4).

Only Farm to Fork (5.4.8) indicated a set of sustainability criteria and clear process when selecting suppliers (see Appendix G), and Vredenhof (5.4.5) insists on certified organic produce. Living Tree (5.4.1), Fyndraai (5.4.2), Divine Foods (5.4.3), Eight (5.4.4), the SI CSA (5.4.9) and the Stellenbosch Organic Farmer's Market (5.4.10) 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:

- a) Seasonality: Produce must preferably be in season.
- b) Location: Produce must be locally produced or as close to the initiative as possible.
- c) Source: Produce must preferably come from small-scale farmers.
- d) Production: Produce must be certified or uncertified organic, or the product of some kind of naturally-orientated production initiative.

The Smouse (5.4.7) base their procurement approach on the best price for farm-fresh produce, while Three Peas (5.4.6) 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). In order to establish

whether initiatives are truly moving toward sustainability, it would be necessary to establish whether their procurement approaches have incorporated more sustainability criteria in a future investigation. This is discussed further in 6.4.6.

5.5.1.d) The nature of relationships with suppliers and customers

The current food system has been disembedded by multiple mechanisms (intensification, specialisation, distancing, concentration and homogenisation) (3.3), constraining the tightening of feedback loops and preventing adaptation to environmental changes (Sundkvist et al. 2005). Producers do not know where their produce ends up and consumers do not know where their food comes from. For this reason, they are not aware of each other and do not communicate (producer to consumer and vice versa) about the impacts of their production and consumption behaviours, and therefore do not adjust to changes in the system.

It is essential to re-establish direct communication between producers and consumers in order to tighten feedback loops. My research focused on a distribution network, operated by middlemen that sustainable food systems are attempting to cut out or at least reduce. Throughout my research process, I tried to identify ways of setting up a distribution network that would not loosen or cut feedback loops. All of the initiatives are in personal communication with at least some, if not all, of their suppliers and personally communicate with all of their consumers. I saw that direct personal communication was one way to tighten feedback loops, but remained concerned that many distribution initiatives displayed a level of separation (loosening of feedback loops) between producers and consumers. I will discuss a particular example of a loosened feedback loop in 5.5.2.

When presenting the dilemma of middlemen loosening feedback loops to some of the interviewees in a small feedback session (see Box 1), Lisa Steyn from Living Tree (5.4.1) shared a valuable insight. She said that a distribution network should not be a network of middle-people, separating producers and consumers, and adding their share to selling prices, but instead a network of middle-communication that links producers and consumers more directly. Distribution initiatives providing a platform for direct middle-communication between producers and consumers include Living Tree (5.4.1), Vredenhof (5.4.5), the SI CSA (5.4.9) and the Stellenbosch Organic Farmer's Market (5.4.10). These are the only initiatives where consumers and producers can directly communicate with

each other and provide the feedback required to sustainably adjust to changes in their shared environments.

5.5.2 Physical connections

The physical distribution connections between local-food distribution initiatives indicate the flow of local-food in that distribution network. Starting with Living Tree (5.4.1), I will discuss each initiative's distribution connections with other initiatives, and then move on to the next initiative until all inter-initiative distribution connections have been exhausted. Fyndraai (5.4.2) does not have any distribution connections in the network. Figure 19 indicates these connections as dotted lines.

Lisa from Living Tree (5.4.1) buys some of her own food supplies from the Stellenbosch Organic Farmer's Market (5.4.10). Divine Foods (5.4.3) procures produce directly from Eric (5.4.9), and runs a stall at the Stellenbosch Organic Farmer's Market (5.4.10). Eight (5.4.4) buys produce from Three Peas (5.4.6), and directly from Eric (5.4.9). Vredenhof (5.4.5) supplies Three Peas (5.4.6). The Smouse (5.4.7) supply produce to the SI, where Farm to Fork (5.4.8) is based. Farm to Fork (5.4.8) sometimes buys produce directly from Eric (5.4.9), and also on occasion buys free-range chicken from Spier BD Farm that is linked to Eight (5.4.4). Eric (5.4.9) also has a stall at the Stellenbosch Organic Farmer's Market (5.4.10).

To show the effects of loosened feedback loops, I would like to refer to a particular example where the distribution initiative acted as a middle-person and not a platform for middle-communication as explained in 5.5.1.d). The connection involves Eight (5.4.4), Vredenhof (5.4.5) and Three Peas (5.4.6).

Isabella from Vredenhof mentioned that in 2009, Eight had showed interest in buying produce directly from her because Vredenhof met their local, organic procurement criteria. She was disappointed when the restaurant never contacted her again. In my interview with Lorraine from Eight, I asked why the restaurant worked through Three Peas instead of procuring produce directly from Vredenhof. From my interviews with Tony from Three Peas and Isabella, it was clear that Three Peas bought only lettuce from Vredenhof—thus limiting what Three Peas could deliver to Eight to a single product. Lorraine stated that because Three Peas offered a delivery service and was already buying from Vredenhof, it

made sense to rather work with Three Peas. She was under the impression that she had received more than just lettuce from Vredenhof, and that Isabella knew that Eight was indirectly procuring from her. Lorraine asked for Isabella's telephone number to resolve the misunderstanding.

I visited Eight several weeks later and asked Lorraine whether she had been able to resolve the situation with Isabella. She said that she had never phoned Isabella, because Tony from Three Peas had informed her that he had not purchased produce from Vredenhof for some time. Vredenhof's harvests had been smaller than expected, so they cut down their distribution channels, including Three Peas. This meant that Eight was buying produce from Three Peas, which as indicated by Tony was mostly not organic, only partly local and not bought specifically from small-scale farmers: all in direct contradiction with the values Eight aims to represent. Because Lorraine was not in direct personal communication with Isabella, the feedback loop between them was loosened. Lorraine could not tell Isabella directly what Eight's criteria were, nor could Isabella tell Lorraine that due to harvest difficulties she was unable to supply her with produce.

5.5.3 Section conclusion

In this section, I highlighted some of the connections that make local-food distribution initiatives in Stellenbosch a local-food distribution network. My analysis did not include the particular details of every connection, nor did it explicitly discuss all connections, but showed how the initiatives interact on conceptual and physical levels. The next section details some blockages and strengths that influence the sustainability of the local-food distribution network.

5.6 Blockages and strengths

This section presents the findings of my qualitative analysis of the case studies in 5.4. I offer a full description of the conceptual framework behind this analysis and its methods in 4.2.2(b) and (e). In short, my analytic process involved identifying blockages and strengths that influence the sustainability trajectory of the local-food distribution initiatives' network by comparing each local-food distribution initiative's vision, perceived reality and realised actions. The initiatives' overlapping blockages and strengths are presented in Table 6 and Table 7, and discussed in greater detail in 5.6.1 and 5.6.2.

5.6.1 Blockages

To answer Research Question B (How can local-food distribution initiatives in Stellenbosch grow a sustainable food system?), I had to establish what blockages were preventing local-food distribution initiatives from operating sustainably and thus constraining the growth of a sustainable food system in Stellenbosch. Identifying specific system blockages contextualises my recommendations for addressing weaknesses in the Stellenbosch food system (6.3). In Table 6 I present four main blockages, as well as some examples and indicators of these blockages in the local-food distribution network.

My explanation of each blockage is informed by theoretical concepts discussed in my literature review and Schulschenk's 2009 findings on the Stellenbosch food system.

Table 6: Blockages preventing sustainability in the network

Blockage	Examples in the system	Indicators of blockage in the system
<i>Unawareness</i>	1. Not promoting produce as local or organic, even though it is. 2. Promoting organic food as the ultimate solution. 3. Consumers who are not attuned to the food capacity and cycles of Stellenbosch.	Misconception Extreme stances Unattainable expectations Only minimising damage Inconsistent agendas Lack of collaboration Mistrust
<i>System limitations</i>	1. Lack of locally produced sustainable food. 2. Limited choices for sustainable food system inputs e.g. sustainable packaging. 3. Lack of urgency to change.	Passively operating within constraints Stagnant adaptation Assuaging guilt/shifting blame
<i>Isolation: (Internal and external)</i>	1. Initiatives operate disconnected from other operations within the same institution. 2. Initiatives operate only in known/comfortable/easy social settings where change is already taking place. 3. Initiatives do not pool their resources in a network of likeminded initiatives.	Conflicting expectations Exclusivity Tunnel vision Extreme stances Limited impact
<i>Concentration of control</i>	1. Dependence on an external body for organic certification. 2. Concentration of ownership of initiatives.	Imposed systems Lack of ownership Lack of commitment Lack of collaboration Unattainable expectations Conditional access

5.6.1.a) Unawareness

The strongest blockage that emerged from my analysis of the case studies was unawareness, which I define as a lack of knowledge of the challenges and constraints experienced by the food system, or a fractional understanding of the situation. Consequently system participants have no or very little understanding of the drastic changes required for the food system to adapt to its current environment and overcome the challenges of the polycrisis (3.2.10).

While the Stellenbosch food system has the capacity to address these challenges (Schulschenk 2009), unawareness prevents this capacity from being utilised or increased. One example of this is when local organic produce is not advertised or sold as such for example the uncertified organic guavas Gurshwen was selling (5.4.7). Conversely, limited or fractional understanding results in oversimplified solutions, which in turn provoke extreme stances, like an insistence that organic food is the ultimate solution for all challenges. These extreme stances may reduce some harmful influences, but they will always be fractional and may even in some instances cause damage, for instance by importing organic produce because it is not available locally. Unawareness results in and increases the disembedded (3.3) state of the system.

5.6.1.b) System limitations

Another blockage that featured prominently in my analysis was system limitations. Although some local-food distribution initiatives indicated an understanding of the challenges faced by the food system and the need for change, limits in the system prevent them from being completely sustainably-orientated. For instance, a lack of organic production in Stellenbosch forces distribution initiatives to either import produce from alternative sources or substitute it with conventional produce; ultimately, a sustainable distribution network can only distribute the produce available to it. Coupled with another limitation—a lack of urgency to adapt the system (which could be a consequence of unawareness)—these system limitations cause participants to continuously operate within the system's constraints without making any adjustments. Continuing to import organic

produce suffocates local organic production initiatives and consequently increases the disembeddedness of the food system (3.3)⁵³.

5.6.1.c) Isolation

Isolation can be divided into two categories: internal isolation and external isolation. Internal isolation refers to the way some distribution initiatives are embedded within an institution and yet not connected to related initiatives. Consequently initiatives operate in isolation within the institution and often have to deal with conflicting expectations.

External isolation refers to the way in which some initiatives are confined to a particular safe social network. These initiatives often position themselves within a social context where change has already started and there is very little resistance to deal with. Initiatives can then afford to take extreme positions without opposition, but also tend to become exclusive. They also have a limited impact on the social networks where food system challenges are most evident and change most urgently required.

As discussed in 5.2, initiatives are embedded in environments ranging from the global to the Stellenbosch context and could be argued to even smaller institutional or social network contexts. Isolation from these contexts results in disembedded (3.3) initiatives.

5.6.1.d) Concentration of control

When the control of a system is concentrated in the hands of only a few actors, major decisions tend to be made to only benefit those actors and to the detriment of the rest of the system (3.3). Investment in organic certification is one example of concentration of control. A certification body, often located beyond the context of the food system depending on certification, determines which foods should be trusted within the system. In the investigated local-food distribution network, a reliance on organic certification means that trust is invested in a disembedded body and standards, resulting in an imposed food system. Similarly, an initiative in which ownership is concentrated generates imposed systems that receive limited commitment and collaboration from those who are supposed to benefit from it.

⁵³ For an extended discussion on the dynamics of food imports in Stellenbosch, see Appendix H for a System Dynamics model based on Schulschenk's (2009) research findings.

Concentration of control in the local-food distribution network results in a loss of food sovereignty (3.4) by the majority of people depending on it, and consequently in social disembeddedness (3.3).

5.6.2 Strengths

To fully answer Research Question B (How can local-food distribution initiatives in Stellenbosch grow a sustainable food system?), I had to establish what strengths can contribute to the sustainable operation of the local-food distribution network, in turn promoting the growth of the area's sustainable food system. Identifying these strengths contextualises my recommendations in 6.3, which aim to build on and further develop the system's current capacity. Table 7 presents four main strengths, alongside examples and indicators of these strengths in the system. Explanations of the strengths are informed by theory discussed in the literature review and Schulschenk's 2009 findings on the Stellenbosch food system.

Table 7: Strengths endorsing sustainability in the network

Strengths	Examples in the system	Indicators of strength in the system
<i>Contextualisation</i>	1. The procurement of produce from local sources. 2. Construction of initiatives around specific contextual needs and resources, e.g. an indigenous edible garden.	Innovations Unique initiatives Holistic approaches Pragmatism Adaptability
<i>Social capital</i>	1. A reliance on word-of-mouth marketing. 2. Identification of suppliers through social networks and personal interactions.	Collaborative efforts Interdependence Direct feedback Community values Trust
<i>Knowledge</i>	1. Local-food initiators with training and experience as chefs, food scientists, environmentalists, food distributors and farmers. 2. Knowledge of the local food system's dynamics, capacity and opportunities e.g. opening a food store with alternative sustainable food choices.	Understanding system complexities Contextualisation Educational approaches
<i>Adaptability</i>	1. Demonstrating a commitment to changing and becoming more sustainable, e.g. planning additional mid-week/evening markets to accommodate farmer and consumer needs.	Flexibility Innovation Processes of change

5.6.2.a) Contextualisation

Contextualisation in this instance refers to local-food distribution initiatives that operate based on the particularities of the Stellenbosch context. Their operators' knowledge of the local food system's dynamics, capacity and opportunities, generates a comprehensive understanding of the situation and positions initiatives to work with the system. A fine example of contextualisation is the implementation of an indigenous edible garden by the local community for its own benefit. Such an initiative is innovative in that it is uniquely adapted to the dynamics, capacities and opportunities of Stellenbosch's social and natural environment. It is the outcome of a reflexive process about the area; inclusive; and part of a slow and evolving process toward sustainability (5.4).

5.6.2.b) Social capital

Social capital refers to the presence of social networks that enable certain actions of actors within the larger system (Portes 1998). Feenstra states that social capital is built on community values (2002), promoting partnerships and participation (2000). My small group feedback session (see Box 1 in 5.5) clearly indicated the presence of some social capital in Stellenbosch's local-food distribution network. Everyone around the table knew at least one other person who they had worked with to distribute local-food in Stellenbosch. What stood out most during the session was the dominance of seemingly informal conversation on the subject of various ways in which the attendees had previously collaborated. Another example of social capital is the way in which Farm to Fork located local and ethical suppliers through its social networks and then passed this information along to the SI's other food-preparing initiatives.

5.6.2.c) Knowledge

Knowledge in a local-food distribution network refers to an awareness of the local food system's dynamics, capacity and opportunities and a familiarity with skills required to take advantage of opportunities within the system. Key operators in the case study initiatives had extensive training and experience as chefs, food scientists, environmentalists, food distributors and farmers. Having been trained to operate in the current mainstream Stellenbosch food system, their knowledge and understanding of the challenges in the system has enabled them to apply their skills to change it to be more sustainable. Divine Foods, for example, was the outcome of Sanet applying her knowledge as a food scientist trained to operate in the dominant food system. Her critical assessment and understanding

of the dominant system enabled her to apply her knowledge to generate sustainable change.

5.6.2.d) Adaptability

Adaptability in the local-food distribution network means having the ability to change with new conditions. As discussed in 1.6, the sustainability of a system depends on its ability to work with changes in its environment. One example of adaptability in the local-food distribution network is the Stellenbosch Organic Farmer's Market committee's plans to hold another mid-week or evening market. This would benefit farmers who harvest twice a week and consumers who will then receive fresher produce more frequently. It will also allow people unable to attend Saturday markets the opportunity to participate in a local-food initiative. The committee's organisation of the market will thus work with the market's changing capacity and the requirements of its social and natural environment.

5.7 The condition of the local-food distribution network in Stellenbosch

To construct a sense of the local-food distribution network's condition, it is necessary to draw together my research findings on local-food distribution initiatives in Stellenbosch. These initiatives were established as a system of interrelated elements organised around the distribution of local-food. In addition to this characteristic, initiatives shared other conceptual (5.5.1) and physical (5.5.2) connections.

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 (5.4.5)—directly linked consumers to producers. Education about sustainable food principles was the initiatives' strongest motivation, followed by personal beliefs and orientations. 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 (5.4.8)—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. Including Vredenhof (5.4.5), only four initiatives provide a platform directly connecting producers with

consumers to tighten feedback loops and improve the network's adaptability. My overall impression of conceptual connections was that while some shared values exist, they are weak and there has been no deliberate network effort to establish a set of shared principles around which initiatives can be organised.

The physical connections that emerged from the case studies indicated that the network was not being utilised to its full capacity. This was highlighted during the small group feedback session when Francois complained about having unsold produce from the previous Saturday's Stellenbosch Organic Farmer's Market (5.4.10), to which Sanet responded by saying that if she had only known, she would have bought it from him to sell in Divine Foods (5.4.3). Another initiative, Fyndraai (5.4.2), is completely physically isolated from the network but would greatly benefit from such connections. Fyndraai could for example distribute edible fynbos through Living Tree (5.4.1) to increase its educative impact, or procure supplementary produce from other initiatives in the network. Some connections operating as middle-persons instead of middle-communication also posed a threat to the network's sustainability by loosening feedback loops. In order to grow a robust sustainable local-food distribution network, it is necessary to establish clear conceptual connections on which physical connections can be developed. Physical connections must aim to establish direct connections between producers and consumers by being platforms of communication, rather than middle-people separating producers and consumers.

Identifying the system's strengths and blockages demonstrated which aspects of the network could be improved or further nurtured to increase its overall sustainability. Blockages included unawareness, system limitations, isolation and the concentration of control (5.5.1); sustainability strategies must work toward dissolving these blockages. Strengths included contextualisation, social capital, knowledge and adaptability (5.5.2); these must be enhanced to grow a sustainable food system.

5.8 Conclusion

In answer to Research Question B (How can local-food distribution initiatives in Stellenbosch grow a sustainable food system?) this chapter analysed the findings of my empirical investigation into ten local-food distribution initiatives in Stellenbosch, comparing each initiative's vision, perceived reality and realised actions. Connections

between initiatives emerged, establishing them as a network organised around the distribution of local-food. 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. I 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. I will discuss practical ways to do this in 6.3, with particular reference to the concept of social capital (3.5.2).

Chapter Six: Conclusions and Recommendations

6.1 Introduction

This final chapter summarises the findings of my investigations into Research Questions A (How can food systems operate sustainably in the current global environment?) and B (How can local-food distribution initiatives in Stellenbosch grow a sustainable food system?). In response to Question A, I describe how food systems can operate sustainably within the global environment by identifying challenges and presenting critically considered ways to overcome them. I then present key recommendations in answer to Question B, based on my analysis of ten case studies of local-food distribution initiatives and their networks. Finally, I outline opportunities for future scholarship that emerged during the research process.

6.2 Research results

I summarise my results in three sections: 6.2.1 presents my conclusions from research on Question A; 6.2.2 offers findings in response to Question B; and 6.3 details my recommendations based on these findings to answer Question B.

6.2.1 How can food systems operate sustainably in the current global environment?

Based on the concepts of complexity and systems theory, I conducted an investigation (2.4.2) of how food systems can operate sustainably (3.6) within the context of the global environment. A literature review established the condition of the global environment as being in a polycrisis. The food system aggravates the polycrisis, but is also constrained by it. In order to operate sustainably within the current global environment, the food system must address the following overlapping challenges:

- Inequality: Food systems must redistribute resources to equally satisfy the global population's basic needs, and so be reconfigured to empower the poorest producers.
- An urban future: Food systems must adapt to supply food to an increasingly urbanised population, paying particular attention to the urbanisation of poverty and ensuring access to food for people living in slums.

- A degraded natural environment: Food systems must repair damage caused to the natural environment and conserve ecosystems for the future.
- Climate change: Food systems must reduce greenhouse gas emissions and prepare to adapt to changing climates.
- Energy constraints: Food systems must become more energy efficient and oil independent.
- Growing food demand: Food systems must increase food production for the future within the carrying capacity of the earth's ecosystems.
- Food insecurity: Food systems must secure food sources for all, either by establishing self-sufficient food production or ensuring that consumers can access markets and have the means to purchase food from them.

I used the next part of my literature review to investigate why the food system has not yet prevailed over these challenges and explored the concept of disembeddedness, which is a state of being spatially and socially disconnected from an environment. O'Hara and Stagl (2001) argue that the food system's disembeddedness is the root cause of the inherent weaknesses preventing it from overcoming environmental challenges. They also assert that profit has been the main driver behind this disembeddedness: in order to produce large quantities of cheap food and make profit, the food system overcame space and time constraints, while depending on symbols to communicate trust and expert advice to eliminate the risks involved in the system's intensification, concentration and industrialisation. Although these strategies succeeded in profitably producing substantial quantities of 'cheap' food, they uprooted the food system from its original context and involved the externalisation of non-monetary costs. These social and environmental costs are now evident in the polycrisis and create a negatively reinforcing feedback loop by hampering the food system's ability to adapt to its changing environment.

Many attempts to re-embed food systems have ignored contextual nuances and resulted in additional obstacles; the promotion of localisation as the ultimate re-embedding solution is one example of this. Localisation is, however, a valuable mechanism for growing sustainable food systems, if used carefully.

Informed by this critical overview of previous oversimplified strategies, I used the literature review to identify practical strategies for growing sustainable food systems.

These included: establishing new alternatives in spaces where the food system is currently weakest; re-contextualising the system and slowing its pace to ensure sustainable adjustments; and rooting a system in the particularities of its context, while keeping it flexible enough to adapt to changes. Strategies must also be based on a ‘food democracy’ which includes all members of the food system and makes space for them to voice their concerns. The creation and protection of political, intellectual and economic spaces for reflection are instrumental in building social capital, which can be another valuable mechanism for growing sustainable food systems, if applied with care.

6.2.2 How can local-food distribution initiatives in Stellenbosch grow a sustainable food system?

I used the literature review’s outcomes to design a set of ten case studies of local-food distribution initiatives in Stellenbosch. A conceptual framework informed my investigation and analysis of these cases. By comparing the vision, perceived reality and realised actions of each initiative, I identified conceptual and physical connections that established the initiatives as a network. Conceptual connections indicated any shared values in the network, while physical connections enabled trade between initiatives and determined the flow of local-food in the network. The conceptual framework also informed my analysis of blockages and strengths influencing the network’s sustainability trajectory. I then drew on my network analysis and identification of the network’s blockages and strengths to establish an overview of the local-food distribution initiative’s network.

To detect any shared principles in the network, I mapped conceptual connections between the various local-food distribution initiatives, including: types of initiatives, shared motivations, approaches to procurement, and consumer–supplier connections. Local-food distributors and restaurants are the most prominent type. Education about sustainable food principles was the most common motivation behind the initiatives’ beginnings, followed by personal beliefs and orientations. Approaches to procurement were mostly unstructured, with some built on a single criterion (organic certification or the lowest price); only one initiative provided a clear set of procurement criteria. My overall impression of the conceptual connections was that while initiatives share certain values, there has been no deliberate network effort to establish a set of shared principles around which initiatives can be organised.

The physical connections that emerged from the case studies also indicated that the network is not being exploited to its full capacity. One initiative was completely physically excluded from the network, although it would benefit from such connections. More than half of the initiatives operate as middle-people, where consumers pay for a service to collect and deliver food from a producer; this kind of service has loosened feedback loops and stalled necessary adaptation. Only four initiatives provided a platform directly connecting producers with consumers, thus tightening feedback loops and improving the network's adaptability. Physical connections must aim to establish direct producer–consumer connections by being platforms of communication rather than middle-people separating producers and consumers. In order to grow a robust sustainable local-food distribution network, it is necessary to base physical connections on clear conceptual connections, which can be developed by building social capital.

The strengths and blockages in the system demonstrated which aspects of the network could be managed to increase sustainability. Blockages included unawareness, system limitations, isolation and the concentration of control. Sustainability strategies must work toward dissolving these blockages. Strengths included contextualisation, social capital, knowledge and adaptability. These must be enhanced to grow a sustainable food system.

6.3 Recommendations

My recommendations are based on critical considerations and practical ways to grow sustainable food systems as outlined in 3.4 and 3.5. Informed by the findings of my research into Question B (6.2.2), I make particular reference to the concepts of localisation and social capital.

Firstly, initiators and key role players in the distribution network must act as catalysts in the process of growing a sustainable food system. The adaptability identified in the network suggests that its current stakeholders are willing to do so.

My research findings (6.2.2) also established that while the local-food distribution network in Stellenbosch is organised around the concept of local-food, initiatives do not promote localisation as the ultimate goal of a sustainable food system. This presents the ideal opportunity to cautiously use localisation as a tool for growing a sustainable food system

in Stellenbosch. 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 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. My research findings (6.2.2) also established that the local-food distribution network needs to define clear conceptual connections in support of sustainability, on which communication-based distribution connections can be built and increased. According to Feenstra (2002), social capital can be fostered through the creation and protection of political, intellectual and economic spaces for reflection. This must be a deliberate component in the process of growing a sustainable Stellenbosch food system.

Feenstra (2007) makes five important recommendations for growing sustainable food systems, which I adapt here as five recommended projects for initiators and key role-players in Stellenbosch's local-food distribution network.

a) Strategise with the community

Due to a lack of conceptual connections in the local-food distribution network, this project will prove especially valuable. A trained facilitator could assist local-food distributors to set clear goals in cooperation with representative members from the Stellenbosch community and municipality. Strategies must include methods for data collection, the development of resources and project infrastructure, project implementation and recurring evaluation (Feenstra 2000). The local-food distribution network's knowledge could be applied in these projects; its contextualisation, social capital and adaptability should be transferred to the dominant food system.

b) Gain an understanding of the food system in question

Schulschenk (2009) has already started this project by investigating Stellenbosch's capacity to grow a sustainable food system and identifying opportunities for future scholarship. It is essential that research initiatives verify and address the system limitations identified in the local-food distribution network. I outline additional opportunities for scholarship in 6.4.

c) Use multiple community resources for outreach and education

One of the major blockages in the local-food distribution network is unawareness, highlighting the importance of outreach and education projects. Key community players must be included to widen the projects' reach and expand the social capital already present in the local-food distribution network. These players should have extensive networks and outreach potential in the food system, and could for example include the SI, food-related departments of Stellenbosch University, local government, hospitals and clinics, nutrition workers and churches. These players should also be included in the aforementioned community-strategising project.

d) Use food policy to support the sustainable food system strategy

The government plays a crucial role in creating sustainable food systems, as policy can be orientated to protect prime farmland, coordinate land use, encourage entry-level farmers and food-related entrepreneurs, promote the preservation of topsoil and coordinate access to quality food (Feenstra 1997). Stellenbosch Municipality currently has no food security strategy (5.3). Due to a lack of primary data of food security in the region, a comprehensive strategy is impossible. However, starting a sustainable food system growth

process with an embedded research component, presents an opportunity for multiple actors to contribute to an embedded food security strategy. Key government officials must be identified and included from the strategising phase to ensure participation and commitment. It is important, however, that control in this project does not become concentrated. The process of growing a sustainable Stellenbosch food system must remain embedded in the community.

e) Create harmonious rural–urban links

In Stellenbosch both rural and urban challenges must be addressed in growing a sustainable food system. Projects must be based on a comprehensive understanding of the interdependent relationship between rural and urban environments. The most successful sustainable food systems address both rural and urban concerns, as they are seen as being shared by the whole community. These concerns range from land access to environmental and community health. Three key features can assist in this process: strong leadership; collaboration between diverse representatives on boards, advisory committees and planning groups; and civic renewal through citizens struggling to restore a sustainable food system together (Feenstra 1997).

6.4 Opportunities for further scholarship

During my research process, I recognised several areas requiring further investigation, presented below.

6.4.1 Investigating how challenges particular to the Stellenbosch context relate to those in the African, South African and Western Cape Province environments

My study focused on challenges facing the food system in Stellenbosch and related these to challenges in the global environment. I did not preclude challenges in the African, South African and Western Cape environments having an effect on those in Stellenbosch, but they fell outside the scope of this study (see 5.2). Further investigation into these environments and their relationship to the Stellenbosch context would advance a nuanced understanding of the situation in Stellenbosch and better inform the region's local-food strategies. The outcomes of my literature review could be used as a baseline study to frame investigations of challenges in different environments as they relate to the Stellenbosch context.

6.4.2 Investigating this thesis' case studies in more depth

In this study I compiled an overview of local-food distribution in Stellenbosch by undertaking a large quantity of studies instead of focusing on the particularities of a smaller number of cases, as discussed in 4.2.2.e). Future scholarship could inform more in-depth investigations of one or several case studies, contributing a more detailed understanding of these initiatives' functions and interactions. This would better inform an understanding of the local-food distribution network in Stellenbosch. Future studies could be framed to examine different aspects of the network: financial management, the mapping of flows of food in the network, decision-making processes, labour relations, or social and environmental sustainability. Studies should also aim to assess the identified strengths and blockages influencing the network's sustainability and identify any which might have strengthened or disappeared over time. A better understanding of the operation of local-food distribution in Stellenbosch would better inform strategies for growing a sustainable food system.

6.4.3 Identifying additional local-food distribution initiatives in Stellenbosch to expand on the understanding of local-food distribution in this study, especially in the informal sector

This study focused specifically on ten local-food distribution initiatives, which were selected according to criteria outlined and justified in 4.2.2.b), Table 1. Due to the time and resource constraints of my study, I identified as many cases as possible but could not investigate them all. The Smouse network in Stellenbosch particularly requires further study. Gurshwen, one of the Smouse (5.4.7), mentioned a distribution initiative where Smouse drive around with 'bakkies' (trucks), selling produce purchased from local farmers to some restaurants and in Stellenbosch's residential areas. He mentioned three such 'Bakkie Smouse': Doultjie Smith, Mr Burksted and Mr Van Graan (Linders 2010). His comments indicated that there was an intricate Smouse network of 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 from 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. This thesis might also have overlooked other distribution initiatives that future scholarship could identify and

investigate; more local-food distribution initiatives might emerge in the future and also require study.

6.4.4 Identifying local-food production and consumption initiatives and investigating how these can be used as catalysts for advancing a sustainable Stellenbosch food system

This study focused specifically on local-food distribution initiatives in order to generate an overview of a local-food distribution network in Stellenbosch and investigate ways in which the network could catalyse the growth of a sustainable Stellenbosch food system. I justify this focus in 4.2.2. Future scholarship could apply a similar approach to the identification of local-food production and consumption initiatives, assembling overviews of local-food production and consumption networks. Such studies would contribute to an improved understanding of the overall local-food system in Stellenbosch, which in turn could better inform its food system strategies.

6.4.5 A greater understanding of the role that personal beliefs and orientation play in advancing sustainable food systems

This study touched only briefly on the motivations behind the establishment of local-food distribution initiatives (refer to 5.1.2, Table 5). Any sustainable change must be underwritten by commitment, which requires a foundation of personal beliefs and orientation. Future studies could research the dynamics of personal belief systems in promoting sustainable systems, as well as the processes of changing belief systems to support sustainability. An extreme range of viewpoints marks the Stellenbosch context; a new study might aim to find ways to integrate sustainability into these diverse belief systems. Such a study could be framed by theories of social capital (3.5.2).

6.4.6 Evaluating whether local-food initiatives have become more sustainable by investigating changes in their procurement behaviour over time

In 5.5.1.c) I discussed the procurement practices of local-food distribution initiatives. To establish whether or not these initiatives are moving toward greater sustainable practices, future scholarship might evaluate whether and how their procurement behaviour changed over time. Such a study could also indicate whether the number of sustainable local-food sources has increased over time.

6.5 Conclusion

Global systems are experiencing multiple overlapping crises including inequality, increasing urbanisation, a degraded natural environment, climate change, energy constraints and a growing population. The operation of global food systems contributes to and is constrained by these crises, resulting in extreme levels of food insecurity. Food systems must adjust their operation to overcome these crises, but have become disembedded from their operational environments through commercialisation. Disembeddedness is the root cause of weaknesses preventing food systems from addressing contextual challenges. A re-embedding of food systems can be achieved through the careful use of mechanisms like localisation and the development of social capital, which must not be mistaken as the ultimate goals of sustainable food systems.

The ten investigated local-food distribution initiatives form a network organised around the principle of local-food distribution, although they do not promote localisation as the ultimate goal of a sustainable Stellenbosch food system. This presents an opportunity to actively and consciously use localisation as a tool for growing a sustainable food system, while incorporating aspects of inclusivity and reflexivity and positioning the food system to address its contextual challenges. Using the concept of local-food, key operators in the local-food distribution network can act as catalysts to grow a sustainable Stellenbosch food system. However, the current local-food distribution network consists of weak and unintentional conceptual connections, which means it is not organised based on a set of shared principles. As a result its physical connections determining the flow of local-food are not fully exploited, while some are creating a separation between producers and consumers. This separation loosens the feedback loops critical to the food system's adjustment to changes in its environment.

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. As one sign at the entrance to the Stellenbosch Organic Farmers Market reminded visitors, “The future of our food is up to us.”

Bibliography

- Allen, P. 1999. Reweaving the food safety net: Mediating entitlement and entrepreneurship. *Agriculture and Human Values*, 16:117-129.
- Allen, P. 2010. Realizing justice in local food systems. *Cambridge Journal of Regions, Economy and Society*, 3: 295-308.
- Anneck, E. [eve@sustainabilityinstitute.net]. 15 July 2010. Re: Kwestions :). E-mail to A. Landman [anriland@gmail.com].
- Attarian, J. 2002. The coming end of cheap oil: To Hubbert's peak and beyond. *The Social Contract*, Summer. [Online]. Available: <http://www.gunnarlindgren.com/comingendoil.pdf>. [11 October 2010].
- Badgely, C., Moghtader, J., Quintero, E., Zakem, E., Chappell, M., Avilés-Vázquez, K., Samulou, A. and Perfecto, I. 2006. Organic Agriculture and the Global Food Supply. *Renewable Agriculture and Food Systems*, 22(2):86-108.
- Balasubramanian, J. *Sustainable food and privilege: Why is green always white (and male and upper-class)?* [Online]. Racialicious. Available: <http://www.racialicious.com/2010/05/20/sustainable-food-and-privilege-why-is-green-always-white-and-male-and-upper-class/#more-8059>. [4 June 2010].
- Bauman, Z. 1992. *Intimations of postmodernity*. London: Routledge.
- Bentley, R. 2001. Global oil and gas depletion: An overview. *Energy Policy*, 30(3):189-205.
- Bernard, H. 2000. *Social research methods: Qualitative and quantitative approaches*. Thousand Oaks, California: Sage.
- Biodiversity and Wine Initiative. 2010. *Home page*. [Online]. Available: <http://www.bwi.co.za/index.asp>. [20 September 2010].
- Birkeland, J. 2008. *Positive Development from Vicious Circles to Virtuous Cycles through Built Environment Design*. London: Earthscan.
- Blalock, A. and Blalock, H. 1982. *Introduction to social research*. Englewood Cliffs, New Jersey: Prentice-Hall.
- Blench, I. 2010. Personal interview. 27 April, Vredenhof Farm, Stellenbosch.
- Bonti-Ankomah, S. 2001. Addressing food insecurity in South Africa. Paper presented at the South African Regional Poverty Network Conference, June, Pretoria, South Africa.
- Born, B. and Purcell, M. 2006. Avoiding the local trap: Scale and food systems in planning research. *Journal of Planning Education and Research*, 26:195-207.

- Brones, A. 2010. *Gardens for rent by the season, with vegetables pre-planted*. [Online]. Springwise. Available: http://www.springwise.com/food_beverage/meine-ernte/. [14 July 2010].
- Brundyn, S. [sanet@devinefood.co.za]. 21 July 2010. Re: Ekstra inligting. E-mail to A. Landman [anriland@gmail.com].
- Burch, D. and Lawrence, G. 2007. Understanding supermarkets and agri-food supply chains. In Burch, D. and Lawrence, G. (eds.). *Supermarkets and agri-food supply chains*. Northampton: Edward Elgar. 1-26.
- Campbell, C. 2002. Petroleum and people. *Population and Environment*, (24)2:193-207.
- Campbell, D. 2001. Conviction seeking efficacy: Sustainable agriculture and the politics of co-option. *Agriculture and human values*, 18:353-363.
- Canning, P., Charles, A., Huang, S., Polenske, K. and Waters, A. 2010. Energy use in the US Food System. Economic Research Report No. 94. Report prepared by the Economic Research Service. United States Department of Agriculture, United States of America.
- Charmaz, K. 2005. Grounded theory in the 21st century: Applications for advancing social justice studies. In Denzin, N. and Lincoln, Y. (eds). *The Sage handbook of qualitative research*. Thousand Oaks, California: Sage. 507-535.
- Chiffoleau, Y. 2009. From politics to co-operation: The dynamics of embeddedness in alternative food supply chains. *Sociologia Ruralis*, (49)3:218-235.
- Cilliers, P. 1998. *Complexity & Postmodernism: Understanding complex systems*. New York: Routledge.
- Cilliers, P. 2000. What can we learn from a theory of complexity? *Emergence*, 2(1):23-33.
- Cilliers, P. 2009. Complexity, limits and ethics. Unpublished notes. Stellenbosch University: Sustainability Institute.
- Coetzee, L. 2010. Personal interview. 25 June, Divine Foods, Stellenbosch.
- Coetzee, R. 2010. Personal interview. 24 June, Die Boord, Stellenbosch.
- Conservation International. 2010. The Biodiversity Hotspots. [Online]. Available: http://www.conservation.org/explore/priority_areas/hotspots/Pages/hotspots_main.aspx. [20 September 2010].
- Council for Scientific and Industrial Research. 2006. *An Architect's Guide to Designing for Sustainability*. Pretoria: Commonwealth Association of Architects. [Online] Available: <http://www.greenbuilding.co.za/index.php/Design/Architecture-Architects-and-Ecological-Design.html>. [29 June 2009].

Cowling, R. 1992. *Ecology of fynbos. The nutrients, fire and diversity*. Cape Town: Oxford University.

Cowling, R. & Richardson, D. 1995. *Fynbos: South Africa 's unique floral kingdom*. Cape Town: Fernwood.

Divine Foods. 2009. *About*. [Online]. Available: <http://www.divinefoods.co.za/index.html>. [19 July 2010].

DuPuis, E. and Goodman, D. 2005. Should we go “home” to eat?: toward a reflexive politics of localism. *Journal of Rural Studies*, 21:359-371.

Du Plessis, J. 2010. Personal interview. 14 June, Café Crème, Stellenbosch.

Eureka Mills. 2010. *About us*. [Online]. Available: http://www.eurekamills.co.za/about_us.php. [20 September 2010].

Fairtrade. 2009. *What is Fairtrade?* [Online]. Available: http://www.fairtrade.net/what_is_fairtrade.html. [25 October 2010].

Food and Agriculture Organisation of the United Nations (FAO), International Fund for Agricultural Development (IFAD) and World Food Programme (WFP). 2002. *Reducing poverty and hunger: The critical role of financing for food, agriculture and rural development*. Paper Prepared for the International Conference on Financing for Development, 18-22 March, Monterrey, Mexico. [Online]. Available: <http://www.fao.org/docrep/003/y6265e/y6265e00.HTM>. [22 April 2010].

Food and Agriculture Organisation of the United Nations (FAO). 1996. *World Food Summit (WFS)*. [Online]. Available: http://www.fao.org/wfs/index_en.htm. [22 April 2010].

Food and Agriculture Organisation of the United Nations (FAO). 2003. *Trade reforms and food security*. [Online]. Available: <http://www.fao.org/docrep/005/y4671e/y4671e00.htm#Contents>. [22 April 2010].

Food and Agriculture Organisation of the United Nations (FAO). 2008. *The state of food insecurity in the world: High food prices and food security – threats and opportunities*. [Online]. Available: [http://www.reliefweb.int/rw/lib.nsf/db900sid/PANA-7M6F2B/\\$file/FAO_dec2008.pdf?openelement](http://www.reliefweb.int/rw/lib.nsf/db900sid/PANA-7M6F2B/$file/FAO_dec2008.pdf?openelement). [22 April 2010].

Food and Agriculture Organisation of the United Nations (FAO). 2009. *The state of food insecurity in the world: economic crisis - impacts and lessons learned*. [Online]. Available: <ftp://ftp.fao.org/docrep/fao/012/i0876e/i0876e.pdf>. [1 April 2010].

Feenstra, G. 1997. Local food systems and sustainable communities. *American Journal of Alternative Agriculture*, 12(1):28-36.

Feenstra, G. 2000. *Community food systems: Linking farmers, consumers and communities*. [Online]. Western Sustainable Agriculture and Education. Available: <http://wsare.usu.edu/pub/sare2000/138.htm>. [10 August 2010].

- Feenstra, G. 2002. Creating space for sustainable food systems: Lessons from the field. *Agriculture and Human Values*, 19:99-106.
- Field, S., Masakure, O. and Henson, S. 2010. Rethinking localization a low-income country perspective: the case of Asian vegetables from Ghana. *Cambridge Journal of Regions, Economy and Society*, 3:261–277.
- Flyvbjerg, B. 2006. Five misunderstandings about case-study research. *Qualitative Inquiry*, 12(2):219-245.
- Fonte, M. 2008. Knowledge, food and place. A way of producing, a way of knowing. *Sociologia Ruralis*, (48)3:200-222.
- Fukuoka, M. 2009. *The one-straw revolution*. New York: The New York Review of Books.
- Gow, M. 2010. Personal photograph collection. E-mail: michellegow@gmail.com.
- Halweil, B. 2004. *Eat here: Reclaiming homegrown pleasures in a global supermarket*. New York: W.W. Norton & Company.
- Harvey, D. 2001. *Spaces of capital: Towards a critical geography*. Edinburgh: Edinburgh University.
- Hassanein, N. 2003. Practicing food democracy: a pragmatic politics of transformation. *Journal of Rural Studies*, 19:77-86.
- Haysom, G. [gareth@sustainabilityinstitute.net]. 14 July 2010. Re: Spier's owners. E-mail to A. Landman [anriland@gmail.com].
- Henderson, E. and Van En, R. 2007. *Sharing the harvest: A citizen's guide to community supported agriculture*. Vermont: Chelsea Green.
- Hendrickson, M. and Heffernan, W. 2002. Opening spaces through relocalization: Locating potential resistance in the weaknesses of the global food system. *Sociologia Ruralis*, (42)4: 347-369.
- Heyns, L. 2010. Personal interview. 26 June, Eight, Stellenbosch.
- Hine, R. and Pretty, J. 2008. *Organic agriculture and food security in Africa*. New York and Geneva: United Nations Conference on Trade and Development (UNCTAD) and United Nations Environment Programme (UNEP) Capacity-building Task Force on Trade, Environment and Development (CBTF). [Online]. Available: www.unctad.org/en/docs/ditcted200715_en.pdf. [14 May 2009].
- Hinrichs, C. 2000. Embeddedness and local food systems: notes on two types of direct agricultural market. *Journal of Rural Studies*, 16:295-303.

- Hinrichs, C. 2003. The practice and politics of food system localization. *Journal of Rural Studies*, 19:33-45.
- Holt-Gimenez, E. and Patel, R. 2009. *Food Rebellions!* Cape Town: Pambazuka.
- Hussain, M. 1990. Nutrition policy and the urban poor in developing countries. *Food Policy*, (15)3:186-192.
- Intergovernmental Panel on Climate Change (IPCC). 2007. *Climate Change 2007: Synthesis Report, Summary for Policymakers*. [Online]. Available: http://www.ipcc.ch/pdf/assessment-report/ar4/syr/ar4_syr_spm.pdf. [12 June 2010].
- Intergovernmental Panel on Climate Change (IPCC). N.d. *Intergovernmental Panel on Climate Change*. [Online]. Organization. Available: <http://www.ipcc.ch/organization/organization.htm>. [1 September 2010].
- International assessment of agricultural knowledge, science and technology for development (IAASTD). 2008. *IAASTD: Global report*. Washington DC: Island Press.
- International Energy Agency (IEA). (2008) *World Energy Outlook 2008: Executive Summary*. [Online] Available: http://www.worldenergyoutlook.org/docs/weo2008/WEO2008_es_english.pdf. [27 September 2009].
- Janse van Rensburg, H. 2010. *Keep them Safe*. [Online]. Available: <http://www.keepthemsafe2010.co.za/>. [25 Julie 2010].
- Joly, N. 2007. *What is biodynamic wine? The quality, the taste, the terroir*. East Sussex: Clairview.
- Kane, E. and O'Reilly-de Brun, M. 2001. *Doing your own research*. London: Marion Boyars.
- Kelly, C. 2010. Personal interview. 11 June, Sustainability Institute, Stellenbosch.
- Kneafsey, M. 2010. The region in food – important or irrelevant? *Cambridge Journal of Regions, Economy and Society*, 3:177-190.
- Lang, T. and Heasman, M. 2004. *Food wars – The global battle for mouths, minds and markets*. London: Earthscan.
- Linders, G. 2010. Personal interview. 23 June, Pick 'n Pay parking lot, Stellenbosch.
- Macfarlane, C. [info@solms-delta.co.za]. 1 October 2010. Re: Fyndraai. E-mail to A. Landman [anriland@gmail.com].
- Macintosh, A. 2009. Personal interview. 12 August, Spier Biodynamic Farm, Stellenbosch.
- Macy, J. & Young-Brown, M. 1998. *Coming back to life: Practices to reconnect our lives, our world*. British Columbia: New Society.

- Madeley, J. 2002. Third World agriculture: Who grows what? In Madeley, J. (ed.). *Food for all: The need for a new agriculture*. New York: Zed Books.
- Malan, F. 2010. Personal interview. 14 June, Pleasant Valley Farm, Stellenbosch.
- Malan, H. [thesofm@mweb.co.za]. 20 September 2010. Re: Die terugvoersessie en die vrae. E-mail to A. Landman [anriland@gmail.com].
- Marshall, C. and Rossman, G. 1999. *Designing qualitative research*. 3rd edition. Thousand Oaks, California: Sage.
- Meadows, D. H., Randers, J. and Meadows, D. L. 2004. *Limits to Growth: The 30-Year Update – A Synopsis*. United States: Chelsea Green.
- Mebratu, D. 1998. Sustainability and sustainable development: Historical and conceptual review. *Environment Impact Assessment Review*, 18:493-520.
- Metelerkamp, L. 2010. Personal photograph collection. E-mail: lmetelerkamp@gmail.com.
- Millennium Ecosystem Assessment (MEA). 2005. *Ecosystems and Human Well-being: Synthesis*. Washington DC: Island Press.
- Mollison, B. 1988. *Permaculture: A designer's manual*. Australia: Tagari.
- Morin, E. 1999. *Homeland earth*. London: Hampton Press.
- Mouton, J. 2001. *How to succeed in your Master's and Doctoral studies: A South African guide and resource book*. Pretoria: Van Schaik.
- Mouton, J. 2010. Research designs in the social sciences: Part One. Unpublished notes. Stellenbosch University: African Doctoral Academy.
- Nel, J. and Steyn, N. 2002. Report on South African food consumption studies undertaken amongst different population groups (1983 – 2000): Average intakes of foods most commonly consumed. Pretoria: Department of Health.
- Norberg-Hodge, H., Merrifield, T. and Gorelick, S. 2002. *Bringing the food economy home: The social, ecological and economic benefits of local food*. UK: Brightsea.
- Nunez, T. 2010. Personal interview. 24 June, Rolou Farm, Stellenbosch.
- O'Hara, S. and Stagl, S. 2001. Global food markets and their local alternatives: A socio-ecological economic perspective. *Population and Environment*, 22(6):533-553.
- Oil Depletion Analysis Centre (ODAC) and Post Carbon Institute. 2008. *Preparing for peak oil: Local authorities and the energy crisis*. [Online]. Available: <http://www.odac-info.org/>. [1 June 2010].

Oil Depletion Analysis Centre (ODAC). 2002. *Newsletter* 14, February. [Online]. Available: <http://www.odac-info.org/newsletter>. [14 May 2009].

Oldjohn, T. Personal interview. 25 June, Rocklands Primary School, Mitchell's Plane.

Organisation for Economic Co-operation and Development (OECD) and Food and Agriculture Organisation of the United Nations (FAO). 2009. *Agricultural outlook 2009-2018*. [Online]. Available: www.agri-outlook.org/dataoecd/2/31/43040036.pdf. [14 May 2009].

Patel, R. 2007. *Stuffed and starved*. New York: Melville House.

Paxton, A. 1994. *The Food Miles Report: the dangers of long distance food transport*. London: SAFE Alliance.

Pienaar, K. 2009. *Municipal Commonage*. Unpublished working paper. Legal Resource Centre Non-Governmental Organisation (NGO), Stellenbosch.

Pimbert, M. 2008. *Towards food sovereignty: reclaiming autonomous food systems*. London: IIED.

Pollard, E. 2009. A divine experience. *The Green Times*, 3:11.

Portes, A. 1998. Social Capital: Its origins and applications in modern sociology. *Annual Review Sociology*, 24:1-24.

Portes, A. and Sensenbrenner, J. 1993. Embeddedness and immigration: Notes on the social determinants of economic action. *The American Journal of Sociology*, (98)6:1320-1350.

Pretty, J., Guijt, I., Scoones, I. and Thompson, J. 1995. Regeneration agriculture: The agroecology of low-external input and community-based development. In Kirkby, J., O'Keefe, P. and Timberlake, L. (eds.). *Sustainable development*. London: The Earthscan Reader. 125-145.

Proctor, P. and Cole, G. 2008. *Grasp the nettle: Making biodynamic farming and gardening work*. Australia: Griffin.

Purcell, M. and Brown, C. 2005. Against the local trap: scale and the study of environment and development. *Progress in Development Studies*, (5)4:279-297.

Putnam, R. 1993. The prosperous community. Social capital and public life. *The American Prospect*, 13:35-42.

Robson, C. 1993. *Real world research: A resource for social scientists and practitioner researchers*. Oxford: Blackwell.

Rossmann, G. and Rallis, S. 1998. *Learning in the field: An introduction to qualitative research*. Thousand Oaks, California: Sage.

Rosset, P. 2000. *Lessons from the Green Revolution*. [Online]. Food First. Available: <http://www.foodfirst.org/media/opeds/2000/4-greenrev.html>. [2 October 2010].

Ruel, M., Haddad, L. and Garrett, J. 1999. Some urban facts of life: implications for research and policy. *World Development*, (27)11:1917-1938.

Schatz, M. & Walker, R. 1995. *Research as social change: New opportunities for qualitative research*. New York: Routledge.

Schulschenk, J. 2009. *Benefits and limitations of local food economies to promote sustainability: A Stellenbosch case study*. MPhil thesis. Stellenbosch, South Africa: University of Stellenbosch.

Scotcher, J. 2009. The Green Choice Living Farms Reference 2009/2010 version. Report to Green Choice (World Wildlife Fund and Nature and Conservation International partnership). [Online]. Available: http://assets.wwfza.panda.org/downloads/greenchoice_living_farms_reference_2009_2010.pdf. [25 October 2010].

Schrire, K. 2010a. Personal interview. 14 June, Sustainability Institute, Stellenbosch.

Schrire, K. [kateschrire@gmail.com]. 16 July 2010b. Re: A few more questions. E-mail to A. Landman [anriland@gmail.com].

Shiva, V. 2005. *Earth democracy*. Cambridge: South End.

Slow Food. 2010. *About us*. [Online]. Available: http://www.slowfood.com/about_us/eng/mission.lasso. [20 September 2010].

Soil Association. 2010. *Telling porkies: The big fat lie about doubling food production*. Bristol: Soil Association. [Online]. Available: <http://www.soilassociation.org/LinkClick.aspx?fileticket=qbavgJQPY%2Fc%3D&tabid=313>. [25 October 2010].

Solms-Delta. 2009a. *About*. [Online]. Available: <http://www.solms-delta.co.za/about/>. [14 July 2010].

Solms-Delta. 2009b. *About: Wijn de Caab*. [Online]. Available: <http://www.solms-delta.co.za/community/wijn-de-caab-trust/>. [14 July 2010].

Solms-Delta. 2009c. *About: Dik Delta*. [Online]. Available: <http://www.solms-delta.co.za/heritage/dik-delta-fynbos-reserve/>. [14 July 2010].

Solms-Delta. 2009d. *About: The chef*. [Online]. Available: <http://www.solms-delta.co.za/restaurant/the-chef/>. [14 July 2010].

Solomons, M. and Gross, R. 1995. Urban nutrition in developing countries. *Nutrition Reviews*, (53)4:90-95.

Sorrell, S., Speirs, J., Bentley, R., Brandt, A. and Miller, R. 2009. Global oil depletion: An assessment of the evidence for a near-term peak in global oil production. A report produced by the Technology and Policy Assessment function of the UK Energy Research Centre [Online]. Available: www.ukerc.ac.uk/support/tiki-download_file.php?fileId=283. [9 June 2010].

South Africa. National Assembly. 2004. Broad-Based Black Economic Empowerment Act, no. 53. 2003. Cape Town: Government Gazette.

Statistics South Africa. 2007. *Community Survey 2007 findings*. [Online]. Available: <http://www.statssa.gov.za/Publications/CS2007Basic/CS2007Basic.pdf>. [25 October 2010].

Steel, C. 2008. *Hungry city: How food shapes our lives*. London: Chatto and Windus.

Stellenbosch Municipality. 2008. Local economic development strategy. Main Report. Stellenbosch, South Africa.

Stellenbosch Municipality. 2009. Integrated Development Plan (IDP) for the municipal area of Stellenbosch. Compiled by the IDP and Strategic Programmes Department of the Directorate Strategic Services. Stellenbosch, South Africa.

Stellenbosch Municipality. 2010. Annual report for the 2008/9 financial year. Stellenbosch, South Africa.

Stellenbosch Waldorf School. 2010. *History*. [Online]. Available: http://www.waldorfschool.org.za/waldorf/Stellenbosch_Waldorf_School/History.html. [20 September 2010].

Steyn, L. 2010. Personal interview. 14 June, Café Crème, Stellenbosch.

Stone, J. 2010. Personal interview. 12 July, Sustainability Institute, Stellenbosch.

Strauss, A. and Corbin, J. 1998. *Basics of qualitative research: Techniques and procedures for developing grounded theory*. Thousand Oaks, California: Sage.

Sundkvist, A., Milestad, R. & Jansson, A. 2005. On the importance of tightening feedback loops for sustainable development of food systems. *Food Policy*, 30:224-239.

Sustainability Institute (SI). 2010a. *About the Institute*. [Online]. Available: <http://www.sustainabilityinstitute.net/about-the-institute-mainmenu-2/overview-mainmenu-4>. [20 September 2010].

Sustainability Institute (SI). 2010b. *Stellenbosch Food Security Initiative*. [Online]. Available: <http://www.sustainabilityinstitute.net/home-mainmenu-33/260-stellenbosch-food-security-initiative>. [20 September 2010].

Swarts, E. 2010. Personal interview. 4 July, Stellenbosch Organic Farmers Market, Stellenbosch.

Swilling, M. 2009. *What Africa's leaders are ignoring*. Sustainability Institute. [Online]. Available: <http://www.sustainabilityinstitute.net/newsdocs/footprints/252-what-africas-leaders-are-ignoring>. [29 June 2009].

Swilling, M. & Annecke, E. Forthcoming. *Just Transitions: Explorations of Sustainability in an Unfair World*.

United Nations Development Programme (UNDP). 1998. *Human Development Report 1998: Overview*. [Online] Available: http://hdr.undp.org/en/media/hdr_1998_en_overview.pdf. [10 June 2010].

United Nations Educational, Scientific, and Cultural Organisation (UNESCO). 2010. *World Heritage*. [Online]. Available: <http://whc.unesco.org/en/about/>. [20 September 2010].

United Nations Environment Programme (UNEP). 2009. *The environmental food crisis – The environment's role in averting future crises*. [Online]. Available: http://www.unep.org/pdf/FoodCrisis_lores.pdf. [25 October 2010].

United Nations Environment Programme (UNEP). 2010. *Assessing the Environmental Impacts of Consumption and Production: Priority Products and Materials*. [Online]. Available: http://www.unep.org/resourcepanel/documents/pdf/PriorityProductsAndMaterials_Report_Full.pdf. [25 October 2010].

United Nations Human Settlement Programme (UN-Habitat). 2003. *The Challenge of Slums: Global Report on Human Settlements*. UK: Earthscan.

United Nations Human Settlement Programme (UN-Habitat). 2006. *State of the World's Cities 2006/7*. London: Earthscan & UN-Habitat.

Urban Sprout. 2010. *Bloublommetjies*. [Online]. Available: <http://www.urbansprout.co.za/?q=node/320>. [20 September 2010].

U.S. Census Bureau, Population Division. 2010. *International Data Base: World Population Summary*. [Online]. Available: <http://www.census.gov/ipc/www/idb/worldpopinfo.php>. [1 May 2010].

Van Zyl, M. 2010. Personal interview. 17 June, Nook, Stellenbosch.

Wackernagel, M., Schulz, N., Deumling, D., Linares, A., Jenkins, M., Kapos, V., Monfreda, C., Loh, J., Myers, N., Norgaard, R. and Randers, J. 2002. Tracking the ecological overshoot of the human economy. *PNAS* 99(14):9266-9271.

Warby, V. 2007. *South Africa: BBBEE Codes Gazetted*. [Online]. BEE Scorecard. Available: http://www.bee-scorecard.co.za/news/bbbee_codes_gazetted.htm. [25 October 2010].

World Commission on Environment and Development. 1987. *Our common future*. [Online]. United Nations (UN) Documents. Available: <http://www.un-documents.net/wced-ocf.htm>. [25 October 2010].

World Food Summit (WFS). 1996. *Rome declaration on world food security and WFS plan of action*. [Online]. Food and Agriculture Organisation of the United Nations (FAO) Corporate Document Repository. Available: <http://www.fao.org/docrep/003/w3613e/w3613e00.HTM>. [25 October 2010].

Yin, R. 1989. *Case study research: Design and methods*. London: Sage.

Appendices

Appendix A: A screenshot of *The Regional Buffet*



SATURDAY, JULY 3, 2010

This little piggie went to market



One of the first "BUTS" that comes up in conversations about local/regional/organic food is that it is too expensive for average people (and students!). So I decided to test this assumption by comparing our weekly market shopping with two supermarkets in Stellenbosch. One supermarket is known for its very affordable prices and the fact that you can pick your own produce, the other for its unfailing quality and organic range. For the purpose of this exercise, let us call the former F&V and the latter WW.

Product	Quantity	Organic Market (all organic)	F&V	WW (organic = o)
Yogurt (full cream)	1 L	R45	R19.99	R25.95
Yogurt (low fat)	1 L	R25	R19.99	R25.95
Milk	1 L	R12	R9.99	R11.95 (o)
Whole Chicken	1 kg	R35	R23	R35.95 (o)
Eggs	6	R12	-	R7.45
Hummus	120 ml	R25	-	R11.95
Butternuts	1 kg	R30	R4.99	R6.99
Sweet Potato	1 kg	R10	R4.99	R10
Potato	1 kg	R10	R6.99	R11.50 (o)
Beetroot	A bunch	R7	R5	R13 (baby)
Broccoli	1 kg	R30	R25	R26.99
Carrots	1 kg	R10	R4	R14
Spinach	1 kg	R24	R15	R64.95
Tomatoes	1 kg	R10	R12.99	R13.99
Lettuce	A head	R5	R5.50	R7.89
Bananas	1 kg	R17	R10	R13.99
Pineapples	1	R12	R5	R5.95
Oranges	1 kg	R10	R4.99	R6.95
Gooseberries	1 kg	R50	R113	R84.95
Naartjies	1 kg	R10	R12.99	R14.95
Guavas	1 kg	R20	R7.99	R20

ABOUT

Welcome to The Regional Buffet, a sustainable food resource for everyone living on the tip of Africa's tongue. If you're new here, you might like to read the project's [mission statement](#) and [FAQ](#), or [meet the blog's authors](#).

A - Z OF REGIONAL PRODUCERS



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Appendix B: The memo of research findings up to 21 September 2010

This memo was handed to the seven attendees of the small-group feedback session.

**A small-group feedback session about the findings thus far of the study, Growing sustainable food systems: A study of local food distribution initiatives in Stellenbosch by Anri Landman
21 September 2010, 15h00 to 17h00 at Divine Foods, Stellenbosch**

Introduction

Why was this session scheduled, who are here and why?

An overview of the research findings thus far

The research aim

To understand the actual steps we have to take to grow sustainable food systems.

- A food system includes the production, distribution, consumption and waste of food.
- A sustainable food system produces, distributes, consumes and wastes food in a way that works with nature, not against it, and so that everyone in the system obtains enough food to eat.

The approach

1. To first identify the challenges of the environment in which food systems operates.
2. To then look at why food systems can't face these challenges and how to change that.
3. To finally use Stellenbosch as a case study to investigate how some initiatives have been edging toward sustainability and to learn the steps to take toward sustainable food systems. What have they been doing right? What are the blockages? How can these initiatives contribute to the growth of a sustainable food system?

1. The environment

1.1 The global environment

In order to be sustainable, food systems have to overcome certain challenges, including:

- A degraded environment: Food systems must repair the damage it has caused the environment (water, soil and air) and conserve it for the future.
- Climate change: Food systems must reduce its carbon emissions and prepare to adapt to changing climates.
- Energy constraints: Food systems must become more energy efficient and oil independent.
- Growing food demand: Food systems must increase food production for the future population within the carrying capacity of the earth's ecosystems.

- Inequality: Food systems must ensure equal access to food and create opportunities that will benefit the poorest producers.
- Food insecurity: Food systems must create distribution networks that ensure access to food for all.
- An urban future: Food systems must adapt to supplying an increasingly urbanised population with food.

1.2 The Stellenbosch environment

In research done by Jess Schulschenk in 2009, she established about the Stellenbosch food system that:

- Food insecurity is a real threat. A part of the Stellenbosch population does not have enough food to eat.
- Food production or farming in the area is dominated by viticulture that uses mostly conventional approaches (chemical farming) and the produce is mostly exported.
- Most of the food consumed in Stellenbosch is imported from other parts of the country or the world. The town does not produce enough food to feed itself.
- Stellenbosch has the capacity to produce enough food to feed itself.

2. Why can't the food system face the challenges in its environment?

2.1 The weaknesses of the food system

The current dominating food system (conventional production, supermarket distribution, processed consumption, un-recycled waste) cannot overcome the challenges of its environment, because during its creation, it did not take the environmental and social limits of its environment into consideration. It operates out of context. Farmers don't know where their food will end up and consumers don't know where their food comes from. It can thus be called disembedded from its environment.

2.2 To change the situation, so that the food system can overcome these challenges...

...the food system must be re-embedded. This does not mean simply localising the food system or only distributing organic food or only making compost from our organic waste. It must be an approach that re-embeds the system on all of its different levels of production, distribution, consumption and waste, simultaneously. It must take the environment and the social community into consideration. Environmental and societal concerns must always be part of decision-making processes in the food system. From considering operating hours to selecting packaging for produce to choosing what food to eat, participants in the system must always ask: Will this be good for my environment? Will this be good for my community?

3. Local distribution initiatives in Stellenbosch

Why distribution? Because it links production and consumption. Without a local distribution network, that understands the complexities of the Stellenbosch context, it will be very difficult to set up a sustainable food system.

Why initiatives edging toward sustainability? Because it is easier to work with those parts of a system that are already working somewhat and to connect them to each other to strengthen the system.

The ten identified distribution initiatives, including Divine Foods, Eight, Fyndraai, Farm to Fork, the SI Staff CSA, Three Peas, Living Tree, the Smouse, the Stellenbosch Organic Farmer's Market and the Vredenhof Market, were identified because they edged toward a more sustainable food system.

After conducting semi-structured interview with key informants in these initiatives, an overview of the larger alternative distribution network that these initiatives form part of was created. The overview produced various insights, which have been documented and will be presented in the final report. For this session, blockages are of particular interest. From the overview the blockages that limits the distribution network's ability to contribute to a more sustainable food system in Stellenbosch, were identified (see the last page).

Some questions for discussion:

1. Do you think it is important to grow a sustainable food system?
2. Why?
3. Are these blockages real in your experiences as a key participant in the local-food distribution network? Are they preventing a more sustainable food system?
4. Are there any other blockages you feel are important, but not mentioned here?
5. Which strengths do you think the alternative distribution network has to grow a sustainable food system?
6. From where it is now, what needs to happen in the alternative distribution network to make a sustainable food system a reality?
7. Are there any important questions you want to add to the list before we start?

Blockage	Examples in the system	Symptoms
<u>Unawareness</u>	<ol style="list-style-type: none"> 1. Not promoting produce as farm-fresh, regional or organic, even if it is. 2. Promoting organic/regional food as the ultimate solution. 3. Promoting produce as organic when it is not. 	<p>Misconception Miscommunication Taking extreme stances Only minimizing current damage, not restoring a broken system first Inconsistent agendas Lack of collaboration Mistrust</p>
<u>System limitations</u>	<ol style="list-style-type: none"> 1. Lack of locally produced sustainable food. 2. Limited choices for sustainable food system inputs e.g. packaging. 3. No consumer demand for change 	<p>Passively operating within the constraints Stagnant adaptation Shifting blame</p>
<u>Isolation:</u> (Internal and external)	<ol style="list-style-type: none"> 1. Initiatives operate disconnected from other operations within the same institution 2. Initiatives operate only in known/comfortable/easy social settings where change has already begun 3. Don't combine resources in a network of likeminded initiatives 	<p>Contradicting expectations Exclusivity Tunnel vision Taking extreme stances Limited impact: always only an alternative</p>
<u>Concentration of control</u>	<ol style="list-style-type: none"> 1. Organic certification 2. The control of ownership within initiatives 	<p>Imposed systems Assuaging guilt/shifting blame Inconsistent agendas Lack of ownership Lack of commitment Lack of collaboration</p>

If you think of anything that might be important to our discussion, and which you would like to add, please feel free to contact me at any time.

Contact details

Anri Landman

Cell number: 084 506 8665

E-mail address: anriland@gmail.com

Appendix C: An example of the method used to identify blockages in a case

This is an example of how I identified blockages in a write-up of one of the case studies. This exercise was repeated for each case. I also used this technique to identify the strengths within each case study and the network connections between case studies. The main overlapping blockages, strengths and network connections that were established are printed in bold in this table and discussed in 5.5–5.7. Many of the singular identified elements like ‘exclusivity’, ‘communication gap’, ‘middle person’, ‘loosened feedback loop’ and ‘lack of commitment’ were related back to overlapping elements in order to discuss the local-food distribution network in greater detail.

Excerpt from write-up	Blockages
X is a farm-to-fork restaurant with an <i>haute cuisine</i> approach.	Isolation , exclusivity
Conventionally farmed vineyards cover half of the 600-hectare farm.	System limitations
The initial attraction to X was not its sustainable orientation, but the fact that Y would be able to work less than 17 hours a day, with a guaranteed day off.	Unawareness
Their main supplier is Z, who has insured Y to only deliver organic produce. Later, during an informal conversation with X it was said that Z was no longer able to deliver organic produce, but because of an established arrangement was still delivering. It also seemed as if Z had been delivering inorganic produce for some time before X knew about it.	Communication gap, middle person, loosened feedback loop
There are no ethical local beef suppliers.	System limitations
In some instances, like with pineapples, it is obviously sourced from the more tropical northern regions of South Africa.	System limitations
Some X dishes contain quinoa from South America...because it is one of A’s favourites.	Concentration of control
It is more convenient to work with Z, who delivers.	Unawareness, system limitations
X has been featured in two acclaimed national magazines.	Exclusivity, isolation
The restaurant is not yet involved in any community projects.	Isolation
X has to be established before it can invest in community projects.	Unawareness
The misconceptions people have about what organic and healthy food is, means that they often rather go to other restaurants that offer more than ‘just a salad’.	Unawareness
Y finds it extremely limiting to work with very few basic ingredients, limited by local availability and seasonal changes.	System limitations

Y was trained to never use the same ingredient more than once in the same menu.	Conventions
Above all, however, the biggest challenge remains finding suitable local suppliers.	System limitations
Y has also been struggling with a lack of commitment from staff.	Lack of commitment
A final challenge is health and safety measures that require them to use things like unsustainable plastic wrapping in the kitchen.	System limitations
Y did not feel entitled to comment on the Stellenbosch food system, because she has no time to participate in it. X keeps her fully occupied.	Isolation

Appendix D: Fyndraai's Hiervandaan/Heritage menu



Special winter menu 2010

Starter

Crisp, fried vegetable samoesa and prawn springroll served with avocado puree and warm tomato chutney

Or

Hearty chicken, wild garlic and mushroom soup with cream, served with freshly baked seed loaf

Main course

(Served with a glass of Vastrap or Langarm)

Curried Cape snoek and calamari wrap with egg plant paste, egg plant crisps and steamed basmati rice with fennel flavours

Or

Braised springbok shank with turnip and sweet potato emulsion, sweet potato crisps and buttered farm vegetables, served with its own braising sauce

Or

Warm marinated salad drizzled with fynbos herb pesto, accompanied with home smoked goat's cheese

Dessert

Banana and ginger pudding baked with vanilla sauce

2 course R135

3 course R155

With culinary regards

Executive Chef, Shaun Schoeman

Appendix E: Fyndraai's winter menu



STARTERS

Soup of the day
R38

West Coast mussels *potjie* cooked with *vinkelblaar*, coconut milk and sweet chilli
Wine suggestion: Vastrap or Lekkerwijn
R40

House salad with *heuningbos roomkaas* and mayonnaise, *tuinblare*, marinated tomatoes and *aspersies*
Wine suggestion: Amalie or Lekkerwijn
R39

Pan-fried Cajun scallops with *slaphakskeentjies*, *soetwortel* purée, *kweper* and spicy avocado *slaai*
Wine suggestion: Lekkerwijn
R79

Biltong and blue cheese pâté served with *kraakbrood*, baby garden leaves, mango and *lemmetjie* achar
Wine suggestion: Langarm or Amalie
R45

Fyndraai Tapas Platter
Chicken samoosas, calamari nuggets, *lamsfrikkadel sosatie*, smoked chicken, creamy mayo and peppadew wrap, *pampoenkoekies*, smoked *snoek sambaal*, mini *boerewors* roll, South African ham and *blaarslaai*, all served with local condiments
Wine suggestion: Lekkerwijn
R82

From the Dik Delta fynbos culinary gardens:
Veldkos vegetable bake with *bokmelkkaas*, garden leaves and *boegoe* buttermilk sauce
Wine suggestion: Karri or Vastrap
R 40

MAINS

Cape line-fish, pan-fried with local salami and *veldkoolslaai* on *raaptol* en *witwortelpap*, accompanied by a citrus *boegoe* butter sauce
Wine suggestion: Lekkerwijn
R80

Pickled giant black tiger prawns and spicy tomato stew (with onions, bayleaves and allspice) served with apple yoghurt purée and *sousboontjies*
Wine suggestion: Karri or Amalie
R108

Karoo lamb loin stuffed with *fynbos* herb paste, *wilde knoffel* and rosemary flavoured braised onions and *vinkelknol* served with crisp fried baby potatoes enhanced with a Cape Jazz Shiraz reduction
Wine suggestion: Langarm or Africana
R108



MAINS

Fyndraai risotto, *gestoofde uie*, roasted bell peppers, Kalahari truffle and toasted almonds
with creamed cheese and parmesan
Wine suggestion: Amalie or Karri
R78

Curried free-range chicken breast with crayfish and spring onion basmati rice, cucumber *raitha*, roti,
and a warm crayfish *asyn slaaisous*
Wine suggestion: Vastrap or Amalie
R98

Combination of calf's liver and fried pickled tongue, traditional *Kaapse tamatiesmoortjie*, *aartappelvla*
with a balsamic and *karri* wine sauce
Wine suggestion: Cape Jazz Shiraz or Hiervandaan
R89

Traditional *wildsbokpastei* served with *rooi ui* marmalade, pan-fried wild mushrooms,
corn on cob and a brandy peppercorn sauce
Wine suggestion: Langarm or Africana
R108

Lightly smoked ostrich fan fillet served with *waterblommietjie* tart, honey roasted *patat* emulsion,
buttermilk *souringsous* and *spekboomslaai*
Wine suggestion: Hiervandaan or Langarm
R115

DESSERTS

Caramelised baked custard served with traditional *koeksister* and vanilla ice cream
Wine suggestion: Cape Jazz Shiraz or Karri
R40

Cape brandy pudding served with nutty ice cream and a creamy brandy sauce
Wine suggestion: Cape Jazz Shiraz or Koloni
R42

Rooibos and *klapper* cheesecake served with coconut cream sauce, *rooibos* syrup and lemon sorbet
Wine suggestion: Karri
R41

Mango and strawberry ice cream coupe served with chocolate and caramel sauce
Wine suggestion: Cape Jazz Shiraz
R40

South African cheese platter served with homemade *blatjang* and crackers
Wine suggestion: Koloni or Lekkerwijn
R85

Appendix F: Divine Foods' tuck shop menu

Snoepie Spyskaart Tuck Shop Menu

SAPPE / JUICES	Price
House of Juice 350ml	R7.00
Ceres 250ml	R5.00
Tizers 330ml	R7.00
Just Juice 330ml	R6.00
Minute Maid 330ml	R6.00
Wilde Juices 250ml	R5.00
Ice Tea 330ml	R6.00
Water 500ml	R5.00
Vrugtesap ysies / Frozen Fruit Juice	R 2.00
Herbal juice 200ml	R 6.00
YOGHURTS	
Parmalat drinking 250ml	R 7.00
Parmalat bakkies / cups	R 5.00
Yoghurt met vars vrugte / Yoghurt with fresh fruit	R 8.00
Yoghurt & muesli	R 8.00
ROOMYS / ICE CREAM	
Frozen yoghurt	R 8.00
Slush puppies van vars vrugtesap (somer) / Slush puppies with fresh fruit juice (summer)	R 6.00
SOUT HAPPIES / SAVOURY SNACKS	
Popcorn	R 4.00
Pretzels	R 4.00
BESKUITJIES EN KOEKIES / BISCUITS	
Oat crunchies	R 2.50
Coconut clusters	R 2.50
Droe vrugte / Dry fruit	R 3.00
Neute / Nuts	R 5.00
Grondboontjies & rosyne / Peanuts & raisins	R 3.00
Saad stafies / Seed bars	R 6.00
Tuisgemaakte nougat / Home made nougat	R 5.00
Liquorice	R 2.00
Rosyne / Raisins	R 4.00
Dadels /Dates	R 3.00
Tuisgemaakte klein koekies / Home made cookies	R 2.00
Tuisgemaakte koekies / Home made biscuits	R 3.00
Choc brownies	R 6.00
Muise / Mice	R 2.00
Vrugterol / Fruit roll	R 5.00

Appendix G: Farm to Fork's supplier questionnaire

FARM 2 FORK DINING PROJECT SUSTAINABILITY INSTITUTE

SUSTAINABLE SCORECARD FOR DRY GOODS SUPPLIERS

SUPPLIER NAME: _____

QUESTIONS	MARKING GUIDE	MARK	COMMENTS
AGRICULTURAL METHODS (total possible marks=60)			
Is it grown according to organic, biodynamic, natural or permaculture principles?	yes=20, no= -15		
Is it fairtrade certified?	Yes=5, no=0		
Does it contain preservatives, synthetic flavourants or colorants?	Yes= -30, no=0		
Is it certified GM-free?	Yes=14, no=0		
Does the farmer grow the crop in season?	Yes=6, no= -5		
Does the farmer grow a range of crops?	Yes=6, no=0		
Does the farmer practice any of the following: light tilling, crop rotation, seed saving	Yes=3 for each		
ORIGINS (total marks=50)			
Are we buying direct from the producer?	Yes=25, no=0		
Is it produced within an hour's drive of the SI?	Yes=15, no=0		
If not, is it grown in South Africa?	Yes=10, no=-5		
If imported, how is it imported?	Truck =5 , train=6 , cargo ship=5 , airplane=-15		
If buying from a wholesaler, can they tell you who and where they source from?	Yes=10, no= -15		
LOGISTICS (total marks=40)			
Will they deliver to the SI?	yes=20, no=-10		
If not, can orders be collected in a convenient place?	Yes=8, no= -30		
Does delivery cost extra or is there a minimum order size?	Yes= -16, no=0		
Is delivery weekly, or to order?	Weekly=8, to order=14		
How is the order placed?	Email = 0, fax=0, phone=6		
FINANCES (total marks=50)			
Does the item seem reasonably priced in comparison with supermarket prices?	Choose between 0 and 40, where 40 is most reasonably priced and 0 is expensive		
Do they accept EFT payments?	Yes=10, no=0		
	SUBTOTAL:		
Divide subtotal by two to get the supplier's score as a percentage:			FINAL SCORE AS %:

FARM 2 FORK DINING PROJECT
SUSTAINABILITY INSTITUTE

SUSTAINABLE SCORECARD FOR FRESH GOODS SUPPLIERS

SUPPLIER NAME: _____

QUESTIONS	MARKING GUIDE	MARK	COMMENTS
AGRICULTURAL METHODS (total possible marks=60)			
Are animals raised according to organic, biodynamic, natural or permaculture principles?	yes=17, no= -15		
Does the finished product contain preservatives, synthetic flavourants or colorants?	Yes= -30, no=0		
Are the animals free range (i.e. space and access to grazing)?	Yes=12, no= -25		
Do the animals have access to shelter?	Yes=10, no=-10		
Are the animals given antibiotics routinely?	Yes=-8, no=10		
Are sick animals which are given medicine isolated from the herd/flock?	Yes=8, n/a=0, no=-10		
Are the animals slaughtered on-site?	Yes=3, no=0		
ORIGINS (total marks=50)			
Are we buying direct from the producer?	Yes=30, no=0		
Is it produced within an hour's drive of the SI?	Yes=20, no=0		
If not, is it produced in South Africa?	Yes=10, no=-40		
If buying from a wholesaler, can they tell you who and where they source from?	Yes=15, no= -15		
LOGISTICS (total marks=40)			
Will they deliver to the SI?	yes=20, no=-10		
If not, can orders be collected in a convenient place?	Yes=8, no= -30		
Does delivery cost extra or is there a minimum order size?	Yes= -16, no=0		
Is delivery weekly, or to order?	Weekly=8, to order=14		
How is the order placed?	Email = 0, fax=0, phone=6		
FINANCES (total marks=50)			
Does the item seem reasonably priced in comparison with supermarket prices?	Choose between 0 and 40, where 40 is most reasonably priced and 0 is expensive		
Do they accept EFT payments?	Yes=10, no=0		
	SUBTOTAL:		
Divide subtotal by two to get the supplier's score as a percentage:		FINAL SCORE AS %:	

Appendix H: A System Dynamics model of Stellenbosch imports

A System Dynamics representation of a food imports in Stellenbosch based on Schulschenk (2009)

1. The problem

The imbalance between food exports and imports in Stellenbosch illustrates that the region does not enjoy food sovereignty.

Via Campesina defines food sovereignty as: “... *the right of peoples to define their own food and agriculture; to protect and regulate domestic agricultural production and trade in order to achieve sustainable development objectives; to determine the extent to which they want to be self-reliant; to restrict the dumping of products in their markets; and to provide local fisheries-based communities the priority in managing the use of and the rights to aquatic resources. Food Sovereignty does not negate trade, but rather it promotes the formulation of trade policies and practices that serve the rights of peoples to food and to safe, healthy and ecologically sustainable production*”.

The representation of this problem, using basic System Dynamics Modelling tools, aims to better understand the dynamic interactions between relevant elements in the Stellenbosch food system, as to identify key areas for the most effective policy interventions.

2. The hypothesis

Even though Stellenbosch has the land and resource capacity to produce enough food, prevalence is given to more profitable wine production for exports. The small amount of food currently produced and distributed locally is not enough for the region's food security and therefore food has to be imported from elsewhere. Because of the imbalance, the region is becoming increasingly dependent on food imports for food security and thus increasingly vulnerable to external shocks such as international food price hikes.

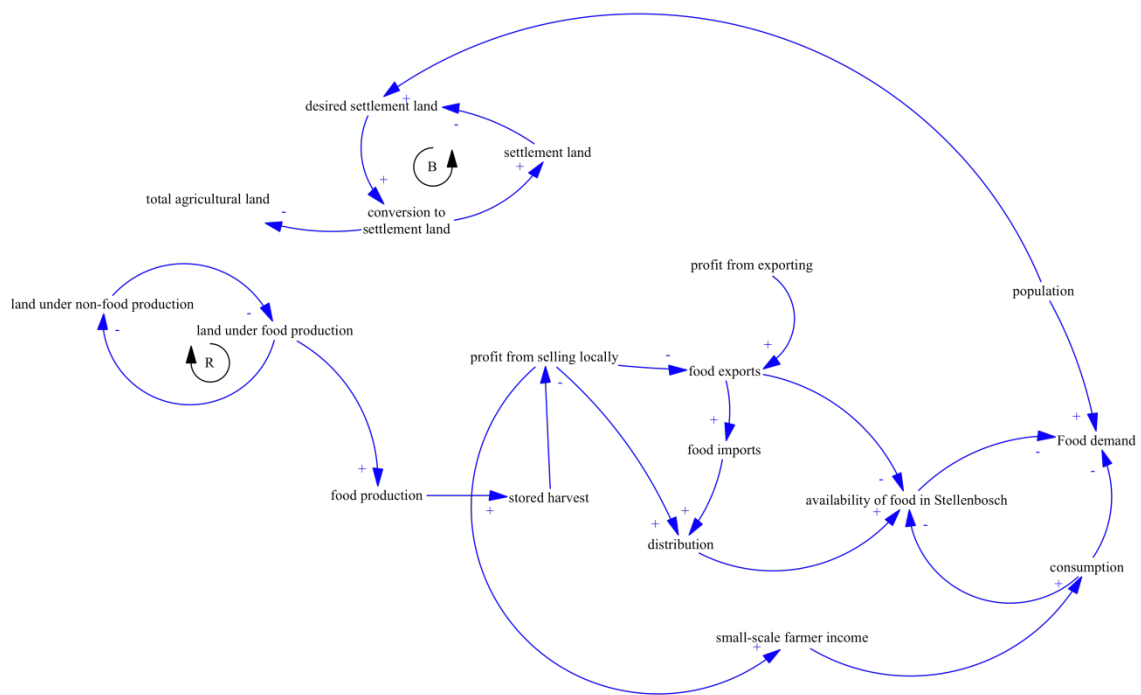
Furthermore, the region is also experiencing an influx of people from other areas of the country, especially the Eastern Cape and also from neighbouring African countries like Zimbabwe. As the population grows, both the conversion from agricultural land to settlement land and the demand for land for food production increases. This dynamic puts more strain on the food system.

2.1 The causal loop diagram

The causal loop diagram in Figure 1 illustrates the dynamic interaction of the feedback loops between different elements of the Stellenbosch food system.

As the population in Stellenbosch increases, it increases the demand for settlement land, which increases the conversion of agricultural land to settlement land. In South Africa, agricultural land can be converted into other land uses, but only fallow land can be converted into agricultural land. Very little fallow land exists in Stellenbosch and therefore agricultural land can either decrease or stay stable.

Figure 1: A causal loop for the Stellenbosch food system



The diagram divides agricultural land into land for food production and land for non-food production like viticulture and cash crops such as herbs for essential oils. The latter is orientated toward exports and because the exporting enterprise is currently more profitable, it competes with food production for agricultural land. Food production is therefore constrained by the availability of land.

Once the food is produced, the option to export tends to be more profitable, especially for deciduous fruits. Locally produced vegetables are distributed locally, but are not enough to meet food security demands and extra food is therefore imported.

The consumption of food will be the minimum of food demand and food availability. Consumption is also increased by higher small-scale farmer income, which is in turn increased by the local trade

of locally produced vegetables. Consumption decreases food availability and increases demand together with a higher population and a decreasing stock of food availability.

The diagram shows how a growing population increases both the demand for food and for settlement land. The conversion of agricultural land into settlement land competes with the higher demand for food, which in turn also requires larger areas of land for food production.

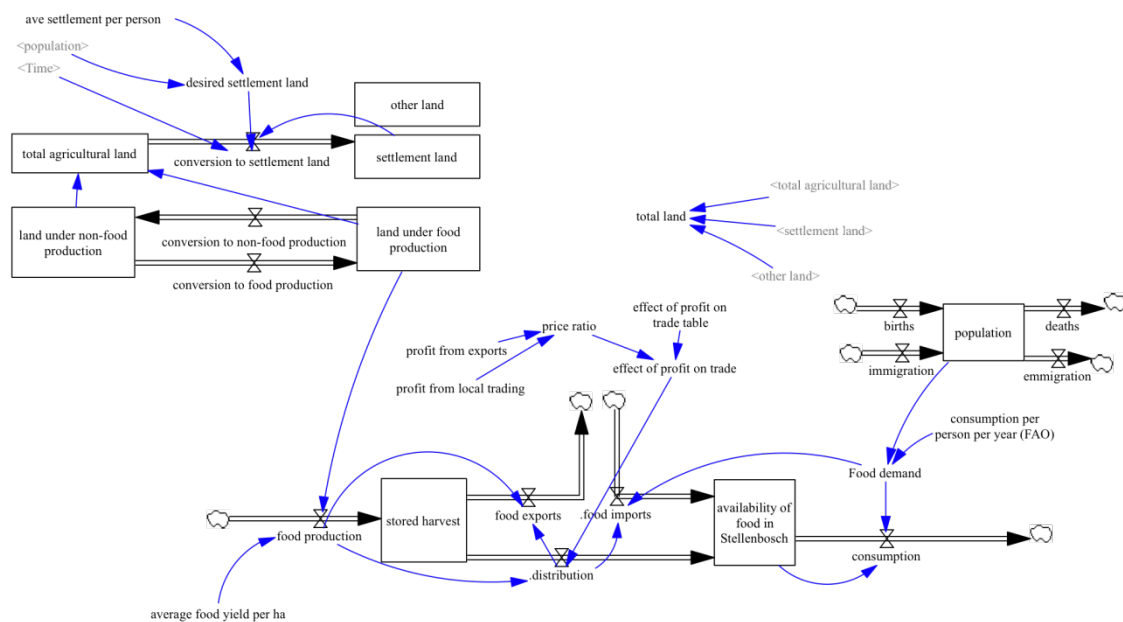
3. The stock and flow diagram

The stock and flow diagram illustrates the stocks and flows of the food system and the different variables that influence them.

3.1 Identification of the stocks and the flows

Before the diagram can be drawn and discussed, the stocks are identified. Boxes indicate the stocks. The flows include conversion to settlement land, food exports and imports, production, distribution and consumption.

Figure 2: A stocks and flows diagram of the Stellenbosch food system



3.2 The diagram

During the assembly of the diagram in Figure 2, it was obvious that some variables would have to be added to do the required calculations for simulations in the future. Some variables have thus been added to the ones used for the causal loop diagram. The model will have to be further developed for simulations, but is already capable of facilitating possible future projections if the

system continues to operate as it currently does. The purpose of this System Dynamics model was to illustrate the dynamics of the problem. Even though a quantitative analysis could validate some of the assumptions made based on the qualitative diagram, the qualitative model is sufficient for now.

3.3 A short discussion on possible future scenarios

The conversion of land from food to non-food production is likely, because of the higher profit made from non-food-production for exports (this is not explicitly shown in the model and will have to be incorporated on further development of the model). It is also likely that more and more food will be exported because of a better price for exported food. In addition population growth will eventually lead to all agricultural land being converted into settlement land. Both scenarios will increase Stellenbosch's dependence on food imports for food security. Similarly, the region's food security will become more exposed to international shocks, like the food price hike in 2008.