

**Sowing the seeds of food sovereignty or cultivating consent?
The potential and limitations of Johannesburg's community gardens**

By

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Abstract

This thesis investigates the benefits and challenges of participating in community gardens in Johannesburg. More specifically, it seeks to understand whether and how urban community gardens contribute to food sovereignty, with the aim of identifying ways to enhance their contribution. For this research, six components of food sovereignty were considered: 1) access to sufficient, healthy and culturally appropriate food; 2) sustainable livelihoods and local economies; 3) environmental sustainability; 4) food system localisation; 5) empowerment and food system democratisation; and 6) gender equality. This research adopts a constructivist approach and a comparative case study method. In addition to an extended period of participant observation, the research utilises a unique array of research instruments adapted from various disciplines, including key informant interviews, an informal survey of community gardens in Johannesburg, a food diary exercise, food/life history interviews and semi-structured interviews with garden participants.

The thesis finds that the community gardens do contribute to food sovereignty, though their contribution to the six elements is uneven and faces many obstacles. Some of the more unique challenges identified by this research include: 1) the role of culture and worldviews; 2) the restrictive impact of the neoliberal rationality underpinning support for the gardens—whether from government, non-governmental organisations or the private sector; and 3) conflicts and a climate of suspicion amongst gardeners which inhibit knowledge sharing, development of critical consciousness and social mobilisation.

This research represents a contribution to both the urban agriculture (UA) and food sovereignty scholarship. Applying the food sovereignty framework to community food gardens in Johannesburg enables a more multidimensional and multi-scalar analysis of the gardens than previously found in South African literature on UA. At the same time, this research highlights a number of unexplored issues within the food sovereignty literature, such as: the challenge of defining ‘culturally appropriate’ food; the potential contradictions between culturally appropriate foods, sustainable livelihoods and agroecological production methods; and the role of race and gender inequality. This approach also revealed that the material benefits of UA (e.g., food security, income) are limited by the context of marginalisation, while its transformative potential can only be realised if support for UA has transformation as a principal objective.

DECLARATION

Submitted in fulfilment of the requirements for the degree of Doctor of Philosophy (Development Studies), in the Graduate Programme in the School of Development Studies,
University of KwaZulu-Natal,
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I, Brittany Kesselman, declare that this thesis is my own unaided work. All citations, references and borrowed ideas have been duly acknowledged. It is being submitted for the degree of Doctor of Philosophy (Development Studies) in the Faculty of Humanities, Development and Social Science, University of KwaZulu-Natal, Durban, South Africa. None of the present work has been submitted previously for any degree or examination in any other University.



Student Signature

21 April 2017

Date

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List of Acronyms

Acronym	Full name
AFN	alternative food network
AFSUN	African Food Security Urban Network
AGDI	African Gender and Development Index
BEE	black economic empowerment
CFS	community food security
CSR	corporate social responsibility
CWP	Community Work Programme
DAFF	SA Department of Agriculture Forestry and Fisheries
DRC	Democratic Republic of Congo
DSD	Department of Social Development (City of Johannesburg)
ECDC	early childhood development centre
EPWP	Expanded Public Works Programme
ESD	enterprise and supplier development
FANTA	Food and Nutrition Technical Assistance
FAO	UN Food and Agriculture Organisation
FEZ	Food Empowerment Zone
FTFA	Food and Trees for Africa
GADS	Gauteng Agricultural Development Strategy
GDARD	Gauteng Department of Agriculture and Rural Development
GEAR	Growth Employment and Redistribution
GEM	Gender Empowerment Measure
HDDS	Household Dietary Diversity Score
IAASTD	International Assessment of Agricultural Knowledge, Science and Technology for Development
IDT	Independent Development Trust
IFOAM	International Federation of Organic Agriculture Movements
IFSNP	SA Integrated Food Security and Nutrition Policy (2014)
IFSS	SA Integrated Food Security Strategy (2002)
KPI	key performance indicators
MDGs	Millennium Development Goals
MST	Landless Rural Workers Movement, Brazil (O Movimento dos Trabalhadores Rurais Sem Terra)
NCD	non-communicable disease
NGO	non-governmental organisation
PGS	participatory guarantee system
SAFSC	South African Food Sovereignty Campaign
SAOSO	South African Organic Sector Organisation
SFHC	Soils, Food and Healthy Communities
SPCS	sociopolitical control scale
TNC	transnational corporation

UA	urban agriculture
UJ	University of Johannesburg
UNDP	United Nations Development Programme
UNECA	United Nations Economic Commission for Africa
UPA	urban and peri-urban agriculture
USD	United States Dollars
USDA	United States Department of Agriculture
WTO	World Trade Organisation
ZAR	South African Rand

Chapter 1: Introduction

1.1) Context for the research

Johannesburg is a city of contrasts, with extreme wealth alongside severe poverty. It is the economic engine of South Africa, yet has an official unemployment rate of over 26% (Statistics South Africa, 2015b). Food security¹ in the city is a matter of access to food, rather than availability, so high levels of poverty and unemployment translate into high levels of food insecurity (Rudolph, Kroll, Ruysenaar, & Dlamini, 2012, p. 14). One study of food insecurity in Alexandra township, Joubert Park in the inner city, and Orange Farm found that 56% of households were food insecure, with 27% severely food insecure (Rudolph et al., 2012), while another study focusing on the most deprived wards of the city found rates of food insecurity as high as 90% (de Wet, Patel, Korth, & Forrester, 2008, p. 21). These high levels of food insecurity violate the basic human right to food, enshrined in international conventions such as the Universal Declaration of Human Rights as well as in clause 27(1)(b) of the South African Constitution.

Hunger in Johannesburg exists alongside increasing levels of obesity and associated non-communicable diseases (NCDs) such as hypertension, cardiovascular disease and diabetes (Department of Health, 2013, p. 11). Paradoxically, nutrient deficiencies and NCDs often exist in the same people, especially the poor, who cannot afford healthy diets and instead subsist on cheap, energy-dense foods high in fat and added sugar but low in essential nutrients (Temple & Steyn, 2011).

In many cities of the global south, urban agriculture (UA) is a significant coping strategy used by the urban poor to supplement their diets and incomes. UA can be understood as “the growing, processing, and distribution of food and non-food plant and tree crops and the raising of livestock, directly for the urban market, both within and on the fringe of an urban area” (Mougeot, 2006, p. 4). In some cities in Asia and Africa, UA meets a significant portion of the vegetable needs of the urban population (de Bon, Parrot, & Moustier, 2010). Yet in Johannesburg, despite the high levels of

¹ Food security is said to exist “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).

unemployment and food insecurity, the practice is very limited (Rudolph et al., 2012, pp. 20–21). South African research has also found UA to have a minimal impact on levels of poverty and food insecurity, compared to findings in other countries (Crush, Hovorka, & Tevera, 2011; Lee-Smith, 2013; Webb, 2011).

Despite this limited impact, the South African government continues to promote and support urban agriculture as a response to poverty and food insecurity (City of Johannesburg, 2012; Gauteng Provincial Government, 2013). Recently, this support of UA to the detriment of other potential food system interventions, such as preferential procurement and price-related interventions, has come under criticism (Battersby, Haysom, Kroll, Tawodzera, & Marshak, 2015). Yet demand for land in the city, and interest in urban agriculture, remains high in many areas, suggesting that UA holds some appeal (Malan, 2015).

1.2) The research question

This thesis seeks to understand whether and how urban community gardens² contribute to food sovereignty in Johannesburg, with the aim of identifying steps that could be taken to enhance their contribution. Food sovereignty can be defined most simply as “the right of peoples to healthy and culturally appropriate food produced through ecologically sound and sustainable methods, and their right to define their own food and agriculture systems” (*Nyéléni Declaration on Food Sovereignty*, 2007). The concept emerged as a radical alternative to food security, in recognition of its severe limitations and apparent inability to address persistent hunger and malnutrition under the current globalised, industrial food regime. Food sovereignty seeks to ensure not only that people everywhere consume sufficient calories, but that the food system³ itself is transformed to be more just, democratic and equitable, along with a similar transformation of the broader social relations in which the food system is embedded.

² Community gardens can be defined as “organised initiative(s) whereby sections of land are used to produce food or flowers in an urban environment for the personal or collective benefit of their members who, by virtue of their participation, share certain resources such as space, tools and water” (Beilin & Hunter, 2011, p. 523).

³ The food system can be understood as “the chain of activities connecting food production, processing, distribution, consumption and waste management, as well as the associated regulatory institutions and activities” (Mubvami & Mushamba, 2006, p. 56).

To address this broad research question, I ask six sub-questions, one for each of the key elements of food sovereignty:

- i) How do community gardens improve access to adequate, nutritious and culturally appropriate food for participants and the surrounding community?
- ii) How do community gardens contribute to the livelihoods of garden participants or other members of the community?
- iii) How do community gardens contribute to the environmental sustainability of the food system?
- iv) How do community gardens contribute to localising the food system, understood as bringing producers and consumers closer together and enhancing local control?
- v) How do community gardens promote empowerment of participants, and how do they contribute to greater democratic control over the food system?
- vi) How do community gardens contribute to the empowerment of women or to greater gender equality?

Food sovereignty was an attractive framework for this research in light of the severity of the problem of hunger in Johannesburg and the limitations of the existing food security approach taken by most governmental and non-governmental programmes. Food sovereignty enables us to examine urban agriculture's benefits and challenges at various scales, and incorporates critical issues that are excluded from the food security framework but are extremely relevant in the local context—power relations, culture and gender issues. I discuss the merits of this framework in greater detail in Chapter 2. By contrast, food security is silent with regard to how food is produced, by whom, and who controls the food system (Schanbacher, 2010).

I opted to focus on urban agriculture (UA) for three reasons: i) it has been one of the principal hunger-related interventions in the city of Johannesburg (City of Johannesburg, 2012), ii) in other cities of the global south, it has been found to contribute to food security, improved nutrition and poverty reduction (Mougeot, 2006), and iii) it has been highlighted by some advocates of food sovereignty as a possible pathway toward food system transformation (Feagan, 2007; McClintock,

2013). Bringing the food sovereignty framework to bear on urban agriculture in Johannesburg represents a new approach to research on both food sovereignty and UA in South Africa. This has allowed for a more multidimensional assessment of UA's impacts, possibilities and limitations through a multi-scalar analysis.

1.3) Approach to the research

This research study began with a firm commitment to the need for social change with regard to the levels of hunger, malnutrition and poverty experienced in Johannesburg. It adopted a constructivist approach that valued, and sought to understand, the multiple perspectives of garden participants with regard to their situation. I then adopted a comparative case study method in order to achieve depth of understanding, through the triangulation of multiple data collection methods, drawn and adapted from various disciplines. These included:

- i) A literature review,
- ii) Key informant interviews with experts, officials, NGO personnel,
- iii) An informal survey of community gardens,
- iv) Participant observation,
- v) A food diary exercise,
- vi) Food/life history interviews,
- vii) Semi-structured interviews with garden participants.

I chose to focus on community gardens because I believed the social organisation of community gardens, as opposed to the individualistic nature of a home garden, makes them more conducive to the reflexivity and discourse required for social learning, empowerment and social mobilisation. For my two case study gardens, Vunani⁴ in East Bank, Alexandra and Sekelanani in Bertrams, I deliberately sought out gardens in poor and marginalised communities, where issues of hunger and poverty are prevalent. I wanted to find gardens that had been in existence at least a year, as I felt that anything less would make it difficult to assess their impact on participants and the surrounding communities. I sought gardens with as many active participants as possible, so that I would have more people to engage with during the research, and I felt that larger gardens might be more likely to have a greater impact.

⁴ Pseudonyms have been used for the names of the gardens, to protect the identities of participants.

1.4) Findings and contribution

The research found that the gardens did contribute to food sovereignty, though their contribution to the different components was quite uneven and beset with difficulties. While many of the contributions and challenges that surfaced in the research reflect those in the existing literature on UA, other issues emerged that are not so commonly found in the literature. These included:

- i) the role of culture and worldviews;
- ii) the restrictive impact of the neoliberal rationality underpinning support for the gardens—whether from government, NGOs or the private sector; and
- iii) conflicts and a climate of suspicion amongst gardeners, which inhibited knowledge sharing, development of critical consciousness and social mobilisation.

These issues suggested a number of potential avenues to improve the gardens' contribution to food sovereignty. However, such support must take as its point of departure the structural context in which the gardens operate in Johannesburg, where the combination of corporate control over the food system, neoliberal⁵ policies and the socio-economic, cultural and spatial legacies of apartheid make it virtually impossible for the poor and marginalised to 'grow themselves out of poverty' (Battersby et al., 2015; Philip, 2010). Rather than focusing narrowly on the objectives of food security and poverty reduction, as most support currently does, the findings of the research suggest it would be more effective to focus support for food gardens on three broad areas:

- i) their inspiration value,⁶ in terms of inspiring others to create food gardens and to form gardener networks;

⁵ Neoliberalism is "a theory of political economic practices that proposes that human well-being can best be advanced by liberating individual entrepreneurial freedoms within an institutional framework characterised by strong private property rights, free markets, and free trade" (Harvey, 2005, p. 2).

⁶ Note that the use of the term 'value' here does not refer to value theory, but rather to the common usage meaning of the term: "the importance, worth, or usefulness" of something.

- ii) their conscientisation value, in terms of providing political education to raise consciousness around food system issues that will lead to social mobilisation; and
- iii) their demonstration value, in terms of demonstrating that a more sustainable alternative to the current globalised industrial food system is possible.

This research contributes to the growing literature on food sovereignty by applying it to the practice of urban agriculture in the global south. Doing so raised some interesting issues, including:

- i) the challenge of defining ‘culturally appropriate’ food in a post-colonial, multi-ethnic city undergoing a nutrition transition;
- ii) potential contradictions between culturally appropriate foods, sustainable livelihoods for food producers and agroecological production methods;
- iii) ways in which issues of race and inequality create obstacles to food system localisation in a highly unequal society like South Africa;
- iv) how traditional gender roles, and particularly women’s triple burden of productive, reproductive and community work, impinge on women’s ability to derive the same benefits from UA as men and affect nutrition outcomes for all household members. This is true even if women are treated as equals in the fields.

This research also contributes to the literature on urban agriculture, as the food sovereignty lens enabled a multi-scalar analysis that considered structural issues beyond the ‘garden gate.’ This approach revealed that the material benefits of UA (e.g., food security, income) are limited by the context of poverty, marginalisation and limited support. At the same time, its transformative potential will not be realised without an explicit commitment to promoting democratisation and conscientisation in the gardens, which is currently absent from all of the support provided. Thus in order for UA to be transformative, support for UA must have transformation as a principal objective.

1.5) Overview of the dissertation

The structure of this dissertation is as follows. Part I contains three chapters. Chapter 2 explains the conceptual framework, food sovereignty. It outlines the evolution of the concept as well as its relationship to related concepts such as food security and provides an overview of some of the current debates and critiques. This chapter also examines some existing food sovereignty policies in order to ground the theoretical discussion in reality, before explaining why food sovereignty was chosen and how the framework is used in the research.

Chapter 3 reviews the literature on urban agriculture. This includes policy issues, current debates and differences between the treatment of UA in the global north and the global south. It then reviews the UA literature as it relates to each of the six components of food sovereignty, and concludes with a brief look at the literature on UA in Johannesburg.

Chapter 4 is an overview of the research methodology. It explains my approach to the research, and my selection process for the case study gardens. This chapter also provides an explanation of all of the research instruments (samples are provided in Appendix 1), as well as some of my personal reflections on the research process and its limitations.

Part II of the dissertation contains six chapters on findings, one chapter for each of the six components of food sovereignty. Chapter 5 addresses the gardens' contribution to access to sufficient, healthy and culturally appropriate food. This is broken down into questions of economic and geographic access, production volumes and issues affecting consumption, nutrition and dietary diversity, as well as cultural appropriateness.

In Chapter 6, I examine the gardens' contribution to sustainable livelihoods for the gardeners and to local economic development for their communities. I consider different financial benefits of the gardens, including expenditure savings, income from sales, and wages. I then turn to the rather limited upstream and downstream economic linkages from the gardens.

In Chapter 7, I consider the gardens' contribution to the environmental sustainability of the food system, beginning with how they reuse and recycle resources such as water, waste and packaging. Next, I examine the gardens' use of agroecological production methods, in particular organic methods and the promotion of biodiversity. I then address the question of 'food miles,' or the transport involved in bringing food to consumers, as well as the potential environmental risks associated with UA.

Chapter 8 turns to the issue of food system localisation. It addresses the gardens' contribution to three components of localisation: embedding transactions in face-to-face relations; use of alternative production and distribution methods; and enhancing local control over the food system. The chapter ends with a discussion of the challenges of localisation in a South African context.

Chapter 9 addresses empowerment and food system democratisation. These two aspects are interlinked, insofar as empowerment is a necessary precursor to meaningful democratisation. The chapter considers the gardens' contribution to various aspects of empowerment, such as increased knowledge and skills, psychological empowerment and political consciousness for social mobilisation. With regard to food system democratisation, the chapter considers garden-level practices as well as higher-level food policy processes.

The final findings chapter, Chapter 10, considers the gardens' contribution to gender equality. This chapter examines gender roles in the gardens as well as gender roles in the participants' households. It also considers how these have changed, or persisted, from participants' childhoods to the present time. The chapter briefly considers how apparently gender-blind support is in fact gender-biased, to the detriment of women garden participants.

Part III of the dissertation discusses the crosscutting issues that emerged from the findings before drawing some conclusions from the research. In Chapter 11, I address three key themes that emerged from the application of a food sovereignty framework to community gardens. The first is culture and worldviews, including food cultures and memory; neoliberal mentalities; a culture of democracy; and the persistence of alternative worldviews. The second theme is the challenges of providing the correct

support to gardens. In particular, this theme considers how the neoliberal rationality underpinning assistance provided by government, NGOs and the private sector constrains the amounts, types and methods of support possible. In addition, this theme underlines the importance of incorporating the multi-functionality of the gardens, and the multiple ways gardeners learn, into support programmes. The third theme is scale and impact. This entails an examination of the challenges of localisation, the value of gardener networks as well as some of the gaps and contradictions in the current system that provide openings for transformation.

In the concluding chapter, Chapter 12, I summarise the research question, approach and process. I review the research findings, including the gardens' contribution to each of the six elements of food sovereignty as well as the challenges limiting their contribution. I then consider ways to enhance the gardens' contribution by re-orienting support towards different objectives. In conclusion, I provide an overview of my contribution to the food sovereignty and urban agriculture literature, in addition to highlighting some areas that merit further research.

Part I: Concepts, literature, and methods

Chapter 2: The food sovereignty framework

2.1) Introduction

This research utilises the concept of food sovereignty as its overarching conceptual framework, while drawing from other theories and disciplines as needed. While the evolving definition of food sovereignty is discussed below, it can be most simply defined as “the right of peoples to healthy and culturally appropriate food produced through ecologically sound and sustainable methods, and their right to define their own food and agriculture systems” (*Nyéléni Declaration on Food Sovereignty*, 2007).

The concept of food sovereignty emerged in recognition of the limitations of the concept of food security to address persistent hunger and malnutrition under the current globalised, industrial food regime. Indeed, La Vía Campesina, the international peasant movement that popularised the concept of food sovereignty, identified the corporate-controlled food system (and the neoliberal trade policies that support it) as one of the causes of hunger, through its dispossession of peasants, forcing them into rural wage labour, or to migrate to urban areas in search of non-agricultural work. Food sovereignty was developed as a radical alternative to food security that seeks to ensure not only that people everywhere consume sufficient calories, but that the food system itself is transformed to be more just, democratic and equitable, along with a similar transformation of the broader social relations in which the food system is embedded.

Section 2.2 outlines the history and evolution of food sovereignty as a theory, a movement and a practice, or set of practices, developed in the global south. Section 2.3 then examines the relationship between food sovereignty and the related yet distinct concepts of food security, food justice and community food security, as well as the linkages between food sovereignty and the right to food. Next, Section 2.4 outlines some of the key debates in the food sovereignty literature, focusing on the nature of sovereignty, issues of scale and the role of the state. It also examines some of the critiques of, and contradictions within, food sovereignty, linked to gender transformation, democratic participation and agroecology. Then, picking up a question asked by Raj Patel (2009) some time ago, “What does food sovereignty look like?”, Section 2.5 seeks to provide some examples of ‘actually existing’ food

sovereignty struggles and processes, as well as some insights into a related question, “How do we get there?”

Following the review of the food sovereignty literature, Section 2.6 then addresses the motivation for selecting food sovereignty as the conceptual framework for this research, as well as the contribution this research makes to the evolving debates around food sovereignty. Finally, the chapter ends, in Section 2.7, by outlining the way the concept is defined and utilised in this research.

2.2) Evolution of food sovereignty

Food sovereignty emerged in opposition to the globalised, industrial food system and the undemocratic, neoliberal policies that support it. When La Vía Campesina, a peasant movement with origins in South America, first brought the term to international attention at its meeting in Rome in 1996⁷, food sovereignty was defined as: “the right of each nation to maintain and develop its own capacity to produce its basic foods respecting cultural and productive diversity. We have the right to produce our own food in our own territory. Food sovereignty is a precondition to genuine food security” (La Vía Campesina, 1996). The focus was on national-level sovereignty in the face of World Trade Organisation (WTO) interference in agriculture, dumping of agricultural surpluses in developing countries and unfair trade practices that disadvantaged small-scale producers in developing countries. The 1996 Declaration went on to lay out some of the key principles that would form the bedrock of food sovereignty: food as a basic human right; agrarian reform to give control over food-producing resources to peasants, especially women; the sustainable management of natural resources; reorganisation of trade to prevent dumping; social peace instead of ethnic oppression and racism; and democratic control over the food system (La Vía Campesina, 1996).

As the food sovereignty movement grew and attracted allies from the developed north and from beyond its peasant base, the definition expanded. At a civil society meeting on food sovereignty in 2002, it was articulated as follows:

⁷ The etymology of food sovereignty has been traced back to a government programme in Mexico in the 1980s, but it was La Vía Campesina that popularised the term internationally and gave it the meaning it carries today. For a fully history, see Edelman (2014).

Food sovereignty is the right of peoples, communities, and countries to define their own agricultural, labour, fishing, food and land policies, which are ecologically, socially, economically and culturally appropriate to their unique circumstances. It includes the true right to food and to produce food, which means that all people have the right to safe, nutritious and culturally appropriate food and to food-producing resources and the ability to sustain themselves and their societies (NGO/CSO Forum for Food Sovereignty, 2002).

This definition is grounded in rights language, asserting rights at various scales from communities to countries and expanding the right to food to include the right to produce food and to access food-producing resources, in order to sustain the livelihoods of peasants and their communities. It emphasises the multiple dimensions of food sovereignty--ecological, social, economic and cultural—while also recognising the context-specificity of those dimensions in shaping people’s choice of food system. Further, the safety, nutrition and cultural appropriateness of food are brought to the fore.

The definition of food sovereignty used in this research is drawn from the Forum for Food Sovereignty, a gathering of diverse organisations and movements held in Nyéléni, Mali in 2007. It is the most comprehensive definition of food sovereignty to date, and potentially the most controversial as well, as its inclusion of consumers has been viewed critically as a potential dilution of the anti-capitalist concept (Handy, 2013). In the Nyéléni Declaration:

Food sovereignty is the right of peoples to healthy and culturally appropriate food produced through ecologically sound and sustainable methods, and their right to define their own food and agriculture systems...

Food sovereignty prioritises local and national economies and markets and empowers peasant and family farmer-driven agriculture, artisanal-fishing, pastoralist-led grazing, and food production, distribution and consumption based on environmental, social and economic sustainability. Food sovereignty promotes transparent trade that guarantees just incomes to all peoples as well as the rights of consumers to control their food and

nutrition. It ensures that the rights to use and manage lands, territories, waters, seeds, livestock and biodiversity are in the hands of those of us who produce food. Food sovereignty implies new social relations free of oppression and inequality between men and women, peoples, racial groups, social and economic classes and generations (*Nyéléni Declaration on Food Sovereignty*, 2007).

Food sovereignty has been expanded in this definition to explicitly include the rights of consumers. While complex, this definition contains all of the key elements of food sovereignty: the right of peoples to define their own food and agriculture systems; the right to healthy and culturally appropriate food; sustainable agroecological production methods; and peasant control of food-producing resources. Most importantly, this definition spells out explicitly the need for “new social relations free of oppression and inequality”, something that was implicit in the previous definitions’ emphasis on peoples’ rights to define their own food system. As Patel points out, “To make the right to shape food policy meaningful is to require that *everyone* be able substantively to engage with those policies. But the prerequisites for this are a society in which the equality-distorting effects of sexism, patriarchy, racism, and class power have been eradicated” (Patel, 2009, p. 670). In other words, the project of food sovereignty extends beyond transformation of the food system to include a broader social transformation (Jarosz, 2014, p. 176), in the recognition that under the current neoliberal capitalist world order, the desired food system transformation may not be possible.

While food sovereignty has been criticised as “over-defined” (Patel, 2009), it has also been criticised for its vagueness or lack of clearly prescribed programmatic actions (Akram-Lodhi, 2013). Yet this lack of prescriptive detail has been credited to its recognition of the context-specific nature of food sovereignty, in which people will determine their food systems in accordance with their specific cultural, ecological and socioeconomic requirements. Further, its mobility is seen as a response to the constant evolution of the globalised corporate food regime to which it is opposed (McMichael, 2014, p. 1). Food sovereignty has been variously termed a movement, a theory, a set of practices, a slogan, a paradigm and a political project (Edelman, 2014, p. 960; McMichael, 2014, p. 1). Disregarding the slogan, it seems fair to say that food

sovereignty is a theory espoused by a movement, advocating certain types of practices as well as political changes. There is no reason it cannot be all of those things. With this brief introduction to the history and evolution of food sovereignty, we turn now to its relation to food security.

2.3) Relationship to food security and other concepts

Food sovereignty has been referred to as a “counterframe” to food security, or an “alternative scheme for understanding the global food system” (Fairbairn, 2012, p. 222). Like food sovereignty, the concept of food security has evolved significantly since it was first used to designate “sufficient aggregate food supplies at the national and international levels” (UN 1974 cited in Fairbairn, 2012, p. 221). From these origins, the notion of food security shifted scale, from the national/ international level to the household/individual level. The World Food Summit of 1996 defined food security as existing “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). This definition incorporated the concept of access, following Amartya Sen’s (1981) work on entitlement and famine. In other words, the existence of sufficient food supplies did not guarantee an absence of hunger, as a lack of physical or economic access to food is the principal cause of food insecurity. In the South African context, there is sufficient food produced and/or imported at the national level to meet the food consumption needs of the entire population, yet at least one quarter of the population suffers from hunger due to the inability to purchase sufficient food (Shisana et al., 2013, p. 145).

As a concept, food security is silent with regard to how food is produced, by whom, and who controls the food system (Schanbacher, 2010). It does not speak of people’s participation in defining their food system, or of democratic processes at all. Indeed, Patel (2009) has stated that technically, one could be food secure under a dictatorship or in prison. As Jarosz points out: “Food security is embedded in dominant technocratic, neoliberal development discourses emphasising increases in production... and is aligned with transnational agribusiness and institutions of governance at the national and international levels. In contrast, food sovereignty discourses emerge from civil society and NGOs and align with Marxist political economy/ ecology discourses within and outside academia” (Jarosz, 2014, pp. 169–

170). The critical contribution of food sovereignty is its “relational analysis of how poor and wealthy countries are joined in inequitable relations of political and economic power within the global food system” (Jarosz, 2014, p. 176). In short, food sovereignty foregrounds power relations, or the politics of food, a matter not addressed by the food security discourse.

Food sovereignty advocates point out that the food security solutions proposed by international organisations, national governments, aid agencies and agribusiness tend to rely on and promote the same globalised, industrialised, undemocratic agri-food system and liberalised trade regime that has contributed to food insecurity in the first place (Fairbairn, 2010; La Vía Campesina, 1996; McMichael, 2010). In contrast, food sovereignty proposes alternative solutions to hunger, located outside the current food regime, and based on its core principles of democratic participation, social justice and ecological sustainability.

At this point it is worth comparing food sovereignty to other concepts that also go beyond food security in their responses to hunger. The notion of food justice, for instance, emerged in the United States in the last two decades, in recognition of the fact that race and class inequalities play out in terms of differential access to nutritious and affordable food. Thus low-income communities and communities of colour suffer disproportionately from the effects of poor food access, with higher levels of food insecurity, malnutrition as well as obesity and associated non-communicable diseases, than their more affluent, white counterparts (Holt-Giménez & Patel, 2009, pp. 160–1; Macias, 2008). Where food justice falls short, however, is in its failure to challenge the “bigger politics” of the corporate food regime (Clendenning & Dressler, 2013, p. 12). Instead, food justice activists tend to promote local, community-oriented food initiatives (such as community gardens or farmers markets) that seek to improve access to healthy fresh food in poorly served communities. Yet these initiatives have been criticised for relying on the same market mechanisms as the corporate food regime, and for reinforcing the neoliberal rollback of the state by stepping in to fill the void (Alkon & Mares, 2012).

Like food justice, community food security (CFS) recognises that some communities face barriers to accessing healthy food. Community food security is defined as “a

condition in which all community residents obtain a safe, culturally acceptable, nutritionally adequate diet through a sustainable food system that maximises community self-reliance and social justice” (Community Food Security Coalition cited in Maretzki & Tuckermanty, 2007, pp. 333–4). Unlike ‘traditional’ food security, which focuses on the household level, CFS focuses on the entire community’s ability to access food, emphasising the creation of a sustainable local food economy to improve livelihoods as well as food access (Heynen, Kurtz, & Trauger, 2012). As with food justice, the CFS focus on self-reliance and localised market solutions has been criticised for failing to challenge the larger industrial food system and for reinforcing neoliberalism (Alkon & Mares, 2012).

The concept of food democracy is more aligned to food sovereignty’s emphasis on democratic participation. As Neva Hassanein defines it:

At the core of food democracy is the idea that people can and should be actively participating in shaping the food system, rather than remaining passive spectators on the sidelines. In other words, food democracy is about citizens having the power to determine agro-food policies and practices locally, regionally, nationally, and globally (Hassanein, 2003, p. 79).

Like food sovereignty, food democracy addresses power relations and recognises the need for a shift in those relations in order to create the conditions for meaningful democratic participation (Hassanein, 2003). Unlike food sovereignty, food democracy does not favour any particular scale or method of agricultural production, leaving open the possibility that people could democratically select and control an industrialised, chemical-laden agricultural system, rather than an ecologically sustainable one.

Before turning to some of the debates within the food sovereignty literature, and some of the critiques of the concept, it is worth noting the relationship of food sovereignty to the right to food. Recognised in Article 25 of the Universal Declaration of Human Rights (United Nations General Assembly, 1948) and Article 11 of the International Covenant on Economic Social and Cultural Rights (United Nations General Assembly, 1966), amongst other treaties, the human right to food guarantees freedom from hunger. It has been elaborated in terms of the availability, accessibility,

adequacy and sustainability of food (de Schutter, 2014, p. 3). States have a responsibility to respect, protect, promote and fulfil this right (South African Human Rights Commission, 2004, p. ix). Both La Vía Campesina and then-UN Special Rapporteur on the Right to Food, Olivier de Schutter, have claimed that food sovereignty is a necessary condition for the realisation of the right to food (de Schutter, 2014, p. 20; La Vía Campesina, 1996), arguing that without control over the food system, people's access to food can never be secure. In South Africa, the right to food is enshrined in section 27 of the constitution. The right to food is not absolute, however. It is qualified, with the provision that “the state must take reasonable legislative and other measures, within its available resources, to achieve the progressive realisation of each of these rights” (Republic of South Africa, 1996 section 27(2)).

La Vía Campesina has articulated food sovereignty to encompass a variety of rights—in addition to the right to food, it also incorporates the rights of indigenous peoples, the rights of women, the rights of consumers, and, most recently, the rights of peasants (Khan, 2011, p. 45; Patel, 2009). The right to food has been expanded in the food sovereignty concept to include the right to produce food in a manner of the food producers' choosing (McMichael, 2014, p. 2). While the use of a rights framework helps to ground the demands of the food sovereignty movement and holds states to account for hunger, this approach has been criticised for failing to recognise potential conflicts between some of the individual and communal rights, as well as remaining silent on the question of an alternative rights guarantor, if the state is unwilling or unable to fulfil that role (Patel, 2009; Trauger, 2013).

2.4) Debates, contradictions and critiques

This section addresses some of the key debates in the food sovereignty literature, focusing on the nature of sovereignty, issues of scale and the role of the state. It also examines some of the critiques and contradictions within food sovereignty, linked to gender transformation, democratic participation and agroecology. While by no means exhaustive, this section will set up some of the issues and themes that emerged from my own field research, which will be revisited in Chapters 7, 9 and 10 (on environmental sustainability, food system democratisation and gender equality, respectively).

The demand for food sovereignty immediately raises the question of sovereignty for whom? The different definitions of food sovereignty, outlined above, call for sovereignty of peoples, communities and countries with respect to the food system, suggesting a new notion of multiple, nested sovereignties rather than the more traditional state sovereignty of political science (Iles & de Wit, 2014; Patel, 2009). It also suggests a type of sovereignty exerted not through physical force or territorial control, but through “the active reshaping of cognitive, political, and economic arrangements” (Iles & de Wit 2014: 485) such that people are empowered to make critical decisions about food production, distribution and consumption. As Patel points out:

[O]ne of the most radical moments in the definition of food sovereignty is the layering of different jurisdictions over which rights can be exercised. When the call is for, variously, nations, peoples, regions, and states to craft their own agrarian policy, there is a concomitant call for spaces of sovereignty. ... In blowing apart the notion that the state has a paramount authority, by pointing to the multivalent hierarchies of power and control that exist within the world food system, food sovereignty paradoxically displaces one sovereign, but remains silent about the others (Patel, 2009, p. 668).

This “autonomist and pluralist conception of multiple local sovereignties” suggests a need for new institutional arrangements that would enable these different layers of state and non-state sovereignty to co-exist (Clark, 2015, pp. 4–5).

The possibility of both the state and various sub-units within it being sovereign over food at the same time is an intriguing, if challenging, notion, but it has yet to be worked out in practice (Schiavoni, 2015, p. 468). What would happen, for example, if the food policy decisions of the state, at national level, conflicted with those of communities? What if different communities within the same region adopted radically different food policies? And how do the different types of sovereignty— practical sovereignty, epistemic sovereignty—interact (Iles & de Wit, 2014, p. 489)? A possible working example of functioning nested sovereignty would be the communal councils of Venezuela, which will be discussed in the next section.

The notion of multiple sovereignties is tied directly to the question of scale. At what scale do “peoples” exercise food sovereignty? There is a strong emphasis on “local control” in the discourse on food sovereignty (*Nyéléni Declaration on Food Sovereignty*, 2007), though the “local” is notoriously difficult to define (Born & Purcell, 2006; Feenstra, 1997; Hinrichs, 2003; Robbins, 2015; Winter, 2003). The potential over-valorisation of the local scale will be discussed in greater detail in the next chapter (Urban Agriculture Literature Review). Localisation and democratic control over the food system are logical responses to the globalised corporate food regime, in which significant power rests with undemocratic transnational corporations (TNCs) and intergovernmental organisations such as the World Trade Organisation (WTO). However, the question remains whether it is possible to contest a global system at the local level. As Iles and de Wit elegantly argue, “One cannot adopt a fixed, small-scale approach to confront such a flexible, ‘many-headed beast’ as capitalist agriculture” (Iles & de Wit, 2014, p. 487). It may be necessary to “jump scales” and create global networks in opposition to the current food regime (Wald & Hill, 2016, pp. 206–7). It makes sense to ask, “[I]s localisation actually (and necessarily) a challenge to the globalised, industrialised food system” (Robbins, 2015, p. 450), as many argue, or could it be deemed a withdrawal into the margins of that system? Indeed, despite the emphasis on localisation, La Vía Campesina has recognised and adopted a strategy of contestation at multiple scales, through its network of peasant organisations and allies operating at community, national and international levels.

The third issue, the role of the state, is linked to the questions of sovereignty and scale. In food sovereignty discourses, the state has been posited as both part of the problem and part of the solution (Clark, 2015). The state is part of the problem insofar as it is complicit with capital in implementing neoliberal policies, to the detriment of peasant farmers and the poor in general (Trauger, 2013). However, the state is also seen as part of the solution, insofar as it is the primary guarantor of the rights claimed in the food sovereignty discourse (e.g., the right to food, the right to produce food, the right to control food-producing resources). The state is also the entity most likely to be able to reverse neoliberal policies that support corporate interests, and to replace them with democratic, developmental policies (Akram-Lodhi, 2013, p. 14).

As Akram-Lodhi (2013, p. 20) points out, “a state *for* food sovereignty would need to be at once a traditional redistributive and developmental state, but would also recognise the plural or polycentric nature of sovereignty. It would have to open up space for the co-construction of public policies with civil-society actors.” Thus in addition to fulfilling its obligations as a guarantor of rights, the state would need to create space for meaningful democratic participation in policy-making and implementation with regard to the food system (Pimbert, 2009). This opening would have to occur at multiple levels or scales, from the community up to the national level.

Indeed, when we speak of “the state,” it suggests a unitary entity, rather than the multiple levels of the state, with multiple interests operating within and between each level. Wald and Hill (2016, p. 209) have asked, “[A]re all scales of the state merely replicating the same kinds of power relations, including those related to global capital, or are there differences at different scales?” Indeed, state policies at one level or different levels may well be contradictory—in the South African case, national level support for large-scale agribusiness using patent-protected, genetically-modified seeds and chemical inputs (Bernstein, 2013a) would appear to contradict food sovereignty principles, while provincial level support for small-scale agroecological production and farmer-to-farmer networks for knowledge sharing (such as GDARD’s LandCare programme) would seem to be in keeping with food sovereignty principles.

Given the breadth of the concept of food sovereignty, and its continuous expansion through inputs made by a wide range of stakeholders, it is no surprise that it harbours some apparent internal contradictions. One of these is the issue of gender equality. In recognition of women’s important role in peasant agriculture, as well as in household food production and preparation, La Vía Campesina has emphasised the importance of women’s empowerment and the eradication of inequality between men and women (La Vía Campesina, 1996, 2007). At the same time, strong emphasis has been placed on protecting and promoting the family farm. Yet the family farm has traditionally been a bastion of patriarchy and unequal gender relations (Agarwal, 2014; Patel, 2009). Thus to eliminate this potential contradiction, food sovereignty would need to support the household-level transformation of gender roles on peasant farms, as well

as “redistributing productive assets such as land and inputs *within* peasant households in gender-equal ways” (Agarwal, 2014, p. 1255).

A second internal contradiction pointed out by Agarwal is the potential conflict between the promotion of democratic choice, on the one hand, and the actual choices of small farmers and consumers, on the other. Particularly in the absence of significantly more education and support, small farmers may choose to use chemical inputs and genetically modified seeds, rather than the agroecological methods promoted by food sovereignty. They may also opt not to farm for self-sufficiency for themselves or their community, if selling or exporting is more profitable (Agarwal, 2014). On the side of consumers, Steckley points out that “we need to consider how colonial legacies, and processes of globalisation and Westernisation in many contexts can influence food preferences in ways that perpetuate social inequality and undermine healthy and pro-poor food systems” (Steckley, 2016, p. 27). With regard to Haiti, Steckley found that “The broad preference for imported, foreign foods over traditional, local ones threatens to undermine peasant agriculture and inhibits movement towards the core goals of food sovereignty: to healthy, culturally appropriate food, based on food systems that are rooted in local ecosystems and dignify agricultural livelihoods” (Steckley, 2016, p. 28). In the South African context, both of these potential contradictions are pertinent, as small farmers frequently adopt non-ecological agriculture methods and consumers choose industrially produced fast food over healthier traditional diets (Kekana, 2006; Steyn, Labadarios, & Nel, 2011). The freedom to determine the food system may not lead to the type of food system advocated by food sovereignty activists.

One of the most vocal critics (or sceptics, to use his words) of food sovereignty has been Henry Bernstein. His scepticism relates, firstly, to the existence of peasants in the sense of self-sufficient, subsistence farmers. He argues that “there are no ‘peasants’ in the world of contemporary capitalist globalisation” (Bernstein, 2013b, p. 15). If indeed peasants do exist, they could not be contained in the “abstract and unitary conception of ‘peasants’” put forward by food sovereignty, as they represent diversified on- and off-farm income streams, social classes and other socio-economic differences (Bernstein, 2013b, p. 21). The notion of “community” is similarly oversimplified in the food sovereignty discourse, argues Bernstein, which associates it

with the values of cooperation, reciprocity, egalitarianism and localised identity (Bernstein, 2013b, pp. 16–17). This idealised notion of “community” glosses over differences and contradictions within communities, particularly in terms of gender and intergenerational relations (Bernstein, 2013b, p. 17).

Bernstein also takes issue with food sovereignty’s goal of transforming the food system to be based on localised, agroecological methods of production, practiced by peasants based on their indigenous or traditional knowledge. He expresses doubt as to the potential of this subsistence-oriented farming to create the necessary surplus to feed the entire non-farming world population (Bernstein, 2013b, p. 2). Indeed, some see food sovereignty’s celebration of agroecology as misplaced, in terms of its potential yields as well as its apparent dismissal of universal science (Jansen, 2014, pp. 11–13). Jansen contends that many small farmers’ knowledge and practices do not fit into the agroecological approach (Jansen, 2014, p. 13). Bernstein (2013b, p. 25) extends his critique to ask, even if sufficient surplus could be created, what “downstream” market mechanism would deliver it to consumers in a way that met the needs of both peasant farmers and low-income consumers?

Finally, Bernstein raises the issue of the role of the state, pointing out that the food sovereignty discourse seems to demand a great deal from the state—in terms of regulating trade, protecting small-scale farming, providing subsidies, etc.—without adequately recognising the implication of most states in the expansion of capitalism (Bernstein, 2013b, p. 26).

In his response to Bernstein, Philip McMichael points out that small producers still produce the majority of the world’s food, and that the corporate food regime has produced food insecurity (and diet-related illnesses) on a massive scale (McMichael, 2014, pp. 4–5). He also contends, following Edelman, that ‘peasantness’ is a political rather than an analytical category (McMichael, 2014, p. 7). Thus those small-scale food producers who are facing dispossession by the neoliberal policies that support the corporate food regime are peasants for the purposes of the food sovereignty movement. Ultimately, while disagreeing with many of Bernstein’s doubts, McMichael acknowledges the usefulness of the provocative questions he raises, in furthering the development of food sovereignty.

Setting aside the question of ‘peasantness’, I would agree with Bernstein’s caution not to oversimplify the ‘community.’ Whether within a traditional rural agricultural community or a community of food-insecure urban workers, there are unequal power relations at work in terms of age, class, gender, ethnicity and other differences that should not be obscured under a singular notion of ‘the community’. With regard to the goal of transforming the food system to one of agroecological production, it seems difficult to see how anyone would object to low external input, non-toxic agricultural methods, as long as they were able to produce sufficient food. Since the current challenge of food insecurity is one of poor access to food, rather than insufficient food, it seems worthwhile to attempt to shift to more ecologically sustainable growing methods, ensuring that farmers are given the necessary knowledge and skills to maintain sufficient yields. Furthermore, a number of studies, including the comprehensive International Assessment of Agricultural Knowledge, Science and Technology for Development (IAASTD) compiled by a panel of the world’s pre-eminent experts, have found that agroecological methods of production can match productivity levels of conventional industrial methods (IAASTD, 2009, p. 6).

The question of the role of the state, as discussed above and queried by Bernstein, can be further understood by examining some examples of food sovereignty policies that have been enacted at different levels. These also contribute to our understanding of what food sovereignty might actually look like in practice. Thus the next section addresses Patel’s (2009) important question, “What does food sovereignty look like?” and extends this to ask an additional question, “How do we get there?”

2.5) Food sovereignty policies and pathways

Food sovereignty has been referred to as a dynamic and transformative process, rather than a fixed end-point (Pimbert, 2009; Schiavoni, 2015). Its people-driven, context-specific nature means that it will “look” different in every setting. Yet despite this, it does have some core principles, such as democratic participation, local control, food for people (not profits), and agroecological production methods (La Vía Campesina, 2007). A number of food sovereignty laws and policies have been enacted in the last decade, enabling us to examine the role of the state in furthering the core principles of food sovereignty. This section will provide a brief overview of three such policies, in

Maine (USA), Ecuador and Venezuela, as well as a non-governmental project in Malawi, in order to provide some examples of the struggles associated with food sovereignty in practice.

In 2011, four towns in the state of Maine in the United States adopted 'Local Food and Community Self-Governance Ordinances' to protect the practices of local small farmers that were under threat by state and federal regulations. Nicknamed 'Food Sovereignty Ordinances' by observers, these local measures proclaimed the right of local residents to "produce, process, sell, purchase and consume local foods thus promoting self-reliance, the preservation of family farms, and local food traditions." The Ordinances further affirmed "our right to a local food system requires us to assert our inherent right to self-government" (Town of Sedgwick, 2011). The ordinances claimed that "federal and state regulations impede local food production and constitute a usurpation of our citizens' rights to foods of their choice" (Town of Sedgwick, 2011). The federal and state regulations in question seemed designed to favour corporate industrial meat producers, and threatened the economic viability of small poultry and livestock farmers utilising different farming practices.

Though the local ordinance has been challenged in court by the state authorities, it has also inspired passage of similar 'food sovereignty ordinances' in other towns in the US (Bayly, 2016; Kurtz, 2013; Trauger, 2014). The small farmers and their allies in the communities where the ordinances were passed did not necessarily see themselves as struggling for food sovereignty when they started (Kurtz, 2013, p. 16). Yet they demonstrate a clear food sovereignty orientation in terms of: i) their desire to protect small-scale farming processes and the small farm economy; ii) their wish to protect access to food produced by small farmers using non-industrial practices; and iii) their insistence on maintaining local control over decision-making about their food system. Their opposition to corporate industrial agriculture's dominance of the food system and to decision-making taking place outside of the community (in this case at state and federal levels), places them squarely within the food sovereignty struggle.

Ecuador was one of the first countries to enshrine food sovereignty in its constitution, which was developed through a participatory process and adopted in 2008 as part of President Rafael Correa's citizen revolution (*revolución ciudadana*) (Clark, 2015, p.

7). The constitution states that “food sovereignty is a strategic objective and an obligation of the state that persons, communities, peoples and nations achieve self-sufficiency with respect to healthy and culturally appropriate food on a permanent basis” (National Assembly, cited in McKay & Nehring, 2013, p. 14). The constitution spelled out fourteen types of actions to be undertaken by the state to realise national food sovereignty (see Figure 1). In addition, the government’s official development plan sets out a model of ‘*socialismo del buen vivir*’, a form of socialism modelled on the indigenous concept of *sumac kawsay*, generally translated as ‘living well,’ which rejects the concept of development merely as economic growth (Clark, 2015, p. 8).

Figure 1: State responsibilities toward food sovereignty in Ecuadorian constitution

1. To expand the production, processing capabilities and fisheries of small and medium-sized producers, to respect collective production and the social and solidarity economy;
2. To adopt fiscal policies such as tax and tariffs to protect the national agriculture and fishing sectors and to prevent a reliance on food imports;
3. To strengthen the diversification and introduction of ecological and organic technologies into agricultural production;
4. To promote redistribution policies that permit peasants the access to land, water and other productive resources;
5. To establish preferential mechanisms of credit for small and medium producers, facilitating the acquisition of the means of production;
6. To promote the preservation and recovery of agricultural biodiversity, the use of related ancestral knowledge, as well as the conservation and free exchange of seeds;
7. To ensure that animals destined for human consumption are healthy and raised in a healthy environment;
8. To assure the development of scientific research and the innovation of appropriate technology to guarantee food sovereignty;
9. To regulate the use and development of biotechnology, such as its experimentation, use and commercialisation;
10. To strengthen the development of organisations and producer-consumer networks, such as the commercialisation and distribution of food to promote equity between rural and urban spaces;
11. To generate fair systems of food distribution and commercialisation based on principles of solidarity; to prevent monopolistic practices and any type of speculation on food products;
12. To donate food to victims of manmade or natural disasters that are at a risk of food insecurity. Any food received from international aid must not affect

the health or future of the production of locally produced food;
13. To prevent and protect the population against the consumption of contaminated foods that might endanger their health or foods that have uncertain science about their effects on humans;
14. To prioritise small farmer associations and networks when acquiring food and raw materials for social programs.
Source: (Asemblea Constituyente 2008, 138-9, translated and cited by McKay & Nehring, 2013, p. 28)

Despite the constitutional commitment, and the drafting of legislation to operationalise it, progress toward food sovereignty in Ecuador has faced numerous obstacles. In the case of much-needed agrarian reform, the state has been slow to implement its promised expropriation and redistribution of large private landholdings, focusing instead on publicly-owned lands (McKay & Nehring, 2013). Another element of food sovereignty has come under threat as President Rafael Correa backtracked in 2012 on the constitutional provision against genetically modified organisms (GMOs), stating it was a mistake to include it in the constitution (McKay & Nehring, 2013). The Ecuador case demonstrates that legislating food sovereignty is not enough, if the political will or political power to transform social relations—in this case, by challenging the power of large landholders and agribusinesses—is not in place.

Venezuela provides another fascinating example of food sovereignty in policy and practice. As part of the ‘Bolivarian Revolution’ of then President Hugo Chavez, a new constitution was adopted in 1999 that enshrined the right to food and support for sustainable agriculture (Schiavoni, 2015). Venezuela also created a number of institutions specifically to promote food sovereignty objectives. The *Misión Zamora*, the National Land Institute and the National Rural Development Institute were created to promote land and agrarian reform, including redistribution and support (McKay & Nehring, 2013). In addition, the Venezuelan Agricultural Corporation procures crops from small farms at a fair price, while the school food programme, subsidised food shops (*Misión Mercal*) and 6000 food banks/soup kitchens (*Casas de alimentación*) help to combat food insecurity (McKay & Nehring, 2013; Schiavoni, 2015). These institutions assisted Venezuela to achieve its target of halving hunger ahead of the

2015 deadline set by the Millennium Development Goals (MDGs) (UN Food and Agriculture Organisation, 2013).

These institutions and programmes to promote agrarian reform and food security are important, but it is the promotion of decentralised participatory democracy through the creation of Communal Councils (McKay & Nehring, 2013) that really represents a move towards food sovereignty in Venezuela. The Communal Councils create space for community level self-governance, in which people define and implement their own development priorities with funding channelled to them directly from national-level institutions (McKay & Nehring, 2013; Schiavoni, 2015). Communal Councils can also group together into Socialist Communes to implement larger-scale development projects (McKay & Nehring, 2013). As McKay and Nehring (2013, p. 23) point out, Venezuela is “creating spaces for people to define, determine, manage, and implement their food and agriculture systems in a decentralised, participatory way,” a move that is clearly aligned to the core principles of food sovereignty.

These examples give us some indication of the role the state might play in furthering the objectives of food sovereignty, as well as some of the challenges and limitations of state action. In Maine, local government support for food sovereignty has faced challenges from state and national government. In Ecuador, the constitutional commitment by the state to food sovereignty seems not to have been translated into the necessary structural changes and laws to drive the agenda forward. In Venezuela, the three-pronged approach of transforming social relations through land and agrarian reform, fulfilling the right to food through subsidised and/or free food distribution, and providing space for decentralised, participatory democratic governance represents a comprehensive programme for food sovereignty. This is perhaps the best possible example of a state working for and with the population to achieve food sovereignty. Yet challenges due to Venezuela’s very limited agricultural production, its reliance on food imports and more recent political changes threaten its progress in this regard.

In northern Malawi, a project called Soils, Food and Healthy Communities (SFHC) sought to address child malnutrition amongst communities of smallholder farmers (Msachi, Dakishoni, & Bezner Kerr, 2009). This example is not of state policy, but rather of a non-governmental project that has sought to address issues of food

insecurity through a food sovereignty approach. Faced with declining maize yields and unable to purchase sufficient fertiliser, smallholder farmers in the project were encouraged to practice intercropping of legumes with maize. Initial scepticism amongst many farmers was overcome by the visible success of the programme—through improved maize yields as well as an additional groundnut crop—demonstrated at farmer field days (Msachi et al., 2009). The project was undertaken through participatory research involving community members in fora such as the ‘Farmer Research Team,’ the ‘Nutrition Research Team’ and ‘Agriculture and Nutrition Discussion Groups.’ In this way, participating community members were involved in investigating issues around food and nutrition, devising their own solutions and promoting these amongst others in the community (Msachi et al., 2009). Taking participation a step further, activities such as farmer exchange visits and recipe days promoted knowledge exchange to disseminate the lessons learned during the project. This participatory approach recognised the knowledge and experience of smallholder farmers and their households, and sought to empower them and build their capacity rather than imposing outside expertise.

The recipe days, in particular, deserve further explanation. These events grew out of the recognition that in order to tackle child malnutrition, it would be necessary to transform gender roles, since women’s burden of reproductive labour was a barrier to proper infant and child feeding. The project team also recognised that a “public and enjoyable approach” might be more successful at changing behaviour than the “one-on-one didactic approach” (Patel, Bezner Kerr, Shumba, & Dakishoni, 2015, p. 34). At these events, all participants were encouraged to share local recipes and women taught men to cook for their households. These community gatherings created a space in which “women and men are offered the opportunity to perform gender relations differently. ...The creation of these spaces makes it easier for gender transformation to occur. These transformations in turn lead to improvements in food security within the household” (Patel et al., 2015, p. 37). Targeting the transformation of gender roles in order to address food insecurity is a key element of food sovereignty, one that has been lacking even in explicit food sovereignty interventions. The participatory, capacity-building approach of this project, combined with its explicit focus on transforming gender relations, makes it an interesting example of a food sovereignty struggle in practice.

The final concern to be addressed in this section is the question, “How do we get there?” The examples provided above give us some indication of some of the steps toward food sovereignty, though of course the process will be different in each place, according to the socio-economic and ecological context. Furthermore, since food sovereignty itself can be seen as more of a process than an endpoint, it makes sense that “the means by which food sovereignty is enacted remains more important than arriving at a predetermined set of conditions” (Wald & Hill, 2016, p. 211). From the food sovereignty literature, and from the cases discussed above, we can distil certain key elements of the process.

The first step, according to Philip McMichael (2010), is the politicisation of the current food regime. Through education and awareness-raising, the current food regime must be de-naturalised, making visible its taken-for-granted assumptions about food as a commodity to be bought and sold, and about the role of different stakeholders at different scales of the food system. Next, it will be necessary to develop alternative methods of production, distribution and consumption of food. The purpose of these alternatives, in the early stages, will be as a demonstration, to show that other ways are possible. This is necessary to make these alternatives ‘thinkable,’ since the current food regime has largely made all other alternatives ‘unthinkable’ (Carolan, 2016). Beyond their demonstration value, it is of course necessary to develop “methods of production and circulation of food that are cooperative, equitable and sustainable,” in order to move the food sovereignty agenda forward (McMichael, 2010, p. 173).

Beyond changes in the food system itself, food sovereignty requires different forms of governance in general. Thus there must be an opening up of political space, in order to create more participatory, democratic forms of governance at various levels, from the local to the international. As food sovereignty activist Itelvina Masioli explained, the movement seeks “to construct another social and political consciousness of participation. ... How the community begins to organise, from having a culture that is representative democracy to a participatory democracy, where the social and human subjects who live there are part of a community that constructs an identity and that then, in its life, in its form of producing, in its cultural life already starts to produce

other cultures and values” (Masioli & Nicholson, 2010). To achieve this alternative political organisation, Masioli continues, requires “political work of ongoing education” to ensure that people are aware of the implications of their choices (Masioli & Nicholson, 2010, p. 43). Thus the daily practice of democratic participation is critical to bringing about a culture of democracy. Similarly, ongoing education is necessary so that people can understand which elements of the current system cause injustices or ecological unsustainability, and then choose alternatives that will transform the food system, and broader society, to be more equitable, just and sustainable.

To undertake these steps, there must be social mobilisation, as food sovereignty activists educate others about the current food system and their alternative vision, to enlist support for change, as well as steps by the state toward creating more space for democratic participation. As Jonathan Fox found in his study of a food programme in Mexico, “the reciprocal interaction between state reformists and social movements changed the boundaries of the politically possible” (Fox, 1993, p. 2).

2.6) Why food sovereignty?

Food sovereignty was an attractive framework for this research project for a number of reasons. First and foremost, a food sovereignty approach appears to be a dire necessity when examining the food security situation and food system in Johannesburg. As the country’s largest city and economic heart, there is enough food available in Johannesburg to feed all 4.4 million residents, yet an Urban Food Security Baseline Survey conducted for the City of Johannesburg indicated that 42% of city households were food insecure, assessed as going without food between three and ten times in the preceding four weeks (City of Johannesburg, n.d.-a, p. 68). Other estimates of food insecurity in the city range from 27% citywide to up to 90% in the poorest wards (City of Johannesburg, 2012; de Wet et al., 2008).

Hunger in Johannesburg is a result of poverty and lack of access, not a shortage of food. The overall rates of poverty (estimated at 21.6% of households in 2008) and unemployment (officially 24.7%) smooth over serious inequalities, with geographical “deprivation clusters” suffering from much lower levels of income, employment,

education, health and a poorer living environment (City of Johannesburg, n.d.-b, 2013, pp. 14–15; Statistics South Africa, 2012b).

Challenges of accessing a nutritious diet go beyond simple price considerations to include the legacy of Apartheid spatial planning, which located many poor households far from the city centre in marginalised areas not served by major food retail outlets (City of Johannesburg, 2011, p. 45). Poor households often face limited choices that lead to consumption of food of poor nutritional quality. Those food retail outlets located in marginalised areas (whether supermarkets, spaza shops⁸ or informal street vendors) tend to have less fresh produce available than their city-centre counterparts. Research in Cape Town found that supermarkets tended to open alternative format stores in low-income areas with a more limited range of products and less fresh produce than they would stock in wealthier areas (Battersby & Peyton, 2014, pp. 161–162).

One African Food Security Urban Network (AFSUN) study on Johannesburg found that households tended to eat calorie-dense, low-fibre and micro-nutrient poor foods, which could be linked to chronic illnesses such as diabetes, obesity, hypertension and cardiovascular disease (Rudolph et al., 2012, p. 14). In line with this, fast food consumption has increased in South Africa, with 8661 formal fast-food outlets in the country in 2010, and significantly more informal street stalls (Igumbor et al., 2012, p. 4). In one Johannesburg survey, only 39% of respondents said their families ate vegetables five to seven days a week, with 48% eating them two to four days a week and the remainder eating them even less often (Data Management and Statistical Analysis (DMSA), 2013). This is far below the World Health Organisation (WHO) recommended intake of 400g or five portions of fruit and vegetables per day (Naudé, 2013, p. S49; Shisana et al., 2013, p. 177). Thus the combination of unhealthy food offerings in marginalised areas and expensive transport connections condemns many Johannesburg residents to diets of poor nutritional value.

Even as most Johannesburg residents struggle to meet their nutritional requirements, the food industry in South Africa is highly concentrated and reaps enormous profits.

⁸ Informal convenience stores, sometimes located in people's homes or garages.

Some companies in the sector, e.g. the main bread manufacturers, have been found guilty of collusion and price fixing (Berkowitz, 2013; Greenberg, 2015). Along the entire value chain from agricultural inputs through commercial farming, processing, manufacturing and retail, the South African food system is dominated by a few large (usually corporate) players at each node (Greenberg, 2016). Levels of profit in the sector are particularly high for food processors/ manufacturers and for supermarkets (Greenberg, 2016). This has been referred to as criminal profiteering by the activists in the nascent South African food sovereignty campaign (SAFSC), which has called for increased regulation and provision of land to small producers to ensure that all South Africans have enough to eat (South African Food Sovereignty Campaign, 2016).

Food sovereignty is a better framework than food security for addressing the situation in Johannesburg because it incorporates critical issues that are excluded from the food security framework but are extremely relevant in the local context, namely: power relations, culture and gender issues. In a post-colonial, post-apartheid South Africa, race-based marginalisation remains a reality. For example, the official unemployment rate amongst the black African population was 35.6% in 2011, compared with 5.9% for white South Africans; the average annual household income for black African households was R60,613 (about \$8,337) in 2011 compared with R365,134 (about \$50,225) for white households⁹ (Statistics South Africa, 2012a). The control of the food industry by white (and often transnational) capital to the exclusion of the black majority is a stark reminder of the continuing need for economic transformation (Greenberg, 2016). The spatial legacy of apartheid planning is legible in the location of marginalised black townships far from economic opportunities, and the dearth of healthy food options available in many township areas (City of Johannesburg, 2011).

Colonialism and apartheid also impacted people's food preferences. These racist regimes removed people from their rural homes, separated family units and placed individuals in urban environments where they had limited time and limited access to traditional ingredients. In cities and townships, they encountered industrially produced "Western" foods, which were presented as "modern" while traditional,

⁹ At the annual average exchange rate for 2011 of ZAR 7.27=1 USD. All subsequent dollar values are calculated at the average annual exchange rate for the year in question.

indigenous ingredients were looked down upon (Ngcoya & Kumarakulasingam, 2016; van der Merwe, Cloete, & van der Hoeven, 2016). Thus racist colonial and apartheid attitudes had both direct and indirect effects on food choices and preferences, which continue to impact dietary patterns today (Raschke & Cheema, 2008; Steckley, 2016).

Despite constitutional provisions to promote gender equality, patriarchal attitudes and traditional gender roles remain deeply entrenched in South Africa (Hassim, 2004, p. 7), resulting in higher rates of poverty and unemployment amongst women (Statistics South Africa, 2012a) as well as higher rates of food insecurity amongst woman-headed households (de Wet et al., 2008, p. 21; Hendriks, 2002). The rubric of food security, with its mechanistic focus on food supply and household-level analysis (de Schutter, 2014) is ill-equipped to address the issues of power at the heart of inequitable access to healthy food in South Africa.

Another reason I chose food sovereignty as the framework for this research is that it is an example of theory from below, developed by small-scale food producers from the peasant movement, La Vía Campesina, in opposition to the globalised, undemocratic industrial food system and to the limited definition of food security that excludes issues of power relations in the food system while supporting neo-liberal notions of free trade, industrial production and food as a commodity (Fairbairn, 2010; McMichael, 2010; Wittman, Desmarais, & Wiebe, 2010). Of course, sympathetic academics such as Raj Patel, Annette Desmarais, Hannah Wittman, Philip McMichael and many others have played an important role in unpacking and expanding the theoretical elements of food sovereignty, but its origins outside of academia made it appealing. Undertaking research in marginalised areas of Johannesburg, it made sense to adopt a framework developed by marginalised populations in the global South.

Further, food sovereignty's rights-based approach is aligned to the language of rights in the South African constitution. Section 27 specifically provides for the right to food, though this right is qualified by the provision that the state must take reasonable steps to meet its obligation (Republic of South Africa, 1996). To date, the state's efforts with regard to the right to food leave much to be desired (de Schutter, 2012). Nonetheless, the strong rights orientation of the democratic South African constitution suggests that the rights under food sovereignty (to food, to produce food, to have

access to productive resources and ultimately to determine the food system) might find accommodation within it.

This research also provides an opportunity to explore some of the challenges of the food sovereignty framework and to expand its boundaries. Issues of sovereignty, scale and the role of the state are expressed in unique ways in the case of Johannesburg, which may contribute to the on-going debates on these themes (see, for example, Akram-Lodhi, 2013; Clark, 2015; Iles & de Wit, 2014; Pimbert, 2009; Trauger, 2013; Wald & Hill, 2016). Some of the internal contradictions in the food sovereignty discourse, particularly around democratic participation, agroecology and gender (Agarwal, 2014; Bernstein, 2013b), may also be further explored and illuminated through this research.

Initially developed by peasants from the global south, the concept of food sovereignty has been broadened to incorporate a wider range of concerns as support has grown amongst farmers and consumers from the global north. Despite this, its relevance to both producers and consumers in an urban context in the global south has not been sufficiently examined. Traditionally, a binary of rural/producer/south and urban/consumer/north has defined most food systems research, though the food sovereignty literature does try to bridge these divides to some degree (Trauger, 2013, p. 13). Thus this research presents an opportunity to push the boundaries of food sovereignty discourse beyond this false binary, by looking at small-scale producers (who are themselves also consumers) as well as consumers in a highly urbanised setting in the global south. Such an exploration can yield important insights and nuances for the food sovereignty framework.

2.7) Operationalising the conceptual framework

To utilise the food sovereignty framework in this research project, I had to select the relevant elements from the evolving definition and determine how they could be assessed in the field. I began with the definition from the Nyéléni Declaration on Food Sovereignty (mentioned earlier), issued by the Forum for Food Sovereignty in Mali in February 2007. The concept was further elaborated in the synthesis report of the Nyéléni Forum for Food Sovereignty, which laid out six core principles of food sovereignty. These principles can be summarised as follows:

1. *Focuses on food for people*: puts the right to sufficient, healthy and culturally appropriate food for all individuals, peoples and communities at the centre of food and agriculture policies; and rejects the proposition that food is just another commodity.
2. *Values food providers*: values and supports the contributions, and respects the rights, of women and men who cultivate, grow, harvest and process food; and rejects those policies, actions and programs that undervalue them, threaten their livelihoods and eliminate them.
3. *Localises food systems*: brings food providers and consumers closer together; puts providers and consumers at the centre of decision-making on food issues; protects consumers from poor quality and unhealthy food.
4. *Puts control locally*: places control over territory, land, grazing, water, seeds, livestock and fish populations on local food providers and respects their rights. They can use and share them in socially and environmentally sustainable ways which conserve diversity; and rejects the privatisation of natural resources through laws, commercial contracts and intellectual property rights regimes.
5. *Builds knowledge and skills*: builds on the skills and local knowledge of food providers and their local organisations, developing appropriate research systems to support this and passing on this wisdom to future generations; and rejects technologies that undermine, threaten or contaminate these, e.g. genetic engineering.
6. *Working with nature*: uses the contributions of nature in diverse, low external input agroecological production and harvesting methods that maximise the contribution of ecosystems and improve resilience and adaptation, especially in the face of climate change (La Vía Campesina, 2007).

By using the lens of food sovereignty, this research is able to operate at multiple levels of analysis, from the individual to the household to the food system as a whole, and to address issues of power, gender, culture and other relational issues excluded by the food security discourse. Drawing on the definition and principles elaborated at Nyéléni, I selected six key elements of food sovereignty relevant to the assessment of urban community food gardens in Johannesburg. At the most basic material level, this involves, first and foremost, access to “sufficient, healthy and culturally appropriate food.” Second, it entails an examination of the economic sustainability of

the food system, in terms of the viability of livelihoods for small-scale food producers and the contribution of food production to local economies. A third key element of food sovereignty is the use of agroecological production methods to ensure environmental sustainability. Moving beyond the material effects of the food system to the more intangible components, the fourth element of food sovereignty in this research is that of localisation of the food system, which involves questions of scale. Drawing on the concept of “new social relations free of oppression and inequality between men and women, peoples, racial groups, social and economic classes and generations,” the fifth element is democratisation of control over the food system, which includes aspects of socio-economic as well as political empowerment. Also transformative, the sixth element addresses women’s empowerment and the promotion of greater gender equality. These core elements of food sovereignty serve as an operational definition in order to analyse urban community food gardens in Johannesburg.

Part of the strength of the food sovereignty framework lies in the complex inter-relationship between its various components. As Robbins (2015, p. 454) warns, “If the elements of food sovereignty are compartmentalised and dealt with separately, the transformative potential of the framework is compromised and there is a risk that the theoretical breadth of food sovereignty is lost in the concrete practice of one element.” For purposes of clarity, this dissertation examines each of the six elements in turn, before bringing them together again in Chapters 11 and 12.

These six elements of food sovereignty will also serve as the organising framework for the review of literature on urban agriculture in the next chapter.

Chapter 3: Urban agriculture literature review

3.1) Introduction

The literature on urban agriculture (UA) has grown exponentially since the early 1990s, when both academics and development practitioners began to take a greater interest in the practice. While the cultivation of food in and around cities has happened for as long as there have been cities (McClintock, n.d.), the convergence of a number of factors (economic decline, structural adjustment programmes, neoliberal globalisation and growing concern over climate change) elevated UA's importance in policy and academic circles (Bourque, 2000; Frayne, McCordic, & Shilomboleni, 2014; McClintock, 2010).

A comprehensive review of all of the literature on urban agriculture would be impossible, and certainly beyond the scope of this chapter. Therefore, this chapter focuses on the relevant global and South African UA literature using the lens of food sovereignty. While UA has been found to provide myriad benefits to participants and their surrounding communities, this literature review focuses on the following benefits: 1) its contribution to food and nutrition security and dietary diversity; 2) its contribution to urban livelihoods; 3) its positive environmental effects; 4) localisation of the food system; 5) democratisation of the food system and empowerment of participants; and 6) empowerment of women and promotion of gender equality. These six benefits of UA, frequently cited in the literature, are the six elements of food sovereignty utilised in this research.

Though many studies on UA do not use the language of food sovereignty, they nonetheless highlight positive outcomes that comprise key elements of food sovereignty. Some advocates of food sovereignty, meanwhile, point to urban agriculture as one of the possible methods for local communities to wrest some control away from the transnational corporations that dominate the globalised, industrialised food system. They argue that urban agriculture enables face-to-face interactions between producers and consumers that may promote a more just and democratic food system. They further argue that through their experience of UA, both

producers and consumers can create and support examples of alternatives and thereby contribute to food system transformation.

To date, in South Africa, the concept of food sovereignty has not often been applied to the study of UA projects; nor has the practice of UA featured prominently in the nascent South African food sovereignty movement. However, the overlap between the two discourses—in terms of the changes they seek to promote—is clear. Despite celebrating the multi-functionality of UA as one of its strengths, many studies tend to focus on only one of its benefits, e.g. food security or the empowerment of women. Utilising the food sovereignty framework enables us to make a more multidimensional assessment of the impact of UA. In addition, the food sovereignty framework, with its focus on global-level, structural political-economic issues, enables us to understand the benefits and challenges experienced at garden level within the broader national and international context. This helps us to assess more realistically what we can and cannot expect from UA. Without a food sovereignty framework, most UA practice and research tends to focus on immediate outcomes such as achieving food security or generating income, failing to recognise how deeper structural constraints inhibit these outcomes. Thus utilising a food sovereignty framework to assess urban agriculture projects is not only relevant, but represents a new whole greater than the sum of its parts.

This chapter begins, in Section 3.2, with a definition of urban agriculture and the related sub-category, community gardens. This includes a profile of the “typical” urban farmer in South Africa. After that, Section 3.3 gives a brief overview of key policy issues related to UA, while section 3.4 covers some of the debates in the UA literature, including its capacity to feed the world’s cities, its transformative potential and the differences between the way UA is written about in the global north and the global south. Section 3.5 reviews the literature on UA in relation to the six elements of food sovereignty mentioned above. In conclusion, Section 3.6 gives an overview of the literature on UA in Johannesburg and identifies some gaps to be filled.

3.2) Definitions and profiles

There are many definitions of urban agriculture, some quite simple and others complex. Broadly, they differ on what constitutes ‘urban’—is it within city limits or

near a city; is it a political or a geographic demarcation—and what constitutes ‘agriculture’—is it just cultivation of edible crops, or also ornamentals? What about the raising of livestock? Does it include the production of inputs for cultivation, and other stages of the value chain such as agro-processing or marketing of urban-produced crops? In addition, some specify who is involved in production, the intended destination of their production (e.g. for own consumption, for sale, to give away) and whether it is a full-time or part-time occupation (Mougeot, 2000).

One defining characteristic of UA is its integration into the urban socio-economic fabric, as well as the urban environment (Mougeot, 2000). The “urban-ness” of UA is about the flow of resources, products and services between the city and the garden (Mougeot, 2015, p. 164). Beyond this, there is significant variance across the activities that constitute urban agriculture, in terms of who practices it; what kind of space they use (open land, containers, rooftops, walls); what land use arrangement they have (own property, leased property, use agreement with public/private owner, informal/illegal use of open private/public land); what they produce (ornamental plants, fruits, vegetables, herbs, medicinal plants, staple crops, livestock); why they produce (own consumption, sales, barter, donations, education, community greening); and production methods (organic, permaculture, or conventional). When peri-urban agriculture is included, the picture expands further.

One commonly used definition of UA is: “the growing of plants and the raising of animals for food and other uses within and around cities and towns, and related activities such as the production and delivery of inputs, and the processing and marketing of products. Urban agriculture is located within or on the fringe of a city and comprises of a variety of production systems, ranging from subsistence production and processing at household level to fully commercialised agriculture” (van Veenhuizen, 2006, p. 2). For the purposes of this research, I adopt a simple and useful definition. It states that UA can be understood as “the growing, processing, and distribution of food and non-food plant and tree crops and the raising of livestock, directly for the urban market, both within and on the fringe of an urban area” (Mougeot, 2006, p. 4).

Given the challenge of defining UA, it is unsurprising that it is equally difficult to determine the extent of UA, in terms of how many people are participating in it, how much food it produces, how reliant the cities are on it for food, etc. This challenge is discussed in greater detail in section 3.4.

The case study gardens used in this research are community gardens, a subset of urban agriculture. As with its parent category, there is no standard, agreed definition of a community garden (Guitart, Pickering, & Byrne, 2012, p. 366). Essentially, they are “organised initiative(s) whereby sections of land are used to produce food or flowers in an urban environment for the personal or collective benefit of their members who, by virtue of their participation, share certain resources such as space, tools and water” (Beilin & Hunter, 2011, p. 523). Central to this definition is the fact that there is a group of members, in an organised initiative, sharing resources. The presence of a group of gardeners sharing space and other resources is what differentiates the community garden from, for instance, a private backyard garden cultivated by an individual. Under this definition, the form of organisation of a community garden may vary—it could be an informal group, a registered non-governmental organisation, a community trust or a cooperative. This definition also does not limit the purpose of production—it could be for own consumption, for donation to the community or for sale.

It is important to acknowledge that the term ‘community’ can be highly problematic and hotly contested. Using the term uncritically may imply that the community is a fixed, homogenous group of socio-economic equals, thereby concealing the inevitable power differences and disagreements within the group. “UA spaces are often full of different opinions and tension. This reminds us that communities are *performed* through fluid networks of relationships, habits, norms, and practices that shape the everyday lives of its members. Communities are dynamic and fluid” (McIvor & Hale, 2015, p. 737).

This study recognises the community to be a constantly shifting social formation. Harvey (2001, p. 192) has referred to the community as a process, not a thing, while Williams (2004, pp. 561–62) has cautioned that the community itself can be a product of development projects (in this case, of the community garden), which may mask the

power relations at work in a community. Unlike (homogenous) socially-defined communities, spatialised urban communities are diverse and may be seen as “the concrete life-experience settings, where citizenship rights are fought for, where mobilisations against social exclusion are initiated and staged, and where new political rights are defined” (Moulaert, 2010, p. 6). Thus the term “community garden” is used in this research, in line with the definition given above, to denote a group garden. However, when referring to the community, the term is unpacked and problematised as needed.

There is no single ‘type’ of UA practitioner. Urban farmers can be old or young, male or female, otherwise employed or not, professional or recreational, affluent or poor. In South Africa, UA practitioners tend to be female, middle-aged or older, low-income, unemployed, and recipients of social grants. A study of UA in Grahamstown found that unemployed households receiving social grants were the dominant group practicing UA (Thornton, 2008). These households were poor, but they were not the very poorest. Another study, in Atteridgeville, Pretoria, found that participants were low-income, middle-aged and elderly women (van Averbek, 2007). In KwaMashu, Durban, UA is practiced by the poor, with low levels of education and employment, in public open spaces, with 80 per cent of produce consumed by the practitioners (Magidimisha, Chipungu, & Awuorh-Hayangah, 2013).

Research conducted in the informal settlement of Orange Farm, Johannesburg, found that participants were mostly women (79%), over 35 years of age (73%), with low levels of education (mostly primary) and no employment (89%) (Onyango, 2010). Participants in an urban agriculture project in Soshanguve, near Pretoria, were mostly women (77%), over age 40 (50%), from low-income households (79% survived on under R500 per month¹⁰), unemployed (47 out of 48 participants) and had low levels of education (only 10% had completed grade 12, while 19% had never been to school at all). Many (56%) had migrated from rural areas, but they had all been in the Soshanguve area at least two years. Most (83%) said their households did not have adequate food (Kekana, 2006, pp. 39–40). Of course, it could be said that these studies focus on low-income areas, but given that UA is promoted for its contribution

¹⁰ At the annual average exchange rate of ZAR 6.79=1 USD for 2006, that was USD 73.64 per month.

to food security and livelihoods, and given that poverty and food insecurity are serious challenges facing South Africa, this seems appropriate.

3.3) Urban agriculture policy issues

In some of the early urban agriculture literature, scholars and practitioners bemoaned the fact that UA was in fact an illegal activity, banned under zoning rules and municipal bylaws and not provided for in city planning (de Zeeuw, Guendel, & Waibel, 2000; Mougeot, 2006; Mubvami & Mushamba, 2006). As a result, those practicing UA faced harassment by the authorities and risked confiscation or destruction of their crops and eviction from the land they used (Mbiba, 2000; Onyango, 2010). Over time, as UA has been accepted and even adopted by the authorities as a possible means to fight food insecurity and poverty, much attention has been devoted to developing appropriate policy frameworks to support UA (Aubry et al., 2012; Bourque, 2000; Cole, Lee-Smith, & Nasinyama, 2008). Indeed, even the UN Food and Agriculture Organisation (FAO) has adopted UA as a key component of food security amongst urban populations (FAO, 2001).

In line with its multi-functionality,¹¹ UA may serve a number of different policy objectives, such as combating food insecurity, improving environmental sustainability and contributing to the urban economy (de Zeeuw et al., 2000). Depending on the policy objectives, UA will need to be integrated into a number of different policies, such as agriculture, land use, public health, environment, economic development and municipal planning (de Zeeuw et al., 2000; Mubvami & Mushamba, 2006, p. 60).

For these policies to be effective, they must address the challenges faced by urban farmers. Those most frequently cited in the international literature include access to sufficient land and secure land tenure, access to water, education and training, financial support or credit, and access to markets and market-related information (Cabannes, 2006; de Zeeuw et al., 2000; Deelstra & Girardet, 2000; Guitart et al., 2012; Mbiba, 2000; Mougeot, 2000; Nugent, 2000; Warren, Hawkesworth, & Knai,

¹¹ The multi-functionality of UA refers to “the multiple roles or objectives that society assigns to agriculture, including economic, social and environmental roles” (Aubry et al., 2012; de Bon et al., 2010, p. 26).

2015). Another issue amongst community gardens is “intra-group tensions and ‘uneven work commitment from members’” (Jacobs & Xaba, 2008, pp. 194–5).

Successful UA policies must also address the possible health risks, linked to environmental hazards. These are summarised by van Veenhuizen as follows: “contamination of crops with pathogenic organisms as a result of irrigation with water from polluted streams and insufficiently treated wastewater or unhygienic handling of products; spread of certain human diseases by mosquitoes and scavenging animals; contamination of crops due to prolonged intensive use of agrochemicals; contamination of soils and products with heavy metals due to traffic emissions and industrial effluents; certain diseases transmitted to humans by keeping livestock” (van Veenhuizen, 2006, p. 4). These can be mitigated through the combination of a supportive policy environment and basic education and training for cultivators (Cole et al., 2008; Mougeot, 2015).

Writing in a US context, Pothukuchi and Kaufman (1999, pp. 217–8) insist that food is a significant urban system and must be included in urban planning, for a number of reasons: the food system is a source of employment and an important part of the urban economy; a significant portion of household income is spent on food, and many city residents may rely on food assistance; food waste (actual food and packaging) is a significant portion of waste in a city’s rapidly filling landfills; there are significant food-related health problems in a city, due to both malnutrition and over-nutrition; trips to grocery stores are a significant portion of transportation volume; and the quality of a city’s transport system affects access of the poor to affordable, healthy food.

3.3.1) International UA policies

Recognising the potential contribution of UA to development, a number of city authorities have begun to recognise and support UA. The city of Kampala, Uganda, for example, revised the Kampala Structure Plan to include UA as a legitimate land use and also set up an Urban Agriculture Unit in the Kampala City Council. The city started a participatory process to revise its by-laws and created new regulations (Mougeot, 2006, pp. 28–29). The city of Dar-es-Salaam, Tanzania, has long supported UA, through inclusion in city policies, use of multi-stakeholder working groups to

develop plans, and the provision of extension services, credit and other support to urban farmers (Jacobi, Amend, & Kiango, 2000; Mwalukasa, 2000). The city of Rosario, Argentina, developed a municipal urban agriculture programme through a consultative process, facilitating access to vacant land through the creation of an enabling regulatory framework (Dubbeling, 2006).

Perhaps the most celebrated case of policy support for UA is that of Cuba, where the fall of the Soviet Union meant the loss of subsidised agricultural inputs and also of markets for agricultural commodities (Prain, 2006). The Cuban government adopted UA as part of its response to the resultant food crisis, providing significant, coordinated support to UA in the form of: 1) access to land; 2) extension services; 3) research and technology development; 4) new supply stores for small farmers; and 5) new marketing schemes and organisation of selling points for urban producers (Gonzalez Novo & Murphy, 2000, p. 333). To incentivise UA, the government allowed individuals to sell surplus production (Gonzalez Novo & Murphy, 2000). Cultivation was encouraged on every available space, including municipal land, land next to factories and even the interior patios of residential buildings (Torres Lazo & Paz Barada, 2006). Through this support, the UA sector created 160,000 jobs in different varieties of farms and support services in about a decade (Companioni, Ojeda Hernández, Páez, & Murphy, 2008, p. 416). According to official statistics, in 1999 the urban *organopónicos* (raised beds filled with a mix of soil and organic matter) and intensive gardens provided 215g per person per day of fresh crops, over half of the goal set, after only about five years of operation (Companioni et al., 2008, p. 422).

3.3.2) South African policies

In South Africa, the policy environment has also shifted over time, with increasing levels of support for UA in the large metropolitan areas of Cape Town, Durban, Pretoria, Johannesburg and Ekurhuleni (Battersby et al., 2015; Rogerson, 2003, pp. 146–7, 2011). In general, municipal authorities have shifted from informal acceptance of UA to formalised support for the activity. The City of Cape Town, for example, held an urban agriculture summit in 2002. The summit mandated the city to develop an urban agriculture policy and assistance programme. There followed a consultative process involving researchers, practitioners, non-governmental organisations (NGOs)

and other stakeholders to map out the state of UA in the city and develop a draft policy document (Visser, 2006, p. 48). Adopted in 2007, the City of Cape Town's Urban Agriculture Policy was the first in the country. Its objective was to contribute to improved food security, poverty alleviation and economic development by creating an enabling environment for UA (City of Cape Town, 2007). To achieve this objective, the City of Cape Town planned to formalise UA as a land use, establish consultative fora on UA, link UA to other strategies such as poverty reduction, build strategic partnerships, release municipal land for UA and provide subsidised water to vulnerable groups. The City also planned to provide—in partnership with other stakeholders—support such as inputs, infrastructure, tools and capacity building (City of Cape Town, 2007).

Of course, municipal policies exist within the framework of provincial and national policies. In South Africa, responsibility for food security is vested with the Department of Agriculture, Forestry and Fisheries (DAFF) at the national level. The Integrated Food Security and Nutrition Policy (IFSNP) of 2013 (gazetted in 2014) guides the actions of various government departments with regard to food security and nutrition (Department of Agriculture Forestry and Fisheries (DAFF), 2014). This policy replaced the Integrated Food Security Strategy (IFSS) of 2002, which, despite being a multi-sectoral strategy, was biased in favour of increasing agricultural production in rural areas in order to maintain national-level food security. This is unsurprising, as DAFF was the lead implementing agency (Battersby et al., 2015; Ruysenaar, 2012).

The new IFSNP is built on five pillars: improved nutritional safety nets; improved nutrition education; the alignment of investment in agriculture towards local economic development; improved market participation of the emerging agricultural sector; and food and nutrition security risk management. Of these five pillars, the first is a social security intervention, the second involves primarily the departments of health and education and the remaining three are related to agriculture, with a focus on rural areas. Government released a draft implementation plan for the new policy in early 2015, but it was allegedly returned for further consultations after civil society groups and even some government departments complained about the drafting process (GDARD official, personal communication, 16 March 2015).

At provincial level, support for community gardens largely falls under the Gauteng Department of Agriculture and Rural Development (GDARD), which is guided by the Gauteng Agricultural Development Strategy (GADS) and the Gauteng 20 Year Food Security Plan. The LandCare programme is a community-based approach to the sustainable management and use of agricultural natural resources, with the goal of optimising productivity and sustainability of natural resources so as to result in greater productivity, food security and job creation (Department of Agriculture Forestry and Fisheries (DAFF), 2001). The Food Security programme seeks to eradicate extreme hunger and poverty, through establishment of homestead and community gardens, provision of training and inputs.

GDARD's LandCare and Food Security programmes provide assistance, in the form of tools, inputs, extension officers and training, to community and homestead gardens throughout the province. These programmes have supported the establishment and maintenance of several thousand homestead gardens and several hundred community gardens since 1996 (Gauteng Department of Agriculture and Rural Development (GDARD), n.d.). The target in the Gauteng 20 Year Food Security Plan is to establish 150 community gardens and 3000 household gardens per year over the next 20 years (Gauteng Provincial Government, 2013).

GDARD's approach has been criticised for measuring outcomes in terms of numbers of gardens established or starter packs distributed, rather than actual improvements in food security, nutritional status or economic benefits to participants (Ruysenaar, 2012, p. 5). In addition, projects are established without regard to linking production to local markets, and the technical support provided is insufficient (Ruysenaar, 2012). The Gauteng Agricultural Development Strategy noted that "urban agriculture has emerged as a key livelihood and coping strategy for urban residents and as an essential land use, changing the way people in cities feed themselves and making a significant contribution to urban food security" (Gauteng Department of Agriculture and Rural Development (GDARD), 2006, p. 28). While this may be an overstatement of the current impact of UA in Gauteng, it provides important recognition and validation of the activity. Indeed, in 2014, GDARD initiated a process of developing a

specific policy to consolidate and expand its support of urban agriculture in the province (GDARD official, personal communication, 16 March 2015).

Municipal authorities have no official competence over food security matters, but they have taken up the challenge under their responsibility for socio-economic development (City of Cape Town, 2007; City of Johannesburg, 2012). The City of Johannesburg only adopted its Food Resilience Policy, ‘A City Where None Go Hungry’, in 2012. The policy outlines the five major areas of intervention: i) better information on food insecurity; ii) support for those who wish to grow their own food, to consume or sell; iii) ensuring that healthy food is available at affordable prices; iv) education and mobilisation of communities around food security; and v) promotion and enabling of healthy eating (City of Johannesburg, 2012). While the city does distribute food parcels and run soup kitchens to provide emergency relief for the hungry, the focus is on empowering people to feed themselves through the creation of homestead or community gardens, as well as larger commercial farms.

In line with the policy, the Department of Social Development (DSD) has set up agri-resource centres in most regions of the city. The agri-resource centres give out seeds, loan out tools, provide advice and training, and also seek to support access to markets (City of Johannesburg, 2012, p. 4). In addition to the agri-resource centres, the policy provides for hubs that will provide a number of services (such as packing, cold storage, administration, etc.) enabling groups of small farms to join together to service larger orders (City of Johannesburg, 2012, p. 6). Further, the policy provides for the establishment of food empowerment zones, with three large-scale farms—Eikenhof, Northern Farm and Nancefield—on which a number of cooperatives will be given one hectare each to cultivate. The same sites will also host a number of other support services (City of Johannesburg, 2012, p. 13). These interventions seek to address the affordability aspect of food security by generating income for participants, as well as making locally grown fresh vegetables available at reasonable prices, in areas that might not be serviced by larger retail shops—thus addressing accessibility as well.

Beyond these agricultural interventions, the policy calls for subsidised markets, at which produce grown at city-supported farms will be sold at a discount, as well as a food-for-waste exchange programme (fresh produce in exchange for recyclable waste)

and people's restaurants selling subsidised healthy meals made from vegetables grown by city-supported farmers. By buying directly from the small farms and gardens it supports, the city seeks to improve their financial sustainability. These interventions, together with the GoJozi programme's support for exercise and nutritious diets, represent a comprehensive approach to improving food security (City of Johannesburg, 2012).

Municipal policy support for UA is still fairly new in South Africa and has suffered from slow and uneven implementation. Thus while the research suggests that neither Cape Town's UA policy nor Johannesburg's Food Resilience Policy have achieved their objectives (Battersby et al., 2015; Malan, 2015; Olivier, 2014), it seems to be a matter of non-implementation rather than failed policies.

The UA literature is full of recommendations on how to improve policy support for UA. In South Africa, Nigel Webb has consistently criticised this emphasis, claiming that early advocacy of UA was based on studies from other countries and generalisations (Webb, 2011). Webb (2011) argues that the early South African data challenged assumptions about both the nutritional benefits and the economic benefits of UA to the most marginalised populations. He contends that subsequent South African UA studies found limited impact but continued to advocate in support of UA, based on the suggestion of greater potential (Webb, 2011). In light of the consistent findings of the limited impact of UA on food security and income generation, Webb (2011) argues it should not be advocated as a measure to combat poverty or food insecurity, at least not without significantly more research.

The city of Joburg's¹² Food Resilience Policy appears to address a number of the previous critiques of the provincial garden support programme—e.g. by seeking to facilitate access to existing markets and to create additional markets, and through a wider range of interventions aimed at generating income and encouraging healthy eating. To date, however, many of the components of the Food Resilience Programme are still theoretical, or in the early stages of implementation. Thus it is difficult to

¹² Joburg is a nickname for the city of Johannesburg, used by the City government.

assess whether it will indeed become the holistic intervention that is needed to address food insecurity in Johannesburg.

3.4) Key issues and debates in the UA literature

This section addresses a couple of the debates in the UA literature that are relevant to food sovereignty, namely: whether UA can feed the world's cities, and whether UA should be viewed as a transformative activity or one that props up neoliberalism. I then briefly examine some of the differences between how UA is approached in the global north and south.

3.4.1) How important is UA?

As mentioned in my discussion of the definition of UA above, the full extent of participation in urban agriculture, or of cities' reliance on UA, is unknown. A widely cited UN report from 1996 estimated that 800 million people were producing food in cities, though this number was a rough estimate and has been queried and disputed (J. Smit, Nasr, & Ratta, 2001). No subsequent global estimate of UA participation has been produced, but various studies have sought to estimate the level of participation in UA in individual cities. Diana Lee-Smith summarised a number of these studies of African cities, in which the level of participation ranged from 17 per cent of the population in Addis Ababa in 1983 to 93 per cent of the population in Mbeya, Tanzania in 2002 (Lee-Smith, 2013, p. 70). The African Food Security Urban Network (AFSUN) conducted surveys in eleven Southern African cities and found an average of 22 per cent of households said they normally grew some of their own food, though only three per cent consumed home-grown food on a daily basis (Frayne et al., 2010, p. 25). There was significant regional variation, with high levels of participation in UA in Blantyre, Malawi (66 per cent of households) and Harare, Zimbabwe (60 per cent of households) and much lower levels in Johannesburg (nine per cent) and Cape Town (five per cent) (Frayne et al., 2010, p. 25).

Another approach to assessing the significance of UA is to estimate the percentage of food (or particular food items) produced in and around cities. One study found that Shanghai, China had been self-sufficient in vegetables, but dropped from 100 per cent to 60 per cent due to competition for labour and rising production costs (Y.-Z. Cai &

Zhangen, 2000, p. 471). Another found that the Dakar region in Senegal produced about 60 per cent of its own vegetables (Mbaye & Moustier, 2000, p. 243). Urban and peri-urban agriculture in Dar-es-Salaam, Tanzania in 1999 produced 60 per cent of milk and 90 per cent of vegetables for the city (Nugent, 2000, p. 81). One review of the evidence from a range of UA studies from all over the world found that more than 70 per cent of leafy vegetables in most of the cities studied were produced in or around the city, within 30km of the city centre (de Bon et al., 2010, p. 25). While staple crops continued to come from rural areas, perishable items tended to be produced closer to the city.

A third approach was a recent attempt “to produce the first global-scale, spatially explicit assessment of the current extent of urban and peri-urban croplands using a consistent methodology” (Thebo, Drechsel, & Lambin, 2014, p. 2). Instead of the usual approach of using case studies or household surveys and then extrapolating to determine levels of participation, the researchers used a spatial overlay analysis of global scale datasets to determine the overlap between cropland and urban areas (Thebo et al., 2014). This spatial approach indicated that urban cropland constituted 5.9% of total cropland, with 98% of all cities (with populations over 50,000) having some rain fed cropland, and 87% having some irrigated cropland (Thebo et al., 2014, p. 4). The authors acknowledge that their approach is likely to underestimate levels of UA, due to the level of spatial resolution, which excluded home gardens and other small-scale urban agriculture (Thebo et al., 2014)—the kind of UA most commonly practiced amongst the urban poor in South Africa, and the rest of Africa. Because the research focused on certain crops for which datasets existed, the authors acknowledged that their analysis may underestimate the extent of vegetable and fruit production in cities (Thebo et al., 2014). Interestingly, when a buffer of 20km around the urban areas was included, the study found that 60% of the world’s total irrigated cropland and 35% of total rain fed cropland fell within this area (Thebo et al., 2014, pp. 6–7)—a significant finding.

Given the wide variety of results for different studies on UA participation and production, it seems relatively difficult to assess its importance on a global scale. Even at the city level, participation is uneven and its importance may differ significantly from household to household. Further, there is no need for UA to “feed

the cities”—rural areas can and will continue to produce food for urban areas, particularly staple crops that can be stored and transported more easily than delicate fresh produce. Even those who advocate significant changes to increase the environmental sustainability and self-reliance of urban food systems recognise that growing *everything* in a city is neither practical nor environmentally sustainable (Grewal & Grewal, 2012).

Furthermore, as Nathan McClintock (n.d., p. 3) notes, the debate over whether UA can feed a rapidly urbanising world misses the various other contributions made by UA, such as contributing to social cohesion, political mobilisation, education and dealienation. Therefore, the question is not whether UA can feed the cities, but what UA does for cities, and for those individuals, households and communities involved in or affected by it. This brings us back to its multi-functionality.

3.4.2) Transformative or neoliberal?

Perhaps the most fundamental debate around UA in the academic literature, beyond the more practical question of its impact on poverty, food security or environmental sustainability, is whether it should be viewed as a transformative activity that poses a direct challenge to the current industrialised, globalised food system or as a palliative measure that alleviates the worst effects of the current food system (for those who are excluded and food insecure) and thereby prevents more significant mobilisation against the system.

There are two main strands of thought that see urban agriculture, and other alternative food production and distribution systems, as oppositional and transformative. One views participation in UA as an activity that raises consciousness with regard to the injustices of the current food system, leading to social mobilisation and change. Kristin Reynolds (2010, pp. 138–9) argues that UA “might thus be understood as a means by which to increase not only access to fresh foods, but also a mechanism to develop critical awareness of social issues related to food and agriculture. Such an understanding *may* have the potential to create widespread insistence on social justice related to food, as well as to agricultural production. Such an approach *might* be oppositional; ...and it *might* be revolutionary” [emphasis added]. Thus while leaving open the possibility that UA *might not* lead to such changes, Reynolds highlights the

pathway by which participation in UA *might* raise awareness and lead to social action for change.

The other strand of thought that sees UA as potentially transformative argues that UA creates alternatives to the dominant, globalised industrialised food system. As Purcell and Tyman (2015, p. 1132) argue, “growing food in the city has the potential to challenge dominant regimes that structure how urban space is produced and used.” This is because, “Cultivating urban land very often emphasises and develops social and ecological values rather than market logics. It can generate nodes of solidarity, relations of reciprocity, and networks of self-sufficiency among urban inhabitants. It can emphasise the use value of urban space rather than its exchange value and it can prioritise the needs of inhabitants over the rights of owners” (Purcell & Tyman, 2015, p. 1132). Thus by creating food system alternatives that are not aligned to the market logic of neoliberal capitalism, UA represents a move away from that food system and towards another one, controlled by participants rather than by TNCs.

In contrast to these, there are also two strands of thought that see UA and other alternative food systems as an “anti-politics” machine (Page, 2002), propping up and even reproducing neoliberalism. The first of these sees UA as a “band-aid” or coping strategy that helps to cushion the poor against the worst impacts of the current food (and political-economic) system, allowing them to survive while avoiding the real structural issues of poverty and malnutrition (Bourque, 2000, p. 122). As McClintock (2013, p. 2) points out with regard to NGO-supported UA projects, “such alternative forms of food provisioning ultimately fill in gaps left by the rolling back of the social safety net. From this perspective, the burden of food production and provisioning of healthy food in low-income areas has largely shifted from the state to non-profits and community-based organisations operating in areas where market failure limits both wages and purchasing power.” According to this view, UA helps to diffuse social tensions and thereby prevents social mobilisation or demands for entitlements, ultimately allowing the status quo to remain unchallenged (Page, 2002).

The second strand of thought is a critical approach to UA that sees in its discourse and practices a reproduction of neoliberal subjectivities and spaces. McClintock (2013, p. 9) explains that “some UA projects employ a neoliberal discourse of

entrepreneurialism and self-help that shifts responsibility onto the shoulders of individuals and their communities.” Market-oriented gardening projects, often advocated by food justice organisations or indeed in UA policies aimed at poverty alleviation, reproduce the very capitalist logic that created the need for the UA project in the first place, without questioning the underlying structural inequalities. To the extent that UA projects put “individuals in charge of their own adjustment(s) to economic restructuring and social dislocation through self-help,” they can be seen as “spaces of neoliberal governmentality” (Pudup, 2008, p. 1228).

This discourse is anti-political insofar as “transformation of the food system is relegated to individual choice and individual reengagement with food rather than via collective action” (McClintock, 2013, p. 9). By shifting the focus from political mobilisation to individual consumers’ eating decisions, UA projects may depoliticise food system transformation, falling victim to the limited individualist, consumerist politics rendered possible by neoliberal rationalities (Guthman, 2008b). These types of UA projects have been referred to as alternative rather than oppositional, insofar as they may make a material difference in their immediate locality but they fail to advocate policy change that would bring about structural transformation (Allen, FitzSimmons, Goodman, & Warner, 2003).

Ultimately, McClintock (2013, p. 2) argues that “urban agriculture, in its many forms, is not radical *or* neoliberal, but may exemplify *both* a form of actually existing neoliberalism *and* a simultaneous radical counter-movement arising in dialectical tension.” UA projects exemplify both tendencies—they can raise consciousness and help to bring about social mobilisation for broader food system transformation, and/or they can cushion the impact of food insecurity and fill gaps left by the neoliberal rollback of the state, avoiding demands for entitlements and reproducing neoliberal subjectivities. This is in line with Karl Polanyi’s (1944) notion of a double movement, in which society oscillates between the excesses of capitalism, on the one hand and society’s protective counter-movement, on the other.

It may be true that “UA alone cannot usher in food justice. Food justice requires increased entitlements. It requires jobs and living wages, not just a garden or grocery store in every neighbourhood. In other words, we are simply asking too much of

urban agriculture—to buffer food security, to create jobs, and to provide ecosystems services and green space” (McClintock, 2013, p. 20). However, it is also true that consciousness, and the desire to struggle for change, must begin somewhere. Or, to put it another way, the “knowledge necessary to imagine and enact more egalitarian futures must come from somewhere” (McIvor & Hale, 2015, p. 738). Participation in UA, either as a gardener or even as a customer buying from an urban food garden, may be a first step towards the acquisition of such knowledge, the imagination of alternatives and even the construction of those alternatives. The real question, therefore, should not be whether UA is transformative or neoliberal, but *what makes UA transformative or neoliberal?* I will return to this question in Chapter 11.

3.4.3) UA in the global north and south

While UA is a popular research topic in cities all over the world, the approach to UA seems to differ in the literature of the global north and south, or the developed and developing world. According to Battersby & Marshak (2013), the literature in the north tends to focus on citizen participation, the cultivation of social capital, promotion of well-being, transforming neighbourhoods and bringing oppositional politics to people’s relationship with food. The literature on UA in the south, meanwhile, focuses on its development potential, and its possible contribution to food security, urban livelihoods and poverty alleviation, with an occasional reference to environmental benefits (Battersby & Marshak, 2013). This seems to reflect an underlying assumption that practitioners of UA in the global south must be undertaking the activity as a survival strategy, and that in so doing, they cannot have any additional reasons for taking it up. The flipside of this assumption is that practitioners in the global north must not be poor or hungry, and therefore must have other reasons for growing food in cities, such as neighbourhood beautification.

This distinction, however, belies the multi-functionality of urban agriculture, not only for cities but also for the individuals who participate in it. It also ignores the increasing levels of hunger and inequality in developed countries, particularly the United States (Otero, Pechlaner, Liberman, & Gürcan, 2015). The literature on food

justice and food deserts¹³ in the United States recognises and reflects the fact that many people of colour in low-income areas of cities are in fact poor and under-nourished (Mares & Peña, 2010; McClintock, 2011; Santo, Yong, & Palmer, 2014). For them, UA projects may be, in part, survivalist. At the same time, poor and marginalised residents of cities of the global south, who undertake UA primarily to supplement household food supplies or income, may also participate in UA for other reasons, such as to socialise, to remind them of the rural areas where they grew up, or to find some peace and quiet (Slater, 2001; Wills, Chinemana, & Rudolph, 2009). In their research in Cape Town, Battersby and Marshak (2013) found that many of the debates in the north are relevant in the south, as participants in their UA case study talked about health benefits and community building more than food security or income. In this research project, I follow Battersby and Marshak in bringing together debates from both the north and the south as relevant to the situation in Johannesburg, recognising the multiple possible functions of UA for individual participants as well as for cities.

This section reviewed two of the key debates in the literature on UA: its importance or ability to feed the cities, as well as its radical or neoliberal nature and outcomes. There is no agreement on levels of participation in UA, nor on cities' levels of reliance on UA for food. Yet UA is undeniably important to those who practice it, whether for survivalist or other reasons. UA does not need to "feed the cities" in order to merit consideration or support. As for the radical vs. neoliberal nature of UA, it is not inherently one or other. Rather, it may contain elements of both, and it is more useful to ask what makes UA radical or neoliberal. Finally, this section looked at the differences in the treatment of UA in the north and south, arguing that the different approaches derive from questionable underlying assumptions.

The next section now turns to the review of the UA literature as it pertains to the six elements of food sovereignty that were described in the previous chapter.

3.5) Urban agriculture and food sovereignty

¹³ A food desert is a low-income area with limited access to affordable and nutritious food (Blanchard & Matthews, 2007). The term has been criticised for suggesting that the solution to a perceived 'lack' is located outside of the community (Redmond, 2009), and for being a Trojan horse to facilitate greater corporate control of the food system in communities of colour (Redmond, 2013).

As mentioned above, using a food sovereignty lens to examine urban agriculture can significantly enrich our understanding of the benefits and limitations of UA, by enabling us to consider its multi-functionality while also reminding us of the importance of scale and of structural and systemic issues beyond the garden gate, so to speak. At the same time, a focus on UA brings something new to food sovereignty as well, since it has tended to focus on rural small-scale producers and, to a lesser degree, urban consumers (in the global north). Thus a focus on urban producers in the global south expands the food sovereignty literature.

There are other benefits associated with UA in the literature that will not be considered in this section, as they are not directly relevant to a food sovereignty approach. These include neighbourhood greening, crime reduction and creation of safe recreational spaces (Evans & Miewald, 2013; Meenar & Hoover, 2012; Saldívar-Tanaka & Krasny, 2004; Tidball & Krasny, 2009). UA has also been credited with contributing to social cohesion, preservation of cultural heritage and the integration of marginalised groups such as refugees (Cohen & Reynolds, 2014; Guitart et al., 2012; Mares & Peña, 2010; J. Smit & Bailkey, 2006). In addition, the literature has linked UA to physical and mental health benefits, especially for children and the elderly (Battersby & Marshak, 2013; Mundel & Chapman, 2010; Wakefield, Yeudall, Taron, Reynolds, & Skinner, 2007).

In each of the following subsections, I review the literature on UA relevant to one of the six elements of food sovereignty utilised in this research. In each subsection, I consider the global or regional literature before focusing on the South African literature.

3.5.1) Access to sufficient, healthy and culturally appropriate food

This element of food sovereignty is the one most similar to the notion of food security, particularly in reference to ‘sufficient’ food. It also incorporates nutrition by specifying ‘healthy’ food. The notion of cultural appropriateness is a complex one, especially in a culturally diverse urban setting like Johannesburg.

Much of the global literature on UA since the 1990s has presented it as a potential solution to urban food insecurity. Urban agriculture has been found to improve food

security (Armar-Klimesu, 2000), and to contribute a significant amount of the population's vegetable intake in some cities of the south (Cole et al., 2008; Foeken & Mboganie Mwangi, 2000; Jacobi et al., 2000; Karanja & Njenga, 2011; Kreinecker, 2000; Mbaye & Moustier, 2000). Urban garden participants also attribute improved health to increased consumption of fresh vegetables (Mougeot, 2006, p. 41). While these studies have suggested UA's contribution to food security, few if any have measured it in quantitative terms, or even in large-scale qualitative studies. One attempt at a systematic review failed to find a single study of UA's impact on food security and nutrition that met its stringent inclusion criteria, largely because none of the studies was a formal impact evaluation (Korth et al., 2014). This highlights the challenge in making claims about the specific impacts of UA on food security, as well as the deep divide between the more quantitative approach to understanding UA's impacts and the approach that seeks understanding through perceptions and other qualitative measures.

With regard to nutrition, very few studies in African cities have attempted to rigorously test the link between UA and nutrition by comparing the nutritional status (assessed by the height-for-age, weight-for-age and weight-for-height indicators) of children aged under five, from farming and non-farming households (Armar-Klimesu, 2000). In Accra, no positive association was found between urban farming and child nutritional status (Armar-Klimesu & Maxwell, 2000). In a review of the contribution of UA to dietary diversity in fifteen developing or transition countries, Zezza and Tasciotti (2008) found an association between engagement in UA and greater dietary diversity in ten of the fifteen countries. Another review, focusing on the association between UA and food security, dietary diversity and nutritional status, found mixed results and generally limited evidence; however, it found a positive but limited association between UA and increased dietary diversity and food consumption (Warren et al., 2015).

The research indicates that increased access to vegetables does not necessarily translate into increased consumption (Ruysenaar, 2012). In the review just mentioned, the authors noted the role of limited nutrition knowledge in people's consumption of vegetables, citing one of the reviewed studies in which a mother said "we eat vegetables as an alternative to tablets [vitamin supplements] because we cannot afford

tablets. If we were not poor, we would not eat vegetables” (Warren et al., 2015, p. 62 citing Miura et al 2003). This sort of statement indicates the importance of nutrition knowledge and cultural factors in determining vegetable consumption and dietary diversity.

With regard to ‘cultural appropriateness,’ communities of diverse ethnic backgrounds in marginalised areas of cities in the developed north use community gardens to access culturally specific foods that may not be available through other channels (Guitart et al., 2012; Schmelzkopf, 1995). One study in Boston in the US found that gardens are often “spatial manifestations of cultural heritage” (French, 2008, p. 83). Both the methods of gardening as well as the crops planted reflect the cultural heritage of the different ethnic groups involved (French, 2008, pp. 89–94). Similarly, gardeners of Central and South American descent in South Central Los Angeles created a “Mesoamerican agroecological landscape in the inner city” (Mares & Peña, 2010, p. 244) where they grew vegetables for traditional recipes and learned about traditional ingredients from community elders (Mares & Peña, 2010).

As in other cities, some cultural and religious communities in Johannesburg utilise UA to grow specific traditional vegetables that are not available through mainstream retail channels (Abrahams, 2006; Lewis, 2013).

Research conducted by AFSUN amongst poor households in 11 Southern African cities found that “UA is not an effective household food security strategy for poor urban households” and concluded that “while some poor households in Southern African cities may practice forms of small-scale urban agriculture, they do not derive significant economic or food security benefits from these practices (Frayne et al., 2014, p. 178).

South African research has generally found UA to have a minimal impact on food security, despite the fact that many people practicing UA claim to do so for nutritional and economic reasons (Olivier, 2014; Webb & Kasumba, 2009). Thornton’s (2008) study of UA around Grahamstown found the practice to be fairly limited amongst poor households, whose plots were too small to be able to produce for subsistence, yielding limited savings on groceries of about R100 to R150 (about \$12.08-18.16) per

month.¹⁴ In Atteridgeville, Pretoria, UA projects were found to produce far below the estimated potential amount of 8kg per m² per year, providing gardeners' households with only 28 per cent of the recommended intake of vegetables in the case of group gardens, and even less from home gardens (van Averbek, 2007). Reasons for such low productivity included discontinuous use of the land, limited use of fertilisers and constrained access to water (van Averbek, 2007).

Studies from Cape Town likewise have found that UA contributes little to household food security, due in part to their low productivity (Olivier, 2014; Eberhard 1989 cited by Slater, 2001, p. 635). Despite remaining food insecure, however, one study found that UA practitioners in Cape Town derived other food- and health-related benefits; they saved money on food expenses (Olivier, 2014, p. 132), experimented with new foods that they grew, learned about healthy eating and changed their dietary preferences as a result of the training they received from NGOs and their practice of cultivation (Olivier, 2014, pp. 154–55). Similarly at Siyakhana garden in Johannesburg, the combination of access to fresh, organic produce, medicinal herbs and information about nutrition led participating principals to claim the project had impacted positively on their health as well as that of the children at the early childhood development centres (ECDCs) they ran (Wills et al., 2009).

As in other parts of the world, cultivation of vegetables in South African UA projects does not necessarily translate into consumption. According to Webb's (2000) research, this is due to the low levels of production, the emphasis on sales due to the need for cash, and cultural/dietary norms about how and when vegetables are eaten. The same was found to be true in Botshabelo township in the Free State, as a result of cultural dietary norms as well as lack of nutrition education (Earl, 2011, pp. 55–56). Even when UA does lead to increased consumption of vegetables, or increased dietary diversity, participants tend to grow the same vegetables commonly found in supermarkets (e.g. spinach, beetroot, tomatoes), rather than indigenous vegetables that are often more nutritious as well as better suited to the climate and therefore easier to grow (Onyango, 2010, p. 106; van der Merwe et al., 2016). This has been attributed to a lack of awareness about the benefits of growing indigenous crops.

¹⁴ At the annual average exchange rate of ZAR 8.28=1 USD for 2008.

One urban agriculture project in Soshanguve, near Pretoria, provided training and inputs to participants from low-income households. The project found that the food gardens contributed to household food security through own consumption, food expenditure savings as well as increased dietary diversity, though actual levels of food security were not measured (Kekana, 2006, p. 53). The surrounding community also benefited through the increased availability of a diverse selection of vegetables, at lower than market prices, in their immediate area, which reduced transport expenses (Kekana, 2006, p. 54). These benefits were not quantified, but participants in the UA project expressed this perception.

Almost all of the literature on UA suggests that it has the potential to improve food security and nutrition. Yet very few studies have been able to measure the actual benefits, and those few that have tried, have not found significant associations between UA and food security. However, finding that households practicing UA are food insecure does not necessarily mean that UA makes no contribution to food security. Rather, it may be that those studies are asking the wrong question—if the most food insecure households are more likely to take up UA as a survival strategy, then they may well be better off than they would have been without UA, but still remain food insecure. This is where the food sovereignty perspective, which recognises the broader structural inequalities that lead to the marginalisation of poor households, is useful. Food insecure urban households are not going to ‘farm themselves out of poverty’ through UA. It is, as McClintock (2013, p. 20) stated, asking too much of UA. In other words, “Expecting the urban poor, who have the least access to the resources (money, land, tools, seed, knowledge, equipment) necessary to establish successful agricultural ventures, to ‘grow their own’ in order to uplift themselves out of poverty, fails to recognise the massive barriers constraining urban agriculture in South African cities” (Battersby et al., 2015, p. 2).

Within these structural limitations, however, it appears that the practice of UA does have some impact on dietary diversity. The limitations here, it seems, are a result of limited nutritional knowledge and cultural dietary practices. Thus the UA interventions that provide education on nutrition and health, in addition to farming, seem to produce better results in this regard (Olivier, 2014; Wills et al., 2009).

Following this logic, providing education on the health and environmental benefits of growing indigenous vegetables—and access to seeds—would likely lead to further improvements.

3.5.2) Economic sustainability of the food system: producer livelihoods and local economies

Economic sustainability of the food system refers to the economic viability of smallholder agriculture, food businesses and their local communities, as well as decent livelihoods for all workers in the food system (Kloppenburger Jr, Lezberg, de Master, Sevenston, & Hendrickson, 2000, pp. 182–183). In the context of urban agriculture, economic sustainability may be understood as the direct and indirect contribution of UA to incomes and livelihoods of garden members, as well as their households and communities.

There are several ways UA can contribute to the economic wellbeing of participants and their households (Mitchell & Leturque, 2010). The first is through savings, as urban producers save money on food purchases, which can then be spent on other necessities, such as housing, transportation, energy costs or school fees. The second is through income from sales of produce. The third is through the payment of wages for either casual or full-time work. At the community level, UA can create employment, reduce the cost of food (through greater supply or lower prices), and reduce transport costs for food purchases. In addition, UA projects can contribute to the local economy by spending on inputs, as well as creating opportunities for hawkers, local food shops and agro-processing enterprises (City of Johannesburg, 2011; Hinrichs, 2003; Reos, 2010).

The global literature on UA frequently finds that it makes an important contribution to the livelihoods of the poor, and sometimes the middle class, in cities in the developing world (Armar-Klemesu & Maxwell, 2000; Homem de Carvalho, 2006; Jacobi et al., 2000; Mbaye & Moustier, 2000; Nugent, 2000). In Havana, Cuba, as a result of government policies and support, UA was the largest job growth sector during the 1990s, providing both food and income for thousands of urban residents involved in urban cultivation (French, 2008, p. 130). In Beijing, China, with support from the municipal government, gross output value from agricultural production and

processing grew at 26% from 1998 to 2002, along with increases in agro-tourism (J. Cai & Yang, 2006, pp. 198–99). Studies from Kampala, Uganda, Dar-es-Salaam, Tanzania, Yaoundé, Cameroon and Addis Ababa, Ethiopia found that urban farming households had above average incomes (Lee-Smith, 2013).

South African studies have generally found that UA generates little income for participants. In light of the low productivity of many South African UA projects, this is unsurprising. At a regional level, research conducted by AFSUN amongst poor households in eleven Southern African cities, including several in South Africa, found that “UA has limited poverty alleviation benefits under current modes of practice and regulation” (Frayne et al., 2014, p. 179).

A study in Ezibeleni (Queenstown) found the value of cultivation to the household, measured as the combined value of produce consumed and produce sold, less the cost of inputs, was very low for most participating households (less than five per cent of household income) and was negative for over ten per cent of cultivators (Webb & Kasumba, 2009). Aside from not providing much by way of savings or income, the cultivators also provided almost no employment via their gardens (Webb & Kasumba, 2009).

A project on UA in Soshanguve, near Pretoria, improved productivity of urban gardeners. One garden on 869 m² with 8 members managed to generate R3188.50 (about \$692) in sales for the year (1997), which was a net income of R2681.31 (about \$582) after costs¹⁵ (Kekana, 2006, p. 45). This is only about R28 (about \$6.07) per person per month. Since almost all participants consumed some of the vegetables they produced, there are additional household savings from food expenditures, but these were estimated at about R21 (about \$4.56) per week for a household of five people (Kekana, 2006, p. 54).

Food gardeners in Botshabelo township in the Free State earned extra income from their gardens, which they used to pay for other essential items like staple foods or electricity. This income amounted to between R20 and R100 (\$2.75-\$13.76) per

¹⁵ At the average annual exchange rate of ZAR 4.61=1 USD for 1997. Subsequent dollar values in this paragraph are calculated at the annual average exchange rate for 1997.

month¹⁶ for half of the respondents (Earl, 2011, p. 50). With such small earnings, it is unsurprising that many remained food insecure, particularly in the second half of the month (Earl, 2011, p. 49).

In his study of UA in Cape Town, Olivier (2014, p. 130) found that for most cultivators, UA provided minimal income from opportunistic sales, but that this income was still valued by cultivators. Formal cultivation groups that received support from NGOs, including market access through NGOs, were actually able to work full-time in UA and earn an income of R1000-R3000 (about \$92-\$276) per month¹⁷ (Olivier, 2014, p. 131).

Kate Philip (2010, p. 21) argues that the structure of the South African economy means that enterprise development strategies “that assume that poor people can ‘self-employ’ their way out of poverty are misplaced; under current conditions, self-employment is a poverty trap for many.” In other words, given the socio-economic context, small-scale informal entrepreneurial activity—whether in agriculture, retail or other sectors—is extremely unlikely to grow into the kind of larger-scale, formalised business that could provide secure employment at a non-poverty wage. This means that UA projects—even highly productive ones—are unlikely to lift participants out of poverty. In Cape Town, UA participants who receive significant support in the form of training, inputs and also access to wealthier customers beyond their immediate communities have been able to earn decent livelihoods through UA (Olivier, 2014; Small, 2006). This support has addressed not only agricultural skills, but also the structural barriers and spatial inequalities faced by poor UA practitioners. Given that UA is frequently promoted as an income generation strategy for the poor, it is essential that the structural constraints limiting the potential of UA projects be addressed.

3.5.3) Environmental sustainability

Critics of the current global industrialised food system, amongst them proponents of food sovereignty, cite its environmental unsustainability as one of its key failures. The industrialised mass production of monocultures using intensive chemical inputs,

¹⁶ At the annual average exchange rate for 2011 of ZAR 7.27=1 USD.

¹⁷ At the annual average exchange rate for 2014 of ZAR 10.85=1 USD.

clear-cutting of forests for agricultural land, the use of large amounts of water for irrigation, the pollution of waterways from agricultural chemical runoff and the long-distance transportation of foods are amongst the aspects of the food system that contribute to greenhouse gas emissions, soil erosion, water pollution, deforestation and other environmental problems (IAASTD, 2009; Pretty, 2008b). Thus this aspect of food sovereignty entails alternative production systems, primarily agroecology, to improve the environmental sustainability of agriculture by working with nature instead of against it (Altieri, 2010; La Vía Campesina, 2007). It also entails the adoption of alternative, more localised distribution systems to further reduce agriculture's carbon footprint.

Amongst global studies of UA, the potential to “close the loop” in urban systems of production and waste is frequently cited as an important environmental benefit, with specific reference to the recycling of nutrients through composting of organic waste and re-use of water through greywater systems (Cofie, Adam-Bradford, & Drechsel, 2006; Deelstra & Girardet, 2000; McClintock, 2010). In addition, the shorter food chain that results from urban production reduces the “food miles” travelled by food consumed in cities, thereby reducing carbon emissions from transport (McClintock, 2010; Mougeot, 2006; Peters, Bills, Lembo, Wilkins, & Fick, 2008). Carbon emissions are further reduced when gardens use agroecological approaches that work with nature to minimise or eliminate use of carbon-intensive fertilisers and other chemical inputs such as pesticides, herbicides and fungicides (Altieri, 2010; Altieri et al., 1999; Deelstra & Girardet, 2000; Gonzalez Novo & Murphy, 2000).

There are also environmental health risks associated with UA, such as growing food in contaminated soils, using polluted water, exposure to exhaust or other air pollution, and the risk of zoonotic illnesses (Deelstra & Girardet, 2000; McClintock, 2011; Mougeot, 2006; van Veenhuizen, 2006). However, through the use of agroecological approaches and supportive municipal policies (e.g. for soil testing, rehabilitation and wastewater treatment), most of the risks can be mitigated (de Zeeuw et al., 2000; Deelstra & Girardet, 2000; Mubvami & Mushamba, 2006).

In South Africa, the low use of chemical inputs in UA projects is more a matter of economic necessity than a deliberate environmental strategy (Kekana, 2006;

Onyango, 2010). The exception, however, is in cases where UA participants receive permaculture¹⁸ training from NGOs, in which they learn the principles of organic farming alongside specific techniques to combat pests and improve soil health without chemical inputs (Nicolle, 2011; Olivier, 2014). In such cases, UA participants adopt environmentally-friendly practices such as composting, companion planting and water conservation as they develop an “environmental ethic” (Olivier, 2014, p. 165).

A study of one hundred cultivators in Ezibeleni (Queenstown) found that the incidence of recycling urban wastes into gardens was limited. Only 26.4 per cent of cultivators composted their garden waste, and only 20.8% composted their household waste (Webb & Kasumba, 2009, p. 36). It would appear that UA is not inherently more environmentally sustainable—it is the types of UA practices that determine its environmental impact, and these in turn are a result of economic and environmental factors, along with participants’ knowledge.

3.5.4) Food system localisation

As expressed in the Nyéléni synthesis, localising the food system refers to bringing the producer and consumer closer together, and shifting the locus of control to the local level. Localisation “resists governance structures, agreements and practices that ... give power to remote and unaccountable corporations” (La Via Campesina, 2007). Thus localisation involves changing the scale at which food-related activities and processes occur—and at which they are governed—from a global one to a local one (Robbins, 2015).

This definition from Nyéléni is more or less aligned with the generally-celebrated elements of localisation as: a) favouring small-scale producers and alternative distribution networks with shorter food supply chains over corporate concentration and globalisation, b) re-embedding the market in face-to-face social relations, and c) giving more power over the food system to food providers and consumers, starting at (but not limited to) the local level (Feagan, 2007; Feenstra, 1997; Hendrickson & Heffernan, 2002). Other arguments in support of food system localisation cite the

¹⁸ Permaculture is an ethically based form of sustainable or permanent agriculture, based in systems ecology. It refers to “consciously designed landscapes which mimic the patterns and relationships found in nature, while yielding an abundance of food, fibre and energy for provision of local needs” (Holmgren, 2007, p. 3).

environmental benefits, as well as the development of the local economy (Kloppenburg, Hendrickson, & Stevenson, 2008; Marezki & Tuckermanty, 2007; Pothukuchi, Joseph, Burton, & Fisher, 2002; Trivette, 2012).

The un-reflexive celebration of the local has been heavily criticised. For one thing, the local is extremely difficult to define. Is it a physical/geographic boundary or a political/administrative one? Is 'the local' bound together through some kind of shared culture? As discussed with regard to the 'community,' the 'local' can also mask difference, tension and inequality within a particular area.

Aside from challenges in defining the local, critics have pointed out its potential to obscure unequal local power relations and exclude certain groups (Bellows & Hamm, 2001; DuPuis, Goodman, & Harrison, 2006; Feagan, 2007). They have raised the danger of "defensive localism," an exaggeration of the benefits of locally-produced food, where local may be defined in an exclusionary and potentially elitist manner, without due regard to local injustice or inequality (Fairbairn, 2012, p. 220; Hinrichs, 2003; Macias, 2008). As Born and Purcell (2006) argue in their critique of 'the local trap,' there is nothing inherently desirable about the local, as a scale. These critics, however, do not find anything inherently undesirable about the local, either, but rather call for a reflexive approach that focuses on social relations rather than spatial ones (Hinrichs, 2000). Without such a reflexive approach, a local food system is "just as likely to promote inequitable access as... food security" (Trivette, 2012, p. 173).

The appeal of UA to advocates of food system localisation is clear. Urban residents can see their food being produced and interact with the producers. There is little or no transport involved, so the distance in both space and time between production and consumption may be dramatically reduced (de Zeeuw et al., 2000; Robbins, 2015). Through this interaction with the process of food production, "UPA¹⁹ may be the initial impetus and learning process for more substantial local organisation around the needs arising from the failure of the global, national and local economies, displacing traditional top-down, centrally controlled local government with truly democratic forms of local organisation" (Atkinson, 2013, p. 94). The key word here is *may*, as

¹⁹ UPA is urban and peri-urban agriculture.

there is no guarantee that urban food producers or those who consume their produce will gain awareness about the food system or feel motivated to organise if they do. As Born and Purcell (2006, pp. 195–6) remind us, “No matter what its scale, the 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.” This is equally true of UA as of any other element of a food system.

Further, implicit in the notion of localisation are a set of assumptions about the relationship between the spatial and the social. This implies:

[T]he incorporation of a moral economy of interaction between neighbours or allies mutually engaged in production and consumption. The local is assumed to enable relationships of aid and trust between producer and consumer, eliding the faceless intermediaries hidden within commodity chains and industrial foods. The local is also assumed to encourage both producers and consumers to internalise the externalities of conventional agriculture, paying the full costs of food production directly, rather than indirectly through displaced environmental and social harm (Allen et al., 2003, p. 64).

This is not a safe assumption, however, as again, there is no inherent link between a particular scale and a particular mode of social interaction. Rather, a key question when discussing localisation is: “How are pre-existing economic, social and cultural relations of power and privilege considered in food-system localisation efforts?” (Allen, 2010, p. 296).

Where community food gardens are able to produce enough to sell food to their surrounding communities, they contribute to the localisation of the food system (Lewis, 2011). Yet it is difficult to assess the extent of this. Few studies quantify the amount of produce grown or sold, or the number of people who purchase regularly from nearby UA producers. The closest we get to understanding how ‘local’ a food system may be, is through studies that attempt to quantify the percentage of local needs (with local referring to the city in these studies) met through urban and peri-urban production, usually for specific products, e.g. leafy greens or milk (Nugent, 2000). Other studies have sought to quantify what percentage of local needs (again meaning the city, or in one case an entire state) *could* be met through UPA, based on

mapping of available land and estimating agricultural productivity (Kremer & DeLiberty, 2011; McClintock, 2011; Metcalf & Widener, 2011; Peters et al., 2008).

These studies, while shedding some light on the possible extent of ‘local’ production, do not illuminate the other elements of localisation; namely, the scale of production and types of distribution; embeddedness of the market in face-to-face social relations; and shifting control to the local level. Theoretically, it would be possible for a single transnational corporation that owned and controlled all of the available urban and peri-urban land in and around a city, to produce a significant portion of the food needed by a city, and then distribute the food via its own retail outlets. This would be a ‘local food system’ in the sense of proximity, but not in the sense intended by La Vía Campesina (La Vía Campesina, 2007).

South African studies of UA have not been particularly concerned with the concept of localisation. However, given that most studies have found very low levels of production—whether for own consumption or for sale—it seems unlikely that UA is having any impact on South Africa’s highly concentrated, corporate-controlled food system (Crush, Hovorka, & Tevera, 2010; Greenberg, 2015).

3.5.5) Empowerment and democratisation of the food system

This aspect of food sovereignty refers to the shifting of power over the food system to small-scale producers and consumers, rather than transnational corporations. It also refers to political and socio-economic empowerment in order to achieve “new social relations free of oppression and inequality” (*Nyéléni Declaration on Food Sovereignty*, 2007).

Democratic control refers to equal opportunities for genuine participation in decision-making around food system policies and practices at various levels or scales (from local to global), sometimes expressed as “food democracy” (Hassanein, 2003). With regard to the role of UA in promoting food democracy, the question is whether local food initiatives “can effectively introduce any measure of democratic control over economic systems that are essentially nondemocratic or whether meaningful agrifood system change can only be accomplished by first transforming the larger society as a whole” (Ostrom & Jussaume, 2007, p. 240).

Further, in the context of development, the notion of participation has been heavily criticised for its neoliberal emphasis on the individual, ignoring local power differences and de-politicising the development process (G. Williams, 2004). Cornwall (2008), however, notes that there are different degrees and types of participation that affect voice and control, while Mirafteb (2004, pp. 3–4) distinguishes between “invited spaces” of participation, in which actions taken by the poor can only aim to cope with existing hardship and are sanctioned by donors and government institutions, and “invented spaces” of participation in which grassroots actions directly confront the status quo.

Individuals and communities must be empowered to participate equally in food-related decision-making. Concepts of empowerment are many and contested, ranging from the basic acquisition of knowledge, skills or financial resources, to more transformative notions of empowerment that entail the development of critical consciousness (Freire, 1970) or “critical insights into social and political systems, and self-perceptions of competence and control in the socio-political domain” (Christens, 2012, p. 543). Kabeer (1999) conceptualises empowerment as a process that expands people’s ability to make choices. This involves both an increase in resources (material, human and social) and an increase in agency, ‘the ability to define one’s goals and act upon them’ (Kabeer, 1999, pp. 437–8). Others have referred to resources as the ‘institutional environment’ or ‘opportunity structure’ for agency (Ibrahim & Alkire, 2007, pp. 383–4). Empowerment may be viewed as individual or collective, may be considered as occurring in different domains or at different levels, and may be considered vis-à-vis family members, government, the private sector or other people or institutions with power (Ibrahim & Alkire, 2007). Key elements of empowerment at any level, or in any domain, include “participation with others to achieve goals, efforts to gain access to resources, and some critical understanding of the sociopolitical environment” (Zimmerman, 2000, p. 44). For the purposes of this research, a crucial element of empowerment is that it entails not only a change in self-perception (psychological empowerment), but also social mobilisation for structural change (Ibrahim & Alkire, 2007; Mohan & Stokke, 2000).

Most studies on UA find it to be empowering for participants, at least in the practical or instrumental sense of gaining knowledge and skills. When it comes to the more transformational concept of empowerment inherent in food sovereignty, many studies suggest the *potential* of UA to contribute to such a process of conscientisation and mobilisation. For instance, community gardens are presented as “a shared activity focused on intentionally building communities” which creates a space for interaction and mobilisation of the community to plan and implement their urban agriculture project (J. Smit & Bailkey, 2006, p. 147). In order for UA to realise this potential, it must be undertaken with a focus on democratic processes. “Cultivating democratic communities, then, might be seen as more central to urban agriculture’s mission than the more tangible tasks of repurposing vacant land and supporting local food production and consumption” (McIvor & Hale, 2015, p. 728). For UA projects to explicitly promote “deep democracy” they must a) focus on cultivation of civic *relationships*, b) publicly map power dynamics, and c) be oriented towards the common (McIvor & Hale, 2015, p. 729).

The experience of the city of Governador Valadares, in Brazil, indicated that the multi-stakeholder process of participation in developing the policies and institutions for a thriving urban agriculture sector was fundamental, because it was through the participatory process that power relations were redefined (Dubbeling & Merzthal, 2006). Conversely, when the City of New York set up gardens in empty lots in the 1970s without consulting residents, the residents had no sense of ownership and the gardens were soon vandalised and abandoned (Schmelzkopf, 1995).

Olivier’s (2014) research in Cape Town found that UA empowered participants in a number of ways, beyond simply increasing their knowledge and skills. Their achievements in the garden contributed to a greater sense of self-worth, which in turn led to greater aspirations (Olivier, 2014, p. 127). In addition, UA provided “a place to get away from their stressful environments. ... UA increases quality of life not only in terms of beautifying surroundings, but by changing perceptions of one’s surroundings... creating a sense of peace and time to reflect increases cultivator’s [sic] problem-solving abilities, and UA provides increased opportunities for positive interactions such as sharing goods or visiting plots” (Olivier, 2014, p. 168).

An evaluation of Siyakhana garden in Johannesburg found that garden participants gained confidence as a result of the additional skills they developed through training at the garden (Wills et al., 2009). They also developed stronger social networks that enabled them to learn from each other, to the benefit of the NGOs and early childhood development centres (ECDC) where they worked (Wills et al., 2009). Many of those trained at Siyakhana put their knowledge to use elsewhere, and shared what they learned with others (Nicolle, 2011).

3.5.6) Promotion of gender equality

This element of food sovereignty grows out of the recognition of women's important role in food production and preparation, which has been undervalued under modern industrial capitalism.

The definition of women's empowerment is complex and contested. Mosedale (2005, p. 252) assesses a number of existing definitions before proposing her own: "the process by which women redefine gender roles in ways which extend their possibilities for being and doing." Her framework for assessing empowerment involves three key components: i) identifying constraints to action, using a multi-faceted understanding of power; ii) identifying how women's agency has developed; and iii) identifying how women's agency changed constraints to action (Mosedale, 2005, pp. 252–256). For each of these components, a number of potential questions are proposed. Alternatively, women's empowerment "can be seen as a process in which the following elements will be considered: awareness/consciousness, choice/alternatives, resources, voice, agency and participation" (Charmes & Wieringa, 2003, p. 423).

There is debate as to whether such a complex process can be measured. International development institutions have developed indices of women's empowerment in an attempt to measure progress. The United Nations Development Programme's (UNDP) Gender Empowerment Measure (GEM) has indicators that seek to measure women's political participation, economic/professional achievement and income, relative to men's (Charmes & Wieringa, 2003). The UN Economic Commission for Africa (UNECA) developed the African Gender and Development Index (AGDI) to measure the gender development gap as well as countries' performance on gender issues

(United Nations Economic Commission for Africa (UNECA), 2011). Though more nuanced than the GEM, the AGDI cannot capture the transformative aspects of women's empowerment, in terms of issues of consciousness and agency, at either the individual or collective level.

Rather than seeing women's empowerment as a zero-sum game, feminist researchers have identified forms of power where one person's gain does not equate to another's loss. 'Power within' refers to self-esteem or confidence; 'power to' refers to power that increases a person's capabilities or expands the scope of possible achievements; and 'power with' refers to strength through collective action (Mosedale, 2005, p. 250). These three types of power help to indicate the types of change to be measured in assessing empowerment.

Many studies of urban agriculture have found that women's participation in community garden projects contributes to their empowerment through increased skills and knowledge, financial independence, confidence, and social networks (Dasso & Pinzas, 2000; de Olarte, 2006; Lekganyane, 2008; Slater, 2001; J. Smit & Bailkey, 2006). Others have cautioned that simply recognising the involvement of women in urban food production is not the same as a truly gendered analysis of UA (Crush et al., 2011; Hovorka & Lee-Smith, 2006).

In her study of commercial urban agriculture in Gaborone, Botswana, Alice Hovorka's gendered analysis found that "gender clearly influences the quantity and type of foodstuffs produced for the urban market. Gender matters because men and women enter into agricultural production and participate within this urban economic sector on unequal terms. Gendered socioeconomic status means that women are more limited in their access to land, as well as in their ability to put this land to productive agricultural use" (Hovorka, 2005, p. 309). Gendered positionality influences urban agriculture in terms of socio-spatial as well as human-environment relationships, which in turn reproduce gendered relations of power (Hovorka, 2005, pp. 309–310).

Many researchers argue that UA should be supported as a developmental intervention to promote women's empowerment. However, if women participate in UA precisely because they face barriers to more formal employment, does supporting UA empower

women or does it reinforce their marginalisation and create additional work for women? To address this question, Alice Hovorka adopted Caroline Moser's (1989) distinction between practical gender needs—basic requirements such as household food security, based on women's marginalised circumstances—and strategic gender needs, which help women to achieve structural change and overcome their marginalisation, arguing that interventions in support of women's participation in UA should seek to address both, such that women can meet “daily, practical requirements in ways that transform the conditions in which they make choices and take action” (Hovorka, 2006, p. 56).

In a project in Peru, women embraced a community garden initiative as a way to provide food for their families—thus meeting their ‘practical gender needs’. However, in the process, the garden “became an empowering place for women, improved their self-assurance and self-esteem, heightened their expectations of life and improved division of labour with their spouses” (de Olarte, 2006, p. 140). Thus through their participation in UA, women were actually able to fulfil, to a degree, their strategic gender needs as well.

Similarly, Van Averbeké (2007) found that the middle-aged and elderly women who practiced UA in the informal settlements near Atteridgeville, Pretoria participated in gardens to fulfil their gendered role in the household (as food providers), to give themselves some freedom from male-controlled household budgets, to socialise, build their communities, create green spaces and utilise the knowledge of farming they brought to the city from their rural homes. In other words, while undertaking UA in part to comply with gender norms, women were also able to empower themselves in various ways, by building social networks, improving their living environment and creating at least a small degree of financial independence.

In Cape Town, Olivier (2014, p. 172) found that “while UA allows women to fulfil gendered roles such as that of food provision, women also are empowered through UA in Cape Town by being in the majority in leadership, by having equal opportunities for earning an income through UA, by having equal rights in terms of tenure security, and by refusing to tolerate patriarchal attitudes in formal groups.”

Thus UA is empowering even while it enables women to comply with their expected roles as providers of food for the household.

A gendered analysis of UA must consider many facets of women's and men's participation in gardens, and in the food system more generally. Simply noting that participants in UA projects are predominantly female is not the same as understanding how the gendered social, economic and spatial positionality of participants impacts on UA outcomes, or how UA in turn can both reinforce and challenge existing unequal gender relations. To my knowledge, no South African studies have considered how men's gendered positionality may affect their participation in UA.

3.6) Urban agriculture in Johannesburg

Little of the South African literature reviewed above addressed UA in Johannesburg. The studies examined UA in other South African cities such as Cape Town, Pretoria, Durban, Grahamstown, Ezibeleni (Queenstown) and Bloemfontein. Those addressing UA in Johannesburg included the AFSUN research on food security in Southern Africa, a thesis on UA in Orange Farm, a report on three gardens in Johannesburg, and a few studies on the Siyakhana garden, which is a project of Wits University. There have also been a few studies on the policy framework in support of UA in Gauteng province (Malan, 2015; Rogerson, 2011; Ruysenaar, 2009, 2012) and on the role of civil society in urban food security (Warshawsky, 2014). Thus it is fair to say that there are significant gaps in the literature on UA practices and impacts in Johannesburg.

The AFSUN research indicates that rates of participation in UA are very low in Johannesburg, and that UA appears not to have a significant impact on household food security or poverty levels (Crush et al., 2011; Frayne, Battersby-Lennard, Fincham, & Hayson, 2009; Rudolph et al., 2012). AFSUN's data is complemented by the research from Orange Farm, which entailed a 200-household survey and participant observation, and addresses some of the challenges faced by UA participants as well as some of the benefits they derive from UA (Onyango, 2010). Lewis' case study research, involving participant observation, interviews and a survey, focused on three very different UA projects (Siyakhana, Bambanani and Monaghan farms) in order to assess the ability of small-scale agroecological

producers to earn sustainable livelihoods by gaining access to niche markets, e.g. for organic produce or traditional/ cultural vegetables not sold in supermarkets (Lewis, 2011, 2013). Ledger's (2015) research, based on participant observation at two gardens in the West Rand (adjacent to Johannesburg), considered issues of identity and the mismatch between the views of officials and those of garden participants in order to better understand why many poor people prefer not to grow their own food.

While every community garden is unique, Siyakhana is a special case insofar as it is not actually a community garden at all, in the sense defined earlier. The Wits Siyakhana Initiative for Ecological Health and Food Security ('Siyakhana') is a project of the University of the Witwatersrand (Wits) Health Promotion Unit, subsequently moved to the Wits Health Consortium. The garden produces organic food that is distributed amongst partner NGOs and ECDCs and sold to the surrounding community. These partners do not work in the garden themselves—rather, Siyakhana employs gardeners and volunteers for cultivation. In addition, the garden serves as a teaching and research site for various university departments, and provides training to interested community members (Nicolle, 2011; Wills et al., 2009). One study on Siyakhana cited in this research utilised participant observation and interviews as data collection methods (Nicolle, 2011), while another evaluation study used focus group discussions and interviews (Wills et al., 2009).

The two case studies in this research project thus add to the rather thin literature on UA in Johannesburg, in terms of our understanding of the participants, practices and policy framework for UA. To date, a food sovereignty approach has not been used to study community gardens in Johannesburg. Applying a food sovereignty lens will expand our understanding of the multi-functionality of the gardens, while also helping to situate them within broader global structures and systems that impinge upon the outcomes of the gardens. At the same time, a focus on small-scale urban food producers in the global south brings a new dimension to the food sovereignty literature, which has tended to focus on small-scale rural producers (in both the north and south) as well as urban consumers in the north.

Within the South African UA literature, this study is distinguished methodologically by the use of multiple methods drawn from different disciplines to gather a more

nuanced picture of the social world of the gardens and the gardeners. The use of food diaries and life history interviews, in particular, represents an innovation. These and other aspects of my methodology are the subject of the next chapter.

Chapter 4: Research Methodology

4.1) Introduction

This research explores whether and how urban community gardens contribute to food sovereignty in Johannesburg, with the aim of determining steps that could be taken to enhance their contribution. To render this broad research question answerable, I broke it down into six sub-questions, one for each of the key elements of food sovereignty.

These were:

- i) How do community gardens improve access to sufficient, healthy and culturally appropriate food for participants and the surrounding community?
- ii) How do community gardens enhance the livelihoods of garden participants or other members of the community?
- iii) How do community gardens contribute to the environmental sustainability of the food system?
- iv) How do community gardens contribute to localising the food system, understood as bringing producers and consumers closer together and enhancing local control?
- v) How do community gardens promote empowerment of participants and how do they contribute to greater democratic control over the food system?
- vi) How do community gardens contribute to the empowerment of women or to greater gender equality?

As discussed in Chapter 2 (Conceptual Framework), I found food sovereignty to be an attractive framework for this research in light of the severity of the problem of hunger in Johannesburg and the limitations of the existing food security approach taken by most governmental and non-governmental programmes. I was particularly drawn to the food sovereignty framework's incorporation of issues of power, culture and gender at various scales. Food sovereignty has been developed as a theory, a movement and a set of practices. This multiplicity of identities has enabled me to employ food sovereignty as my over-arching conceptual framework, while also examining specific practices in the community gardens in light of those advocated within the concept of food sovereignty.

I opted to focus on urban agriculture (UA), as mentioned in the previous chapter, because it has been one of the principal hunger-related interventions in the city of Johannesburg, and because it has been highlighted by some advocates of food sovereignty as a possible pathway toward food system transformation. Bringing the food sovereignty framework to bear on urban agriculture in Johannesburg represents a new approach to research on both food sovereignty and UA in South Africa. This has allowed for a more multidimensional assessment of UA's impacts, through a multi-scalar analysis.

The next section (4.2) outlines my approach to the research. This is followed, in Section 4.3, by an overview of my research sites, and then in Section 4.4, by an explanation of the various instruments used in the process of my research and analysis. In the final section of this chapter (4.5), I discuss some reflections on my positionality and the research experience, as well as the limitations of this study and how I sought to mitigate them.

4.2) Approach to the research

This research study adopted a qualitative approach, which used various data collection methods to understand the experiences and perceptions of participants in community gardens with regard to the benefits and challenges of participation. While there are aspects of UA that are amenable to quantitative studies (production volumes, soil contamination levels, percentage of population practicing UA), the aspects related to food sovereignty are much more appropriately studied through qualitative methods. This is because food sovereignty is, essentially, about issues of power and control over the food system. Issues such as empowerment have as much to do with perceptions as with actual changes in circumstance.

Even those elements of UA and food sovereignty that could be measured quantitatively, such as the amount of nutritious food eaten each week, can only be understood in all their complexity through qualitative inquiry. It is not enough to know that garden participants eat an average of one portion of vegetables per day (hypothetically). In order to assess the impact of the gardens, we need to understand why they eat so few vegetables. Do they not produce enough? Do they produce

enough but choose to sell them and use the money for other foods, or for non-food items? Are they unaccustomed to eating more vegetables? Is there a negative status associated with vegetable consumption? These kinds of questions are best addressed through qualitative research.

I opted for a comparative case study approach in order to develop an in-depth picture of the social and natural worlds at two different gardens. According to Yin (2003, p. 1), “case studies are the preferred strategy when ‘how’ or ‘why’ questions are being posed, when the investigator has little control over events, and when the focus is on a contemporary phenomenon within some real-life context.” A case study approach does not dictate a particular method, but rather encourages the use of multiple methods of data collection and triangulation. The two case studies are not intended to be a representative sample of community gardens in Johannesburg. However, as Yin (2003, pp. 32–33) explains, while statistical generalisation is not possible, “the mode of generalisation is ‘analytic generalisation,’ in which a previously developed theory is used as a template with which to compare the empirical results of the case study. In other words, findings from the case study gardens may not be directly generalisable to other gardens in Johannesburg, but they may impact on our understanding of food sovereignty, and then via the conceptual framework, the findings may be ‘generalised’ to new cases (Yin, 2003, p. 48).

This is in line with Michael Burawoy’s (2000) concept of global ethnography, in which detailed ethnographic study of social processes in specific sites is wedded to an examination of the external forces that influence them. This relationship between the local and the global, or the micro and the macro, is not a one-directional one. The way in which the case study sites (in this case the community gardens) accommodate or resist the ‘external’ or global forces in turn affects the constitution of those forces (Burawoy, 2000, p. 5). As Gillian Hart explains with regard to her concept of relational comparison:

Instead of comparing pre-existing objects, events, places, or identities, the focus is on *how* they are constituted in relation to one another through power-laden practices in the multiple, interconnected arenas of everyday life. Clarifying these connections and mutual processes of constitution – as well as slippages, openings, and contradictions – helps to generate new

understandings of the possibilities for social change (G. Hart, 2004, pp. 21–22).

This research began with a firm commitment to the need for social change with regard to the levels of hunger, malnutrition and poverty experienced in Johannesburg—thus a critical approach to research. It adopted a constructivist paradigm, which asserts that “there is no *social* reality apart from the meaning of the social phenomenon for the participants” (Matthews & Ross, 2010, p. 25). In other words, this approach sees social phenomena as being continually reconstructed through social interaction, and therefore looks to the perspectives of social actors—in this case, garden participants—to understand their situation, rather than to quantitative measures (e.g. income levels). I then adopted a comparative case study method in order to achieve depth of understanding, through the triangulation of multiple data collection methods. Before elaborating on those research instruments, the next section will provide an overview of the two case study gardens.

4.3) The research sites

The city of Johannesburg was an ideal setting for this research. There is a pressing need to address food issues due to the high prevalence of hunger, poverty and unemployment in the city, despite its status as the economic hub of South Africa. In addition, the nutrition transition is creating a situation in which poverty is becoming associated with non-communicable diseases such as diabetes, heart disease and hypertension due to poor diets, especially low consumption of fresh fruits and vegetables (Shisana et al., 2013). Yet despite the hunger, malnutrition, poverty and unemployment, the practice of urban agriculture is extremely limited in Johannesburg, compared to other major cities of the global south, where it has been found to reduce levels of hunger and improve nutrition. Furthermore, there has also been very little political mobilisation around access to food (Greenberg, 2006), until the launch of the South African Food Sovereignty Campaign (SAFSC) in 2015.²⁰ This

²⁰ The South African Food Sovereignty Campaign (SAFSC) was launched in March 2015 by an alliance of civil society organisations and activists concerned about “a crisis-ridden corporate and globalised food system that is responsible for worsening social, health and climate challenges” (South African Food Sovereignty Campaign, 2015a). The campaign has organised marches, a hunger ‘tribunal,’ food sovereignty festivals, training for small farmers and other actions aimed at raising awareness of, and challenging, the corporate-controlled food system in South Africa. See section 9.2.4 for more information on the SAFSC.

paradoxical situation, in which there are high levels of hunger but low levels of UA and even lower levels of mobilisation around food, makes Johannesburg an excellent research site.

I chose to focus on community food gardens, rather than all or other forms of urban agriculture, for several reasons. In terms of the less concrete elements of food sovereignty (research questions 4-6), I believed the social organisation of community gardens, as opposed to the individualistic nature of a home garden, made them more conducive to the reflexivity and discourse required for social mobilisation, transformative learning and empowerment. Linked to this, it would be easier to assess their impact on social relations, since participation in a community garden is inherently social. On a more practical level, community gardens were easier to locate and access for research than home gardens or informal individual gardens on marginal public lands. Furthermore, in an urban context where many people live in flats and open land is scarce, community gardens are a more viable option than backyard gardens.

4.3.1) Case selection

To identify potential case study gardens, I undertook consultations with government departments and NGOs involved in garden programmes. Based on the information on the locations of gardens provided in those conversations, I then visited eighteen community gardens in different parts of Johannesburg, spoke to the participants and observed the gardens and their surroundings. In addition to providing a sample of gardens from which to select my case studies, these garden visits formed the basis of my informal survey, discussed in section 4.4, below.

In order to choose my case study gardens, my selection criteria included the neighbourhood in which the garden was located (see Figure 2 below for the locations of the two case study gardens), length of time the garden had been operating, number of participants, size of the garden, and what types of support they received. I deliberately sought out gardens in poor and marginalised communities, where issues of hunger and poverty were prevalent. I wanted to find gardens that had been in existence at least a year, as I felt that anything less would make it difficult to assess their impact on participants and the surrounding communities. I sought gardens with

as many active participants as possible, so that I would have more people to engage with during the research, and I felt that larger gardens might be more likely to have a greater impact. In general, I hoped to find one garden that received most of its support from government and another that was predominantly supported by an NGO, as these are the two main forms of support for gardens in Johannesburg and thus I hoped to compare their approaches and what impact these approaches might have on the functioning of the gardens.

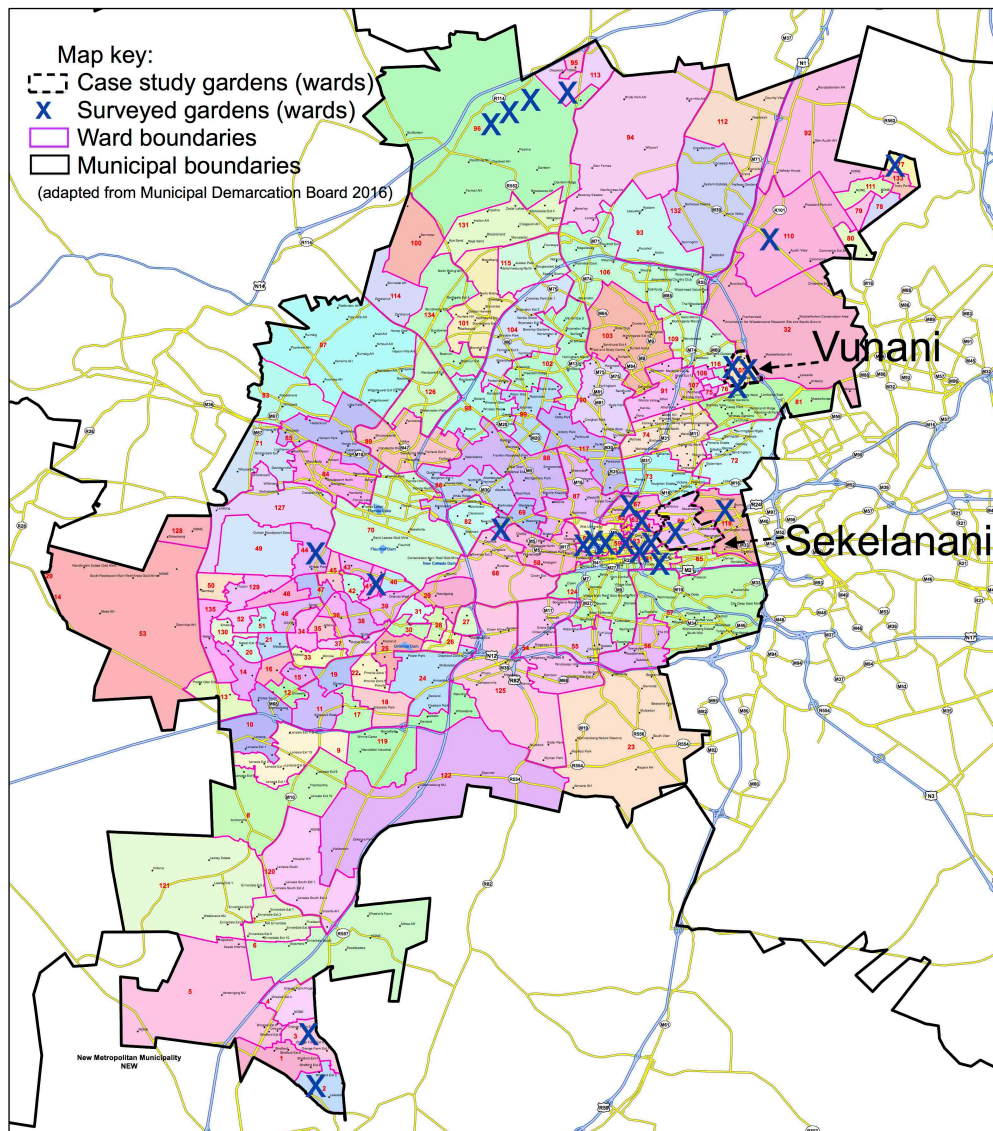


Figure 2: Joburg ward map showing locations of case study gardens and surveyed gardens

4.3.2) Vunani, Alexandra²¹

²¹ I have used pseudonyms for the gardens and all participants. This choice is discussed in section V below on ethical considerations.

The first case study garden was Vunani, located in Ward 105 in East Bank, Alexandra township (see Photo 1, below). This is a newer section of a 100-year old township located close to Sandton, one of the wealthiest parts of Johannesburg. The skyline of hotel towers and office blocks in Sandton is visible from the garden, highlighting the high levels of inequality in Johannesburg. While the older parts of Alexandra township are a maze of small streets, dilapidated buildings and informal dwellings, East Bank appears slightly more orderly. It consists mostly of government-built RDP²² houses, the majority of which now boast solar water heaters on their roofs as a result of a government-sponsored initiative to reduce electricity use. Over the course of my fieldwork, increasing numbers of ‘backyard shacks’ were built around the RDP houses, most likely as a source of rental income for the residents of the houses (see Photo 2, below). Some of these can be seen along the East edge of the garden in Photo 3, below, while larger RDP houses can be seen to the West side. According to the 2011 Census, almost 13% of households in East Bank lived in informal dwellings. In the immediate vicinity of the garden is a large high school, an informal church, a meat shop and a number of informal businesses including a barbershop and a snack vendor. The area is mostly residential, and residents have to travel by taxi to reach larger shops such as supermarkets. The population of Alexandra township is 99% black. The mean household income in East Bank was 42.3% of the mean income for Gauteng province, or R66,081.91 (about \$9090), with an average household size of three people, in 2011 (GCRO, n.d.-b; Statistics South Africa, 2012b).

²² The Reconstruction and Development Programme (RDP) was a socio-economic policy framework adopted by the democratic government in 1994 to overcome the legacy of apartheid. It included provision of free houses to households below a certain income threshold. The South African government continues to provide free houses, which are still known as RDP houses, even though the RDP programme has been replaced by other socio-economic policies.



Photo 1: Vunani, Alexandra



Photo 2: Shacks erected next to Vunani

Vunani is located on approximately 1600m² of sloped land under high-tension electrical lines, owned by City Power, Johannesburg's electrical utility (see aerial image of garden, Photo 3, below). Because of these, no building may occur on the property. The empty lot was used as an informal rubbish dump site by local residents

before it became a garden. While people’s accounts varied, the initial impetus for the garden seems to have come from a local community development worker²³, who organised a community meeting in 2010 and proposed starting a garden to improve access to fresh vegetables and provide exercise for elderly residents. As with many such projects, dozens of people expressed interest in the beginning, but as the hard work of clearing the rubbish from the land got underway and no immediate benefits were forthcoming (in the form of vegetables or remuneration), many people dropped out. The garden grew into its space in stages over many years, as patches of land were cleared and planted.



Photo 3: Aerial view of Vunani, Alexandra

The same community development worker helped the garden members register it as a cooperative—the form of organisation preferred by the City of Johannesburg and the provincial department of agriculture for providing support—and helped them get a letter from their local ward councillor that facilitated their access to the land. When I first visited the garden, the cooperative had seven members, four men and three women. Of these, only four members regularly worked in the garden when I first started there. Six members were pensioners over the age of sixty. The one member of working age had found employment and therefore he was almost never seen at the garden. Two members had been involved from the very beginning, with their spouses,

²³ A community development worker is an employee of the City of Johannesburg tasked with implementing social development projects at community level. They do not necessarily come from the community in which they are working.

while others had joined slightly later. None of the five members I met had been born in Johannesburg, though most had lived there many years. They came from the provinces of KwaZulu-Natal, Limpopo, Eastern Cape, Mpumalanga and Gauteng. During the time I undertook my fieldwork, no community members expressed any interest in becoming members of the garden. When I asked garden customers if they might be interested in joining the garden, they usually laughed before saying they were too busy.

Though I never understood how or when this had happened, the garden was divided into sections, with different members taking responsibility for different sections. In general, a husband and wife team worked one section of the garden, while two other members worked another section. A fifth member tended to occupy himself with ‘cleaning’ the garden—raking the paths, sweeping common areas, and so forth, rather than planting or weeding with the others. I asked participants about the division of labour, but never got a satisfactory answer as to how it had come about. The gardeners worked at the garden five days per week, starting at different times from 7:00 to 9:00 in the morning until about 4:00 in the afternoon. One woman tended to leave around 13:00 to look after her grandchildren at home. Some of the members went home for lunch, while others worked through the day, stopping to eat a packed sandwich or just to rest.

When I first visited Vunani, they were receiving support from an NGO, Food and Trees for Africa (FTFA). That support included training on organic growing methods (in the early days of the support); provision of inputs such as seedlings, compost and tools; assistance with getting a municipal water tap installed in the garden; installation of minor infrastructure such as a small shaded structure; and periodically, provision of volunteer labour in the form of corporate volunteer groups. FTFA normally provides support to a garden for a period of one to three years, after which time the garden is supposed to be self-sustaining. The garden also received support from GDARD in the form of monthly visits (give or take a little) from an extension officer.

4.3.3) Sekelanani, Bertrams

The second case study garden was Sekelanani, located in Ward 66 in Bertrams, central Johannesburg (see Photo 4, below). On the eastern fringe of the city centre,

across the road from a large sports arena, the garden is on a busy road serviced by the city's Rea Vaya²⁴ bus system. There is a supermarket up the road, as well as many other shops. The housing immediately surrounding the garden is mostly quite old and run down, though toward the centre of the city there are high-rise apartment blocks. To the east, moving away from the city centre, are several more affluent neighbourhoods with largely white populations, though in the immediate vicinity of the garden the population is mostly black. There are pockets of migrants from other African countries living in Bertrams and the nearby areas of Hillbrow and Yeoville. Because the ward includes wealthier white suburbs (the ward population is approximately 14% white), the average household income for the area is actually higher than that of Gauteng province, at R182,779.74 (about \$25,142), with an average household size of 3.25 (GCRO, n.d.-a; Statistics South Africa, 2012b). This figure obscures the poverty in the area immediately surrounding the garden.



Photo 4: Sekelanani, Bertrams

Sekelanani is on about 3000m² of tiered land owned by the city of Johannesburg. At least part of the land used to be a lawn bowling green, and there is a cricket oval on the adjacent lot (see aerial image of the garden, Photo 5, below). The garden shares the property with a building housing the regional offices of the municipal Department

²⁴ The Rea Vaya bus rapid transit system was launched in 2009 to improve the city's public transport infrastructure. The modern buses have dedicated lanes and a high-tech card payment system.

of Social Development (DSD) as well as a sewing cooperative (visible on the right hand side of the garden in Photo 5, below). The building has a kitchen, which is used by a baking cooperative and out of which a city-run soup kitchen sometimes operates. As with Vunani, there were multiple versions of the garden's origins, but again, they involved a community development worker from the DSD, in 2006. She recruited members and helped register the garden as a cooperative in the early days—again, the preferred form of organisation for accessing municipal and provincial support—when it occupied a smaller portion of the land than it did when I started there.



Photo 5: Aerial view, Sekelanani, Bertrams

For most of the time I spent at Sekelanani, I did not see or know the identities of most of the cooperative members. Two main members were usually present—a man in his forties and a woman in her fifties—along with a shifting group of casual labourers and volunteers, some of whom were eventually employed by the city to work in the garden (see Chapter 6, Sustainable livelihoods). Later, when a corporate sponsor agreed to provide significant funding to the garden, they required the cooperative to update its membership, leading to a process of removing inactive members and adding new ones, many of whom vanished from the garden soon afterwards. Though some community members occasionally expressed interest in becoming members, they generally lost interest and stopped coming to the garden fairly quickly. Most of the people actively working in the garden, whether members, casual workers or volunteers, were in their thirties or forties. Sometimes school children also came to

volunteer, though usually only for a couple of hours at a time. One of the main members was born in Soweto, but most of the members and workers that I met came from other provinces including Limpopo, the Eastern Cape, KwaZulu-Natal and Mpumalanga. Most were unemployed when they started at the garden, though one member started volunteering in his free time while working as a security guard.

At Sekelanani, there was no official division of labour in terms of spaces or tasks when I started, though later this was attempted. Rather, one or two core members usually decided what needed to be done, and assigned tasks to the other people present (volunteers, casual workers, etc.). At times, the core members disagreed about what should be done, but this rarely happened openly. Instead, they would grumble about each other to me or to other disinterested parties. In general, the participants worked five days per week, from about 7:00 or 8:00 in the morning until 4:00 in the afternoon. Most participants took tea breaks and lunch breaks in the kitchen on the premises (which belonged to the Department of Social Development, DSD). When some of the members started to receive salaries from the DSD (this is discussed in Chapter 6), they also took on job responsibilities for the DSD, which took them away from work in the garden from one to three days per week. One gardener regularly sold produce at a Sunday market, and sometimes on Saturdays as well.

When I first started at Sekelanani, they received support from the city (land, water) and from GDARD's LandCare programme. They also had a collection of corporate sponsors who provided occasional assistance in terms of planning, infrastructure or inputs. This changed over the course of my fieldwork when a major corporate sponsor agreed to a two-year support programme, which was supposed to include funding, training and a purchasing agreement for eighty per cent of all produce. Due to its central location, long history, organic production methods and the incredible networking skills of one of its members, Sekelanani received frequent media attention in the form of articles in newspapers and magazines. A popular talk radio DJ also publicised the garden's call for volunteers on at least one occasion, leading to hundreds of people showing up to help.

Overview of the two case study gardens, at time of selection (2014)
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Characteristics	Vunani	Sekelanani
Location	Plot of land in East Bank, Alexandra (township)	Plot of land in Bertrams (central Johannesburg)
Land tenure	Permission from City Power/Eskom	Permission from City of Joburg
Year started	2010	2006
Garden size	Approx. 1600m ²	Approx. 3000m ²
Garden Project Objectives (per co-op president)	Food security for community	Food security for vulnerable populations
Organisation	Cooperative	Cooperative
# of members	7	6
Labour	Members (mostly elderly), occasional casual workers or volunteers	Some members and some hired casual workers; volunteers
Main support/partners	NGO- Food and Trees for Africa (FTFA)	City of Joburg Department of Social Development
Other support/partners	GDARD Food Security programme	Some corporate sponsors; GDARD LandCare programme
Distribution	Sell to local community. Distribute amongst members. Occasional donations.	Sell to local community, local shops, also at 2 weekend markets. Distribute amongst members. Donate to local organisations.
Livelihoods/income	Members get an annual payout.	Members don't get income, just vegetables. Garden sustains itself.
Environmental features	Organic, compost, vermiculture ²⁵	Organic, permaculture, compost
Participant motivation	Income, food access, hobby, something to do because not working, keep fit and healthy	Income, food access, passion, volunteer to help community, gain knowledge, therapy/relaxation

Table 1: Overview of the case study gardens

The two case study gardens were amongst the largest community gardens I saw in Johannesburg, outside of the City of Joburg's larger 'Food Empowerment Zones' (FEZ) in Diepsloot (Northern Farm), Soweto (Nancefield) and Southern Johannesburg (Eikenhof). These FEZ's were not yet established at the time I started my research—indeed, I attended the official launch of Eikenhof near the end of my research in March 2016. At that time, the farmers there were struggling with water access challenges, and additional facilities for washing, packing and processing food were not yet operational. The Northern Farm FEZ was still being set up when I visited

²⁵ Vermiculture is the keeping of worms in order to compost waste and make 'worm tea,' a rich fertiliser made of liquid worm waste.

gardens in Diepsloot 2015. Rooftop gardens in central Johannesburg and other gardens throughout the city were often significantly smaller, providing food for participants but no surplus to sell to the surrounding community. I was interested in larger gardens for my case studies in order to see the extent to which they could provide food to the surrounding communities. Table 1 provides an overview of the main criteria I used to select the case study gardens.

4.4) Research process and instruments

As mentioned above, the case study approach encourages the use of multiple methods of data collection. This not only facilitates greater understanding of the cases, but also allows for triangulation of data, to enhance validity or reliability. Due to the range of issues covered in my six research sub-questions, I required a broad toolkit to answer them. With the understanding that “research methods should be seen as being constructed (for particular purposes) rather than selected (for any general usefulness)” (Clough & Nutbrown, 2012, p. 20), I selected, adapted and developed a number of different tools from different fields of research. These included:

1. Literature review
2. Key informant interviews with experts, officials, NGO personnel
3. Informal survey of community gardens
4. Participant observation
5. Food diary exercise (photographic and written)
6. Food/life history interviews
7. Garden participant interviews
8. Analysis.

Samples of all of these research instruments (with the exception of the literature review, participant observation and analysis) are included in Appendix 1.

4.4.1) Literature review

Naturally, my inquiry began with a literature review, which contributed to the development of my research questions and continued throughout the course of my research. The review covered literature on urban agriculture and food sovereignty, as well as on sub-themes including food security, nutrition, diet and culture, poverty, the informal sector, environmental sustainability, food system localisation, empowerment and gender, amongst others. In addition, I reviewed the relevant policy documents,

legislation and regulations at municipal, provincial and national level relating to UA and food security in Johannesburg, and compared these to food policy documents from other parts of the world.

4.4.2) Key informant interviews

I also conducted semi-structured key informant interviews, beginning early in the research process and continuing throughout (2013-2016), with people in relevant positions in government departments and NGOs providing support to gardens. These included representatives of the Department of Social Development (DSD), the Gauteng Department of Agriculture and Rural Development (GDARD) and several NGOs. In addition to providing information about their policies and programmes in support of gardens, these experts also helped me to identify gardens for my informal survey. I also interviewed academic experts on urban agriculture and the food system. Over the course of my research, I returned to interview some of these representatives a second time. This was to get additional information and clarify my findings but also served as a form of validation, as I was able to check emerging findings with these experts. A list of the sixteen interviews is included as Appendix 2.

4.4.3) Informal survey of community gardens

Over the course of my research, I conducted an informal survey in order to gain a more holistic view of the working of community gardens in Johannesburg, the demographic background of garden participants, their motivations for participating as well as their perception of the benefits and challenges of community gardens. This began with my early visits to 18 gardens in 2013 to select my case studies. I eventually visited a total of 25 gardens by 2015, spread throughout the city, and informally interviewed participants. The informal survey helped to contextualise my findings at the case study gardens. I was able to experience a wide range of types of gardens, and to compare the benefits and challenges experienced at those gardens to the case studies. A table providing an overview of the gardens surveyed is included as Appendix 3.

4.4.4) Participant observation

I deployed a number of research tools in my case study gardens, the most intensive of which was participant observation (Payne & Payne, 2004, p. 166). Between August

2014 and April 2016 I spent an average of one day per week at each of the two case study gardens, working alongside the other participants. At Vunani, my most frequent task was weeding, while at Sekelanani I engaged in a variety of different tasks, including weeding, planting seeds in trays, transplanting seedlings into the ground, pulling out old plants or helping to get produce ready for markets. Garden participants showed me how to do these tasks, as I had almost no experience with growing food prior to the research. Sometimes one or more of them worked with me, while at other times they left me working on my own and went to work in another section of the garden. Each day, I recorded voice notes on my phone while working in the field, which I then transcribed on my computer every evening. I also took photographs to document the gardens and their surroundings. One challenge with participant observation was that the gardens were both fairly large, and because they were sloped, the different beds were on multiple levels. The gardeners tended to be dispersed throughout the gardens, and therefore if I was working in one area, I could not see or hear what was happening in another area (Yin, 2003, p. 96).

Working in the gardens enabled me to gain an understanding of the rhythms of the gardens, the way tasks were organised, the social interactions of participants and customers, the methods of production used, the foods produced, etc. On a more personal note, it also enabled me to gain a solid grounding in the process of growing food—prior to starting the participant observation process, my knowledge of agricultural production was largely gleaned from texts, not actual experience. Spending an extended period of time in the gardens allowed me to experience seasonal fluctuations in practices and production levels. By becoming part of the social universe of the gardens, I got to experience the social, ecological and material conditions there, as well as the challenges and benefits of participation. I did not seek to capture an objective reality in a positivist sense. Rather, my constructivist approach to participant observation, or ‘reflexive ethnography’ in Burawoy’s (2003, p. 669) formulation, involved “a self-conscious recognition of the way embodiment, location, and habitus affect the ethnographer’s relations to the people studied, and thus, how those relations influence what is observed and the data that are collected.”

Participant observation was fundamental to building rapport and gaining the trust of garden participants. If I had not been working alongside them, they would not have

opened up to me or allowed me to conduct multiple interviews with them over this period. Indeed, one member of Sekelanani told me that of all the students and journalists who had visited the garden over the years, none had worked there the way I had, and that he didn't mind if I took time to interview people because he could point to the evidence of my work in the garden. While it was never possible for me to become a true 'insider,' given the very obvious markers of race, age, class, educational and other differences, my presence was generally embraced as an "acceptable outsider" (Sultana, 2007, p. 379).

Participant observation over a sustained period of time also allowed me to view on-going processes of change in the garden. This was particularly helpful in contextualising my various interviews with the participants—at times their responses to similar questions were different, and I was able to locate these differences within changes at the garden. Participant observation contributed to answering all six of the research questions. The immersive experience and rich insights of participant observation have led to its frequent use in garden research (Guitart et al., 2012, p. 366; Ledger, 2015; Wakefield et al., 2007).

Sometimes my participant observation took me out of the gardens, as I attended events with the garden participants. These included government-sponsored farmers' fora, training events, exchange visits and festivals. I also accompanied them to various markets to assist in selling their produce. In addition, I attended a number of sessions of a free farmer school held on Saturdays at the University of Johannesburg (UJ) Soweto campus, where I was able to engage with dozens of urban farmers from Soweto and other areas. These events gave me a more nuanced picture of the activities of the gardeners, while also enabling me to engage with customers, other farmers, government officials and NGO representatives.

4.4.5) Food diary exercise

After several months of participant observation, I undertook a food diary exercise in the case study gardens in December 2014, adapted from the field of nutritional research (Day, McKeown, Wong, Welch, & Bingham, 2001; Gustafsson & Sidenvall, 2002). A list of participants in the food diary exercise is included in Table 2, below. The goal of this exercise was to understand the general adequacy of participants'

diets, and to see how much food they ate from the gardens. In nutrition studies, participants are asked to record everything they eat for a fixed period (usually seven days, but sometimes three or four days) in a food diary, which is then assessed for nutritional information (Bingham et al., 1994). In this study, I opted for three days to prevent participant fatigue. I also combined the food diary from nutritional research with an expenditure diary (such as that used in South Africa's Income and Expenditure Survey since 2005/06). I gave participants a small booklet, pre-marked with the necessary columns, and asked them to record everything they ate, as well as all of the food they procured (what, from where, at what cost) for three days. To facilitate the recording and for ease of comparison, I gave them disposable cameras to visually document the food procured and consumed. I brought an interpreter with me to the gardens on the day I distributed the diaries and cameras, to translate the instructions and ensure that participants understood what was being asked. I asked participants to start recording their food intake in the diaries on a Sunday, so that it would include both weekdays (work days at the garden) and a weekend day (when they usually did not work at the garden).

There were some unexpected challenges with the food diary exercise. When I developed the film from the disposable cameras, most of it was blank or over-exposed. The diary entries were also not as complete as I had hoped, in terms of what was eaten and where it was procured, so I conducted retrospective food diary interviews (with an interpreter, when needed) in order to go over the diaries and photos with participants (Palojoki & Tuomi-Gröhn, 2001; Thompson & Byers, 1994). This provided an opportunity for them to explain and expand upon the diary entries, and for me to ask follow-up questions. Many of the participants had included more than three days in their diaries, but not necessarily all of their meals for each day. From the interviews I was able to gain a better understanding of participants' food procurement, preparation and consumption patterns, as well as their nutritional knowledge. This contributed to answering question one (food access), question two (in terms of savings) and unexpectedly question six (in terms of gender roles at home).

Table 2: List of food diary exercise participants

Vunani, Alexandra		Sekelanani, Bertrams	
Pseudonym²⁶	Status at garden	Pseudonym	Status at garden
Bongani	Co-op member	Blessing	Casual worker
Margaret	Co-op member	Grace	Volunteer/ EPWP
Rebecca	Co-op member	Lindiwe	Volunteer/ EPWP
Samuel	Co-op member	Moses	Co-op member
		Thandi	Volunteer/ EPWP
		Thato	Co-op member

Note: The payment of salaries to some of the garden participants at Sekelanani under the Extended Public Works Programme (EPWP) is discussed in Chapter 6.

4.4.6) Food/life history interviews

After several more months of participant observation, I conducted food/life history interviews with garden participants, between February and April 2015, again using an interpreter when needed. A list of those interviewed is included in Table 3, below.

The goal of this exercise was to understand their lifelong relationship with food, agriculture and the food system more generally, in order to see if and how it had changed as a result of their participation in the garden (Bornat, 2004; Kouritzin, 2000; Payne & Payne, 2004, p. 24). The life history interview method enabled me to focus on a specific issue, namely the food system, over the course of participants' lives, while also situating their experiences within a broader historical context (Bird & Ojermark, 2011; Jackson & Russell, 2010). This method is particularly useful as a way "to explore the relationship between individual people's ability to take action (their 'agency'), and the economic, social, and political structures that surround them" (Slater, 2000, p. 38). Thus in these interviews I sought to assess empowerment as a result of participation in the garden, in the sense of enhanced capabilities, self-confidence and control over food-related decisions, the food system and/or associated political issues (e.g. provision of infrastructure support services to gardens) (Harnett, 2010). The food/ life histories contributed to answering all of the research questions.

Table 3: List of food/ life history interviews

Vunani, Alexandra		Sekelanani, Bertrams	
Pseudonym	Status at garden	Pseudonym	Status at garden
Bongani	Co-op member	Grace	Volunteer/ EPWP

²⁶ As mentioned earlier, I have used pseudonyms for all garden participants, as well as for the gardens themselves.

Isaac	Co-op member	Lindiwe	Volunteer/ EPWP
Margaret	Co-op member	Moses	Co-op member
Rebecca	Co-op member	Thandi	Volunteer/ EPWP
Samuel	Co-op member	Thato	Co-op member

4.4.7) Garden participant interviews

Near the end of my fieldwork, in January and February 2016, I conducted semi-structured interviews with participants at both gardens. A list of those interviewed is included in Table 4, below. These interviews sought to fill in any gaps that still remained. The interviews covered the history and functioning of the gardens, participants' motivations for joining and remaining involved, and the various benefits and challenges associated with participation. As the issues of empowerment and food system localisation remained somewhat challenging to assess because of their complexity, I included questions that sought to further flesh out these themes. During this final round of interviews, I also included questions related to dietary diversity. These were lightly adapted from the standard questions from the Food and Nutrition Technical Assistance (FANTA) Household Dietary Diversity Score (HDDS) questionnaire (Swindale & Bilinsky, 2006). At this point more than a year had passed since the food diary exercise (which had not been without its challenges), so I thought it would be useful to assess participants' diets again. This was a method of triangulation, but also allowed for the possibility of change over time.

Table 4: List of garden participant interviews

Vunani, Alexandra		Sekelanani, Bertrams	
Pseudonym	Status at garden	Pseudonym	Status at garden
Bongani	Co-op member	Grace	Volunteer/ EPWP
Isaac	Co-op member	Happy	Casual worker
Margaret	Co-op member	Lindiwe	Volunteer/ EPWP
Rebecca	Co-op member	Moses	Co-op member
Samuel	Co-op member	Thato	Co-op member

4.4.8) Analysis

Analysis began as soon as the research began, and continued throughout the entire process of data collection. As I proceeded with the research, I continuously analysed the data I had against my conceptual framework and its various sub-themes. This informed the evolution of the research process. I manually coded all of the interview

transcripts, field notes, food diaries and other data according to the broad themes of the research, as well as information about the political, socio-economic, spatial and ecological context in which the gardens are situated, and about the functioning of the gardens (Ezzy, 2002). During the coding, I allowed space for additional themes to emerge from the data (Braun & Clarke, 2006).

It was through the analysis, in particular, that I was able to connect the local and the global, or the micro and macro scales. This was also where my extensive reading of the literature and my fieldwork came together. I was able to connect personal events recounted to me in life history interviews—such as tending cows rather than attending school, migration to Johannesburg to work in the mines and learning to cook while living in a mining hostel—with the racist political and economic policies of apartheid that denied black people education, uprooted them from their families and forced them into white-owned industries. I could understand an individual dietary choice, such as only consuming fruit when it was brought to Johannesburg by family members from the rural areas, within a shift from a rural, communal system in which fruit was freely available to pick and eat, to an urban, highly capitalist one in which it carried a high price in shops.

My validation strategies of triangulation and gathering feedback from interviewees contributed to the reliability of the research. While a qualitative study of this nature is not replicable, because it grows from the interaction between researcher and participants, transparency and detail with regard to methods used is key to reliability. I kept detailed records, notes and transcripts of all field interviews (Creswell, 2007, pp. 209–210). Piloting my research instruments also enhanced their validity and reliability.

4.5) Ethics, reflections, limitations

I have made every effort to protect sensitive information and to respect the rights and dignity of all research participants. In general, garden participants were generous and open with their time and opinions, and usually did not request that their information be kept confidential. However, a few participants did request confidentiality at times. Because the gardens have few members, I have chosen to use pseudonyms for the

gardens and for all of the members, in order to protect the identities of those participants who did not want them disclosed. All interviewees were informed in advance of their right to refuse to answer any question and to withdraw their participation at any time. Only one garden participant exercised this right, refusing to participate in the third and final round of interviews, after willingly participating in the previous two. This resulted from on-going conflicts between garden co-op members and non-member participants (which are discussed further in Chapter 9), more than out of a desire to withdraw from the research, but of course I respected her wishes.

While it is possible that research participants chose not to fully disclose information during our interviews, or even to alter their answers in order to present a particular narrative, this is an unavoidable risk of qualitative or ethnographic research. In some cases I was able to compare participants' answers' to things I read or observed, but in the case of their life histories, my ability to verify their answers was naturally quite limited. However, I did not get the impression that participants wished to mislead me, and between their answers and my other forms of data collection, I felt that the information reflected the perceived "reality" of the participants—which was my objective—if not a quantitatively verifiable "objective reality."

Any field research involves a unique set of power dynamics between the researcher and the 'observed', and in the context of post-apartheid South Africa, these are influenced by the racialised inequality that characterises the broader society. Scholars have pointed out how a researcher's positionality or social location influences the entire research process, including the kinds of research questions asked, the theories and methods employed to answer them, the kinds of data collected as well as one's interpretations of the data (Muhammad et al., 2015; Shope, 2006). My position as a foreign, white, female researcher was certainly a privileged one. However, the power relations were by no means straightforward, nor were they static over the course of the research. While my race may have commanded a certain amount of respect, and therefore cooperation, amongst some participants, it undoubtedly created distance from others (Becker, Boonzaier, & Owen, 2005; Schutte, 1991). At times, my outsider status may have prevented me from seeing or understanding certain subtleties in the gardens; at other times, it may have made participants feel safer confiding in

me about things (e.g. their feelings about other participants) they might not have shared with their immediate community members. Different garden participants reacted to me in different ways, and these changed as they got to know me over the course of the fieldwork. Because I sought information from the participants, they ultimately held a certain amount of power insofar as they could choose whether and what to share with me.

I undertook this research reflexively, and kept a research journal to record and review my perceptions, assumptions, biases and positionality in the research (Creswell, 2009, pp. 191–193; McNair, Taft, & Kegarty, 2008). Reflexivity involves “reflection on self, process, and representation, and critically examining power relations and politics in the research process” (Sultana, 2007). As a foreign, white, female researcher in community gardens in poor areas, I was immediately visible as an ‘outsider.’ This was particularly true at Vunani, in Alexandra, where I never saw another white person during all of my fieldwork. The fact that I came to the garden in an automobile further separated me from the members and surrounding community, who did not have cars. I became the “mlungu²⁷ in the garden,” about whom customers frequently asked questions. I often overheard customers ask one of the gardeners what I was doing there. Usually, she would explain to them that I was studying agriculture.

Occasionally, she would joke that they are now employing white people in the garden, because black people don’t want to work. I was uncomfortable with the underlying racial assumptions of this joke, but garden members and customers (all of whom were black) found it extremely funny. Other comments by the gardeners suggested they were proud to have a ‘mlungu’ working in the garden with them. At times, customers would greet me in Zulu and I would greet them back in Zulu. This very limited ability to respond in their language delighted them, and they would compliment me on my language skills. I was aware that if the situation were reversed, nobody would commend a black South African for knowing a few words of English.

My ‘outsider’ status was slightly less obvious at Sekelanani. There, black staff members of the DSD drove cars to work, so my car was less noticeable. In addition, there were white customers at the garden who came to buy organic produce, as well

²⁷ Mlungu is the Zulu word for white person.

as other white volunteers (schoolchildren, university students or corporate groups). While some of the garden members accepted me as one of them, other garden participants continued to view me as an outsider. Engaging with them in basic Zulu helped to establish rapport in the early days, though this rapport often seemed tenuous. Racialised assumptions about work emerged at Sekelanani as well, where one core member of the garden never failed to comment to anyone who came by about how hard I worked. While this was partly due to the fact that many volunteers (and indeed garden participants) did not work as hard as she did, it also related to the fact that the presence of a white person doing manual labour was highly unusual. Several of the casual workers also frequently commented on my labour, saying that white people usually didn't want to work hard. The fact that we were working hard together did seem to help with rapport. Eventually, I understood that some of the distance between these participants and me probably emerged from the conflicts at the garden, and their perception that I favoured those on the 'other side' of the conflict, despite my efforts to remain neutral and uninvolved.

My role at the gardens was not to uncover a single, objective truth, but rather to seek to understand the perceptions of the gardeners. I do not believe that my outsider status prevented the gardeners from opening up to me—most of the time, they seemed quite comfortable to share their views and experiences with me, and my long-term presence in the gardens helped to develop trust and rapport. At times my questions seemed to baffle the gardeners, who did not understand either why I would be interested in certain things, such as where they purchased maize meal, or how I could not know certain things, such as how to transplant kale cuttings. Thankfully, they were patient with me and my questions. Indeed, they may have been more patient precisely because I was an outsider.

Another way in which my difference affected the research was in the expressed interest of participants in learning certain things from me. As an educated outsider, they believed I had expert knowledge of certain topics about which I spoke to them, e.g. food and nutrition. At times I had to negotiate between their desire to learn from me about these topics and my interest in learning about their current (not-yet-influenced-by-me) knowledge and practices. In general, however, I sought to share whatever knowledge I could, while communicating the limitations of my expertise

and noting any changes in their behaviour that might have resulted from our interactions. One gardener's decision to stop consuming sodas ("cool drink"), for example, was at least in part a consequence of our discussions about how unhealthy sugar-sweetened beverages were.

I observed that my outsider status certainly influenced my own perceptions of the gardeners, and of the views and experiences they shared with me. At times, I noticed myself thinking that what they were telling me was clearly incorrect—not the 'facts of the matter,' so to speak, but rather their interpretation of them. Yet I dutifully recorded their interpretation, keeping in mind that their perception was what mattered, not my assessment of its veracity. For instance, several gardeners at Vunani mentioned to me that the reason corporate volunteer groups no longer came to assist them was because the gardeners were not getting along. As far as I could ascertain, the corporate volunteers had previously been organised by the supporting NGO, whose contract for support had subsequently ended. It was unlikely these volunteers had even noticed the internal dynamics at the garden in their brief visits. There was no moral judgment involved, simply the end of the NGO's contractual support. Yet because the gardeners themselves were so upset by the in-fighting, they perceived this distress to affect those around them as well.

Impact on the "researched"

This was a socially engaged, critical research project, with the goal of gaining understanding for the purpose of bringing change. While the principal avenue through which a research project such as this contributes to change is usually through influencing policy and practice, this can be a slow and circuitous process. Thus from the outset, I sought to ensure not only that my research adhered to the principle of doing no harm, but that it actually benefited the gardeners. Of course, my work in the fields as a participant observer was the most obvious benefit, particularly since they were often short of labour. It was also the only benefit I promised them when I first asked permission to conduct fieldwork at the case study gardens. I was very wary of making any promises I would not be able to keep, so I explained that I would be there working with them each week, in exchange for their cooperation.

Beyond the labour, though, I sought to assist in other ways when opportunities presented themselves. The gardeners at Sekelanani quickly realised the benefit of having a researcher with a car in the garden, and enlisted my help in the form of transportation to meetings, to purchase supplies or to markets. Occasionally, they would even call me in the morning on days when I was scheduled to work in the garden, to confirm that I was coming and would be able to drive them somewhere. My research skills and access to the internet were also in demand at Sekelanani, where at times participants would ask me to look up information about a possible supplier or the best way to plant something. This skill was also in demand at Vunani, where I routinely looked up information on a pest or disease affecting one of the crops, as well as information on how to cook some of the lesser-known vegetables that volunteers had planted there.

In general, I sought to share any useful information or knowledge I had with the gardeners. This included successful farming practices I had seen at other gardens or had read about, information on possible assistance from NGOs or other sources, recipes using garden produce, as well as access to markets. Recipes were of particular interest at both gardens, although I often found that I would need to simplify recipes to be accessible to people at the gardens, who had significantly less kitchen equipment as well as ingredients available to them (e.g. oils, spices, etc.). At Vunani, I connected the gardeners to a vendor at an organic market, in the hopes that it could provide an additional avenue for sales. Also, because that market employed a participatory guarantee system (PGS) to monitor organic production methods of growers, I thought their membership would afford them access to advice, support and a community of other growers. On one occasion, I ferried unusual, unwanted produce (artichokes) from the garden to the organic market, and brought back the proceeds to the garden. However, while the PGS team did provide advice when they visited the garden, it turned out that some members were not interested in an additional market. Indeed, one member felt that they already struggled to produce enough for their existing customers, and thus the group did not pursue the market.

While a traditional positivist research paradigm might view these efforts as ‘interference’ that somehow contaminates the research field, this was by no means the case. From a constructivist point of view, there was no ‘objective’ external reality for

me to interfere with, and my presence in the garden as an observer already impacted upon the garden. Thus, from a critical, activist standpoint, it was important to ensure that my presence in the garden had a beneficial impact. Of course, I undertook these measures consciously and reflexively, observing and analysing the effects as part of the research process. They also contributed to the sense of a two-way exchange, in which I provided labour and also information and transportation in exchange for access to information (and new garden skills) from the garden participants.

Limitations

The majority of the limitations experienced during this research can be grouped under the banner of language. First and foremost amongst these, was the fact that I did not speak any of the home languages of the gardeners, beyond a basic level of Zulu. The first languages of garden participants included Zulu, Xhosa, Sotho, Swazi and Venda, though between them they spoke many additional languages. Most of the gardeners could communicate with me in English, though one man at Vunani spoke virtually no English at all. This language barrier had several implications for the research. First, during participant observation, I could not necessarily understand the conversations happening around me, either between the gardeners or with their customers. When these happened in Zulu, which was frequently the case, I could usually follow the gist of the conversation, but I could not necessarily follow all of the detail. Thus my ability to observe what happened around me was incomplete. However, given the length of time I spent at the gardens, I was able to piece together interactions to the point where I felt I understood what was happening fairly well.

The second implication was for the use of the various research instruments. To ensure that participants understood what I was asking, and that I understood their responses, I employed a field interpreter to translate during my interviews with garden participants. For some, this was absolutely necessary. For others who were able to communicate in English, I gave them the choice of using the interpreter or doing the interviews in English. Naturally, there are risks associated with translation, as some meaning may be lost along the way, but I sought to mitigate these by briefing the interpreter about the topics under discussion, recording the interviews and having a different translator check some of the transcripts for accuracy. As I was able to follow

some of what was said during interviews conducted in Zulu, I could also check meanings with the interpreter as we proceeded.

A third issue around language had more to do with the meanings ascribed to words than to strict translation issues. When I interviewed participants about their diets, for example, I asked them about their consumption of vegetables. With one Zulu-speaking participant, I realised after our second such interview that he was making a distinction between ‘vegetables,’ meaning foods such as squash that are grown in the garden, and wild greens (or other wild plants) that he had harvested and eaten as a child in rural KwaZulu-Natal. Failure to notice this distinction earlier had coloured my understanding of his interview responses, which I then had to review in light of my new understanding. This issue is evident in the use of the Zulu word *imifino*, which is generally translated as ‘vegetables’ but which is sometimes used to refer to leafy greens or even herbs.

Another example emerged with regard to the term ‘training’, which seemed to mean something different to me and to one of the English-speaking participants. On numerous occasions she had told me about different training courses she had attended, including one in Magaliesburg.²⁸ Yet when I asked during an interview if she had attended any trainings as a result of her participation in the garden, she said no. While it was possible she misunderstood my question, it was more likely that the term ‘training’ meant something slightly different to her, and that the courses and workshops she had attended fell under another name. This sort of situation highlighted the importance of triangulation. As a result of collecting data in different ways over a long period of time, I was able to disentangle these meanings and avoid misunderstandings.

A final limitation of the study was a perception of bias, or more specifically of unequal treatment of garden participants. This emerged in different ways at both of the case study gardens. At Vunani near the end of my fieldwork, one of the garden participants was explaining that she thought some of the others might be jealous because a neighbour from across the road sometimes came to help in her side of the

²⁸ The area of Magaliesburg is about an hour away from Johannesburg, and has many farms.

garden. She said she didn't see why they should be jealous, as she wasn't jealous when I came to help them in their side of the garden. I explained to this member that I was there to help the whole garden, not any particular member. But she pointed out that I only worked in their side of the garden. It was true, I realised at that moment, that I usually worked in the other peoples' section of the garden, but this was a result of one of them being assigned as my informal supervisor when I first arrived at the garden. Also, I had always assumed that it didn't matter where I worked, since all of the income from sales went into one account to be shared equally amongst members. But clearly my assumption was naïve, and failed to account for the deep divisions amongst garden members. Despite my reflexive consideration of my positionality vis-à-vis the gardeners (Burawoy, 2003; Sultana, 2007), I failed to see how each of the gardeners might interpret it differently.

The conflict amongst participants at Sekelanani also coloured their perception of my role there. Because some of the participants required an interpreter for interviews and others did not, I sometimes conducted the interviews on different days. As a result, some of those who used the interpreter did not see the other interviews happening in English, and they thought the other participants were not being interviewed. I was not aware of this perception, until the final round of interviews when some of the non-English speakers refused to participate, on the grounds that the others weren't being interviewed. I explained that in fact everyone was interviewed, but not on the same days, since I had to prioritise non-English speakers on the days that the interpreter joined me. This distinction (between those who used the interpreter and those who did not require interpretation) mirrored an existing conflict amongst garden participants (based on membership in the cooperative and the source of their income at the garden). Thus the conflicts spilled over into the research. After a fair amount of discussion, two of the three non-English speakers agreed to participate in the interviews, but the situation revealed the dangers of naively assuming that I was beyond the fray in existing conflicts. At both gardens, the fact that I spent more of my time working with certain individuals (usually a result of chance, language and their ability to supervise me) led to a perception that I was on their side in conflicts. However, because I engaged with everyone, and never actively participated in any disputes, all parties remained willing to work with me.

Beyond the limitations of this specific research project, it should be noted that qualitative research itself carries certain limitations. Prominent amongst these is its implication in the racist project of colonialism (Denzin & Lincoln, 2005). Thus undertaking research with a critical stance involves certain tensions between the exploitative history of research (as an activity associated with colonial domination), the positionality of the researcher, and the social justice objectives of the research project. In the case of research aimed at promoting food sovereignty, undertaken by a foreign white researcher amongst relatively marginalised black communities in the global south, it was necessary to keep this challenge in mind at all times.

Part I has covered the use of food sovereignty as the conceptual framework for this research, reviewed the literature on urban agriculture and outlined my research methodology. In Part II I will address the findings of this research, with one chapter devoted to each of the six components of food sovereignty.

Part II: Research findings

Chapter 5: Access to sufficient, healthy and culturally appropriate food

5.1) Introduction

This chapter examines the contribution of the two case study gardens to the first element of food sovereignty, namely access to sufficient, healthy and culturally appropriate food. As discussed in the literature review, food gardens are frequently promoted as a response to food insecurity, despite mixed findings in this regard. In Johannesburg, the municipal Department of Social Development (DSD) and the provincial Department of Agriculture (GDARD) support food gardens as a means to address food insecurity. Non-governmental organisations (NGOs) that support food gardens also do so as a means to contribute to greater food security. Garden participants themselves speak of their work as ensuring that they, their families and their communities, don't go hungry.

To understand the contribution of gardens to this aspect of food sovereignty, we must examine the meaning of access, as well as the concepts of 'sufficient' food, 'healthy' food and 'culturally appropriate' food, dealt with in Sections 5.2 to 5.5 below respectively. The results from the two case study gardens are contextualised, as needed, by the results of my informal survey of gardens in Johannesburg, as well as by the literature, interviews and other information.

5.2) Access to food

The official UN Food and Agriculture Organisation (FAO) definition of food security entails four elements: availability, access, utilisation and stability. Traditionally, availability refers to the presence of sufficient food, often at national level, while access refers to people's possession of sufficient resources or entitlements (often, but not exclusively in the form of money) that enable them to acquire food (FAO, 2006). However, it has been argued that access should be understood more broadly—moving beyond the notion of economic access to include geographic access as well (South African Cities Network, 2015, p. 21). For the purposes of understanding the impact of the gardens, this expanded notion of access is adopted, as the availability of food at national level does not necessarily translate into availability in marginalised communities. This section thus considers the contribution of the gardens to both local

availability/geographic access and economic access, for garden participants as well as their surrounding communities.

5.2.1) Geographic access/availability

Urban agriculture advocates frequently cite its contribution to food security by improving access in marginalised communities (Zezza & Tasciotti, 2008). Vunani is located in an area with no supermarkets or other fresh produce shops within walking distance. The informal vendors near Vunani—an important source of food in many townships (Crush & Frayne, 2010)—carried almost no vegetables (see Photo 6 below). While the expansion of supermarkets has been criticised for its impact on informal vendors (Battersby & Peyton, 2014), the area around Vunani seemed to lack both formal and informal fresh food retail. Aside from Vunani itself, there were a few other vegetable gardens in the area—I observed several new ones emerge over the course of my fieldwork. While these were generally much smaller gardens located next to people’s homes, some did offer fresh produce for sale as well. One garden participant estimated that “there’s about four or five other gardens” nearby where people can purchase fresh produce (Isaac, personal communication, January 20, 2016), though none of these was as large as Vunani.

In South Africa, “distance and transport to shops are key features of food access” (South African Cities Network, 2015, p. 22). Vunani generates significant time and monetary savings for the people purchasing their fresh produce at the garden. Indeed, one of the founding members explained that this was one of the motives for starting the garden: “We thought most people, when they want spinach or anything else, they have to take taxis... so we thought maybe we should start something that will limit older people from going all this distance, rather to just come here and get all the vegetables they want” (Bongani, personal communication, January 20, 2016).

Another garden participant agreed that the garden allowed her to save on transport expenses: “It’s better, because you can manage to eat spinach because you take it on here. It’s not like you’re going to the shop. When you go to the shop you must take money, go to the shop R6, coming back R12 (about \$0.41-\$0.82). But here you can walk, come to the garden, you can find spinach and eat the spinach” (Margaret, personal communication, January 20, 2016). Customers confirmed that the garden made vegetables more accessible. As one woman explained, “Instead of Pan Africa

[supermarket],²⁹ we can walk here and get vegetables” (customer, personal communication, December 19, 2014). Urban agriculture is frequently proposed as a solution to the challenge of food deserts (Metcalf & Widener, 2011), because it brings fresh produce into under-served neighbourhoods and reduces transport expenditures for participants and their customers.



Photo 6: Informal food vendor, Alexandra

Sekelanani, in Bertrams, central Johannesburg, is located in a very different context. The garden is on a major transport artery, on a road that has a supermarket as well as smaller food shops about two blocks away. While Vunani’s location might be termed a ‘food desert’, Sekelanani’s would not. However, Sekelanani offers something different from the nearby formal and informal food retail options. Members point out that their garden is the only place in that area where people can buy freshly-picked organic produce. It is also one of the only places to acquire some of the more traditional Southern African vegetables³⁰—such as amaranth greens, pumpkin leaves or okra—that are not generally available in nearby supermarkets (van der Merwe et al., 2016). Sekelanani thus improves geographic access to certain kinds of foods—

²⁹ Pan Africa shopping centre, about 4km away, is where the nearest supermarket is located.

³⁰ In urban South Africa, traditional/ indigenous vegetables tend to be underutilised and not readily available in retail shops (Pasquini & Young, 2009; van der Merwe et al., 2016).

organic produce, African vegetables and other unique varieties—that would otherwise be unavailable to neighbourhood residents.

5.2.2) Economic access

In terms of economic access, aside from reducing transport costs, Vunani also offers vegetables at lower prices than formal retail shops. When I asked customers why they chose to buy vegetables at Vunani, they consistently said that produce was cheaper than elsewhere (customer interviews, December 2014). For years, a bunch of spinach or kale,³¹ 50-100 per cent larger than the bunch one would find at a supermarket, was sold for R7 (about \$0.65).³² Eventually this was raised to R10 (about \$0.92), still a very reasonable price—much smaller bunches in the shops were at least R10, sometimes up to R15 (about \$1.38). Cabbage was sold for R7-R10 per head (see Photo 7 below), and tomatoes were ten for R5 (about \$0.46) or a large box for R20 (\$1.84). Pumpkins started at R10, depending on their size. While garden members were never able to explain to me how they set their prices, they did suggest that they sought to keep them lower than the shops, in order to attract customers. One member explained that she learned this at a training course offered by the City of Joburg: “We will get a lot of customers if we make it cheap, the plastic [bag] we make it full... If they say it’s too much you say ok, I will make it less, that’s what they were teaching us. You must be good to the customer” (Margaret, personal communication, February 26, 2015).

³¹ At many of the gardens in Johannesburg, the gardeners and customers refer to kale by the name *chou moellier*—this is technically the name of the variety of kale commonly grown in the gardens, but gardeners tended to use the terms interchangeably.

³² All dollar values in this paragraph were calculated at the annual average exchange rate for 2014 of ZAR 10.85=1 USD.



Photo 7: Marketing sign, Vunani

The situation at Sekelanani was somewhat different with regard to economic access—for some items, such as bunches of spinach or kale, the prices at Sekelanani were the same as or cheaper than those of nearby shops. Bunches of herbs were usually R10, and much larger than what would be available in a supermarket (though the nearby supermarket did not offer as many varieties of herbs as the garden). In Johannesburg, organic produce tends to be more expensive than non-organic produce, when it is available at higher-income supermarkets and weekend food markets. The prices for organic produce from Sekelanani were generally lower than what one might find at those places, and the selection of organic items was generally wider. In Bertrams, however, the nearby shops and supermarket did not tend to sell organic produce, so the price comparison was between the organic goods from Sekelanani and non-organic foods at those shops—in this case, the garden was not always less expensive.

5.2.3) Culture of sharing

Many of the gardeners at both gardens had grown up in rural areas, in homes that produced most of their own food. Thus the concept of needing to purchase all of your food represented a shift from the culture of self-provision that they knew from childhood. As one gardener explained: “We grew up eating vegetables because we were growing food. Most of our food was from the garden. We didn't buy much from shops. It's only now that we're working that we buy things at the shops” (Bongani, personal communication, February 25, 2015). Another lamented the shift from

growing their own food to having to purchase: “They plant mealie, pumpkin, everything, we eat very good. ... Also *morogo*, our grandmother. Also a lot of peach, apple in the garden, because it was a big place. Also the cows were there, we drank milk... There were chickens, when they want chicken they kill one, they eat. It was very nice. Life was good, but not like now--everything you buy it" (Margaret, personal communication, February 26, 2015).

Many gardeners also referred to a sharing economy in their childhoods, in which neighbours shared seeds, assisted with the agricultural workload, and also shared their food. “Sometimes we had a system where we'd give other people seeds, and in exchange they would come and assist us,” one gardener said. “And even us, just to make sure they were growing food, we'd go and assist them in growing food from their gardens" (Isaac, personal communication, February 25, 2015). Another explained that in his childhood, the whole community grew their own food, so the concept of purchasing it was quite foreign. They also shared freely with the children of the community. “I didn't know that mealies have got a price, you know. But when I came to Joburg, I heard that they're saying that mealies is this much, when we know that our mothers, our grandmothers, our neighbours can cook a big pot, and then you go and eat as much as you want” (Moses, personal communication, April 2, 2015). Thus the shift from rural childhood homes with a strong culture of sharing to Johannesburg, where everything must be purchased, was a major change for many gardeners. Remnants of this culture of sharing can be seen in the gardeners' desire to share their produce with the most vulnerable members of their communities, discussed in Section 5.3, below.

5.2.4) Participant access and community access

Before moving on to consider the question of sufficient food, it is worth noting a distinction between the access of the food gardeners themselves, and the access of their customers. For community garden participants, the produce from the garden was free, and they could take home as much as they wished. Of course, it involved a trade-off, as anything they took home was not sold, thereby reducing garden income. However, it represented direct access to food, and a savings on food expenditure for the participants. Almost all of the garden participants at both gardens lived within

walking distance of the gardens, so produce from the garden did not involve any transport costs.

At Vunani, there were usually four or five garden participants working in the garden, and while at Sekelanani there were two to six participants most of the time. It was impossible for me to ascertain the number of customers at each garden on any given day, despite my attempts to keep track. My best estimate for Vunani is an average of about eight to ten customers per day—split between individuals purchasing for own consumption and street vendors buying to resell. At Sekelanani, this calculus is even more difficult as there were different kinds of customers—walk-ins from the local community, people in cars from wealthier suburbs, employees of the on-site Department of Social Development offices, as well as the supermarket up the road. I can definitely state that much more of the produce at both gardens was sold to customers than taken home by participants.

Most garden customers lived in the immediate vicinity of the two gardens, and indeed first learned about the gardens by passing by. In Alexandra, some of the customers at Vunani were street hawkers, who came from a bit further away to buy many bunches of kale, which they then divided into smaller bunches to sell near transport hubs (e.g. the Marlboro Gautrain station). These vendors also travelled to the Johannesburg Fresh Produce Market in the south of the city—a much greater distance—to get other items to sell, such as potatoes and onions. South African research indicates that street traders commonly purchase fresh produce from the large distributors in the formal sector (Philip, 2010, p. 13), limiting the amount of revenue that stays in the local community. Visibility of the garden was also important at Sekelanani, as people walking by frequently shouted through the fence to enquire about the prices or availability of particular vegetables. However, because it was located on a bus line, some of the passers-by might have resided further away from the garden. In addition, Sekelanani was well known for its quality organic produce, so wealthier customers from the suburbs also came to the garden, by car, to buy vegetables.

At both gardens, the members spoke of improving the community's access to fresh vegetables as one of the objectives of their gardens. One of the founding members of Vunani said “the elderly can come here and buy vegetables instead of taking a taxi to

somewhere far” (Bongani, personal communication, January 20, 2016). Participants at Sekelanani expressed their desire to improve community access to healthy food.

“What I like most about this garden is that it’s a garden that allows people to come and buy food... we’re helping other people to access vegetables” (Thandi, personal communication, February 25, 2015). Another participant agreed, “we help the community with veggies” (Lindiwe, personal communication, February 25, 2015).

Thus the gardens improved both geographic and economic access to fresh produce for both the participants and their surrounding communities, but in slightly different ways.

5.3) Sufficient food

The notion of sufficient food is fundamental to the logic of food gardens as a response to food insecurity and hunger. Sufficient food means enough food to meet one’s daily caloric requirements. Ideally it encompasses access to sufficient nutrients as well, but that question will be addressed in the next section, on healthy food. This section will examine three issues: production levels of the gardens; participants’ food consumption; and the surrounding communities’ consumption from the gardens.

5.3.1) Production levels

First, it is important to state that I was never able to determine precise production levels. Poor record-keeping is a common problem amongst urban agriculture projects (Kekana, 2006, p. 41; Ruysenaar, 2012, p. 15). Neither garden kept records of quantities of produce, and even sales records were imperfect. Further, sales records did not include produce taken home by the gardeners, nor that given away to volunteers or community institutions such as orphanages. At Vunani, the amount of cash collected from sales (though not the items sold) was written down on a scrap of paper at the end of each day, with one member keeping the records and another holding on to the cash, in order to prevent disagreements or theft. This system of record keeping had been suggested by the garden’s extension officer from GDARD. At Sekelanani, no sales records were kept during the early part of my fieldwork, but later, once a corporate sponsor came into the picture, a system of record keeping was started. Because Sekelanani sometimes ordered seeds or seedlings from large suppliers, there were some records of the amount planted, but that was not a clear indication of the amount actually grown and harvested.

One important aspect of production volume in community gardens is seasonal fluctuation, which impacts the stability aspect of food security. In Johannesburg, the cold dry winter months are not conducive to growing most of the vegetables commonly grown in the community gardens (Ruysenaar, 2012). In summer, significantly more kinds of vegetables, as well as fruits, can be grown. Also, due to labour shortages at both gardens, planting did not always happen on the most ideal schedule to ensure maximum, continuous production. Summer production at Vunani was fairly diverse, while in winter the garden had a much more limited selection of produce (see Table 5, below). All year, the majority of the planted area of the garden was always devoted to kale and spinach. The gardeners selected vegetables to grow based on what seeds they could find at the nearby supermarket, as well as on what the customers wanted to buy. When they planted other items, or when volunteers did, those tended to go to waste. On more than one occasion, one of the gardeners asked me about herbs or other items growing in the garden—what they are used for or how they are prepared, because they didn't know. As far as I could ascertain, none of the participants used any fresh herbs from the garden when cooking at home. It should be noted that the herbs planted in the garden by the NGO and volunteers were not indigenous herbs, but rather 'European' herbs such as basil and mint.

Table 5: Summer and winter produce, Vunani

Vunani production	Spring/ Summer	Winter
Aloe	x	x
Artichokes		
Baby marrows	x	
Beetroot	x	
Bell peppers (green)		
Butternut	x	
Cabbage	x	x
Carrots	x	x
Chillies	x	
Chinese spinach		x
Fennel	x	
Green beans	x	x
Herbs (basil, coriander, mint, parsley, rosemary sage, thyme)	x	x

Kale (chou moellier)	X	X
Leeks		X
Lemons		X
Lemon verbena	X	
Lettuce	X	
Onion	X	X
Potatoes	X	
Pumpkins	X	
Rhubarb	X	
Spinach/ Swiss chard	X	X
Spring onions	X	X
Sweet potatoes	X	
Tomatoes (3 varieties)	X	

At Sekelanani, items also went to waste if they were produced at the wrong time—for instance, large amounts of tomatoes ripened all at once around Christmas, when there were fewer customers in the area and their regular weekend market was closed (see Photo 8 below). “In December, we lost a lot of tomatoes,” explained one gardener. “We didn’t sell. ...Our stuff was just thrown to waste” (Thato, personal communication, January 21, 2016). Despite the waste, the gardeners did not seem to take many of the tomatoes home to eat.



Photo 8: December surplus tomatoes, Sekelanani

Sekelanani produced a much wider variety of vegetables, due to the interests of the gardeners in experimenting with different plants as well as the access to higher-income customers through the weekend markets (see Table 6, below). But even these customers had relatively limited knowledge of, or interest in, unusual vegetables such

as Asian lettuces (mizuna, Japanese mustard greens, etc.). “We were having lettuce in the tunnel which we did not sell. We are having sweet basil, it’s bolting³³” (Thato, personal communication, January 21, 2016). The gardeners themselves never seemed to take these more unusual items home, though on a few occasions they did ask me how certain items—e.g. aubergine (brinjal) or basil—should be prepared. Sekelanani had peach trees and a mulberry tree, but gardeners and passers-by ate the fruit from these as (or before) it ripened—I never saw any of it being sold. Sekelanani also produced specialty items for the local community of African migrants from surrounding countries. Some of these people brought seeds for the gardeners to grow, so the garden produced Congolese and other regional varieties not found in shops. Sekelanani had large plastic-sheeted tunnels—the number increased from one, to two, and eventually to three over the course of my fieldwork—which enabled the gardeners to grow a wider variety of produce even during the cold winter months, though these were not always used optimally.

Table 6: Summer and winter produce, Sekelanani

Sekelanani production	Spring/ Summer	Winter
Amaranth	x	
Asian greens (bok choy, Japanese mustard greens, mizuna, tatsoi)	x	
Baby marrows	x	
Beans	x	
Beetroot	x	
Bell peppers (red, yellow, green)	x	
Brinjal (aubergine/ eggplant)	x	
Broccoli	x	
Butternut	x	
Cabbage	x	x
Carrots	x	x
Cauliflower	x	
Celery	x	
Chillies (various)	x	
Chinese spinach	x	x
Cucumbers	x	x
Fennel	x	

³³ When lettuces are left in the field too long before picking, they bolt—go to flower, past their prime for eating.

Garlic	X	
Gem squash	X	
Gooseberries		X
Green beans	X	
Herbs (basil, coriander, mint, parsley, rosemary, sage, thyme)	X	X
Kale (chou moellier)	X	X
Leeks		X
Lettuce (various)	X	
Luffa squash	X	
Maize (mealies and sweet corn)	X	
Medicinal plants (Comfrey, <i>lengana</i>)	X	X
Mulberries	X	
<i>Ngai-ngai</i> (roselle, red sorrel)	X	
Okra	X	
Onions	X	X
Patty pan squash	X	
Peaches	X	
Potatoes	X	
Pumpkins (and pumpkin leaves)	X	
Radish		X
Rhubarb	X	
Rocket	X	
Spinach/ Swiss chard	X	X
Spring onions	X	X
Strawberries	X	
Sugar snap peas	X	
Sweet potatoes	X	
Tomatoes (3 varieties)	X	

Seasonal cycles of production at both gardens meant that the volume and variety of vegetables produced was significantly higher in summer than winter, with periods in between plantings when very little was available, and other periods of surplus. These fluctuations represent instability of the food supply. There were many times at Vunani when I heard one of the gardeners tell a potential customer that what they wanted was not available. The street vendors who came to buy many bunches of kale usually called one of the gardeners first to check if there was enough. Sometimes she had to tell them to wait, because they didn't have enough. She also indicated that when the vendors come to buy, there was very little left for the other customers to purchase. This also happened at Sekelanani, though not as frequently (see Photo 9 of empty fields, below). One of the gardeners at Sekelanani recognised that they could improve

their growing schedule: “I would like to grow things, you know, which can sustain the garden. If it’s spinach, we grow spinach this week as seedlings. Next week we grow again, so that every time we can have... so that there’s no gap in between” (Thato, personal communication, April 2, 2015). While some seasonal fluctuation in production is inevitable, a greater use of indigenous edible plants, combined with more planning and use of permaculture methods, would even out production.



Photo 9: fields cleared and awaiting new planting, Sekelanani

5.3.2) Participants’ consumption of garden produce

At times when the garden was producing well, Vunani produced enough vegetables to meet the needs of all of the gardeners there, even after sales to regular customers.

That is to say, there was enough for the gardeners to take home a bunch of spinach, or some other vegetable, every day. Yet none of the gardeners there took home produce every day. Based on their food diary exercise and subsequent interviews, it appeared that most gardeners ate produce from the garden about two times per week. They also indicated that they purchased other vegetables not available in the garden. As one explained, “I do take some food here. Like carrots, I buy carrots because we haven’t got carrots here, but the rest I take from here” (Rebecca, personal communication, December 19, 2014). Another gardener expressed a similar sentiment: “Like now

there's no pumpkin here, so I have to go to the shops and buy it. ... Sometimes I buy the cabbage at Spar, the fruit market there. If I forget to take cabbage from the garden, I can buy it from the shop" (Margaret, personal communication, December 19, 2014).

Most of the gardeners at Vunani said that getting food was one of the reasons they joined the garden, though usually it was not the main one. As one stated, "I enjoy it here because I get something to eat. I work and I get something to eat" (Margaret, personal communication, February 26, 2015). The gardeners at Vunani all indicated that they had enough to eat, though one said, "It does happen sometimes that we run out of food, because I'm a pensioner. R1000 (about \$92) you can't do much, so that's why we come to the garden, so that when those times come, we are able to get food from the garden" (Isaac, personal communication, February 25, 2015). Thus the garden serves as a safety net at times when income to purchase food is insufficient. However, the food diary exercise indicated that several of the gardeners appear to consume insufficient calories, particularly in light of the heavy physical labour they do in the garden, and that they certainly do not meet their recommended fruit and vegetable intake (to be discussed in the next section, on healthy food). Low levels of vegetable consumption amongst food garden participants have been observed in other South African studies (Ledger, 2015; Webb, 2000).

Sekelanani also produced more than enough food to provide all of its members with vegetables. However, with one exception, they only took food an average of about twice a week from the garden. Several participants at Sekelanani indicated that around month-end, before they received their salaries (to be discussed in the next chapter) they ran short of maize meal (their main staple food). They indicated that getting food was one of the reasons to join the garden, though again, not the main one. As one participant explained, "I knew that if I work here, I won't starve because we're dealing with food" (Thandi, personal communication, February 25, 2015). Because there is a kitchen facility on site at Sekelanani (part of the City of Joburg's offices), one of the participants sometimes cooked lunch for the entire group. The lunch usually entailed pap³⁴ with fresh vegetables from the garden, or a soup made from vegetables from the garden. At other times, when there was sufficient cash from sales,

³⁴ Porridge made from refined maize (mealie) meal.

participants would buy white bread rolls, pap and chicken from the prepared foods section of the supermarket up the road. This purchased lunch was certainly less nutritious than the one made from garden-fresh vegetables.

The food diary exercise illustrated clearly that most garden participants at both gardens did not consume sufficient food, and that even when they met their daily calorie requirements, they did not consume anywhere near the recommended amount of fruits or vegetables to meet daily nutrient requirements (to be discussed further in the next section). Several participants ate only two meals per day, one in the morning consisting only of bread or porridge and tea with sugar, and one in the evening also consisting primarily of mealie meal (pap), with a small side portion of meat and/or vegetables.

Given the challenges with the food diary exercise (as explained in Chapter 4, Research methodology), I cannot state with certainty the precise calorie or nutrient intake of participants, but from the diaries, photos and associated interviews—as well as my participant observation—certain food consumption trends were very clear. First, all participants consumed high levels of refined carbohydrates, mostly in the form of maize meal porridge or bread, and sometimes white rice or macaroni. These items, not grown in the garden, were frequently bought in bulk on a monthly basis and would sometimes run short near the end of the month. Second, not a single participant consumed the recommended daily levels of vegetables or fruit. In fact, during the food diary exercise there was no fruit consumption at all, with the exception of one mango brought from Limpopo by a gardener's family member. As for vegetables, most participants only ate them at supper, and not every day, as a small side or sauce accompanying their portion of carbohydrates. Third, participants consumed significant amounts of refined sugar in their tea. Other nutrition-related observations will be discussed below, in the section on healthy/nutritious food.

5.3.3) Community consumption of garden produce

For the surrounding community, neither garden produced enough to make a significant difference to the food security situation in its neighbourhood. An earlier study found both of these areas to have high levels of food insecurity (Rudolph et al., 2012). As discussed above, Vunani certainly improved access to fresh produce for

those in the surrounding area, but production levels were not that high and on many occasions, between plantings, the garden had nothing to sell. One member expressed her frustration that they frequently had to tell customers “Sorry, we don’t have any”. The customers also had limited knowledge of vegetables, such that they did not want to buy anything considered ‘unusual’—for most people, this included everything other than spinach, kale, cabbage, onions, pumpkins and tomatoes. Even a slightly different variety of spinach, with red or yellow stalks, was too “unusual” for most customers to purchase. Despite these limitations, the lower prices, larger bunches and freshness of the produce from the garden did contribute, at least marginally, to improving the surrounding community’s food access.

Sekelanani, when functioning optimally, produced significantly more than Vunani, due to a larger land area available for planting, better infrastructure (tunnels, irrigation system, etc.), more labour and more training in permaculture methods of production. At times, the garden was able to deliver 50 bunches of spinach twice a week to the supermarket up the road, in addition to producing vegetables to sell to passers-by and at a weekend market. However, the garden frequently functioned less than optimally, due in part to challenges with labour, and in part to infrastructure delays when a new corporate sponsor came on board. The sponsor agreed to fund new drainage under one of the fields, and construction of a new double-width growing tunnel in the other main field. The group thus waited to plant the fields that would be affected by this construction, but miscommunication and delays meant that those fields lay empty for months. During this period, customers were often turned away as there was nothing to sell. Another obstacle to optimum production levels was the frequent absence of the gardeners. On a number of occasions, all of the garden members went to meetings or training courses, leaving the garden unattended. The garden thus did not produce enough to affect the food security of the area, but it did contribute to the dietary diversity of its customers.

5.3.4) Food donations

In addition to improving access to fresh produce for their customers, both gardens also made a point of donating vegetables to organisations helping the vulnerable in their communities. When there was extra produce available, the gardeners at Vunani donated to a nearby hospice. “Because we give away when we’ve got a lot, you see.

When we've got lots, we see that now it's gonna be wasted" (Rebecca, personal communication, February 9, 2016). At other times, the hospice purchased vegetables from the garden. Another gardener at Vunani knew of a children's home that he thought might like to receive vegetables, and tried to organise for them to come and collect produce. The arrangement never came to fruition, and the gardener told me it was because the people at the children's home looked down on the produce from the garden: "They are prepared to get things from the big companies... They felt we'll lower their standards" (Samuel, personal communication, March 11, 2015). While I found this hard to believe, this gardener frequently expressed a perception that people looked down on the garden.

Like Vunani, Sekelanani also donated food to the community, including to a City of Joburg soup kitchen run from the premises, a mental health organisation and to a nearby crèche. As one of the participants who also worked in the soup kitchen indicated, "I want to help people so that people can eat, like we normally cook soup, for people to come and have soup. For me it's not about me making money, it's because I have love for what I'm doing" (Grace, personal communication, January 21, 2016). Another participant explained, "We give back to the community... mentally disturbed, we give them veggies when we have" (Thato, personal communication, January 21, 2016). I myself provided transport for the gardeners from Sekelanani to take vegetables to a nearby crèche on several occasions. Although the donations were sporadic, the socially minded efforts of the gardeners made a contribution to the food security of the most vulnerable in their communities, that the mere presence of additional food retail outlets would not have done.

5.4) Healthy food

The concepts of food security and food sovereignty both incorporate the healthfulness of the food, though in practice, when measuring food security, this tends to be sidelined in favour of measuring the amount of food consumed. South African studies have found that the population consumes well below the recommended daily amount of fruits and vegetables (Naudé, 2013; Shisana et al., 2013) and as a result, the population shows signs of various nutrient deficiencies (Mchiza et al., 2015). The country adopted a fortification programme to address these, but so far results have been poor (UN Standing Committee on Nutrition, 2013). Other studies have also

found gardeners' fruit and vegetable consumption levels to be low (Earl, 2011; Webb, 2000). Food safety—in terms of soil contamination and food handling practices—will be discussed in Chapter 7 (Environmental risks).

5.4.1) Garden variety

In considering whether community gardens contribute to improved access to healthy food for participants and their communities, it is necessary to consider the healthfulness of the garden produce in general as well as the diversity of crops produced (and consumed).

While I did not conduct any laboratory analyses on the soil or produce from gardens, it seems safe to assume that the vegetables produced in both case study gardens were generally healthy. Vegetables such as spinach, kale and cabbage—the main crops produced at the case study gardens and many other gardens surveyed in Johannesburg—are rich in important nutrients (Wenhold, Annandale, Faber, & Hart, 2012). The same is true of pumpkin, butternut squash, tomatoes, green beans and other crops produced in the gardens. Without wading too deep into the polemic around the relative nutritional value of organic versus non-organic vegetables, it seems likely that the greater attention to soil health at Sekelanani may well have contributed to a higher nutrient content in the crops grown there.

A commonly used measure of food security that seeks to incorporate nutritional concerns is the individual or household dietary diversity score (IDDS or HDDS). The standardised questions seek to establish how many of a number of different food groups were eaten by an individual, or someone in their household, the previous day (Swindale & Bilinsky, 2006). The questions can be customised to reflect local dietary patterns and preferences. Underpinning the use of this measure is the notion that dietary diversity is indicative of dietary quality and linked to improved health outcomes (Swindale & Bilinsky, 2006). In South Africa, various studies have found relatively low levels of dietary diversity, amongst the general population (Mchiza et al., 2015; Naudé, 2013) as well as those practicing urban agriculture (Ruysenaar, 2012). I asked garden participants about their consumption of different food groups, using a revised version of a South African-adapted HDDS questionnaire. While there were challenges in communicating the food groups to participants in a way they could

understand (discussed in greater detail in Chapter 4), it was apparent that most participants had relatively low dietary diversity scores.³⁵

Given that dietary diversity is linked to positive health outcomes, it is useful to consider what is grown, and what is not grown, at the gardens. At Vunani, there is a strong, year-round focus on kale. In addition, onions and spinach feature prominently, while other crops, such as tomatoes, butternut, pumpkin, green beans, carrots, beetroot and sweet potatoes, are grown seasonally on smaller portions of land, when the gardeners are able to procure seeds. In addition, there are herb plants and fruit trees at the garden that were planted by an NGO that used to support the garden, and by volunteers that the NGO brought to assist with planting. The fruit trees do not produce ripe fruit, and the herb plants generally are not used by the gardeners nor requested by customers at the garden. Taken in its entirety, garden produce represents a diverse range of foods (see Table 5 above), which in turn provide a diverse range of nutrients. In practice, most of what the garden produced is kale which, while very healthy, cannot on its own meet people's nutritional requirements.

At Sekelanani, there was a greater variety of crops grown, though spinach and kale still dominated production. Two of the gardeners, responsible for ordering seedlings, regularly selected more unusual plants such as Asian greens—mizuna, Chinese spinach, bok choy, tatsoi, etc. They also grew, according to the seasons, a wide range of vegetables as well as many varieties of herbs (see Table 6 above). Beyond these, there were regional African vegetables such as amaranth greens and others grown from seeds brought by customers. The garden also boasted two mulberry trees (one of which was severely pruned over the course of my fieldwork) and several peach trees—but most of the fruit was eaten as it ripened by birds or people working in the garden, rather than sold (see Photo 10 below). If the garden participants had regularly consumed a wide selection of the produce grown at the garden, they would have been able to meet many of their nutritional requirements.

³⁵ Dietary diversity measures have been criticised for over-representing the nutritional value of dietary diversity scores because they represent simple counts of different types of foods consumed, with 'points' awarded even to foods that are unhealthy—e.g. fats, added sugars and 'other foods' (such as coffee and tea). More sophisticated measures of dietary diversity try to take into account the health value of the foods consumed and the frequency of consumption, applying weighting factors. In this study, these aspects of dietary diversity were considered qualitatively



Photo 10: Peaches growing at Sekelanani

Neither garden had any livestock, or animal production of any kind. The gardens rarely produced beans, and did not grow any nuts or edible seeds, meaning that vegetable protein was in limited supply. Neither garden grew staple grains. Technically Sekelanani did grow maize in summer, but it was generally eaten fresh, not dried and ground into mealie meal for porridge. Given the small size of the gardens, they could not produce a significant quantity of any staple grain, so it made more sense to focus on vegetables. Thus while participants could have met many of their nutritional needs by eating more food from the garden, they would still have needed to supplement with grains and protein-rich foods from somewhere else.

As seen in the food diaries and interviews, and through participant observation, most garden participants at both gardens only took vegetables home about two times per week. When they did take vegetables, they tended to take the more familiar ones—spinach and kale were by far the most common, followed by cabbage and when available, tomatoes, carrots, pumpkin or beetroot. Based on the questions garden participants would ask me about other vegetables and herbs growing in the garden, it was clear that they were not familiar with those other vegetables, and did not know how to prepare them. This was especially true of the herbs growing in both gardens. As mentioned previously, the herbs grown at both gardens were generally not indigenous—with the exception of *lengana*, a medicinal herb grown at Sekelanani.³⁶

³⁶ Research on the use of indigenous edible herbs has tended to focus on rural areas, where they grow wild, and on leafy green vegetables, rather than herbs used for seasoning in the European culinary sense (Shackleton, 2003).

Thus limited food preparation knowledge, with regard to the crops grown in the garden, was clearly a barrier to fuller *utilisation* of the available produce—a key element of food security and healthful eating.

The gardeners saw their vegetables as healthier than the ones available in shops, due to their freshness—and at Sekelanani, due to the fact that they were grown organically as well. Asked about the difference, one gardener explained: “They are different in quality because the one from the shop, you’ll find that it was harvested last week, and this one from here you pick it same time and go and cook it. ... Sometimes you find that one [from the shop] no longer has the same taste as the one you get from here” (Bongani, personal communication, January 20, 2016).

5.4.2) Nutrition knowledge

Another barrier to healthful eating was nutritional knowledge. When asked if they ate healthfully, all but two participants answered affirmatively. The two who said they did not explained that they could not afford to eat a more nutritious diet, with one of them indicating that fish would be good to eat but was unaffordable. Virtually all participants correctly indicated that the healthiest thing they ate was vegetables—some just mentioned vegetables, as a generic category, while others specified spinach. Based on the food diaries, interviews and participant observation, I would argue that most participants did *not*, in fact, eat a nutritious diet, and that their diets were high in added sugar and deficient in fruits and vegetables. While fruits might be unaffordable in rand per calorie terms (Naudé, 2013; Temple & Steyn, 2011), vegetables were freely available much of the time—certainly in larger quantities and variety than most gardeners chose to take.

While gardeners understood that vegetables were healthy, they seemed not to know what quantity of vegetables was required for good nutrition, since they assured me their diets were healthy. Their knowledge on this topic seemed to be derived from a combination of custom, formal education and the media, with about half of participants indicating that they had learned something about nutrition in school. One possible explanation could be the result of a shift from wild-harvested, indigenous leafy greens to garden-grown spinach as the sauce or relish eaten alongside the main dish of starch. In the past, the wild-harvested, indigenous leafy greens most likely

provided significantly more nutrients than the garden-produced spinach does today, yet the dietary custom has not changed.

Figure 3: Food diary excerpt, Grace, Sekelanani

Day	Time	Description of foods/ drinks
Day 1	10:00	Bread, eggs, tea with sugar
	13:00	Pap, chicken livers
	21:00	Pap, chicken, spinach
Day 2	7:30	Porridge
	16:00	Chips, cool drink [soda]
	20:50	Rice, mashed potatoes, fish
Day 3	8:00	Porridge
	19:30	Rice, chicken, spinach

Figure 4: Food diary excerpt, Rebecca, Vunani

Day	Time	Description of foods/ drinks
Day 1	7:30	Oats, tea with sugar
	16:00	Jam sandwich, tea with sugar
	??	Pap, spinach
Day 2	7:00	Biscuits, tea with sugar
	12:30	Bread, tea with sugar
	19:45	Pap, vegetables [beans]
Day 3	7:00	Toast [margarine & jam], tea with sugar
	13:00	Rice, spinach
	19:00	Pap, chicken

Looking at the two food diary excerpts above (Figures 3 and 4), it is clear that the gardeners' diets were lacking in nutrients. Out of the five recommended portions of fruit and vegetables per day (Naudé, 2013), Grace ate one portion of spinach on day one, one portion of potatoes on day two (though these are frequently counted as a starch rather than a vegetable), and one portion of spinach on day three. She consumed no fruits at all, and no other types of vegetables—e.g. no orange-coloured vegetables, which typically contain vitamin A. She consumed refined starch (as opposed to whole grains) at every meal, in the form of bread, pap, porridge and rice. She also consumed significant added sugar, in the form of tea (she used at least three spoons of sugar) and soda. Similarly, Rebecca from Vunani also consumed no fruit and very few vegetables: one portion of spinach on day one, one portion of beans (often counted as protein rather than a vegetable) on day two, and one portion of spinach on day three. She also consumed starch at every meal, in the form of oats

(possibly whole grain), bread, biscuits, pap and rice. Rebecca also consumed added sugar in her tea every day, as well as in the biscuits and the jam. Without knowing exact portion sizes or cuts of meat, it is difficult to know if either consumed sufficient protein, iron or fat, though it seems likely that Grace did and Rebecca did not. What is certainly clear, however, is that even though they had access to free vegetables from the garden, neither of these two gardeners consumed anywhere near the recommended daily amount of vegetables.

A little over a year after the food diary exercise, I asked participants questions about their diets again, using questions lightly adapted from the Food and Nutrition Technical Assistance (FANTA) Household Dietary Diversity Score (HDDS) questionnaire (Swindale & Bilinsky, 2006). In general, these reflected consumption patterns similar to those discussed in the food diary exercise. Fruit consumption was very low, with one participant saying “Wooh, I didn't have it for a long time. I even forget if there's anything like fruits” (personal communication, Rebecca, 9 February 2016). Others claimed to eat fruit around month end, or perhaps once a week. Cost was mentioned several times as a prohibitive factor. At Sekelanani, at least briefly, participants had access to peaches and mulberries when the trees bore fruit; at Vunani, there was no fruit to eat. Most participants ate refined starches, including maize meal porridge, rice and bread, every day, usually at every meal. Potatoes, though consumed by most participants, were more of a luxury, and were eaten more often when they were available from the garden. Consumption of orange-coloured vegetables such as pumpkins or carrots varied—one participant said he ate them when they were in season at the garden, while others ate them only on Sundays because of the amount of work involved in cooking them. Most participants claimed to eat greens, such as spinach or kale, once or twice a week. The same was true of beans. Meat consumption also varied, with several of the participants at Sekelanani eating it daily, and others a few times per week. Fish and eggs were rarely consumed, while many participants had dairy products daily—either as milk in their tea, or milk or *amasi*³⁷ in their porridge. As with the food diaries, these interviews demonstrated that participants’ low levels of vegetable consumption were due to reasons other than availability.

³⁷ *Maas* or *amasi* is fermented milk.

Despite their awareness that vegetables were healthy, the garden participants at Sekelanani regularly bought unhealthy food to consume during their tea break. They would consume white bread rolls or pastries from the nearby supermarket with their tea, sweetened with several spoons of sugar. Sometimes they also purchased lunch from the supermarket, usually prepared pap (maize meal porridge) and meat, if the one member who frequently cooked vegetables for them was not present, or not available to cook. If that member cooked, she tended to prepare pap with greens from the garden, or soup with whatever vegetables were available the garden. Even when participants from Sekelanani went on City of Joburg-sponsored training to learn to bake “healthy” bread, their practice of eating white bread did not appear to change (although this presumably reflected economic necessity and convenience more than health considerations). Some studies have pointed out that unhealthy foods represent a cheaper source of the calories needed for the heavy labour of gardening (Ledger, 2015; Temple & Steyn, 2011).

5.4.3) Time and effort constraints

Aside from food preparation skills and nutrition knowledge, increased vegetable consumption was further hindered by the time and physical effort required to cook vegetables. Several female garden participants mentioned that after working all day in the garden, they were too tired to prepare vegetables when they got home. As one explained, “The thing is, the vegetables, you have to put it in water, wash it, slice it, it's a job. ...Sometimes...you find it's rotten because I forgot to cook. Because I don't have time or I'm tired from working in the garden. They require too much work. ...I just look for something easy to cook, so I can cook quickly, then lie down and rest” (Margaret, personal communication, December 19, 2014). Another gardener explained that she's too busy during the week to cook vegetables. “These days I don't eat a lot, because I've got no time to cook. I've got no time to cook. I can eat the food from the one I cook on Sunday, I can eat it Monday and Tuesday, on Wednesday it's finished. Which is the food from the garden, you see” (Rebecca, personal communication, February 9, 2016). This was more of a problem for women who worked in the gardens, and then were expected to cook at home. Men who worked in the gardens, and had wives at home, did not face the same double burden of garden and domestic labour. The challenge of women's additional labour burdens and time

poverty (Grassi, Landberg, & Huyer, 2015) is discussed in greater detail in Chapter 10, Gender Equality.

Interestingly, when I asked garden participants whether they would change their diets if they won the lottery, most indicated that they would not. Or rather, they would not change *what* they ate, but they would change *how* they acquired the food they ate. Some of the more passionate farmers said they would use the money to buy land, so they could grow all of their food: “I would eat the same, because I’ll just buy a farm and plant and plant” (Thato, personal communication, April 2, 2015). Others indicated a desire to eat in restaurants, to have their food prepared for them. As one man said, “I would start eating at Woolworths, because Woolworths is expensive but they have good food. I will also even be able to call in food, make a call and they bring it, because I will have money” (Isaac, personal communication, February 25, 2015). Similarly, another gardener said, “I would be able to go to restaurants with my children. They would be happy” (Grace, personal communication, February 25, 2015). This desire to have food prepared by others suggests the importance of time constraints and work burden in determining diet, though status considerations may also have informed this desire.

5.4.4) Customers’ vegetable consumption

Customers at both gardens expressed their appreciation for the freshness of the produce. As one stated, “Food is delicious from the garden, it still has vitamins” (customer interview, Vunani, 10 December 2014). There was a general perception that vegetables in shops are old and less nutritious, having travelled long distances and sat on the shelves for a significant amount of time. In contrast, vegetables from the gardens were freshly picked, to order, and therefore still ‘had vitamins.’

While I did not survey the nutritional knowledge of garden customers, my observation of their purchases, and my engagement with them and the gardeners suggested that their level of nutrition knowledge was similar to that of the gardeners. For instance, garden customers tended to be unwilling to purchase new or unfamiliar vegetables—this is understandable in the context of a limited food budget, but it also restricted their nutritional intake. Some customers asked me how to prepare certain vegetables, indicating that they normally just boiled them. In all the time I visited Vunani, I only

saw one customer express any interest in herbs. At Sekelanani, there was a broader customer base that came from beyond the immediate surrounding area, including wealthier white customers from the suburbs, people of Indian descent eating diets reflecting that heritage, and customers eating more traditional diets from other African countries. These customers tended to be interested in a wider range of vegetables and herbs than customers at Vunani.

Many studies find that vegetables are perceived as ‘poverty food,’ to be replaced by meat as soon as people are financially able to do so (Steckley, 2015; Wenhold et al., 2012). This perception was in evidence at the gardens as well. As one gardener at Sekelanani indicated with respect to fluctuations in their sales to the nearby supermarket: “when people have money they buy meat, but when the money is finished they go back to eating spinach.” It was also evident that the gardeners, or their families, preferred meat to vegetables alongside their staple grains. At Sekelanani, almost all participants indicated that they ate meat every day, whereas they did not all eat vegetables every day—this was despite the fact that vegetables were freely available, while meat had to be purchased from a limited food budget.

5.5) Culturally appropriate food

The concept of cultural appropriateness, as used in the food sovereignty literature, was developed by peasant farmers, often members of indigenous groups in South American countries, in resistance to the penetration of industrialised foods produced by transnational corporations based on recipes developed in the global North. The concept has not received as much academic attention as other aspects of food sovereignty. However, Sampson and Wills have uncovered and problematised some of its underlying assumptions, namely: i) the cultural appropriateness of food is assumed to be agreed upon within communities, and static over time; ii) cultural appropriateness of food is assumed to be less consequential than more material claims to *enough* food, *healthy* food, and local control over food and agriculture policy; and iii) cultural appropriateness is seen as more subjective and less knowable (Sampson & Wills, 2013, p. 3). They argue that in fact, “the cultural appropriateness of food is contested and shifting, that collective definitions of cultural appropriateness are worked out in the contexts of complex and unequal power, and that ideas of cultural

appropriateness are consequential in the politics and strategies of feeding oneself’ (Sampson & Wills, 2013, p. 3).

In a country as geographically and culturally diverse as South Africa, cultural appropriateness is by no means universally agreed upon, but rather is specific to each person. Further, as the country is undergoing a “nutrition transition” as a result of urbanisation and industrialisation of the food system, people’s food preferences and habits are shifting (Naudé, 2013; Pereira, 2014; UN Standing Committee on Nutrition, 2013). Many of the garden participants grew up in rural areas, where they ate slightly more traditional diets than what they reported eating in Johannesburg during the time of my fieldwork. The five main gardeners at Vunani came from five different provinces of the country—KwaZulu-Natal, Limpopo, Eastern Cape, Mpumalanga and Gauteng—though most had lived in Johannesburg for most of their adult lives. At Sekelanani, where on average the participants were about twenty years younger, participants came from KwaZulu-Natal, Limpopo, Eastern Cape and Gauteng. Thus cultural appropriateness was by no means a uniform concept amongst the gardeners.

Two elements of culture stood out during my fieldwork: the first was the production of ‘culturally appropriate’ vegetables at Sekelanani for customers from surrounding African countries. The second was the culture clash between what was considered desirable to plant and eat by the NGOs and volunteers that support the gardens, and what was of interest to the gardeners themselves or the customers from their immediate surrounding communities. A third cultural element, of interest to me but apparently of less concern to the gardeners or their customers, was the production of indigenous vegetables for food and medicinal uses.

5.5.1) Traditional vegetables

The neighbourhood in which Sekelanani was located had a significant population of migrants from other African countries. Many of the customers who came to the garden were from Zimbabwe, Malawi, the Democratic Republic of Congo (DRC), Cameroon, Ethiopia and other countries. These customers wanted to eat familiar vegetables from their own countries, so they sometimes provided seeds to the gardeners, who then grew those foods for them. One of the gardeners explained this

using the Lingala words (a Congolese language) for the vegetables: “Some Congolese customers, as we are having most of them from outside [South Africa], they like ngai-ngai, and lenga-lenga [amaranth greens], and madembele [sweet potato] and chigwagwa [pumpkin leaves]. ...Ngai-ngai is their own seed they brought from Congo, we are planting for them” (Thato, personal communication, January 21, 2016). Another gardener explained the cultural importance of eating foods that remind one of home: “That's the reason why people feel, being far from home, with this garden it's a blessing to them” (Moses, personal communication, February 9, 2016). On another occasion, the same gardener told me proudly that people from many countries can get their foods in the garden. The importance of foods from home for migrants to maintain a connection to their place of origin has been well documented (Möhring, 2008; Tuomainen, 2009).

5.5.2) Whose culture?

The second issue—a kind of a culture clash—was apparent at both gardens, but more so at Vunani. That garden received support for several years from Food and Trees for Africa (FTFA), an NGO that specialises in organic, permaculture food gardens. The NGO provided support in the form of training, tools, seeds and seedlings, as well as bringing volunteer labour (usually corporate groups) to the garden on several occasions. As with alternative food programmes in other countries, many of the programme officers at the NGO were white, middle class and had specialist knowledge of permaculture (Slocum, 2007). They brought a wide array of seeds and seedlings to the garden, which was more a reflection of their use of organic methods such as companion planting for natural pest protection and soil health than it was a reflection of their (or the gardeners’) dietary preferences. In general, the NGO workers were aware that not all of these plants were familiar to the gardeners, and therefore they tried to teach gardeners about their nutritional value and how to prepare them (personal communications with NGO personnel). I began my fieldwork as the support from the NGO was winding down at Vunani, so I never saw any of the training they provided. I did, however, see the legacy of their planting in the garden, in the form of fruit trees, herbs, fennel, rhubarb, artichoke, chilli peppers, aloe and other plants that the gardeners generally did not consume or sell. Sometimes the gardeners would ask me what those plants were for, or how to prepare them. On a few occasions they even asked me to print out recipes for them. Other times they would

simply complain that they took up space, and eventually some of them were removed. Clearly, what was appropriate for the NGO (in cultural or ecological terms) was not appropriate for the gardeners—the assistance provided reflected the NGO’s priorities rather than the gardeners’ needs (Guthman, 2008a). If training on these plants was provided, as the NGO claimed, it was insufficient.

To a lesser extent this same divide was visible at Sekelanani, though it played out differently. At Sekelanani, the culture clash was between the wealthy suburban customers who sought out organic produce at the weekend market where Sekelanani had a stall, and the majority of the garden participants who were not familiar with many of the vegetables they grew (Slocum, 2007). While two gardeners were very knowledgeable about more unusual vegetables—due to their more extensive permaculture training—the majority had no knowledge of these vegetables at all. Not only did they not know how to cook them, they did not even recognise them as cultivated crops and frequently pulled these specialist vegetables out as weeds, frustrating their fellow gardeners. Even the two gardeners who knew about how to grow the more unusual vegetables did not know how to prepare them. Thus they could plant and look after them, but would not take them home to eat. On several occasions, participants at the garden asked me how to prepare certain vegetables or herbs that were growing there, though I got the impression that only one of the gardeners ever tried preparing any of the new vegetables.

5.5.3) Indigenous vegetables and nostalgia

The third aspect of cultural appropriateness, the growing of indigenous plants, was not actually an issue in the gardens. Most participants expressed no interest in planting indigenous vegetables or herbs, and even when I expressed such an interest, it was met with little enthusiasm. My interest was both dietary—as indigenous leafy greens have been shown to have higher nutritional value than the spinach commonly planted in community gardens—as well as environmental, since indigenous plants are generally better suited to local climactic conditions and therefore require less water, fertiliser or pesticide to grow successfully (T. Hart, 2010; Wenhold et al., 2012). It also represented an interest in “decolonising the diet,” in line with the prevalent concept of decolonising tertiary education and other aspects of life in post-colonial, post-apartheid South Africa, where traditional and indigenous culture had been

denigrated for hundreds of years (Raschke & Cheema, 2008). However, there were two aspects of growing indigenous or traditional plants that did seem to resonate with some of the garden participants.

One of the gardeners at Sekelanani who grew up in rural Limpopo frequently mentioned the wild plants he used to eat as child. These were in addition to the plants he and his family members farmed. When asked what plants he might like to grow that he was not currently growing in the garden, he said, “I would like to grow some indigenous vegetables which I grew up eating. Some are growing like weeds, but some cannot withstand the weather here” (Moses, personal communication, February 9, 2016). He went on to explain the nostalgia value of eating the indigenous foods of his childhood, “Because when I get like blackjack (*Bidens Pilosa L*), I remember my upbringing, when I grew up. When I eat delele (jews mallow/ *Corchorus olitorus L*), you know, then I remember ... it reminds me of my upbringing” (Moses, personal communication, February 9, 2016). The indigenous wild plants of his childhood helped him to feel connected to his rural roots, combating the social dislocation of his move to the city (Holtzman, 2006). Given that he was the gardener who most often procured seeds and seedlings for the garden, and that he and other family members made trips back and forth between Johannesburg and Limpopo, I am not sure why he didn’t try to plant any of the indigenous greens he mentioned. Even with the colder weather in Johannesburg, some of them could have grown—certainly in the tunnels, if not in the open fields of the garden.

During fieldwork at Sekelanani, one of the gardeners heard me coughing. She showed me a *lengana* plant (African wormwood/ *Artemisia afra*), picked some for me and told me it was a traditional remedy for coughs. She explained how to boil it and drink the infusion. Several months later, I noticed one of the gardeners at Vunani coughing, and told her about the *lengana* plant. I offered to bring some for her, and she accepted, saying her grandmother used to prepare it for her when she was sick as a child in the Eastern Cape. When I took it to her, she smelled it and said “Oh” with a look and sound of happiness and nostalgia. I asked if it smelled like her childhood and she said yes. On another occasion, the same gardener asked me if I could get her some more *lengana*. She said to tell the gardeners there that she was sick and needed some *lengana*, and if she got it, she would be fine. She even planted a clipping from the

lengana I brought, so that she could grow her own plant. For her, the *lengana* was not just medicine, but a reminder of her childhood and the traditions of her grandmother. This linkage between foods, gardening and memory/identity is well documented in the food studies literature (Abarca & Colby, 2016; French, 2008). However, it is not usually included in food *security*-related studies of urban agriculture from the global South.

5.6) Discussion

My findings on this element of food sovereignty are largely in line with the international and South African literature, though they raise some interesting issues. As with most South African research on urban agriculture, I found that the gardens do improve economic and geographic access to food, though there are significant limitations in terms of the quantity of food produced and the income it generates, which in turn limit the ability of economically marginalised gardeners and their surrounding communities to access sufficient food. These challenges are further compounded by seasonal fluctuations in production and less than optimal planting schedules. The gardens produce sufficient produce to meet most of the vegetable requirements of participants, though not to meet the needs of the surrounding communities. They certainly do not represent a challenge (in terms of volume or earnings) to the industrial food system.

While there is no doubt as to the healthfulness of the food grown in the gardens, the nutritional quality of participants' diets remains poor, as a result of numerous barriers to consumption of more vegetables, including time constraints, cultural habits, food preparation knowledge and nutritional knowledge. The barriers to consumption identified in this research depart from the traditional arguments in the international literature that the practice of UA leads to improved nutrition (Armar-Klemesu, 2000; Zezza & Tasciotti, 2008), especially in combination with nutrition education (Department of Health, 2013; Earl, 2011, p. 55). Rather, UA and nutrition education will only change diets if structural issues, such as poverty, and cultural issues, such as dietary preferences and the gendered division of labour, are addressed.

The issue of cultural appropriateness, rarely discussed in the food security literature and under-emphasised in the food sovereignty literature, was significant in this

research. Given the diversity of cultures represented in the gardens, and the on-going nutrition transition in South Africa, culture was by no means a fixed entity. Further, a significant culture clash was evident between the white, middle-class culture of the NGO providing support to Vunani and that of the gardeners and their surrounding community. A similar cultural divide could be seen at Sekelanani, between the wealthy white customers from the northern suburbs of Johannesburg and the gardeners, or their African migrant customers.

While many community gardens throughout the world represent a connection between gardeners and their cultural traditions, this seems to be less important to the gardeners in the two case study gardens. A sense of nostalgia, however, was apparent amongst some of the gardeners in relation to certain plants. Their customers, at least at Sekelanani, did value this connection, and even brought traditional seeds from their home countries for the gardeners to plant. Links to a culture of self-provisioning and sharing were also in evidence, in the gardeners' practice of donating food to the most vulnerable members of their communities. Given the nutritional value and ecological suitability of indigenous plants, it would be beneficial for government departments and NGOs supporting the gardens to promote the growing of these plants, rather than the non-indigenous vegetables that they currently provide. Traditional, indigenous vegetables might enhance the linkages to gardeners' childhood memories of agriculture in rural areas. Having considered the contribution of the gardens to food access in this chapter, we turn to their contribution to livelihoods in the next chapter.

Chapter 6: Sustainable producer livelihoods and local economies

6.1) Introduction

The food sovereignty movement's call for economic sustainability of the food system refers, first and foremost, to the on-going viability of small-scale food production as a livelihood. The movement's principle of valuing food producers requires the adoption of policies that promote and protect their livelihoods, rather than those that privilege industrial production by transnational corporations (La Vía Campesina, 2007).

Beyond the viability of smallholder agriculture, economic sustainability must also apply to small food processing and retail businesses as well as the local communities in which producers are located (Kloppenborg Jr et al., 2000, pp. 182–183). Food sovereignty calls for decent, dignified livelihoods for all workers in the food system. While this call was developed by rural producers whose peasant way of life was under threat, it is relevant in the case of urban agriculture as well, as gardeners struggle to earn decent livelihoods through agricultural production.

As articulated at a civil society meeting in Rome in 2002, food sovereignty “includes the true right to food and to produce food, which means that all people have the right to safe, nutritious and culturally appropriate food and to food-producing resources and the ability to sustain themselves and their societies” (NGO/CSO Forum for Food Sovereignty, 2002). Thus food producers must have access to the resources necessary for them to sustain themselves and their communities, and all people must be able to access food to eat.

Another aspect of the economic sustainability of the food system is localisation, which brings consumers and producers closer together, eliminating many of the ‘middlemen’ who currently absorb most of the value in the industrialised food value chain, leading to low prices for producers and high prices for consumers (Greenberg, 2015). This will be discussed in Chapter 8 on food system localisation.

This chapter begins, in Section 6.2, with an examination of how participation in community gardens affected the livelihoods of the garden participants themselves. Section 6.3 then looks at the contribution of the gardens to local economic

development. The chapter concludes with a consideration of some of the factors that limit the gardens' contribution to local economic sustainability.

6.2) Participant livelihoods

As outlined by Mitchell and Leturque (2010), UA may contribute to participants' livelihoods through three channels: savings on food purchases, income from sales, and wages. While the global literature on UA frequently finds it makes an important contribution to the livelihoods of the poor (Nugent, 2000), and sometimes the middle class (Page, 2002), the South African literature has tended to note much smaller economic impacts (Battersby & Marshak, 2013; Frayne et al., 2014; Kekana, 2006; Webb & Kasumba, 2009). The situation in my case study gardens generally confirmed the findings of other research on South African gardens, though it did highlight some interesting possibilities.

It is worth noting that the community gardeners interviewed for this research each highlighted a number of different motivations for their participation. These did include access to food and a source of income, but there were many others. Gardening was referred to as a hobby, a source of exercise and even as therapy. Many gardeners specifically mentioned wanting to help their community, by making fresh, healthy food more accessible and also by donating it to those in need. The majority of the gardeners at the two community gardens said one of the reasons they joined was that gardening reminded them of when they used to grow food as children.

6.2.1) Expenditure savings

Aside from contributing directly to consumption or income, food gardens may contribute indirectly to gardeners' ability to access sufficient food or make other purchases through expenditure savings. Naturally the gardeners at Vunani would need to purchase food to meet their caloric and nutritional requirements—the garden produced very little food with protein (occasional green beans), a limited range of vegetables, and no grains of any kind. Given that Vunani members only took food home from the garden about twice a week, the expenditure savings could not be that significant. Out of the five main gardeners at Vunani, one estimated he saved about R200 (about \$13.60) per month (Bongani, personal communication, January 20, 2016), though based on the food diary exercise I suspect that overstates his vegetable

consumption and transport savings. Another gardener said he doubted he saved much, because his family preferred to eat meat, not vegetables (Samuel, personal communication, February 9, 2016).

At Vunani, the savings on transport costs seemed more important to the gardeners than the savings on produce. A realistic estimate for the gardeners at Vunani might be around R100 (about \$6.80) per month in savings on vegetable purchases, plus perhaps an additional R24-48 (\$1.63-\$3.26) savings on transport to the supermarket. The restricted range of crops produced at the garden also limited savings, as gardeners opted to purchase vegetables not being produced. As one gardener summed it up, “I can't really say we save much, but at least we can survive. Because we get that money and we are no longer going to [the supermarket] a lot” (Isaac, personal communication, January 20, 2016).

At Sekelanani the situation was similar in terms of savings, since the participants also tended not to take home vegetables every day. While the gardeners frequently referred to the high cost of food, the fact that they only took vegetables home a couple of times per week limited their potential savings. Gardeners seemed to over-estimate the amounts saved. According to one gardener, “I think I’m saving like 40-50% of what I was supposed to be spending at the shop” (Moses, personal communication, February 9, 2016). Yet this same gardener only took produce home from the garden two or three times per week, and consumed significantly more starch (in the form of porridge and bread) than vegetables. The only gardener who consumed significant amounts of vegetables indicated, “I was happy because you know, when you plant and you are not buying food—food is the most expensive thing” (Thato, personal communication, January 21, 2016).

In general, the gardeners’ savings were limited by their low consumption of vegetables. This was due to time constraints, limited food preparation knowledge, customs and dietary preferences more than any shortage of vegetables produced at the gardens.

6.2.2) Income from sales

With sales-oriented community gardens, the main channel through which they are expected to contribute to participant livelihoods is through income from sales. Neither case study garden, nor any other garden I visited in Johannesburg, was able to generate significant income for participants in this way. Both gardens practiced a fairly similar method of managing their incomes—money from sales was collected, deposited into the cooperative bank account, and then paid out to members at the end of the year. At Vunani, this system had been developed with input from their GDARD extension officer, who told the gardeners that paying out the money more frequently was not a good idea, because if any organisation came and expressed interest in providing support, they should be able to show that they have some funds of their own in their account. At Sekelanani, financial management had been extremely lax for many years, but was tightened up during the course of my fieldwork when a corporate sponsor provided significant funds, and in return required proper financial management and reporting of income and expenditure.

It was extremely difficult for me to ascertain the value of sales income at Vunani. This was due in part to the daily, weekly and seasonal fluctuations in sales, and in part due to the record-keeping system, which wasn't particularly stringent. In addition, most participants did not seem overly concerned with monitoring the amount of revenue they were collecting, while the participants who were best placed to have that information seemed reticent to disclose exact figures. This reticence may have been due to concerns that I would misuse the information or disclose it to officials who might then withdraw support for the garden. There was already some jealousy amongst other gardens in the area about the amount of support received by Vunani. When asked the daily value of sales, one participant explained, "I can't really say because each and every day it changes, sometimes it's R50 (about \$3.40), sometimes it's R100 (about \$6.80), sometimes it's R150 (about \$10.20) or 100-something, but we have never sold up to R200 (about \$13.60). It goes somewhere there" (Isaac, personal communication, January 20, 2016). The gardener responsible for counting and recording the money each day estimated that weekly sales averaged around R500 (about \$34). On a summer day in December, with plenty of kale available, she said they had sold R154 and R158 (\$12.06 and \$12.37) in the preceding two days. Another participant estimated R500-R600 (about \$34-41) per week in sales, though he rarely participated in sales transactions.

Based on an average of R500 in sales per week, the garden would generate about R26,000 (about \$1765) in sales revenue per year. Costs for the garden were limited to seeds, which cost about R20-R50 (about \$1.36-\$3.40) per packet, and occasionally transport to meetings. The land, infrastructure and tools at Vunani were all provided by the City of Johannesburg, GDARD or NGOs and volunteers. Even seeds and seedlings were frequently provided for free. Thus divided between the seven members of the cooperative, the annual payout in December could be about R3500 (about \$238). However, when I asked about the importance of the December pay-out for the household finances, one participant explained, “When we get it, maybe 1000 or 2000 or 3000, (about \$68, \$136 or \$204) it can make a difference at home, it makes a huge difference” (Isaac, personal communication, January 20, 2016). Another gardener was somewhat ambivalent about the value of the annual pay-out, noting how quickly the money runs out in January: “It help you because you can do something better, but you cannot buy the furniture, like that. You know the money's nothing this time, it's nothing, we get it, just finish now” (Margaret, personal communication, January 20, 2016). While one gardener said the money was “just small” (Rebecca, personal communication, February 9, 2016), another said, “it’s helpful, but now, it’s once in a while. It’s not worth really concentrating on. Because now, it’s once a year, and really, you patch here and there, and then it’s gone” (Samuel, personal communication, February 9, 2016). Given that all of the gardeners of Vunani were pensioners, it is likely that they received the government pension of about R1500 (about \$102) per month, though we did not discuss this. Some lived in households with adult children, who may have brought in additional income. Thus the December payout would have represented a “thirteenth cheque” or additional month’s income, rather than a significant livelihood contribution.

Interestingly, while most gardeners at Vunani did not feel the payout was very significant, they did include earning money amongst their motivations for working at the garden. As one gardener put it, “I like that we can sell some of the things and get some money to put into the bank” (Bongani, personal communication, February 25, 2015). Another gardener explained that he joined the garden to access food and to keep fit, but “also the fact that now we also get money, the little that we get we are able to buy bread” (Isaac, personal communication, 20 January 20, 2016).

The case of Sekelanani is rather unique amongst Johannesburg’s community gardens. As at Vunani, the land and infrastructure were provided free of charge, along with some of the tools, seeds and other items. Sekelanani gardeners also struggled to generate enough income from sales to meet their needs. However, due to their inner-city location, their organic farming practices and one member’s dogged commitment to making useful connections and expanding their markets, Sekelanani had a number of additional sales outlets beyond passers-by. These included, at various times over the course of my fieldwork: regular sales to the supermarket up the road, weekend food markets in affluent areas (see Photo 11 of market stall, below), organic food delivery via internet grocery providers, participation in occasional markets and City of Joburg events, and private sales to larger customers such as restaurants. These various channels enabled Sekelanani to make larger volumes of sales than would be possible if they were restricted to their immediate surrounding community. In addition, these alternative channels gave Sekelanani access to different kinds of customers with different food preferences, and higher disposable income.



Photo 11: Sekelanani weekend market stall

Despite accessing all of these different markets, the garden still struggled to generate income. I noted a number of challenges for the gardeners, one of the biggest being transport. Without a vehicle of their own, the gardeners had to pay very high transport costs to move their produce to markets—for a short trip of about 20 minutes (under

10km) to one of their markets, they had to pay about R400 (about \$31) for a round trip. With the R300 (about \$23) fee for having a stall at the market, that made it nearly impossible to generate profits from sales of items ranging from R5 to R10 (about \$0.40-\$0.80).³⁸ Whenever possible, the gardener who handled the markets found someone to drive her there, saving the transport money and therefore increasing her profits.

Another challenge inhibiting sales was the fluctuation in production. At times, the garden did not produce enough to meet the high demands of the supermarket up the road, which tended to order 50-60 bunches of spinach at a time, often two or three times per week. The garden was only able to deliver this quantity of vegetables at peak production times. When a corporate sponsor offered to improve drainage in the garden's lower field, and to build a new double-sized tunnel in the main field, all planting in those areas stopped. Yet due to delays in starting the construction work, these fields ended up laying fallow for months, leading to a massive reduction in sales (and income). Always resourceful and unwilling to accept defeat, one gardener reached out to her networks of gardeners around the city to gather enough organic vegetables to sell at her usual weekend market. Without her efforts, the garden would have had almost no sales revenues during that period.

It was impossible to know the sales revenues at Sekelanani. They oscillated dramatically over the course of my fieldwork due to seasonal fluctuations, the delayed construction work mentioned above, as well as the gardeners' frequent absences from the garden to attend trainings and other City of Joburg-sponsored events. One gardener explained that in the past, before any of the participants were employed at the garden (to be discussed below), she was able to hire five to seven casual workers and pay each of them R100 (about \$9.20) per day from sales revenue. That implies receipts of at least R500-700 (about \$46-\$65) per day during that period.³⁹ The supermarket orders (50 bunches of spinach) were worth R500 each, meaning income of R1000-R1500 (about \$92-\$138) per week, or more, just from those orders.

6.2.3) Other sources of income

³⁸ At the annual average exchange rate of ZAR 12.77=1 USD for 2015.

³⁹ At the annual average exchange rate of ZAR 10.85=1 USD for 2014.

In addition to sales, Sekelanani members also earned additional revenue through teaching. On one occasion in 2015, pupils from a nearby private school were brought to the garden for training on how to set up a food garden. The school paid R4000 (about \$313) for the training, which was then divided up amongst the members of the cooperative. Another cooperative I visited in central Johannesburg also earned income from training. Indeed, because the training was more lucrative than farming, members of that cooperative were frequently away from the garden, leaving it unattended for extended periods.

Sekelanani also benefited from prize money won in garden competitions. GDARD organises awards every year and awards prize money to the winning gardens in several categories. Sekelanani won these awards two different years, with prizes of R25,000 and R50,000 (about \$3041 and \$5181). Some of this money went to participants, but in general there was uncertainty about what had happened to the bulk of the prize money. One participant alleged that one of the garden's founding members had stolen most of it, though I was never able to ascertain the truth. A GDARD extension officer told me that he had seen many garden cooperatives fall apart due to infighting over how to spend prize money, and from what I was able to observe, a sudden influx of funding from a corporate sponsor certainly did provoke conflict. He also indicated that a successful garden, on about half a hectare of land, could make about R2000 to R3000 (about \$157-235) per month in sales. Even if we suppose such a garden has only four members (and most have at least five to seven members), that would be R500 to R750 (about \$39-\$59) per month in income, below the upper bound poverty line⁴⁰ for Gauteng province of R963 (about \$132) per person per month (in 2011) (Statistics South Africa, 2015a).

The president of the Sekelanani cooperative told me that the corporate sponsors wanted him to investigate “why the project is failing.” When I objected to the use of the term ‘failing,’ he said they had had a loss of R3000 (about \$235) the previous month from labour costs, and that even when they supplied the online grocery and the nearby supermarket, they didn't make much money. I was never able to tell how the

⁴⁰ The upper bound poverty line includes food and essential non-food expenditures. The poverty line has been criticised for using a standard food basket that does not meet people's daily nutritional requirements (Kroll, 2017, p. 2)

“loss” was calculated, though by this time I know that five or six members were receiving salaries via the sponsor’s funding.

6.2.4) Wages

The concept of wages has limited applicability to Johannesburg’s community gardens, most of which are organised as cooperatives and therefore pay members more of a “dividend” than a wage, often on an annual basis. However, the gardens do occasionally take on casual labourers to assist during busy periods, e.g. seasonal planting or clearing of old plants. At some gardens, GDARD is able to arrange a stipend for gardeners, of about R1500 (about \$117) per month through the Extended Public Works Programme (EPWP)⁴¹ or the Independent Development Trust (IDT).⁴² At others, the City of Johannesburg provides workers to assist on a part-time or occasional basis, from the Community Work Programme (CWP).⁴³

Both case study gardens occasionally benefited from volunteer labour, although this was more common at Sekelanani. At Vunani, the NGO that provided support sometimes organised for a group of volunteers from a company or school to assist with planting for a few hours. Otherwise, when the gardeners needed assistance, they sometimes found people willing to help in exchange for vegetables, or even more infrequently, for payment. In general, despite being short of hands at Vunani, the gardeners did not feel they had the money to pay casual workers.

Sekelanani was quite unusual, compared to other community gardens, for several reasons. First, due to its inner city location and its popularity with the City of Joburg, it received more publicity than most other gardens. As a result, school pupils and corporate groups frequently came to volunteer there. Shortly before my fieldwork

⁴¹ The Expanded Public Works Programme (EPWP) is a government programme that seeks to create decent work opportunities for the unemployed under four sectors: infrastructure, non-state, environment and culture, and social.

⁴² The Independent Development Trust (IDT) is a state-owned entity that manages the implementation and delivery of critically needed social infrastructure and social development programmes on behalf of the South African government (National Government Handbook, n.d.).

⁴³ The Community Work Programme (CWP) is an employment safety net that provides participants a minimum number of regular days of work in order to provide income security. The work performed must be ‘useful work’ that benefits the community, so it involves participatory processes to determine the ‘useful’ work needed (Department of Cooperative Governance and Traditional Affairs, n.d.).

began, they had a volunteer event for Mandela Day⁴⁴ that was promoted on the radio and attracted hundreds of volunteers.

When the garden was producing optimally, it was able to support five to seven casual workers at R100 per day. During the course of my fieldwork, there were often one or two casual workers at the garden. One of them explained that he started as a volunteer but then was asked to continue on a ‘scholarship,’ which was actually just a slightly formalised arrangement in which he received R100 (\$7.83) per day for his work.⁴⁵

In addition, the City of Joburg was able to arrange for several long-term volunteers at the garden to receive salaries of R2000 (about \$157) per month via the EPWP. The contract began in October 2014, for one year. This ensured that they had a consistent salary during that time, which would naturally contribute to food security. One of them specifically said that “yes, there’s enough” food at home, “because now I’m working” (Grace, personal communication, February 25, 2015). At other times, when people did not receive a salary, there was little or no money for garden members to take home, as funds from sales were often used to pay casual labourers. Receiving salaries from the City of Joburg created some confusion in terms of people’s responsibilities at the garden, since the EPWP workers were also expected to do community work for the Department of Social Development (DSD). The EPWP contracts were renewed for some time beyond the first year, but when I returned to the garden to visit after my fieldwork had ended, in August 2016, the contract had expired and the three ladies who had been employed via EPWP were distraught. They had returned to volunteering at the garden in the hopes that another opportunity for payment might come their way. On a later visit I learned that they no longer came to volunteer, but did occasionally come to the garden to pick vegetables to take home.

When a corporate sponsor agreed to support the garden for two years, they provided salaries for three casual workers (for a few months) and about R4700 (about \$368) per month for six members of the cooperative. They refused to provide salaries for three of the people on EPWP salaries who were long-time garden participants, but not

⁴⁴ The 18th of July, Nelson Mandela’s birthday, has been designated Mandela Day and is promoted internationally as a day to help others through 67 minutes of volunteer work, in honour of Mandela’s 67 years of public service.

⁴⁵ At the annual average exchange rate of ZAR 12.77=1 USD for 2015.

official cooperative members. This created a rift amongst garden participants, with those receiving EPWP salaries refusing to take instructions from those receiving salaries from the cooperative. Both of these sources of salaries—EPWP and the corporate sponsor—enabled garden participants to earn a regular salary for the first time since they began working at the garden, even if it was only for a finite period. This was the only garden, of all those I visited, where participants earned a regular salary.

6.3) Local economic development

Food sovereignty is concerned not only with the livelihoods of individual producers, but also with the economic sustainability of their communities. Thus beyond the livelihoods of garden participants, it is important to consider how the gardens fit into, and contribute to, their local economies. Research in the United States has demonstrated four main ways that local businesses contribute to their local economies: 1) labour costs paid to local residents (discussed above under wages); 2) profits retained in the community by local residents (discussed above under income from sales); 3) purchase of goods and services from other local businesses; and 4) charitable giving within the local community (Houston & Eness, 2009, p. 3). Such research has found that money spent at local businesses generates a significantly greater return to the local economy than money spent at national chains—as much as two to three times the level of local economic activity (Houston & Eness, 2009, p. 3).

One potential contribution, discussed in the chapter on access to food, is through lower food prices and reduced transport costs for food shopping. Both of my case study gardens sold a significant amount of their produce to passers-by who came on foot to make their purchases. The transport savings were more significant at Vunani, which was not near any other fresh produce shops or supermarkets. With regard to charitable giving, participants at both gardens mentioned helping the community as one of their motivations, and often donated food to institutions to help the most vulnerable. With regard to wages, Sekelanani contributed more in terms of employment opportunities for community members, as it frequently employed one or two casual labourers.

6.3.1) Upstream and downstream linkages

Another potential contribution to the local economy is through upstream and downstream spinoffs. Upstream opportunities might include purchases of seeds, compost and other inputs by the gardens (referred to above as purchases from other local businesses), while downstream opportunities would include food processing, such as drying, canning, pickling or preparing cooked meals, for sale. Unfortunately, I observed very few upstream or downstream economic linkages at the case study gardens. Most inputs were accessed through the formal sector, e.g. at supermarkets or large nurseries, often outside of the area where the gardens were located. When inputs were provided for free by the government or NGOs, they were also sourced through large suppliers in the formal sector. Seed saving and exchange, a simple way to save money and share community resources, was not in evidence in either community, though each garden did save some seeds for planting.

As for food preservation or processing, members of both gardens expressed some interest in doing this on their own, to prevent waste. At Sekelanani, in the face of a glut of tomatoes in December and no market to sell them, I helped the gardeners assemble a screen for drying and explained the high market value of sun-dried tomatoes. We made one batch, but then I never saw the screen again. I also experimented with a tomato salsa recipe for canning, and despite professed enthusiasm for the idea, the garden members did not take this further. At Vunani, one gardener had experience with canning, and also expressed interest in drying herbs and other vegetables. He put together a small box to use as a dryer, and tested it on rosemary. This was near the end of my fieldwork, so I did not get to observe whether he continued with his experiment. However, given the small size of the box, he would not have been able to dry much of the surplus produce available at the height of summer. While both gardens did occasionally sell to street vendors, I never observed anyone coming to buy produce for processing.

In theory, the gardens also contributed to their local economies by keeping cash circulating in the community. When people travel from the area around Vunani to the supermarket, their money moves out of the community and into the coffers of large corporations with headquarters in other parts of the city, and investors all over the globe. However, when they spend money at the garden, the money remains in the community. Studies have shown a high multiplier effect for local spending (Houston

& Eness, 2009), though in the case of Vunani I suspect the money moved out of the community after one more purchase, since there were very limited opportunities for garden participants to spend it in the immediate surrounds. Indeed, most garden members seemed to do their shopping at the large supermarket. Some gardeners at Vunani expressed the view that it was necessary to travel to the supermarket because it was cleaner, and the food available through spaza shops in the area was likely to be expired. Around Sekelanani, there were many more small independent businesses in the surrounding area, so the chances of a local spending multiplier were higher.

6.4) Discussion

In line with other South African research on urban agriculture, the economic returns from the case study gardens were quite small. Gardeners at Vunani saved about R100 to R150 per month on food expenditures, plus received a small annual payout, approximately equal to one month's old-age pension. At Sekelanani, the commencement of regular salary payments represented a significant departure for participants, and something quite different from other community gardens in Johannesburg. The reasons for the small economic returns from the gardens raise some interesting issues, many of which are not so frequently discussed in the literature.

As some researchers on the informal economy and urban agriculture have pointed out, it is unreasonable to expect poor people to 'grow themselves out of poverty' through UA, given the massive structural barriers they face (Battersby et al., 2015, p. 2; Philip, 2010). The very same spatial and structural issues that have created massive poverty and inequality in South Africa remain in place as the poor start UA cooperatives. Yet government policy continues to suggest that UA, with limited support, can be a road out of poverty (Gauteng Provincial Government, 2013). While the City of Johannesburg has recognised the need for greater support for urban farmers, particularly in terms of access to markets, this recognition has not yet translated into actual procurement from urban farmers (City of Johannesburg, 2012).

The relatively low productivity of South Africa's urban farms has been noted in the literature (van Averbeke, 2007). There are many reasons for this, including limited access to the necessary inputs, low skill levels and frequently labour shortages. My

case study gardens both produced below their potential, but for different reasons. At Vunani, the shortage of labour was the critical factor, particularly as all those working at the garden were pensioners. In addition, limited knowledge around soil health, combined with customer preferences for only a few well-known vegetables, meant that practices such as companion planting, crop rotation and composting were not fully implemented, leading to challenges with pests as well as unhealthy soil. At Sekelanani, labour shortages were also an issue, though these were generally due to frequent absences of project members at city-sponsored trainings and other events. Further, scheduling challenges around the construction of new infrastructure by the corporate sponsor left large portions of the garden unplanted for many months. While few gardens ever receive the level of support offered to Sekelanani, the poor communication between those offering assistance (whether corporate sponsors, government departments or NGOs) and the gardeners was indeed a common problem (discussed further in Chapters 9 and 11).

While the gardens were generally not producing at optimal levels, they also frequently had excess produce that went to waste—this was due to narrow vegetable preferences in the surrounding community, the timing of harvests as well as lack of access to bigger or wealthier markets (e.g. restaurants) for bumper harvests and/or unusual vegetables. Even when Sekelanani was able to connect with such institutional customers, it was not possible to maintain a supplier relationship with them due to fluctuations in production as well as transport challenges.

Seasonal fluctuations in production, and therefore in income, are common in all types of agriculture. Two methods to lessen this fluctuation are available to urban farmers, yet not widely practiced. One is the practice of permaculture, which enables year-round production. This was utilised at Sekelanani, and to a lesser extent at Vunani. The second method is food preservation or processing, such as drying or canning, to preserve summer produce for the winter months. While a few gardens around the city create ointments and other cosmetic or medicinal products from herbs, very few process or preserve their vegetables. My attempts to assist at the case study gardens in this regard were unsuccessful. The topic of food preservation was included in more than one farm school session offered to urban farmers by the University of

Johannesburg (UJ), and appeared to elicit interest amongst the farmers. I do not know if any of them actually implemented what they learned.

One farmer at Sekelanani, who possessed an extraordinary ability to network, was given an old juicer as a gift. This enabled her to process her vegetables—along with purchased fruits—into juices to sell at a Sunday market in an affluent neighbourhood. Later, she was given a better juicer, to continue these sales. This one garden member showed incredible initiative and ingenuity in promoting sales, in a way that no other member did. The juices were very popular at that market as well as other events, though the need to purchase fruits to put in them (since there were none available at the garden most of the time) did reduce the revenue.

The absence of food processing raises another issue, which is market demand. One significant barrier to greater income for the community gardeners is the narrowness of their immediate markets. Customers at Vunani frequently expressed a reluctance to purchase any but the most familiar vegetables, leaving others (such as the colourful ‘City Lights’ spinach variety) to go to waste. Customers were unfamiliar with some of the more unusual vegetables, such as artichokes, planted at Vunani by NGOs and volunteers. It is understandable that in the context of a limited food budget, people would not choose to experiment with unfamiliar foods. But this also means that the potential revenue streams of the garden are limited to those foods the customers already know. This also limits the potential for companion planting, and thus impacts on soil health. That issue will be discussed in greater detail in the next chapter on environmental sustainability.

Beyond their immediate community, Sekelanani gardeners managed to tap into broader markets to expand their income. The fact that their produce was organic helped them to access higher-income, health-oriented customers. They had a stall at weekend markets as well as occasional, once-off markets and events—all of which required one of the gardeners to work on weekends. They also managed to sell their produce through an online organic grocery. These channels enabled them to increase their sales revenues, but also came with challenges. The greatest of these was transport, a constant challenge for gardeners with no vehicle of their own. There were also communication challenges, leading to occasional disappointment on the part of

the farmers, if an event was not what they expected, or on the part of the potential customers, if the farmers did not bring what they expected, or arrive when expected. On more than one occasion, even when they were able to bring their produce to markets, it was rejected due to appearance standards, despite being high quality, organic produce.

When I attempted to help Vunani access a weekend market for their produce, they were not very enthusiastic. The main concern seemed to be that they already struggled to produce enough for their current customer base, so they would not have enough to sell to that market. Transport was also a concern, although the vendor at the market was willing to collect from the garden. By selling at that market, the garden would have entered a participatory guarantee system (PGS), in which farmers, consumers and other stakeholders jointly monitor and verify organic production methods while also sharing skills and knowledge. One gardener was impressed with the pest and weed control tips shared by the PGS team on their initial visit to the garden, while another was highly sceptical. Ultimately, the gardeners opted not to sell at the market or join the PGS system.

With all of these challenges, it is hardly surprising that community gardens generate limited income and alone do not lift their members out of poverty. While issues within the garden contribute to low levels of production, most of the barriers to higher revenues are beyond the farm gate—customer preferences, limited access to markets, externally imposed production standards and transport issues. Without addressing these, no amount of support for the gardens will turn them into profitable businesses. While food security and income generation are the two most common reasons given by government and NGOs for their support of UA, environmental sustainability is probably the third. The next chapter considers the contribution of the gardens to environmental sustainability.

Chapter 7: Environmental sustainability

7.1) Introduction

The science of agroecology refers to “the application of ecological concepts and principles to the design and management of sustainable agroecosystems” (Altieri, 2010, p. 121). This element of food sovereignty entails the use of agroecological production systems to improve the environmental sustainability of agriculture by working with nature instead of against it (Altieri, 2010; La Vía Campesina, 2007). This notion of ‘working with nature’ was one of the six principles of food sovereignty adopted at the Nyéléni meeting in 2007 by members of La Vía Campesina and their allies. It was explained as follows:

Food sovereignty uses the contributions of nature in diverse, low external input agroecological production and harvesting methods that maximise the contribution of ecosystems and improve resilience and adaptation, especially in the face of climate change; it seeks to heal the planet so that the planet may heal us; and, rejects methods that harm beneficial ecosystem functions, that depend on energy intensive monocultures and livestock factories, destructive fishing practices and other industrialised production methods, which damage the environment and contribute to global warming (La Vía Campesina, 2007).

Given this recognition of the interdependence of human beings and the natural world, food sovereignty proponents reject industrialised agriculture and the environmental destruction that comes with it in the form of deforestation, erosion, loss of biodiversity, water pollution and climate change, amongst others. They recognise that the ecological sustainability of farming is tied to its socioeconomic sustainability as a livelihood for small producers, and indeed to the future of humanity as a whole, via agriculture’s contribution to and adaptability to climate change.

While the term “agroecology” is not well known amongst urban gardeners in Johannesburg, many gardens do make use of environmentally sustainable practices. Sometimes this is the result of a commitment to sustainability, while in most instances it is merely an attempt to conserve financial or other resources at the garden. Other South African studies have also found that environmental practices are likely to be the

result of financial considerations, if they are practiced at all (Kekana, 2006; Onyango, 2010; Webb & Kasumba, 2009).

This chapter considers the contribution of the gardens to several elements of sustainability, including the saving or recycling of resources (Section 7.2), agroecological methods of production (Section 7.3), and the reduction of transport requirements (Section 7.4). In addition, I briefly discuss the environmental health risks associated with UA in Johannesburg (Section 7.5), before concluding with some of the barriers to greater adoption of agroecological methods and some of the potential challenges posed by climate change.

7.2) Saving, reusing and recycling resources

One frequently mentioned environmental benefit in the literature on UA is its potential to “close the loop” by recycling waste material back into production systems. Organic waste (e.g. food or garden waste) can be recycled into compost or mulch while greywater⁴⁶ or other forms of wastewater can be redirected into agricultural production (Cofie et al., 2006; Deelstra & Girardet, 2000). This section examines the saving, reusing or recycling of water, organic waste materials as well as packaging in the case study gardens.

7.2.1) Water

In some parts of the world, urban gardeners use wastewater—from sewage drains, rivers or the household—to water their crops. This is not common amongst gardens in Johannesburg. Of all the gardens I visited, only one used greywater for irrigation. That garden was a teaching garden run by a highly skilled permaculture expert, who had constructed a series of pools that naturally filtered the water from the household. Virtually every garden I visited used fresh water to irrigate, usually from the tap. A few had rainwater tanks, usually donated, but even those gardens that had the tanks did not necessarily use them. This use of fresh water in a water-scarce country, and indeed during a drought, seemed a bit of a missed opportunity.

⁴⁶ Greywater is wastewater that has been used by households or businesses (e.g. for washing dishes or laundry) that is then re-used for watering the garden.

At the two case study gardens, they used municipal tap water. In the early days at Vunani, they did not have a tap on site and had to walk to one of the members' homes up the road (about 300 metres away) to fetch water, and then use watering cans to irrigate. Later, with the assistance of an NGO, they were able to get two municipal taps installed in the garden. The exact mechanics of this assistance were never clear to me. I asked if they have to pay for the water, and this again was a bit unclear. One gardener explained that part of the neighbourhood pays for water and another part, where the garden is located, does not: "From this side [pointing in one direction], people are paying for their prepaid meters, but from this side up to there [pointing the other direction], people are not paying. This meter was connected on the side where people are not really paying. But we have decided that we are not going to not pay for water, so we have decided to take out R50 (\$3.92), to pay the meter. So we don't really have much document or receipts or something to say this is how much you're paying per month" [interview Isaac, 20 January 2016]. Presumably the actual cost of the water would be significantly more than R50 per month, if they were to have a properly functioning pre-paid meter. On one occasion, two members had to go to the municipal offices "to sort out a water problem," though they did not explain to me what sort of problem it was.

Over time, the gardeners at Vunani were able to run pipes from one of the taps down to the lower part of the garden. They also received some hoses as a donation, to which they can attach a sprinkler that they run to different parts of the garden to water. This has saved them significant work, in terms of watering. There seemed to be little awareness of water saving techniques, as the sprinkler was frequently on at the hottest time of day, when evaporation rates are highest. Also, one member sometimes used it to 'water' the paths or the entry area, rather than the plants.

At Sekelanani, the City of Joburg did not charge for the use of water. An official from the City's agri-resource centre there estimated that water would cost them R20,000 (about \$1566) per month if they had to pay for it. This seems an extraordinary amount. Sekelanani had a couple of large rainwater collection tanks that had been donated by a sponsor. However, these were not next to either the building on site or the large tunnels, from which they could have collected rainwater runoff. Instead, they were up at the top of the garden, and municipal water was pumped into them. This

was another missed opportunity, particularly notable in a garden that practiced organic permaculture and prided itself on being environmentally friendly. Sekelanani did save water, however, through the use of drip irrigation. They had a very large drip irrigation system in both of the two large fields, which had been donated by a sponsor. However, there were some significant leaks in the system, and because they were reliant on the sponsor to come and fix them, these leaks continued for a long time. I thought we might be able to patch up the system, temporarily, with duct tape, but there was none on site and the gardeners seemed to prefer to wait for the sponsor to come. This also affected the health of the plants, as some of them were not receiving water while those near the leaks were over-watered.

At every agricultural forum and meeting that I attended,⁴⁷ gardeners from different parts of the city complained about water challenges. Some did not have access to water at all on the plots they were using. Some had borehole water, but the pumps were broken so they could not access it. In Johannesburg, water access and costs are a barrier to gardening. After land, it was the most commonly mentioned challenge in interviews and meetings. GDARD sometimes assists gardens to install a borehole and irrigation system, or provides a rainwater collection tank, so that they do not struggle with the burden of paying for municipal water. The main NGO supporting gardens also donates rainwater tanks. Yet in general, it appeared that neither the City of Joburg's agri-resource centres nor GDARD's extension officers placed much emphasis on water-saving technologies or methods. The exception was GDARD's LandCare programme, which did try to encourage water-saving techniques. Given the high cost of water in Johannesburg, and the water scarcity in South Africa, it is imperative to find ways to use greywater for irrigation and to adopt water-saving techniques.

7.2.2) Waste

The recycling of 'waste' is a natural component of the agricultural cycle, with the creation of compost from organic waste being the most obvious, but by no means the only, example. Before the introduction of motorised transport, for example, vegetable growers in Paris, France collected horse manure from the city to fertilise their

⁴⁷ I sometimes accompanied the gardeners from the case study gardens to meetings, trainings, fora, etc. sponsored by the City of Joburg or GDARD, or organised by groups of urban farmers themselves.

extremely productive farms (Deelstra & Girardet, 2000, p. 49). Organic ‘waste’ may in fact be thought of as not being waste at all, but rather a different stage in the nutrient cycle, in which nutrients move between the soil, plants and animals before returning to the soil.

Karl Marx’s concept of socio-ecological metabolism refers to this cycling of materials between humans and the environment, or the transformation of natural materials into essential commodities through work, and then their return to nature (Wittman, 2009). The concept of metabolic rift refers to the separation of human activities, e.g. agriculture, from natural processes, which creates socio-ecological crises (McClintock, 2010; Wittman, 2009). When agriculture recycles organic waste back into the soil, it closes the nutrient cycle and diminishes metabolic rift (McClintock, 2010, p. 195). Urban agriculture reduces metabolic rift in two ways—UA can reconnect people in cities with nature and it can also close the nutrient loop by reincorporating urban wastes into the agrarian production cycle.

In general, it seems that waste recycling in Johannesburg’s community gardens is often more of a socioeconomic necessity than a deliberate ecological strategy. At Vunani, for example, weeds were collected in a heap, dried and then made into compost. At times, City Parks or others with grass cuttings brought them to the gardens to be made into compost as well. The gardeners seemed to have varying degrees of knowledge as to the benefits of compost for soil health. Indeed, in the early days of the garden, they burned the weeds, which led to conflict with the neighbours over the smoke. One member suggested that they make compost, but the rest of the group was sceptical. As he explained: “I decided no, let me do it on my own, and show them the process. But now no one is interested” (Samuel, personal communication, February 9, 2016). The same garden member also makes a natural fertiliser or ‘worm tea’ through vermiculture, which involved feeding garden waste to worms in an old bathtub. As with the compost, it seemed most of the other members had little understanding of how the ‘worm tea’ was made or why it was necessary.

Soil fertility was a challenge at Vunani, for several reasons. First, the land was previously used as a dumping site. It runs under high-tension electrical wires and therefore cannot be used for building, but in the past residents of the area did not

hesitate to dump rubbish there. The clearing of just a portion of the land for gardening was extremely labour-intensive and took months, according to the GDARD extension officer assigned to the garden. Indeed he doubted the group would accomplish it. The land was cleared in stages (see Photo 12 below), and the final sub-plots were cleared during the time of my fieldwork, years after the garden was started. Second, the limited rotation of crops meant that the plants were constantly drawing the same nutrients out of the soil, without replenishing them. This concept will be discussed further in the next section on agroecological growing methods, but suffice it to say that as a result, it was necessary to add nutrients back into the soil through compost or fertiliser. These are expensive when purchased in shops, and given the size of the garden, the volumes needed would be far more than the gardeners could transport or afford. Thus making their own compost was critical.



Photo 12: Portion of uncleared land, Vunani

Beyond composting and making worm tea fertiliser, the gardeners also recycled paper waste at Vunani. On more than one occasion, I saw the members collect old cardboard or newspapers from the side of the road to use to line the spaces between their raised beds, or even to use as mulch. They also collected ash from a nearby braai⁴⁸ shop to sprinkle around potato plants to keep pests away.

⁴⁸ 'Braai' means barbeque. At this shop, customers could select meat and have it cooked outside on an open grill to eat on site.

These practices reflected the gardeners' ingenuity in recycling waste material rather than having to pay for inputs from shops. The fact that they did not stem from environmental consciousness was made clear to me when we collected bits of rubbish after wind had blown it into the garden. This happened often, filling the garden with beer bottles, food packaging, condom wrappers, old toys, pieces of clothing and all sorts of other waste. We separated the rubbish into paper (to be used in the garden), glass (to be recycled for cash) and plastic (to be burnt). The burning of plastic created a heavy smoke that must have irritated the neighbours more than the burning of weeds, yet somehow this practice continued. Other studies have also found that environmental practices associated with low-input agriculture may be a matter of necessity, rather than environmental awareness (Carruthers, 1996).

Unlike Vunani, the members of Sekelanani had an explicit environmental mission. The two core members, at least, both expressed the importance of chemical-free, environmentally friendly food production, something they had learned about in permaculture training courses. Despite this, their recycling practices were fairly limited. The garden had a compost pile, though I rarely saw anyone apply the compost to the fields. When funding permitted, they purchased organic fertiliser, and even negotiated support from an organic input company that agreed to help with soil nutrition (fertiliser) as well as organic pest management. As was the case with water usage, the practices in terms of recycling did not align with the environmental philosophy of the garden. As far as I could tell, the gardeners did not practice recycling because they did not need to—many inputs were provided free of charge by sponsors, whereas at Vunani, recycling was the result of necessity.

7.2.3) Packaging

Both gardens tended to reuse food packaging. Again, this seemed to be the result of limited resources available to purchase such things. At Vunani, customers were encouraged to bring their own plastic bags for their produce. However, if they forgot, there were usually a few old bags (from supermarkets) available for them to use. The gardeners regularly collected old two-litre plastic drink bottles, which they refashioned into little shade tents for newly planted seedlings (see Photo 13 below).



Photo 13: Recycled drink bottles protect seedlings, Vunani

Similarly at Sekelanani, customers were supposed to bring their own bags. The gardeners sometimes used old drink containers to grow seedlings, or old plastic wrap (from the catering section of the supermarket up the road) to protect seeds in newly planted beds and help them to germinate. The gardeners collected old cardboard boxes from the supermarket to pack their produce in when selling larger orders. When one member started making juices to sell, she collected old juice bottles from another juice business to reuse, before eventually finding a source of cups to use.

In general, it seems that gardeners' choices to save resources, reuse or recycle materials were based on practical and financial considerations, far more than on environmental ones. When the necessity for conservation of resources is removed, e.g. through provision of free municipal tap water or free compost, these practices fall away. When there is no source of new free inputs or packaging available, however, gardeners creatively adapt and reuse materials in a way that is ultimately environmentally friendly.

7.3) Agroecological methods

The crux of food sovereignty's commitment to environmental sustainability lies in its embrace of agroecology as a philosophy and a method of production. This entails not

only a different set of practices from those used in conventional, industrialised agriculture, but an entirely different philosophical outlook, in which agricultural production is integrated into the broader ecosystem, “enhancing the habitat so that it promotes healthy plant growth, stresses pests, and encourages beneficial organisms while using labour and local resources more efficiently” (Altieri, 2009, p. 109). This section will consider some agroecological methods practiced, or not practiced, at the case study gardens in order to maintain soil health, control pests, prevent diseases and limit growth of weeds.

7.3.1) Organic

As it is commonly understood, organic agriculture refers to the growing of crops without the use of synthetic chemicals, fertilisers, pesticides or herbicides. However, this represents the narrowest possible definition of organic production. In reality, “Organic agriculture is a whole system approach based upon a set of processes resulting in a sustainable ecosystem, safe food, good nutrition, animal welfare and social justice. Therefore organic production is more than a system of production that includes or excludes certain inputs” (South African Organic Sector Organisation, 2016, p. 1). Trying to reproduce the methods of industrial monoculture production without the synthetic chemicals would not work—that is why organic production must utilise entirely different methods, based on an ecological systems approach.

In South Africa, as elsewhere in the world, agricultural producers may seek third party certification for organic produce, though small farmers find this costly and cumbersome to obtain (Department of Agriculture Forestry and Fisheries (DAFF), n.d.). Smaller producers often opt for a participatory guarantee system (PGS), in which participating producers, consumers and other stakeholders ensure quality and compliance by monitoring each other while also sharing knowledge to help each other improve. In the community gardens I visited in Johannesburg, the use of chemical inputs was fairly limited, though this was largely due to financial constraints, as is common amongst small-scale producers (Carruthers, 1996). Even when NGOs taught gardeners about the logic of organic production and the alternative methods of fertilisation and pest and weed control, they only sporadically put these methods into practice.

For several years Vunani received support from FTFA, an NGO that promotes organic agriculture. Part of the process of providing support for a garden, according to NGO personnel, includes providing organic seeds and seedlings, compost, mulch, training on organic planting methods and also tips on how to cook some of the less well-known vegetables that are provided (Personal communications with NGO staff, June 10, 2014 and March 18, 2016). From observing practices in the garden, I had doubts as to the efficacy of this training, assuming it was indeed provided. On numerous occasions, I observed one participant spraying the plants from a backpack-style sprayer. Several times, I saw this participant bring out bottles of Malasol,⁴⁹ a harmful pesticide, on days when she used the sprayer. Several times I also saw containers of Doom (Blue Death),⁵⁰ a commonly used household pesticide. Neither Doom nor Malasol would qualify as organic under any circumstances, yet they seemed to be in regular use in the garden.

I asked participants about what they'd learned from the NGO, especially about the use of chemical sprays. The same participant who brought the Malasol and Doom to the garden and sprayed with them on numerous occasions told me, "No, they said we must use organic." I asked if they indeed used organic and she said yes. I then asked if they used any chemical sprays and she said no (Rebecca, personal communication, February 9, 2016). One day when she was spraying, she told me it was safe, not poison. On another occasion, this garden member warned me to keep my arms covered while weeding so that insects wouldn't get on me. She said she sprays all the time *with chemicals*, but the insects still come. That same day I asked another participant about the spray, and whether the garden was organic. He said yes, it's organic, and the spray was their own mixture, made with liquid soap (a practice taught by the NGO, and considered acceptable in organic farming). I was never able to reconcile what the gardeners told me with what I saw, nor to ascertain what exactly the gardener who routinely sprayed with Malasol and Doom understood the term organic to mean.

⁴⁹ Malasol is an organophosphate pesticide that is listed as harmful by ingestion, inhalation and contact. It is also listed as dangerous for the environment (Efekto, 2014). In South Africa it is classified as a level 3 hazard (out of 5).

⁵⁰ The active ingredient in Doom Blue Death is deltamethrin, a pyrethroid insecticide classed as a level 3 hazard (out of 5).

Other garden participants, whom I did not observe spraying their section of the garden, told me they didn't know what the others used. One told me: "Chemicals? To spray? Yeah they buy it but I don't know it's right, because sometimes when you spray it looks like it doesn't help nothing. Some other vegetables, like the beans here, they spray it but it doesn't help, there's a lot of things there in the beans, little things, worms... They can't grow nicely" (Margaret, personal communication, January 20, 2016). Another was clearly not interested in organic production, as he explained to me the need to spray. He told me with great admiration how in Limpopo, on the farms of a large agri-business there, "they have all the resources. They no longer use people to spray, they use airplanes to spray" (Isaac, personal communication, January 20, 2016). In his mind, this high-tech, chemical-laden approach to agriculture represented a model of successful commercial farming.

While chemical pesticides seemed to be in regular use at Vunani, they did not use chemical fertilisers or herbicides. This seemed to be due to financial constraints. They made compost by drying out their weeds, as mentioned above, and did all of their weeding by hand. When I asked one member if they used chemicals, he thought I was referring to fertiliser. "No, no we don't use," he said. We "only use the compost, just a natural. Getting it ready to be used and then we bring it back to the soil" (Samuel, personal communication, February 9, 2016). Weeding was done manually, although when possible the gardeners put mulch around their plants to deter weeds. This only happened if GDARD or City Parks arranged to have some grass cuttings delivered to the garden—these were not always the best mulch, as they seemed to contain grass seeds that caused additional weeds to grow.

The situation at Vunani puzzled me, as those who seemed to best understand the concept of organic said the garden was organic, while apparently spraying pesticides. The others, who did not appear to understand or care about organic production, did not spray but seemed to want to. The participant who told me they made their own sprays did, on another occasion, actually make a herbicide spray from rhubarb leaves, which he'd learned about from the people who came to talk to the gardeners about joining an organic PGS group. This participant was the one who most frequently expressed interest in learning new ways of doing things. He told me he'd made the rhubarb spray as an experiment, and would know in a few days if it worked. In

discussing the possibility of selling at an organic market, I told him they would not be able to spray chemicals, as one of the other participants seemed to do. He said the problem is that you can't force people to change how they do things. When I recommended that they visit my other case study garden, to see successful organic farming in practice, he thought that might help. Sadly we were never able to arrange the visit.

Sekelanani, by comparison, used their organic practices as a marketing strategy. Their organic production methods enabled them to sell their produce at wealthier suburban markets and through online grocery merchants. It helped that the two core garden members had received training in organic production—one had been through two organic permaculture courses at Siyakhana, a garden associated with Wits University School of Public Health, while the other had taken many courses on all forms of agriculture, and generally read every piece of information he came across. As he explained it: “What we have learned from the scientists, and my upbringing also, we practiced something with no chemicals, using the kraal⁵¹ manure and whatever.... I prefer growing things the natural way. Because chemical fertiliser, or chemicals, does kill the microorganisms inside the soil” (Moses, personal communication, February 9, 2016). The other garden participants, though less knowledgeable about organic practices, nonetheless understood that the customers “come to buy here because they buy organic” (Lindiwe, personal communication, January 21, 2016).

Because they did not use chemical pesticides, the gardeners at Sekelanani controlled pests by other means, such as planting marigolds at the end of vegetable beds, planting onions between other plants or burying comfrey leaves with their potatoes, to keep pests away. They also knew about making their own pest control sprays from chillies, garlic and other natural ingredients, although I never saw them actually do this. Instead of chemical fertiliser, they maintained high levels of soil health through companion planting, crop rotation and use of compost. For weed control, they used mulch when they could access it, either from GDARD or Siyakhana. Mostly they just weeded manually. The gardeners at Sekelanani indicated that their extension officer from GDARD did not have training in organic or permaculture production—

⁵¹ The *kraal* is the area where the cattle are kept.

according to another extension officer, this kind of training was not regularly provided at GDARD. As a result, extension officers were not in a position to provide the type of specialist assistance required by organic gardens.

7.3.2) Biodiversity

In agriculture, there are three kinds of biodiversity. There is species diversity, which refers to the number of different species being produced (South African Organic Sector Organisation, 2016, p. 3). Maintaining species diversity on a farm means practicing intercropping or companion planting—in other words, planting a number of different species at the same time, in the same space, so that they provide each other with protection from pests and contribute to soil health. It also requires crop rotation so that soil nutrients are not depleted over time.

There is also genetic diversity, which refers to diversity within a species (South African Organic Sector Organisation, 2016, p. 3). This means having multiple varieties of any given species (e.g. tomatoes), which promotes resilience in the face of pests, diseases or changing climate conditions. This is the opposite of the standardisation that occurs in industrial agriculture, in which seed companies develop a single variety of a plant (e.g. a type of potato) that is mass-produced and supposedly appropriate for all contexts.

The third kind of biodiversity is ecosystem diversity, which refers to the types of ecosystems and habitats (South African Organic Sector Organisation, 2016, p. 3). In the case of organic agriculture, the farm is the habitat of many kinds of plants and animals, from soil microorganisms to beneficial insects to birds and other wildlife. While chemical-heavy conventional agriculture tends to kill these, either directly or by destroying their habitat, organic agriculture seeks to protect them as part of its whole ecosystem approach. This is particularly important in the case of urban agriculture, which maintains green spaces in urban areas.

Aside from being ecologically beneficial, maintaining diversity has also been shown to be productive. Increasing species diversity by intercropping groundnuts with maize in Malawi led to improved soil health and increased output, even with decreased use of chemical fertiliser (Msachi et al., 2009). Small farmers with diversified production

have also been found to be more productive in Latin America (Altieri, 2009, p. 105). Genetic and species diversity also contribute to resilience, in the face of climate change and extreme weather events, as seen in Central America after Hurricane Mitch struck in 1998 (Altieri, 2009, pp. 107–8). In rural South Africa, some small farmers manage to maintain significantly more agricultural biodiversity—particularly with regard to medicinal plants—than large-scale commercial farmers, despite intense challenges (African Centre for Biodiversity, 2017).

As mentioned before, the gardeners at Vunani grow a limited variety of crops. This is due to the limited availability of seeds at the supermarket where they purchase them, as well as the narrow preferences of the garden's customers, who are hesitant to try any new or strange vegetables. The customers, and indeed the gardeners themselves, are most familiar with kale, spinach, pumpkins, onions and tomatoes, so that is what the garden mainly produces. The NGO supporting the garden planted herbs and other less common plants (such as artichokes, fennel and rhubarb) at the garden, but neither the gardeners nor their customers knew what to do with these, so often they were pulled out or ignored. When the gardeners tried to plant a different variety of spinach from the one most familiar to their customers, people refused to buy it. This limited market for diverse crops creates a challenge in terms of organic production, as companion planting is an important technique to maintain soil nutrients and also to combat pests. At Vunani, there is no market for basil, so it will not be planted alongside the tomatoes—which would be a mutually beneficial relationship. This is something that would need to be addressed by NGOs and government departments that seek to promote organic methods. There is thus limited species diversity and genetic diversity at Vunani. While working in the garden I observed a fairly diverse range of birds and insects, suggesting the garden does contribute to maintaining ecosystem diversity in an area with limited green spaces.

By contrast, at Sekelanani, the gardeners grow a great variety of different plants. One gardener explained the value of companion planting to me as he prepared beds for planting tomatoes, sweet basil and lettuce. He said this would give them three income streams, as the lettuce would be ready faster (after about 50 days) than the tomatoes (which require 3 months). He also explained that the tomatoes provide shade for the lettuce, and the sweet basil helps the tomatoes to taste better, while the different

plants provide different nutrients that the others need. At Sekelanani, they routinely planted squash amongst the maize, and onions between spinach or kale plants. In areas where they did not practice inter-cropping, e.g. in a small patch devoted exclusively to green beans, they developed problems with pests. Sekelanani was slightly less successful in terms of promoting genetic diversity, largely due to challenges in accessing seeds or seedlings. However, they did tend to plant several types of tomatoes, and if possible, more than one type of kale. As at Vunani, I observed many types of birds and insects during my fieldwork at Sekelanani—I would guess that there were more soil microorganisms as well, due to the focus on soil health.

7.4) Reduced transport

Another element of ecological sustainability is the adoption of alternative, more localised distribution systems to further reduce agriculture's carbon footprint. There are three ways in which UA may do this. First, by making their own inputs (e.g. compost), gardeners reduce the need for these to be produced and transported to them. Second, by selling in their immediate communities, they reduce 'food miles,' the distance food travels from fields to consumers. In the conventional system, food travels long distances in refrigerated transport, which uses significant amounts of fossil fuels (Gonzalez Novo & Murphy, 2000, p. 330). At a Johannesburg supermarket, a significant amount of the produce has come from the Western Cape, Limpopo or Mpumalanga,⁵² if not from other countries. Third, by growing food in 'food deserts,' the gardens reduce the need for their customers to travel by taxi to purchase their groceries.

At Vunani, some gardeners expressed an awareness of the distance food at supermarkets travels from farm to plate. However, this was linked to a concern with the food's lack of freshness, rather than an awareness of carbon emissions. Customers at Vunani expressed a similar concern that produce in supermarkets was older than food from the garden, and therefore less nutritious. The gardeners at Vunani also sought to assist pensioners in the community by reducing their need for transport to the supermarket, to facilitate saving on expenditures. As with many environmental

⁵² Provinces of South Africa with significant agricultural production.

benefits of UA, at Vunani reduced transport requirements were the result of financial considerations, not environmental consciousness.

Out of all of the gardeners, only one, at Sekelanani, expressed an awareness of the concept of food miles. He indicated that if more people grew their own food, the carbon footprint would be minimized. Other than this, Sekelanani's contribution to reducing food miles stemmed from the fact that most customers came on foot to purchase food grown on site. However, given the presence of other food retail outlets in the immediate vicinity, it didn't necessarily reduce customers' transport usage significantly. In addition, one gardener from Sekelanani participated in markets outside of the area of the garden, which required transport. However, this gardener's travel still represented far shorter distances than those travelled by most produce in supermarkets.

Even amongst the NGOs and government departments supporting urban agriculture, there was little mention of food miles. This may be due to the strong focus on food security and poverty reduction goals, rather than environmental ones, in their UA programmes. However, in light of South Africa's high level of carbon emissions, this benefit of UA might be worth emphasising further.

7.5) Environmental risks

One of the concerns regarding the practice of UA is that it may suffer from, or contribute to, environmental pollution and related risks. Contaminated soils, polluted water and air pollution all pose risks to the safety of vegetables grown on urban plots (Deelstra & Girardet, 2000; Mougeot, 2006). At the same time, the use of pesticides or other chemicals in UA, or the presence of livestock in close urban quarters could also pose health risks (Mougeot, 2006). While environmental health risks are not a focus of this study, they are worth mentioning as without proper policies in place to mitigate these risks, UA will not be capable of achieving the desired outcomes.

7.5.1) Contaminants and pollution

Given that Vunani is located on a former dumpsite, the issue of possible soil contamination seemed quite pertinent. GDARD has a land rehabilitation programme that includes the use of phytoremediation to clean up old dumping sites, and in that

programme soil testing is standard (GDARD official, personal communication, 15 October 2015). However, the GDARD extension officer supporting Vunani was from the food security programme, which is entirely separate. From what I could gather, nobody had ever tested the soil at Vunani—not the City of Joburg, the NGO providing support, and not GDARD. The water used in the garden was most likely of good quality, because it was municipal tap water.

The use of Doom and Malasol pesticides at Vunani, as mentioned above, also constituted a health risk. I never saw the gardeners wear protective gear when spraying. They also did not appear to wait long before picking and selling vegetables that had recently been sprayed. As a gardener in Orange Farm explained to me, she used Doom when she started out because she didn't know any better. She was able to adopt safer, natural methods of pest control only after she received training from an NGO. The personnel from the NGO that supported Vunani for several years would have been shocked by the use of an inappropriate, toxic pesticide, but this indicates a failure in their training of the gardeners, either in terms of the benefits of organic, or more likely, in terms of methods of natural pest control that are affordable and effective. Sprays made of chillies and garlic sound simple enough, but at Vunani they did not grow garlic (until the very end of my fieldwork when they decided to try it) and nobody from the garden seemed to use it at home in their cooking. So this was not a freely available ingredient.

The burning of plastic at Vunani was one other potential health risk (see Photo 14 below), as the fumes from the smoke created pollution. It was not clear to me why the gardeners did not just put the plastic out for Pikitup, the municipal rubbish collection service, to take away—particularly as rubbish was collected twice a week in that section of Alexandra. The environmental health risks at Vunani did not appear to garner any attention from any of the organisations supporting the garden.



Photo 14: Burning rubbish next to compost heap, Vunani

7.5.2) Environmental risk management

On the opposite end of the risk spectrum was the misplaced attempt of the corporate sponsor at Sekelanani to improve health and safety at the garden, despite the absence of any serious health risks. Part of the agreement signed with the corporation that agreed to sponsor Sekelanani for two years was that they would buy 80% of the garden's produce, which would be used by the company's catering service. In order for them to buy this food, the company said, Sekelanani would need to comply with their health and safety standards. These were generic standards, not based on any actual risk assessment at the garden. To ensure compliance, they brought in a compliance officer to sit at the garden. This officer was paid a salary that was more than double that of the gardeners, to sit in the office and do virtually nothing except type up forms and templates that nobody ever filled in. That, at least, was the perception of the gardeners.

The sponsor also brought in landscapers to "clean" the garden by removing plants growing around the periphery, without regard to whether the gardeners wanted those plants removed. They installed insect traps in the garden's structures and rodent traps all over the garden, and then sent hygiene officers on a regular basis to check the traps. The sponsor built a vegetable packing and washing shed to promote proper food

handling and provided chemicals for cleaning the vegetable packing shed (which they claimed met organic standards, though this was not clearly indicated on the labels), as well as a detailed schedule for cleaning all structures and rules for the gardeners' hygiene that seemed more appropriate to a food processing company than a farm (e.g. daily fingernail checks). They also placed 'No Smoking' signs in the garden and instructions for hand washing in the bathroom, written in complex, scientific language (e.g. "lather the dorsal side of your hands"). They provided training on first aid, fire fighting, and what to do in case of an earthquake—despite the fact that there had been none of these kinds of emergencies in the garden's many years of operation. The gardeners did not comply with most of these new procedures, continuing to operate in the same ways they had before the sponsor came on board—there was no enforcement, and hygiene did not appear to be a major concern.

The sponsor never asked the gardeners if they wanted or needed any of these things—they simply took charge and imposed them on the garden. During this time, the garden paid much of the sponsorship money back to the sponsor for these 'services' the sponsor provided. Throughout the sponsorship period, the garden produced less than usual, due to the absence of the gardeners from the fields for training, as well as the delays in infrastructure construction that prevented planting. And perhaps most disappointing for the gardeners, the sponsor never bought any vegetables from the garden, in spite of a contractual commitment to do so. I would have been hard pressed to identify any serious health risks at the garden prior to the beginning of the sponsorship, and I certainly didn't notice any real improvements after all of the changes made by the sponsor. This was perhaps the worst example of poor communication and mismatched support of the many that I saw at gardens around Johannesburg (discussed further in Chapters 9 and 11).

7.6) Discussion

My overall impression of the level of environmental awareness at the two case study gardens was that it was fairly low, with the exception of the commitment to organic production at Sekelanani. In general, one or two individuals demonstrated greater knowledge of environmental issues, though this did not necessarily translate into stronger environmental practices. However, the mix of agroecological methods with less environmentally friendly ones practiced at the gardens demonstrated a more

important lesson. While an environmental ethic can be cultivated through education and training (Olivier, 2014, p. 165), gardeners will adopt agroecological practices if they find them practical, efficient and effective. Just telling gardeners to adopt an agroecological practice, without demonstrating how it works to their advantage, is futile. At Sekelanani, conditions seemed right for agroecological farming: customers expressed a preference for organic produce, some of the gardeners were aware of climate change and other environmental issues, and at times, sponsors provided appropriate support such as organic seeds, mulch or organic fertiliser. Yet adoption of agroecological practices was still constrained to some degree by access to resources (e.g. organic seedlings or sustainable packaging), knowledge (how to fix a drip irrigation system or ideal crop rotation cycles) and other concerns (e.g. markets for certain crops).

One gardener at Sekelanani, who had studied organic agriculture, told me that it was the kind of agriculture his mother had practiced in rural Limpopo, without any formal studies—a recognition of the traditional ecological knowledge of black subsistence farmers who understood their dependence on the land. This kind of indigenous knowledge, and the indigenous cosmology in which it is grounded—has been celebrated in other contexts for its contribution to sustainable resource management and use (Gudynas, 2011; Houde, 2007; LaDuke, 1994). Given South Africa's history of land dispossession, forced labour migration and urbanisation, it is understandable that Johannesburg's urban gardeners may not feel the same connection to natural systems and cycles as their forebears (Cock & Fig, 2000).

One GDARD official expressed frustration that even after people at gardens were taught sustainable practices, they often did not adopt them, or adopted them briefly and then returned to more conventional practices (GDARD official, personal communication, July 23, 2013). If Vunani provides any lessons in this regard, it is that such training must be longer-term and must involve both demonstrations (e.g. study visits to other gardens) as well as support. Also, those who teach sustainable practices to Johannesburg's community gardeners must start from a recognition of their specific constraints, in terms of access to the necessary ingredients for natural sprays (e.g. garlic, chillies, rhubarb), markets for the diverse soil-sustaining and pest-detering plants they are encouraged to grow (e.g. legumes, garlic) as well as a lack of

transport to acquire large amounts of items such as compost or mulch. As long as trainers fail to recognise this reality, or as long as those providing support to gardens make their own assessments of the gardeners' needs without consulting them, their interventions are bound to fail. This top-down, technocratic approach to training and extension has been found to be demobilising as well, and thus has been replaced in some parts of Latin America with a more horizontal, farmer-to-farmer form of learning (Kibwika, 2009; Percy, 2005; Pretty, 2008a). This will be discussed in more detail in Chapter 9.

Beyond the issues of appropriate training, long-term support and customer preferences, I noticed that an absence of knowledge sharing amongst gardeners, within and between gardens, further hindered adoption of agroecological practices. At Vunani, the NGO that provided support gave the gardeners a book with practical information about permaculture practices. Despite being for the whole group, this book was often kept at one gardener's home where it was not accessible to the others. Another gardener told me, "I wish I can find a book that I can look, maybe I can learn about the plants" (Margaret, personal communication, February 26, 2015). I offered to lend her my own copy of the NGO's book, which she gratefully accepted. In Johannesburg, many garden cooperatives were formed specifically to access government support and thus represent "engineered" groups rather than organically formed groups. Unsurprisingly, there is a high incidence of conflict amongst the members of these cooperatives, which often leads to their ultimate failure (Ledger, 2015, p. 87). Similar findings have emerged from research on cooperatives in other fields, such as waste collection and recycling where the failure rate is approximately 90 per cent (Godfrey, Muswema, Strydom, Mamafa, & Mapako, 2015).

Oddly, one of the members who had greater knowledge about things like compost, mulch and growing tomatoes frequently expressed his frustration that people in the garden did not want to learn from him. He said they were only interested in learning from outsiders. This was a common refrain of this gardener. He struggled to get the other members interested in compost or vermiculture. When I told him about farmer-to-farmer field schools in South America, in which farmers get together to share experiences and teach each other, he scoffed, saying that when he tried to get farmers in the area to meet, they were not interested. He said—only half jokingly—that they

would even change their numbers to avoid him, unless they needed specific help from him. On another occasion, he said other gardeners in the area were too suspicious to join a network, because they suspected Vunani was receiving government funds and felt jealous.

At Sekelanani, knowledge sharing was a stronger part of the garden's culture, even when there was conflict amongst group members. The two core members regularly taught the others permaculture methods. They also taught volunteers and visitors about permaculture, and shared their knowledge freely in a regional farmers' forum started by the Department of Social Development (DSD) staff at the local agri-resource centre. They also belonged to a provincial forum, through GDARD's LandCare programme, dedicated to sharing sustainable agricultural practices through garden study visits and other interaction. I saw significant enthusiasm amongst the members of the LandCare forum when they came to visit Sekelanani. This forum, though small, indicates the potential for farmers to share knowledge amongst themselves to promote sustainable agroecological practices. However, the lack of communication amongst the gardeners at Vunani, and the mistrust other gardeners in their area feel, demonstrate the obstacles to creating farmer-to-farmer networks in Johannesburg. These issues of communication and trust are also relevant to the next chapter, on food system localisation.

Chapter 8: Food system localisation

8.1) Introduction

Food system localisation, as defined by La Vía Campesina and its allies at Nyéléni, Mali, refers to bringing the producer and consumer closer together, and shifting the locus of control over resources and decision-making to the local level (La Vía Campesina, 2007). The concept of localisation arises in opposition to the distancing that occurs in the global industrial food system—including the physical distance between the point of production and consumption; the sectoral distance between food producers and consumers (via various processors and middlemen along an extended value chain); and the distancing of food and agriculture from nature (via the industrialisation of farming and food processing) (Robbins, 2015). The emphasis on local control seeks to shift power away from remote and unaccountable corporations or international governance institutions such as the WTO.

The definition of localisation adopted in Nyéléni echoes the key elements of a local food system in the literature. These include: a) re-embedding the market in face-to-face social relations; b) small-scale production and use of alternative distribution networks with shorter food supply chains; and c) rescaling the governance of the food system to the local level, and giving more power to food producers and consumers (Feagan, 2007; Feenstra, 1997; Hendrickson & Heffernan, 2002).

A significant challenge in the literature on local food systems is the proliferation of definitions of the ‘local’. One useful proposal incorporates three domains of proximity: geographical, relational and values (Eriksen, 2013). Geographical proximity refers to physical distance between where food is produced and consumed. Relational proximity refers to direct relations between food producers and consumers. Values of proximity are the different positive qualities (such as freshness, quality, or sustainability) that different actors attribute to local food (Robbins, 2015).

Beyond challenges of defining the local, critics have highlighted the danger of “unreflexive localism,” an exaggeration of the benefits of locally-produced food, or “defensive localism,” in which the local may be defined in an exclusionary and potentially elitist manner, without due regard to local injustice or inequality

(Fairbairn, 2012, p. 220; Hinrichs, 2003; Macias, 2008). As Born and Purcell (2006) argue in their critique of ‘the local trap’, there is nothing inherently desirable about the local, as a scale. At any scale, including the local, a food system may reproduce unequal power relations or marginalise certain groups (Bellows & Hamm, 2001; DuPuis et al., 2006; Feagan, 2007).

The limited research on the contribution of UA to food system localisation tends to attempt to quantify either the percentage of local needs being met through urban and peri-urban production (Nugent, 2000), or to estimate what percentage of local needs *could* be met that way (Kremer & DeLiberty, 2011; McClintock, 2011; Metcalf & Widener, 2011; Peters et al., 2008). These quantitative approaches capture only one aspect of localisation—geographical proximity—without addressing the relational or value aspects.

This chapter examines the contribution of the case study gardens to the three aspects of localisation identified above. The next section (8.2) looks at their embeddedness in face-to-face social relations. After that, I address issues of scale and shorter supply chains (Section 8.3), before turning to the question of local control (Section 8.4). The chapter ends with an examination of some of the obstacles that limit the impact of the gardens on localisation.

8.2) Embeddedness

The concept of embeddedness of the market refers to the social connections between producers and consumers, and the relations of trust and reciprocity that these face-to-face interactions generate (Hinrichs, 2000; Kloppenburg et al., 2008). At the case study gardens, customers buy directly from the farmers, at the point of production. When customers arrive at a garden, they tell one of the farmers what they’d like to purchase, and then the farmer picks the vegetables to order. There is no physical or relational distance between producer and consumer.

8.2.1) Face to face interaction

Customers frequently told me that they liked buying from the farmers, because they found them friendly and helpful. At Vunani, a number of street vendors were regular customers. Because they needed larger amounts of kale, they frequently called ahead

to check if there was enough growing in the garden, before coming to purchase. Individual customers also called to enquire about availability or place orders, which they would then collect later. This also happened when people needed larger amounts of vegetables, for events such as funerals. The same happened with customers at Sekelanani, particularly those who bought larger amounts of produce. This level of personal interaction, and the trust involved in placing an order that will only be paid for later, would not happen at large grocery chains.

In general, making a purchase at the gardens involved more social interaction than buying vegetables at the supermarket. Customers frequently accompanied the gardeners into the fields, chatting with them while they picked the vegetables. These interactions frequently lasted twenty to thirty minutes. Some customers would linger to chat even after their purchases were ready. These interactions grew out of the natural rhythm of food harvesting in a way that purchasing pre-packaged produce from a supermarket does not. It thus reconnects food consumers not only to producers, but also to the processes of food production.

The gardens were well integrated into the social universe of their communities. At both gardens, customers regularly shouted through the fence as they passed by on the road, to greet the gardeners and enquire about availability or prices. Beyond these practical matters, customers sometimes stopped to have longer social conversations through the fence, even when they were not coming into the garden to make a purchase.

8.2.2) Abuse of familiarity

At times, customers took this level of familiarity further than the gardeners liked. At Vunani, one of the gardeners told me about a customer who showed up at her house on the weekend, when the garden was closed, to request spinach. Initially, she refused to help this customer. The customer then asked another one of the gardeners for assistance, and eventually the two gardeners went to the garden to pick the spinach for the customer, who explained that she had guests and was desperate. The gardener complained that this customer no longer came to purchase at the garden during the week, only on the weekend when other shops were closed.

Another challenge with familiarity resulted from a perception amongst some gardeners that the customers tried to take advantage of them. At Vunani, there were a number of street vendors who were regular customers, buying a large number of bunches of kale several times per week, if not every day. These women were allowed to pick their own kale, as this freed up the gardeners to spend their time planting or weeding. The customers were then supposed to show their bunches to one of the gardeners, so she could ensure they paid the correct amount. This gardener frequently complained that the customers didn't listen to her or follow her instructions with regard to showing her their purchases before paying. She told me she didn't want to sell to customers who didn't respect her rules. This led to some heated interactions between this gardener and the customers. Other gardeners at Vunani then lamented the fact that this gardener sells to some customers and "chases others away". At Sekelanani, one of the gardeners would complain about customers who tried to bargain for lower prices. She felt that they already sold the produce for less than nearby shops, and that the customers should not try to cheat them out of their income. The gardeners reacted negatively when they felt the customers didn't respect them, their rules, or their labour.

8.3) Alternative production and distribution

As mentioned above, the direct purchases by customers at the gardens, where the food is produced, exemplify both geographic and relational proximity. Where the global, industrial supply chain may involve growers, processors, packagers, transporters, and retailers in multiple cities, countries or even continents, the community garden compresses this entire food supply chain into a single link.

La Vía Campesina's concept of localised food systems rests on small-scale production. With urban community gardens, the scale of production is necessarily small, given that the plots are in highly urbanised areas where land is at a premium—indeed, I visited a number of smaller inner-city gardens on the rooftops of blocks of flats that produced only enough for members' own consumption and limited sales to others living in those buildings. Local food systems produce first for consumption by the surrounding community, not for export to distant places. In contrast, South Africa's food system is notable for high levels of concentration at all stages of the

food value chain, with very large-scale commercial farms and a high degree of corporate power in processing and retail (Greenberg, 2016).

The location of the case study gardens, along with their low production levels, made them well suited to direct sales to the community. This alternative method of distribution, outside of the corporate-controlled supply chain of large retailers, is also a component of localisation. As one gardener at Vunani explained when I asked if they had ever tried selling to supermarkets: “No, no, no, we didn’t even try, because... we haven’t got a lot of things, see that’s the main thing. The shop needs, maybe... twice a week. Maybe we can supply for a week, for that week, but the following week it’s finished” (Rebecca, personal communication, February 9, 2016). Both gardens, however, sell into the retail system as well. At Vunani, as mentioned above, many of the customers were street vendors who bought large amounts of kale (and occasionally other items) to divide into smaller bunches and sell near transport hubs. These vendors represent an alternative distribution system in areas where supermarket penetration is uneven.⁵³ They did buy other items to sell, such as fruits, at the central Johannesburg Fresh Produce Market in the south of the city, a massive market trading in produce from commercial farms all over the country.⁵⁴ Nonetheless, instead of buying kale there as well, the vendors bought it from the garden, thereby localising their supply and extending the reach of the garden further into the surrounding community.

Sekelanani sold produce through a number of channels, including the supermarket up the road. The majority of the stock at the supermarket was sourced through a national distribution system, so the spinach from the garden represented a small step towards localisation of the food system. To deliver produce to the supermarket up the road, the gardeners had to load up a supermarket trolley and push it about 400m uphill, up the road—a tiring and time-consuming task (see Photo 15, below). Sekelanani also sold through an internet-based organic grocery service, which obtained organic produce from various sources to deliver to Johannesburg residents. The website claims it is

⁵³ Estimates of the share of food sales held by supermarkets and other ‘modern’ retailers vary, but the figure of 54% of the total, with small shops and informal vendors making up 46% of sales, seems reliable. Within formal retail, 80% of sales are captured by the five largest supermarkets (Greenberg, 2016, p. 18).

⁵⁴ Research indicates that informal vendors tend to source most of their produce from the formal sector (Philip, 2010), so street vendors purchasing kale at the garden does represent a degree of localisation.

committed to local sourcing, though it does not indicate the provenance of the items listed. Compared to sales to passers-by, the website represents an extension beyond the garden's immediate community. However, compared to a supermarket, which would have produce from other countries on its shelves, the website is indeed more 'local'. This highlights the complexity of the concept of 'local foods'.



Photo 15: Trolley for deliveries, Sekelanani

One other practice by one of the gardeners at Sekelanani further illustrates this complexity. During the time when the garden was waiting for infrastructure improvements, it was producing very little. One gardener did not want to lose her place at the weekend market where she normally sold her produce. Therefore, she reached out to her large network of gardeners in various parts of the city, and was able to collect organic produce from them to sell at the market. In this way, she held on to her place there, while also creating an opportunity for those gardeners who would not otherwise have had access to the weekend market. By providing a larger selection of locally grown produce at this weekend market, whose customers would otherwise

shop at a supermarket, this gardener contributed to localisation. Yet the transport required to collect the produce from various gardens all over Johannesburg was significantly greater than when the produce just came from Sekelanani (though still less than for supermarkets with national distribution).

8.4) Local control

Beyond geographic and relational proximity, the notion of local control is central to localisation. Democratisation will be dealt with in the next chapter; this section focuses on rescaling the level at which food system decisions are taken from the global or national to the local. For the purposes of this discussion, there are two relevant scales: the garden itself, and the surrounding community.

8.4.1) Decisions in the gardens

At the level of the garden, the gardeners made the day-to-day decisions. They decided, individually, what tasks to do, what vegetables to plant, what growing methods to use and what prices to charge for their produce. In this regard, they had control over food production decisions. However, the vegetables in the garden comprised only a small part of the gardeners' diets (see Chapter 5 on food access). Decisions around how the other foods they ate, such as maize meal, were grown and priced happened in other parts of the country, on commercial farms and in corporate boardrooms.

Beyond the day-to-day decisions, however, there were also constraints on what happened in the garden. For example, both case study gardens were located on land owned by others. They had permission to use it, but with conditions. At Vunani, one gardener explained to me that they were not allowed to plant any tall plants—such as fruit trees or even maize—as the plants might interfere with the electrical wires overhead. At Sekelanani, the City of Joburg had to approve any infrastructure changes on the land, which led to delays in the installation of drainage systems and an additional growing tunnel by the corporate sponsor. Even small changes, such as a sign on the fence outside of the garden, were subject to city approval. In urban areas where land is scarce and expensive, gardeners often have to use land they do not own. This precarious hold on their land is a significant challenge, in terms of accessing credit or investing in infrastructure, while also creating insecurity with regard to food

access and livelihoods (Guitart et al., 2012, p. 368; Jacobs & Xaba, 2008, p. 192; McClintock, 2006; Mougeot, 2015).

8.4.2) Community control

At the level of the community, the gardens contributed to local control in two ways. First, both gardens chose what to plant based on customer demand. At Vunani, one gardener explained to me, “now it's based on the customers that come, the customers who say ‘this is what we want’, then we go and buy that thing so that we have that in the garden” (Isaac, personal communication, January 20, 2016). Another gardener explained that they sometimes struggled to find seeds for the vegetables that customers wanted: “Many people come here looking for that vegetable, but it's hard for us to find the seeds to plant it” (Margaret, personal communication, January 20, 2016). At times, giving this much say to the customers backfired for the gardeners. “Like somebody said we must plant broccoli,” one gardener told me, “and then we plant broccoli and they don't even come and buy it” (Rebecca, personal communication, February 9, 2016). Another gardener reported a similar problem (see Photo 16, below): “So the community will come and ...they will want lettuce. But with lettuce, then we plant it only to find that only one person comes, once in a while, wanting it, and so at the end it's there and it's getting ruined” (Bongani, personal communication, January 20, 2016).



Photo 16: Lettuce planted for customers, Vunani

At Sekelanani, the gardeners also claimed to plant according to customer requirements. As one gardener put it, “We do market-driven production ... So you find out that the customers are the ones who will tell you what they want. So when you plant, you plant what customers want” (Thato, personal communication, January 21, 2016). This was certainly true with regard to the customers from neighbouring African countries, who brought seeds to the garden so that they could have access to their traditional foods. “Ngai-ngai,”⁵⁵ one gardener told me, “is their own seed they brought from Congo, we are planting for them” (Thato, personal communication, January 21, 2016). In this way, community members were able to exert some control over the local food system, in terms of what is grown. However, many other planting decisions at Sekelanani seemed not to respond to customer demand. Instead, they seemed to be based on the seasons and on the requirements of companion planting. As discussed in the chapter on environmental sustainability, this mismatch between agroecological planting and customer demand poses a challenge for the realisation of food sovereignty.

⁵⁵ The gardeners only knew the Lingala name, ngai-ngai. The scientific name is *Hibiscus Sabdariffa*, and the English names are roselle or sorrel (Cisse et al., 2009).

A second way in which the gardens contribute to localisation at community level is through what I call their ‘inspiration value.’ The existence of the gardens seemed to inspire others to create their own food gardens. This was particularly noticeable in the area around Vunani, where over the course of my fieldwork I saw many small home gardens spring up in the vicinity of the garden (see Photo 17 below). One of the gardeners at Vunani told me, “This is the first garden here in this community. All these other gardens, as you can see them, come after this one” (Bongani, personal communication, January 20, 2016). When I mentioned to some of the other gardeners that they seemed to have inspired their neighbours to start gardens, they seemed unwilling to take any credit for the phenomenon. The neighbours that I spoke to did not say whether they had been inspired by Vunani. Yet at least one of them, who had grown up farming in KwaZulu-Natal, was clearly influenced by Vunani, since it was based on its presence that he asked for access to the land across the road, which also falls under the power lines. He frequently came over to Vunani to borrow tools, ask for advice, help with weeding or just to chat.



Photo 17: Neighbour's new garden, Vunani

Sekelanani’s inspiration function was more explicitly included in its mission, since the site housed one of the city’s agri-resource centres. The centres promote urban agriculture by giving out seeds, loaning out tools and providing advice to anyone interested in growing food. The garden, highly visible from the street, thus served to attract people to the agri-resource centre, and also served as an illustration of what

was possible. While the gardeners themselves were more focused on community food security, they also appreciated the educational or inspirational value of the garden. They especially enjoyed hosting school groups, and teaching the children about farming. One of the gardeners invited the children from a nearby crèche to visit the garden, so she could teach them about planting. Another gardener even dreamed of designating a portion of the garden to be a children's garden, where kids could be taught about farming and then practice what they learned. Even the casual workers who spent time at Sekelanani tended to fall in love with farming—one told me she was looking for a plot of land to start her own garden.

While this evidence is only anecdotal, it does suggest that the presence of highly visible food gardens contributes to localisation by inspiring others to start gardens of their own. This function of the gardens depends on them being productive. During the period when the gardeners at Sekelanani waited for infrastructure improvements, some members of the nearby community came to complain that the garden was not producing, and that the current participants were wasting the land and the water. They said they wanted to engage the government, and it later emerged that they wanted to take over the garden. This is an example of divisions in the surrounding community, based on a lack of communication about the garden. One of the gardeners told me that she wanted to host trainings for the local community, so that they could feel more involved in the garden, rather than wanting to take over.

8.5) Discussion

While the case study gardens do contribute to localisation in various ways, this impact is limited by a number of constraints. First amongst these is the low productivity level at the two gardens. Neither of the two gardens produced anywhere near the volume that would be required to compete with the conventional food system. Indeed, that would be impossible to do on one hectare of land, though they could have produced more than they did, with additional labour and other resources. Aside from the fact that they did not produce staple grains or proteins, they did not produce the volume or variety of vegetables to meet all of the needs of the surrounding community. I can only say this based on estimates and anecdotal evidence, since there were no official production figures available and I was not able to quantify production with much precision.

This challenge is not unique to Johannesburg. In the literature on localisation, there are debates around whether small-scale agriculture can produce sufficient food to feed the world, as well as how much food it is actually possible to produce locally—though this varies significantly according to geographic and climatic conditions (Hamm, 2007; Kremer & DeLiberty, 2011; Metcalf & Widener, 2011; Peters et al., 2008). There are also debates around how to scale up local production to reach more people without fundamentally changing the character of local production, in terms of sustainability and other values of proximity (Hinrichs & Barham, 2007; McClintock, 2011). The ‘inspiration value’ of the gardens is important in this regard, as it may lead to an increase in the number of small-scale urban producers and the total amount of food produced in this way.

It is worth noting that beyond increasing production volumes, there would need to be changes in consumption patterns to further enhance localisation. At present there is limited demand from surrounding communities for ‘unusual’ vegetables, though growing these is necessary under agroecological production methods for pest control and soil health, and would increase overall output.

The second challenge relates to scaling up impact, or enhancing local control over the food system. Johannesburg’s community gardens would be able to increase their impact and influence by joining together into some form of network—in the United States, such associations have allowed small, geographically dispersed initiatives to engage in national policy processes (Hinrichs & Barham, 2007, p. 349). While some regions of Johannesburg, such as Diepsloot and Orange Farm, have active agricultural fora, gardeners in most regions have struggled to start and sustain such networks. Key challenges seem to include the cost of transport and communication, as well as mistrust amongst farmers, and a failure on the part of the fora to deliver any tangible benefits. When one of the gardeners at Vunani suggested forming a group, other gardeners in the area were suspicious. At Sekelanani, the same regional forum was launched three times during the course of my fieldwork, and each time it failed to take root.

A final challenge with regard to localisation relates back to the issue of defining the local, but in a particularly South African way. The city of Johannesburg remains organised along the lines of apartheid spatial planning, with wealthy white suburbs separated from poor black townships not only by physical distance, but also by poor transport connections. For many gardeners, ‘the local’ is their immediate community, with other parts of the city largely out of reach. This is evident at Vunani, where while working in the garden one can see the luxury hotels of the affluent neighbourhood of Sandton. Despite being only 7.5 km away, it would take about 30-40 minutes for the gardeners to get there by public transport, at a not-insignificant cost. It is, for all practical purposes, a world away, and utterly inaccessible to the gardeners as a market for their produce. While such a short distance would qualify as local under almost any definition involving geographic proximity, Sandton does not feel local to the gardeners, nor would the area around Vunani feel local to most of the wealthy residents of Sandton. Despite the presence of people of all races in Sandton, it remains fundamentally a ‘space of whiteness’⁵⁶ while Vunani’s surrounding community is not (Slocum, 2007, 2008). Any attempt at creating a local food system that incorporated both Sandton and Alexandra would be likely to reproduce the racialised inequality between the residents of these two areas—as suggested by critiques of localism—leading to the marginalisation of the residents of Alexandra in such a ‘local’ system. These socioeconomic and cultural ‘distances’ between neighbourhoods of Johannesburg further inhibit localisation of the food system. The next chapter also deals with these ‘distances,’ in terms of empowerment and democratisation.

⁵⁶ Whiteness is defined here as “a ‘location of structural advantage’ and involves cultural practices that have come to be understood as normal” (Slocum, 2007, p. 523 quoting Frankenberg 1993, p1).

Chapter 9: Empowerment and food system democratisation

9.1) Introduction

The fundamental core of food sovereignty is “the right of peoples ... to define their own food and agriculture systems” (*Nyéléni Declaration on Food Sovereignty*, 2007). Thus the democratisation of the food system, or the shifting of power over the food system to small-scale producers and consumers, rather than unaccountable transnational corporations, is fundamental to achieving food sovereignty. This requires social change, in order to empower all people to participate equally in decision-making processes around food producing resources, food production and food distribution. As Raj Patel explains, “To make the right to shape food policy meaningful is to require that *everyone* be able substantively to engage with those policies. But the prerequisites for this are a society in which the equality-distorting effects of sexism, patriarchy, racism, and class power have been eradicated” (Patel, 2009, p. 670). In other words, meaningful democratic participation is only possible if all forms of inequality are addressed.

Empowerment is a multifaceted concept, ranging from the basic acquisition of knowledge, skills or financial resources, to more transformative notions that entail “critical insights into social and political systems, and self-perceptions of competence and control in the socio-political domain” (Christens, 2012, p. 543). Empowerment may be viewed as individual or collective, may be considered as occurring in different domains or at different levels, and may be considered vis-à-vis various people or institutions with power (Ibrahim & Alkire, 2007). Two necessary elements of empowerment in terms of enhancing democratic participation are: a) a change in self-perception (psychological empowerment) and b) social mobilisation for structural change (Ibrahim & Alkire, 2007, p. 380; Mohan & Stokke, 2000, p. 249).

Many scholars point to the potential for urban agriculture projects to promote democratisation. They suggest that UA “may be the initial impetus and learning process for more substantial local organisation around the needs arising from the failure of the global, national and local economies, displacing traditional top-down, centrally controlled local government with truly democratic forms of local organisation” (Atkinson, 2013, p. 94). However, democratisation is not a guaranteed

outcome of UA. In order for this potential to be realised, UA projects must explicitly address issues of power while cultivating democratic practices and communal values (McIvor & Hale, 2015, p. 729).

Patel refers to the capacity to shape policy “at all appropriate levels” (Patel, 2009, p. 670). Yet the question of scale is complex, as it is unclear whether local food initiatives “can effectively introduce any measure of democratic control over economic systems that are essentially nondemocratic or whether meaningful agrifood system change can only be accomplished by first transforming the larger society as a whole” (Ostrom & Jussaume, 2007, p. 240). In other words, can local democratic initiatives, such as UA projects, influence the global food system, or do they simply occupy the margins of that nondemocratic system (Robbins, 2015)?

Section 9.2 addresses the various elements of empowerment as they played out at the gardens, including knowledge and skills, feelings of self-efficacy and social mobilisation. The chapter then turns, in Section 9.3, to questions of democratic control at garden scale and at the level of the community. The chapter concludes (in Section 9.4) with a brief discussion of the challenges involved in fostering empowerment and democratisation at the community gardens, and how these might be addressed.

9.2) Empowerment

Empowerment leads to “new social relations free of oppression and inequality,” which are required to facilitate meaningful democratic control over the food system (*Nyéléni Declaration on Food Sovereignty*, 2007). It entails both an increase in resources (material, human and social) and an increase in agency, “the ability to define one’s goals and act upon them” (Kabeer, 1999, pp. 437–8). The question of increased material/ financial resources was dealt with already in Chapter 6, which found that the gardeners benefitted from relatively small expenditure savings and income from sales. The topic of women’s empowerment will be dealt with in the next chapter, on Gender Equality. This chapter thus focuses on increased knowledge and skills, psychological empowerment, and enhanced consciousness of the need for social transformation.

9.2.1) Increased knowledge and skills

With regard to the practical or instrumental sense of gaining knowledge and skills, the gardeners at both case study gardens were indeed empowered, though in a somewhat haphazard and narrow fashion. When I asked participants about what they'd learned through their participation in the gardens, most indicated specific gardening knowledge, such as how to plant and care for a particular vegetable that they had never grown before. As one of the casual workers at Sekelanani explained to me: "I've always thought that there's only one kind of spinach, but since I came here I learned that there are lots of different kinds of spinach and different kinds of pumpkins, and how to plant them" (Happy, personal communication, January 21, 2016). Gardeners also referred to new techniques they had learned, such as planting in tunnels or using mulch. While most of the gardeners had some agricultural knowledge from their childhoods, they indicated that they had learned new techniques, and new crops, at the gardens. Some of this learning happened in formal training, but most seemed to have been gained through experience.

Beyond gardening practices, most also indicated that they had learned about new foods from growing them in the garden. One participant at Sekelanani explained that she had not tried cooking with herbs before she came to the garden, while another said he had not tasted kale before. This knowledge was gathered from a variety of sources, including extension workers, NGO personnel, customers and volunteers. Garden participants asked me how to prepare different foods, such as basil or artichokes on numerous occasions, though they only rarely indicated to me that they had actually tried cooking them.

At each garden, there was one participant who was more interested in learning, and who sought out every opportunity—through courses, books or conversations—to learn everything possible about gardening, nutrition, and about non-agricultural topics such as computers or business. These gardeners also seemed to enjoy experimenting in the garden, trying out new techniques such as a new organic spray to prevent weeds, or a new way of digging the raised beds. Yet even these individuals did not appear to put their new knowledge into practice in any systematic way in the gardens, primarily as a result of conflict amongst the gardeners and a perceived resistance to learning from each other. Research amongst cooperatives in the waste collection and

recycling sector found the same problem in terms of a lack of “trust within the co-operatives, and the co-operative members... they do not trust each other... not even with information” (Council for Scientific and Industrial Research, 2015, p. 72).

As stated above, the learning-focused gardener at Vunani frequently complained that the others didn't want to learn from him. When this gardener tried out a new technique he had learned for combatting weeds, he said it worked, and he could see the difference where he had used it. But, he said, “Some people don't want to believe that it works. They don't want to change their ideas once they're old, and they don't want to learn anything from someone they work with. They will only listen to people from outside” (Samuel, personal communication, 3 February 2015). On another occasion, speaking about adopting new pest control techniques, he expressed the view that “you can't force people to change how they do things” (Samuel, personal communication 23 September 2015). This gardener was exclusively responsible for making the compost and worm tea fertiliser at the garden (see Photo 18 below)—none of the others expressed any interest in learning how to do it.



Photo 18: Making worm tea fertiliser in bathtubs, Vunani

The lines of conflict in the garden meant that there was a perception that this gardener only shared his knowledge with one other gardener, and kept it from the other three.

Ironically, this one other gardener once commented about something she had seen on an agricultural television programme she enjoyed watching, “People are clever. And they share their knowledge, they don’t just sit on it and say, this is mine” (personal communication, 23 September 2015). Yet the divisions amongst the gardeners meant that the other three would probably have levelled precisely this criticism at her. Indeed, amongst those other three, one often mentioned her desire to learn more. “I like to get somebody to help us, like lot of things planting, so we can plant,” she said. “Last time I buy the carrot, and I lost it. ...I was telling my husband, say I was buying carrots, I want you to plant it, because I don't know how they do it” (Margaret, personal communication, February 26, 2015). This same gardener struggled with how to grow tomatoes, even though the other two were growing them in their section of the garden on elaborately constructed stakes (see Photo 19 below). She explained, “Even now, the tomato, I don't know how plant it. How the way you must do it. I see they're doing, but I don't know what you must do. Unless I get a book to read and see how the way” (Margaret, personal communication, January 20, 2016). With both carrots and tomatoes, she saw the other two growing them successfully in their section of the garden, yet did not believe she could ask them how to do it, perhaps due to the conflicts in the garden. As a result, she believed she could only learn from a book, or if someone came from outside (e.g. an NGO) to help, reinforcing the perceptions expressed by Samuel above.



Photo 19: Tomato plants on stakes, Vunani

The conflict amongst the gardeners at Vunani prevented them from learning things they needed to know, and thus from producing as much as they could from their garden. This was extremely disempowering for the gardeners. Indeed, one of the members stopped coming to work in the garden due to the conflict, which caused further labour shortages. The extension workers spoke to the gardeners on several occasions to try to resolve the conflicts, but the solutions seemed to be short-lived. One gardener was ashamed that the younger extension workers had to assist their elders to work out their problems, saying it should be the other way around. The conflict was also demoralising, as one gardener explained: “I used to enjoy working with the group, in this garden, but now I'm no longer happy because we no longer see eye to eye. We're all not happy” (Bongani, personal communication, February 25, 2015). While these divisions manifested themselves as differences over planting techniques, management of funds, and treatment of customers, I was never able to ascertain the actual root of the conflict. Nobody ever indicated to me a concrete reason for the mistrust and disagreements, yet they were so entrenched that numerous attempts to resolve them floundered. This mistrust and conflict directly inhibited material empowerment by preventing knowledge sharing and cooperation, and indirectly inhibited development of greater consciousness (discussed below) by preventing dialogue and networking.

Sekelanani was also plagued by conflict amongst the cooperative members, and between the members and those participants who were not registered members of the cooperative. These conflicts flared considerably when the garden received significant financial resources from a corporate sponsor. Conflict amongst cooperative members is a common problem in South Africa, where many cooperatives are formed in order to access government support. “Inter-member relationship problems is often a symptom of forced memberships, where a cooperative did not grow organically out of previously working together” (Council for Scientific and Industrial Research, 2015, p. 71). At Sekelanani, poor communication amongst participants seemed to fuel suspicion and mistrust. Again, this was disempowering as it led to missed opportunities (e.g. when one participant received Sekelanani's invitation to a meeting and failed to tell the others about it), decreased the productivity of the garden (as some participants expressed their dissatisfaction by refusing to complete tasks

assigned by certain members) and nearly led to a loss of support from the City of Joburg.

9.2.2) Psychological empowerment

A key aspect of empowerment at the individual level is psychological empowerment, which “includes beliefs about one’s competence, efforts to exert control, and an understanding of the socio-political environment” (Zimmerman, 2000, p. 46). In other words, it involves “one’s skills and motivations to make social and political change, the knowledge required to do so, and the interpersonal relations and behavioural actions that can contribute to social and political change” (Christens, 2012, p. 543). Psychological empowerment has intrapersonal (or internal), interactional and behavioural components (Zimmerman, 2000, p. 47). This aspect of empowerment is crucial to bringing about social change, as this individual level of consciousness is necessary to spur individuals to action.

I found psychological empowerment difficult to assess, due to its complexity, its inter-connectedness to other aspects of empowerment as well as its simultaneous subjective, internal nature and external context-specificity (Diener & Biswas-Diener, 2005). I also felt that some of the existing measures, e.g. from the sociopolitical control scale (SPCS), provided a static picture and did not assess empowerment processes or change over time (Peterson et al., 2006). When I asked questions adapted from the literature on empowerment (Alsop & Heinsohn, 2005; Ibrahim & Alkire, 2007) in interviews, they did not necessarily make sense to, or resonate with, garden participants. Ultimately, I developed a mixed picture at the case study gardens. At both gardens, the participants frequently demonstrated pride in their work, which suggested confidence in their ability. On several occasions, participants showed me something that was growing well and asked me to take a photograph. Some of the gardeners also indicated that they were proud of their role as farmers. As one gardener at Sekelanani told me, “I’m proud of who I am, because I contribute to the dish of everybody. Because this is a basic need, it’s a necessity that everyone has to live by. ... Because in my hands, lies someone’s food” (Moses, personal communication, February 9, 2016).

Unfortunately, confidence in their gardening knowledge did not appear to translate into a more general confidence in their ability to achieve change, even within the garden. For instance, when I asked garden participants if there was anything they would want to change about the gardens, one woman at Vunani told me, “No, there's nothing I can change, because in my age I can't. There are people who will come and change it, like young people will come” (Rebecca, personal communication, February 26, 2015). Another participant at Vunani felt that the conflict amongst the gardeners prevent him from having a say, “We have people who are above me in this garden, so even if there is anything I'd like to change, we're not seeing eye to eye here at the garden” (Bongani, personal communication, February 25, 2015). This gardener's disempowerment was directly linked to the intra-group conflict at the garden.

9.2.3) External support and empowerment

My observation of the gardeners' interactions with those who were supposed to assist them, such as government officials, NGO personnel and corporate sponsors, suggested that this support was not playing a very empowering role. In many of these interactions, the gardeners did not appear to exercise any control over the support provided, or did not feel that they did, and at times the relationship appeared highly unequal.

This was true at both gardens, but more so at Vunani, where the gardeners recited a litany of disappointments. With regard to the support provided by the city of Johannesburg, one gardener at Vunani told me “Joburg was going to help but the system is not working. It's taking too long. They want to give us seeds, tools, etc. and not come to us. They bring people who don't know what they're doing. They promised to loan us a tractor, then they claim they don't have one. ... They say they'll give compost and seeds, but nothing happens” (Samuel, personal communication, 1 August 2014). On another occasion, all but one of the gardeners from Vunani went to attend training at the DSD's regional offices in Alexandra, San Kopano. They returned about an hour later, feeling very irritated, because the training had been cancelled at the last moment and nobody had called to inform them. They wasted not only time, but also taxi fare, going to the offices. This was after the previous day's training had been on raising livestock, which was not relevant to the assembled participants as they all had vegetable gardens.

The support provided to Vunani by GDARD was visible in terms of the infrastructure at the garden, such as the perimeter fence and a shipping container to use for storage, as well as periodic deliveries of seeds. The extension officer also visited the garden regularly, to give advice and even to attempt to help them resolve their conflicts. While the gardeners were grateful for this assistance, the relationship between the gardeners and GDARD was not an equal one, and was plagued by poor communication. For example, GDARD occasionally invited the gardeners to attend meetings and other agricultural events. Sometimes they provided transport, but sometimes they did not. One gardener told me that GDARD no longer organised transport for them because of the fighting amongst them. The gardeners frequently attributed loss of support to the infighting at the garden, even when it wasn't the real cause. They also did not seem to feel they could ask for assistance from their extension officer. They only responded to his offers, never making any requests of their own. However, when he had requests, such as that they come to the garden on a Sunday because a high ranking official was going to visit, they felt obliged to do as he asked, even though it meant missing church.

With the NGO that supported the garden, the relationship was similarly imbalanced and communication was poor. The NGO occasionally organised groups of volunteers to come and assist at the garden. When they did, they brought compost, seedlings and tools to the garden as well. The volunteers would prepare and plant a bed and then leave the tools and seeds behind for the gardeners. On one such occasion, they brought a wheelbarrow, some watering cans and 20 large spades. These were not particularly useful to the gardeners—there were only five of them actively working in the garden, and they tended to use the small spades. But the NGO never asked what the gardeners wanted. They brought whatever seeds, seedlings and tools they had available. As a result, the gardeners had a large collection of unnecessary tools, and a number of plants growing in the garden for which they had no market (e.g. artichokes, herbs, rhubarb). One gardener complained that when the volunteers planted rosemary in the middle of a vegetable bed, it spread out and then nothing else could grow near it. The NGO had an agreement to support Vunani for a fixed period, but none of the gardeners seemed to know the length of the agreement. Indeed, one gardener didn't

know the support was for a fixed term, and thought the NGO stopped providing assistance because they had closed down their offices, or lost funding.

Sekelanani had a better relationship with the city and with GDARD. The gardeners were aware of the benefits of the support from the city, and were quick to demonstrate their gratitude. However, at a meeting between the city, some of the gardeners and their corporate sponsor, it became clear that city officials viewed Sekelanani possessively, as their project. Over the course of the meeting, the city officials and corporate sponsor hashed out details of their respective roles vis-à-vis the garden, but the gardeners were completely side-lined. They did not speak at all during the meeting. On another occasion, when there was significant conflict amongst the members of Sekelanani, a city official threatened to take the garden away from them if they could not sort out their issues.

GDARD's LandCare forum seemed to be the most empowering form of support provided to gardens. The group visits to forum members' gardens represented peer learning, in which all were encouraged to share experiences and advice (see Photo 20 below). The extension officer who supported Sekelanani, however, was not particularly equipped to provide the kind of support they needed. One of the gardeners explained that it was not the fault of the extension worker: "Their policy makers make it hard for the extension officers to give us what we are requiring. ... We're talking about this infrastructure for a long, long time but they couldn't help in their budget. And also as the organic, who are using organic principles, they don't have any policy which force them to give us those things which are related to organic farming principles. They are still cling to the old system of conventional farming" (Moses, personal communication, April 2, 2015). GDARD was also plagued by logistical problems. In January 2016, the extension officer assured the gardeners that they would soon receive another rainwater harvesting tank. In June, the tank had not yet arrived, and the extension officer explained that they had the tank, but no vehicle to deliver it.



Photo 20: LandCare forum learning visit, Sekelanani

Despite these challenges, the gardeners were grateful for the support from the city and GDARD. The corporate sponsor's two-year programme of support, however, provided the most disempowering 'assistance' of all. The high expectations for the support made it even more disappointing when the benefits failed to materialise. For the sponsor, the agreement was part of its black economic empowerment (BEE) enterprise development spending. The agreement entailed about R1.5 million (about \$117,460) in financial support, spread over two years, and covering salaries, infrastructure, training, and other forms of assistance. The sponsor also undertook to buy 80% of Sekelanani's produce, to be used by its catering division. According to the sponsor, the agreement represented a partnership, and they had no intention of taking over Sekelanani or 'babysitting' the gardeners in terms of how they spent the funds.

In reality, the actions of the sponsor seemed to the gardeners to constitute taking over the garden, which caused a great deal of frustration and conflict. For example, the sponsor could only purchase food from the garden if it was compliant with their health and safety standards. To meet those standards, it emerged, significant changes were needed at the garden, in terms of infrastructure, pest control, hygiene standards and landscaping. Thus a significant amount of the support funding was paid back to the sponsor to do this work, 'cleaning' the perimeter of the garden by pulling out plants, installing rodent traps and insect traps, putting up signs about smoking and hand-washing, training the garden participants in emergency preparedness, etc. The

sponsor also hired a compliance officer to work on site at the garden, overseeing compliance with their standards. This person, who received double the salary of the gardeners, had almost nothing to do, as the garden was not selling to the sponsor at that point. The gardeners resented this imposition, and demanded that their salaries be raised to match the compliance officer's, but the sponsor refused. At no point did the sponsor ask if the gardeners wanted these things—they were simply treated as necessary precursors to purchasing garden produce.⁵⁷

There were things that the gardeners did want, such as an additional growing tunnel (see Photo 21 below), seeds and more labourers. These were provided in a haphazard fashion. The tunnel was indeed built, but with such significant delays that an entire growing season was lost while the gardeners waited for it. The sponsor provided seeds, but they were not organic. They agreed to pay three casual workers for a period of six months, but then did not renew their contracts. These decisions were not made by the gardeners, but rather by the sponsor. The vision of the sponsor seemed to be to set up the garden facilities according to their own plans—by installing the tunnel, office, change room and packing room—and then do 'human development' in the second year of support, to ensure that the gardeners were able to run the garden. Again, this had nothing to do with the expressed needs of the gardeners, it was simply a plan developed by the sponsor. In the process, the sponsor purchased many needless items out of the support funds. Other items that were of interest to the gardeners, such as a delivery vehicle and driving lessons, were initially included in the support plan and then later removed without explanation.⁵⁸

⁵⁷ The limitations of corporate support for the gardens are examined in greater depth in Chapter 11.

⁵⁸ For an excellent overview of some of the inherent limitations of corporate social responsibility (CSR) projects in achieving developmental objectives, see Frynas (2005).



Photo 21: New tunnel installed by sponsor, Sekelanani

The garden eventually passed the sponsor's audit. Yet despite being compliant—despite the many infrastructure changes, trainings and the presence of the compliance officer—the sponsor never bought produce from the garden. They certainly did not, at any point in the two years of support, purchase 80% of produce. I was never able to ascertain why this was, but I would guess that the sponsor never felt the garden was able to produce what they needed. From the gardeners' point of view, it was just another example of the sponsor not doing what they said they would do. One of the gardeners felt the sponsor was destroying the garden, while others remained hopeful that the sponsor would ultimately deliver. Yet when I visited the garden after the two years of support were over, little had changed. The tunnel and the drainage system in the lower field (for which the garden paid more than a quarter of their support funds) were the two lasting improvements left by the sponsor. Conflict amongst garden members, which had been stoked by disagreements around the spending of the support funds, seemed to have died down once the funds disappeared. Amongst all of the support I observed at the gardens, the interaction with this corporate sponsor was the most disempowering. It may have entailed significant funds, but the manner in which the funds were provided was patronising and diminished the capacity of the gardeners to exercise control over the garden. No real 'human development' ever took place throughout the support, leaving the gardeners no better off than they had been before the support, and perhaps worse off because of the conflicts and the damage to their dignity.

9.2.4) Consciousness and transformation

Beyond the instrumental empowerment of gaining knowledge and skills, or the psychological empowerment of self-confidence, a fundamental aspect of empowerment under food sovereignty is the transformation of social relations, to eliminate inequality based on class, race, gender or other social distinctions.⁵⁹

Proponents of food sovereignty reason that the current system of neoliberal global capitalism, of which the food system is a part, perpetuates inequality and thus must be transformed. Empowerment, in this radical formulation, entails “[c]onscientisation and collective identity formation around common experiences with economic and political marginalisation,” leading to social mobilisation by marginalised groups and ultimately “a structural transformation of economic and political relations towards a radically democratised society” (Mohan & Stokke, 2000, p. 249).

Advocates of community gardens suggest that they contribute to conscientisation by providing an example of alternative social and market relations, and by provoking awareness of the failures of the existing food system. For the gardeners, the experience of collectively growing their gardens “requires collective effort that typically engenders social relations like cooperation, solidarity, and mutual respect for the space of others” (Purcell & Tyman, 2015, p. 1138). For gardeners and their customers, the practice of socially embedded market transactions likewise elicits more cooperative social relations. In addition, the fact that community gardens “arise within the interstices and margins of both the food system—by providing food where markets have failed—and of the built environment itself—arising on vacant lots and other urban fallow,” may lead gardeners and their customers to reflect more critically on the food system’s failure to meet their needs (McClintock, 2013, pp. 1–2).

This leap from alternative practices to critical reflection and political consciousness is never fully elaborated in the literature, and at times seemed to me to entail some sort of a magic trick or sleight of hand that was never explained. Food justice projects in the US, for example, seem to begin with political consciousness and then plant the garden—the consciousness does not ‘grow’ out of the garden (McClintock, 2013). At

⁵⁹ This section focuses on race and class, as gender will be addressed in the next chapter.

the case study gardens, as well as the other gardens I visited in Johannesburg, I never encountered this form of political consciousness. No gardener spoke to me of reforming the food system; indeed, none indicated awareness of the existence of a food system at all. When I asked gardeners who makes the food production and distribution decisions in South Africa, they generally did not know. Most guessed that the government made decisions about what foods are produced, though one person thought the farmers decided. Gardeners were certainly aware, however, of high food prices, the lack of quality of vegetables in supermarkets, and the drought—thus the ground was laid for political conscientisation.

When asked if they knew where their food came from, only one gardener said she checked the origins of her maize meal. The gardener at Sekelanani who spent all of his time educating himself about agriculture linked the lack of awareness about food origins to financial constraints. As he poignantly explained: “We don't know, we just eat. So ...the money which we earn, it forces us not to choose, and then not to want to know where exactly our food comes from. ... Once we become in the other class, then it's where maybe we'll start to question some of what we eat and how it was produced... So currently, because we are living beyond the bread line, so we eat whatever ... we can afford and access” (Moses, personal communication, April 2, 2015). He was correct about the limited choices available to those with tight food budgets, but his suggestion that only the wealthier classes could afford to question where and how their food was produced reflected a commonly held neoliberal notion of consumer activism, of expressing one's preferences and values through purchases. It failed to acknowledge the possibility of political activism, mobilising to demand change of state or corporate actors.

Similar neoliberal ideas seemed to underpin the gardeners' ideas about hunger. When I asked gardeners who is to blame for hunger, no gardener spoke to me of injustice, exploitation or marginalisation. The responses were fairly evenly split between blaming unemployment and blaming the hungry themselves for being lazy, with gardeners at Sekelanani more likely to blame unemployment while the pensioners at Vunani tended to blame the hungry. Both of these views are aligned to the dominant neoliberal way of individualising social problems and seeing everything through a market lens. Attributing hunger to unemployment is only seeing the proximate cause

of hunger, without questioning the legitimacy of a globalised capitalist system that commodifies food and thus fails to provide food for those without money. Blaming the hungry likewise fails to recognise the structural conditions that create hunger. Gardeners frequently referred to the need to help oneself: "It's because of laziness. Because if you don't stand up and do things on your own, how will you then expect to get food?" (Isaac, personal communication, February 25, 2015). As another gardener put it: "It's their fault, because the government can't say, wake up, you have to wake up and work. You see? ... They just want free food" (Rebecca, personal communication, February 26, 2015). Another gardener suggested that people have become too dependent on social grants.⁶⁰ As long as people fail to see the structural causes of hunger and unemployment, or fail to recognise their personal struggles as social issues, they will not mobilise collectively to change them.

The experience of jointly struggling for resources—e.g. access to land and water—may create the basis for broader social mobilisation. As one researcher has suggested with regard to South African gardens:

[F]rom this base of welfarist gardens, there is a political friction that can fuel resistance to the status quo. This is especially true in the collective gardens. At the most basic level, the very act of voluntarily combining efforts with others to produce mutually agreed upon outcomes is a step in the right direction away from the atomised, passive dependence on power that is so characteristic of social relations in our times. The realisation that it is necessary to act together with others to change reality, and the actual practice of doing so without prompting from above, is significant and not as widespread as we might wish. It forms the possible basis for a different type of society, one with an active, engaged population (Greenberg, 2006, p. 26).

This concept of garden participation leading to social mobilisation is present in the international literature as well. Yet in my experience at Johannesburg gardens, this mobilisation did not take place. This is not surprising in light of

⁶⁰ I was not able to ascertain how gardeners came to hold these neoliberal views, but given the hegemony of neoliberal discourse in South Africa, I would imagine they absorbed it from radio, television, newspapers, and the entrepreneurial, self-help language of those supporting the gardens.

the lack of conscientisation amongst gardeners, and their mainstream neoliberal views on poverty and hunger. As long as the gardeners saw food only as a commodity to be purchased, and as long as they blamed the hungry for their suffering, they would not mobilise against a system they did not see as culpable. They might recognise racism in the income and wealth disparities between black and white people in South Africa, but differential access to food seemed to be viewed only as a product of those disparities, rather than a rights issue or a symptom of a broken food system.

Furthermore, most gardeners were not aware of the right to food, though it is enshrined in Section 27 of South Africa's constitution. One gardener suggested it meant that people should not be allowed to die of starvation—a limited view of the right that largely absolved government of any responsibility. Those who had heard of it did not see how it would work in practice. As one gardener asked, “A right to eat, but where will we get the food to eat? You'll go to Spar [supermarket] and say, ‘I want to eat’, yet you don't have money to buy food” (Grace, personal communication, February 25, 2015). The notion that government has responsibilities toward the hungry, and that people could make demands in respect of their right to food, seemed largely alien to the gardeners, although they did feel the government should attempt to assist people to grow their own food. As long as they lacked the self-confidence to demand change, and did not see the government as holding any responsibility for hunger, they would not organise to make claims on the state.

With the launch of the South African Food Sovereignty Campaign (SAFSC) by a coalition of grassroots organisations and activists in 2015, I hoped that the explicit work of political conscientisation might begin in urban gardens. The inaugural campaign assembly brought together representatives of over 50 organisations from a diversity of sectors working on issues such as organic food production, the struggle against genetically modified foods, organising rural women, dispossession of land by mining and the solidarity economy, amongst others (*South African Food Sovereignty Campaign Assembly Report, 28 February-1 March, 2015*). At the assembly, a number of speakers made presentations about various problems with the food system and proposed more

sustainable alternatives. The campaign explicitly connected the food and climate crises, linking both to neoliberal capitalism and corporate control of the food system, while promoting democratic control, the solidarity economy and agro-ecological production by small farmers as solutions.

Since its inception, SAFSC member organisations have undertaken important work to popularise the concept of food sovereignty, yet its impact on the ground in Johannesburg seemed limited. At least, that was my perception from participation at SAFSC events (where there were rarely urban farmers present) and from my interactions with farmers (in gardens and at events). This may have been due to a preponderance of member organisations being based in other provinces and/or focusing on rural (rather than urban) agriculture, as well as the general lack of formal organisation amongst Johannesburg's urban farmers. I invited participants from the case study gardens to attend the People's Tribunal on Hunger, Food Prices and Landlessness, and only two accepted. In general, many of the member organisations of the SAFSC remained focused on their specific issues—an understandable choice in light of mandates from constituencies, donor requirements and other constraints—rather than campaigning around the broader concept of food sovereignty. It remains to be seen how the movement will develop, and whether it will reach and resonate with small-scale producers in urban areas.

9.3) Democratisation

As mentioned above, democratisation of the food system refers to enabling all people to meaningfully participate in democratic decision-making on food-related policies and practices, at all relevant scales. Under the current food system, much of the control rests with unaccountable TNCs and international organisations such as the WTO, rather than with affected individuals and communities. There are examples of more democratic control, at least at the local level. For example, the city of Governador Valadares, in Brazil, undertook a participatory multi-stakeholder process to develop its UA policies and institutions, and through this participatory process, power relations were redefined (Dubbeling & Merzthal, 2006, p. 36). Likewise the communal councils in Venezuela, discussed in Chapter 2, in which communities

define and implement their own development priorities, including those related to food and agriculture, represent an important example of food system democratisation.

Both of those examples involve official support by the state for decentralised, participatory governance. The example of the encampments⁶¹ of the Brazilian Landless Rural Workers Movement (*O Movimento dos Trabalhadores Rurais Sem Terra*, MST), represent an example of transformation from below, in which communities have created alternative norms and practices based on cooperation, solidarity, autonomy and democratic participation (Massicotte, 2014, p. 156). Out of the necessity of cooperation, and through the process of working together to create economic and social life in the encampment, participants imagine and create new ways of being and doing. In other words, “identities and ways of being are transformed through collective participation as subjects making their own history, sharing new and often positive experiences, and deliberating and dealing with tensions and conflicts” (Massicotte, 2014, p. 162). Principles of solidarity, processes of politicisation and the daily practices of alternative economic relations and governance mechanisms are mutually reinforcing in the encampment.

The example of the MST encampments helps to highlight some of the barriers to food system democratisation in Johannesburg’s community gardens. First is the process of ‘political and ideological training’ that occurs in the encampments. This process of conscientisation is deliberate, not left to chance. The process involves educating participants about the causes of their socio-economic conditions and the principles of solidarity that underpin the MST’s work, in order to instil consciousness (Massicotte, 2014). No such process of education occurs at Johannesburg’s community gardens—at least not those supported by the DSD, GDARD or the NGOs and corporate sponsors I encountered. The only sort of education these supporters provided was agricultural, business and marketing training. The implicit ideological content was neoliberal and capitalist, not oriented toward solidarity or social transformation. Without deliberate political education, there is no indication that spontaneous politicisation will occur at the gardens.

⁶¹ Encampment (*acampamento*) refers to the occupation of land while asking the government to expropriate and redistribute it. During this period, the landless occupiers of the land are vulnerable to eviction and face significant challenges to produce enough food to survive (Massicotte, 2014, p. 156).

9.3.1) The importance of practice

A second lesson is the importance of democratic practices, which transform people's ways of imagining community life and their role in it. Norms and principles inform practices, but practices also inform norms and beliefs. Thus through participating in democratic processes, people at encampments learn the value of democratic governance. Both of the case study gardens were registered as cooperatives. However, this was more a result of a requirement to access government assistance, than of any particular belief in cooperatives. Indeed, participants had little knowledge of what a cooperative meant, and they simply adopted constitutions from templates they were given, without considering the contents. One GDARD official expressed frustration at the lack of training for cooperatives on issues such as the distribution of resources and duties (personal communication, GDARD official, 16 March 2015).

Beyond the lack of understanding of cooperative values, the conflicts between cooperative members also undermined the potential for democratic governance. As one gardener at Sekelanani indicated, "we must have the same goal, you see. But because we started having money, we realised that we have people who came for the sake of getting money, not having the passion of what we are doing" (Thato, personal communication, January 21, 2016). At Sekelanani, those who were not official members of the cooperative felt particularly excluded from decision-making. One told me, "Sometimes I feel like I want to say something but most of the time I can't say anything because I'm not a member of the cooperative" (Grace, personal communication, January 21, 2016). One of the gardeners at Vunani, who had no formal schooling, felt excluded based on his inability to read. He told me, "If you did not go to school, you find yourself being taken for granted. Now they are using this book system which confuses me and I don't know what it's about. No one really consults to tell me what's happening" (Bongani, personal communication, February 25, 2015).

Rather than cooperating and jointly taking decisions to achieve a common goal, gardeners took decisions individually about the plots of land they worked on. For instance, when I asked participants how they know what to do each day, they told me they consider what they were doing the day before and then carry on with that. As one

gardener at Vunani put it: “I think everyone does what they think is right. So we come here and that one does that, the other one does that, we don't really have a say” (Margaret personal communication, January 20, 2016). I witnessed or heard about only a few group meetings at either garden over more than a year and a half of field work, and these were usually in response to crises or external intervention, not for normal planning purposes. Most gardeners seemed to appreciate the value of group meetings in theory, but that did not translate into practice.

One more positive reading of this atomised decision-making would be that it enabled each garden participant to be their own boss and to have control over their own daily activities. Given the apartheid past, during which all garden members would have been relegated to relatively subservient occupations, this could represent a form of empowerment. Yet any gains in this regard were outweighed by the losses of not cooperating. As one gardener at Vunani stated, “If we can join together and start working together with better communication, we can do this garden much better” (Isaac, personal communication, January 20, 2016). Another indicated that “it becomes a challenge to do things when there's no communication. Even if someone can come and try to assist or make things better, but for as long as things are like this, nothing will really be better” (Margaret, personal communication, January 20, 2016). All of the gardeners seemed disheartened by the conflict amongst them, and happier during the rare interludes of peace. After two GDARD extension officers helped broker a detente, one of the gardeners told me she was happy they were working together, instead of each one doing their own thing. Yet soon after, the conflict resumed, and people stopped cooperating—again, for no clear reason that I could ascertain. Attempts by city officials to improve relations at Sekelanani were similarly unsuccessful, despite the fact that all participants seemed distressed by the conflict.

9.3.2) Food policy processes

As neither garden practiced deliberative democratic decision-making, there was no practical basis for the transformation of participants’ norms or values with regard to democratisation. Beyond the scale of the garden, there was also no evidence of democratisation of decision-making. For example, while garden participants did interact occasionally with policy makers, I saw nothing to suggest that they influenced policy processes. As mentioned above, much of the support from government

departments did not respond to the expressed needs of the gardeners. If this was the case at the level of programmatic support, it is highly unlikely that their views were taken into account at the level of policy development.

The gardeners often expressed frustration at their interactions with government officials. One gardener at Vunani told me that the ward councillor once visited the garden, and promised to come back again. Two years had passed, and the councillor had not returned. Another gardener at Vunani explained how officials just summoned the gardeners to meetings, without communicating what they were about: “Sometimes they'll just call and we don't even know where they get our contact numbers but they'll just call and say the taxi will pick us up. And then we wait for the taxi to come and pick us up and go to these meetings” (Isaac, personal communication, January 20, 2016). With no indication of the nature of the meeting, the gardeners cannot discuss their positions to prepare their inputs.

The gardeners at Sekelanani, or at least some of them, had a closer relationship with city of Johannesburg officials (see Photo 22 below). One official sometimes intervened in support of the garden—e.g. by providing EPWP salaries for some of the garden members or helping with conflict resolution. The DSD did attempt to deliver what gardeners wanted, to an extent. After a consultative meeting with urban farmers in February 2015, the DSD then followed up with another meeting the following month, in response to farmers’ wishes, at which various organisations and government departments that might be able to provide assistance were invited to address the farmers. The DSD then committed to holding such sessions regularly, though to my knowledge that did not happen. While farmers did occasionally feel listened to by government officials, it did not appear that their views ever led to shifts in policy.



Photo 22: Farmers going to meeting with City of Joburg officials

In terms of the broader community's engagement in food system decisions, their role in determining what was grown at the gardens has already been discussed. Beyond this, there is generally very little public participation in the development of policies and legislation that affect the food system. The adoption of the new Integrated Food Security and Nutrition Policy (gazetted in 2014) provoked anger from many civil society groups due to the secrecy and lack of consultation involved in the process (South African Food Sovereignty Campaign, 2015b). For the average citizen, the complex maze of policies, laws and regulations that govern the food system—from agricultural production to food processing to retail distribution and trade—are unknown and inaccessible. Like other researchers before me (Cherry, 2016, p. 46), I struggled to acquire copies of some policies, despite rigorous searches and even direct requests to those tasked with implementing them. Thus the majority of the South African population is not actively involved in shaping food system policy. The gardeners do not appear to enjoy any additional influence in this regard.

Official South African government policy mandates public participation in planning and policy processes. Yet with regard to the gardens, at least, government departments appear to stage-manage these participatory processes in order to meet the official requirement for public consultation, without enabling real substantive

participation by communities. These public meetings seem to be an example of “invited spaces” of participation, in which actions taken by the poor are sanctioned by donors and government institutions, rather than “invented spaces” of participation in which grassroots actions directly confront the status quo (Miraftab, 2004, pp. 3–4). For example, the DSD attempted to organise regional farmers fora in each of the seven sub-regions of Johannesburg, in order to streamline government engagement with farmers. The forum for Sekelanani’s region was started, and subsequently collapsed, three times over the course of my fieldwork. The first time it was started, a young DSD employee with no experience in facilitating meetings gathered a group of strangers in the room and tried to start a process of electing forum officials before people even introduced themselves to each other. At subsequent meetings, DSD sent junior officials with no mandate to make any commitments to the farmers. Officials tended to send out invitations to farmers at the last minute, making attendance difficult. The third time the forum was restarted, the new regional coordinator had no knowledge of prior meetings or commitments. She had not received any information from her predecessor, and did not even know who to invite—she seemed not to have a register of the gardens the DSD was supporting in her region, nor any attendance records from previous fora.

In contrast to the struggles of Sekelanani’s regional forum, the one in Diepsloot, in the north of Johannesburg, seemed to function well (personal communication, Diepsloot forum chair, 31 March 2015). It had 15 member cooperatives and held regular meetings, developed annual plans and published reports on its activities, which included helping gardens to register as cooperatives, conducting research on farming in Diepsloot, setting up a farmers market and organising relevant trainings for the member cooperatives. Recognising that many groups registered as cooperatives without knowing what this entailed, the first training organised by the forum was on the governance of cooperatives. The forum also engages with GDARD and then distributes information amongst its members. In addition, the forum hopes to facilitate sales by members to the city for its emergency food distribution. This forum was started at the farmers’ own initiative, not by city officials. As a result, there seems to be greater participation and commitment to the forum. While not without its challenges, the forum represents the potential of fora to benefit farmers, and possibly to enhance their influence with policy makers.

9.4) Discussion

The levels of empowerment and democratisation witnessed in the case study gardens fall well below the optimistic projections in some of the literature. The visible absence of political conscientisation around the food system, which would be a necessary precursor for social mobilisation, was troubling in light of the many challenges faced by gardeners and their surrounding communities. As discussed above, there is a “close relationship between practices and the power and social relations that they support and uphold and which, in turn, ensure that those practices are maintained, stabilised and reproduced. These social aspects and (micro)politics of practice are often neglected” (Hargreaves, 2011, p. 93). As one activist from La Vía Campesina explained, the transformation of social relations requires both the “political work of ongoing education” as well as the daily practice of participation in order to create a new consciousness and new values (Masioli & Nicholson, 2010).

Without political education, the gardeners do not develop new consciousness. Nor do they develop new practices, and without these, there is no transformation. Yet instead of political education about the causes of their socio-economic conditions, the gardeners receive training that reinforces the hegemonic neoliberal mentality of self-help and market solutions to social problems. And this training is frequently delivered, along with other assistance, in a disempowering manner that demonstrates little respect for the gardeners’ time, their needs and their knowledge. Through networking and organising, the gardeners might come to recognise that their problems are shared, and part of a generalised social marginalisation, yet due to logistical challenges around transport and communications, as well as mistrust amongst the gardeners, such networking rarely occurs. This hinders not only consciousness, but also the potential policy influence of the gardeners. The next chapter also deals with issues of empowerment, but specifically women’s empowerment and issues of gender equality.

Chapter 10: Gender equality

10.1) Introduction

Some of the South African literature on urban agriculture suggests that women's participation is empowering, because it enables them to meet both practical gender needs, e.g., by fulfilling their traditional responsibilities for food provision, as well as their strategic gender needs, such as achieving greater financial independence or challenging patriarchal attitudes (Olivier, 2014; van Averbeké, 2007). Most of the more empowering aspects of UA seemed to derive from women's interaction in organised groups, in which they could share their experiences, develop gender consciousness and build solidarity (Slater, 2001). While there is some evidence of women's empowerment through UA, the literature on rural smallholder agriculture finds that women continue to face formal and informal barriers in terms of access to land, inputs and markets, as well as the double burden of household productive and reproductive labour (Claassens, 2013; T. Hart, 2010; Rangan & Gilmartin, 2002).

The Nyéléni Declaration on Food Sovereignty specifically singles out gender relations, stating that: "Food sovereignty implies new social relations free of oppression and inequality between men and women." It also calls for a world where "there is recognition and respect of women's roles and rights in food production, and representation of women in all decision making bodies" (*Nyéleni Declaration on Food Sovereignty*, 2007, p. 674). Based on a recognition of women's important role in food production and preparation, the call for gender equality incorporates equal access to land for women, an end to discriminatory laws with regard to inheritance and divorce, as well as equal participation by women and men in processes of agrarian reform (La Vía Campesina, 2007).

While these are indeed radical and transformative demands, the concept of food sovereignty exhibits some internal contradictions with respect to gender. For example, at the same time that it calls for an end to patriarchal oppression, it also emphasises the promotion of family farms, which have traditionally been a bastion of patriarchy and unequal gender relations (Agarwal, 2014; Patel, 2009). Also, the demand for women's empowerment is grounded in a recognition of women's role as providers of food for the family, thus implicitly reinforcing women's traditional domestic role. It

has been noted that ending discriminatory laws in itself is not enough to ensure actual changes in social practice—further education and social mobilisation are needed to ensure that there is actual change in women’s situation on the ground (Moser, 1989, p. 1816). Similarly, including women in agrarian reform processes is an important first step, but if such processes do not recognise and seek to transform the gendered division of labour in the household, women may continue to be excluded as a result of their domestic responsibilities.

Women’s empowerment “can be seen as a process in which the following elements will be considered: awareness/consciousness, choice/alternatives, resources, voice, agency and participation” (Charmes & Wieringa, 2003, p. 423). It has also been defined as “the process by which women redefine gender roles in ways which extend their possibilities for being and doing” (Mosedale, 2005, p. 252). As with empowerment in general, there are both instrumental elements, such as access to resources, and more transformative elements, such as consciousness and agency. These are aligned to Moser’s concept of practical and strategic gender needs in development planning (Moser, 1989). As she defines them, practical gender needs are “those needs which are formulated from the concrete conditions women experience, in their engendered position within the sexual division of labour, and deriving out of this their practical gender interests for human survival” (Moser, 1989, p. 1803). These needs arise out of women’s subordinate position, but do not challenge that subordination. In contrast, strategic gender needs seek to overcome women’s subordination and transform society; they are “formulated from the *analysis of women’s subordination to men*, and deriving out of this the strategic gender interest identified for an alternative, more equal and satisfactory organisation of society” (Moser, 1989, p. 1803).

This chapter examines gender roles as performed in the garden and at home, in Sections 10.2 and 10.3 respectively, in order to assess the impact of participation in the community gardens on the empowerment of women. These are viewed in relation to childhood gender roles, as related by participants during the food/ life history interviews, in order to see if there has been change. In addition, Section 10.4 will consider the gender-sensitivity of the support provided to the gardens, and how that might be improved to increase the potential for women’s empowerment.

10.2) Gender roles in the gardens

I asked all garden participants whether they thought growing food was men's work, women's work, or for everyone. All but one told me that it was for everyone, while one male participant at Vunani told me that it was for men, and women just assist (Isaac, personal communication, February 25, 2015). This view seemed to derive from his experience at the garden in the early days when, he told me, the women who had initially joined were struggling to clear the land and asked their husbands to assist them (Isaac, personal communication, January 20, 2016). Interestingly, his wife claimed to continue participating in the garden for his sake, explaining that due to the conflicts amongst the participants she would rather not be there, but she stayed because her husband needed her assistance (Margaret, personal communication, January 20, 2016).

In general, there seemed to be a fairly equal division of labour amongst men and women in both gardens, with all participants undertaking tasks such as weeding, planting, watering, and even basic landscaping work such as creating raised beds. Differentiation of tasks appeared to have more to do with participants' knowledge and skills than with gender roles. For instance, only two gardeners at Vunani knew how to stake the tomato plants—one man and one woman. At Sekelanani, female participants were involved in digging trenches between beds alongside male participants. Despite this, and perhaps only coincidentally, at both gardens men held the official leadership role of co-op president. I was not able to ascertain how these men came to occupy these positions, though in practice this title did not appear to carry any actual authority.

While men and women worked side by side in the gardens, they held ideas about gender that aligned with mainstream social norms. For example, on one occasion, a woman at Sekelanani who was amongst the most independent and capable of all the gardeners I have met, told me that she was frustrated that one of the other participants wasn't doing what he should in the garden as a man, but that as a woman she didn't feel comfortable telling a man what to do. I was shocked to hear her say this, as she routinely supervised male casual workers at the garden, and didn't appear to have any problem telling them what to do. She also regularly gave instructions to her sons, both

young and adult. Yet she seemed to feel that when a man was her colleague, and not her junior, she should not tell him what to do.

There was an often-repeated view, held by gardeners and those who supported the gardens, that growing food was considered ‘uncool’ and looked down upon. Young people, in particular, were thought to prefer office jobs because they didn’t want to get their hands dirty. I was also told that gardening “was associated with people who are of the lower class or from the foreigners” and that people sometimes shouted insults over the fence at Sekelanani (Moses, personal communication, February 9, 2016). Some people suggested that the reason gardening was unpopular was because it had been used as a punishment in schools during apartheid. It was also associated with the stigma of poverty, because if you have money, you can buy your food instead of growing it (Ledger, 2015).

There was no explicit gender dimension to the unpopularity of growing food, but I got the impression that it affected the men at the gardens more. One extension worker explained that in many South African cultures, women traditionally grew the vegetables while men tended the cattle—indeed, this had been the case with one of the men at Vunani. A gardener at Sekelanani told me that initially it was hard for his wife and children that he was a farmer in the city, implying that they were embarrassed by his work. Perhaps gardening was more acceptable for women because it fit into their gendered role as providers of food for their families, whereas men were supposed to be working in the paid economy and earning an income (Ledger, 2015). During the phase when Sekelanani members received salaries, it may have been more acceptable. Thus finding ways to address the stigma attached to gardening, especially for men, could also assist gardeners to feel more confident, and attract new participants.

10.2.1) Childhood experience of agriculture

Most of the gardeners were raised in households that grew food, often in rural areas, so they had some agricultural knowledge from childhood. Responsibility for food production seemed to be shared by men and women, a tradition that continued into the case study gardens. One gardener told me “I know that when we grew food, where we were raised, it was never an issue of whether it's women or men, everyone grew food,

men and women” (Samuel, personal communication, March 11, 2015). Many gardeners mentioned helping their mothers by fetching water for the garden, or learning to plant from their grandparents. In addition, several of the gardeners learned agriculture in primary and secondary school. This subject was mentioned by both male and female gardeners, from different provinces. One expressed regret at the fact that government had subsequently removed that subject from the curriculum⁶². At present, practical agriculture is not part of the primary school curriculum, but Agricultural Management Practices, Agricultural Science and Agricultural Technology are available as subjects at some secondary schools, predominantly in rural areas.

By growing their own food, the gardeners’ childhood households spent relatively little on food purchases. Their childhood home gardens extended beyond vegetable production to meat, dairy and staple foods as well. One gardener told me, “We were growing at home, mealies, and wheat. And veggies, cabbage, spinach, everything, potatoes, everything... We were doing maize, we'd grow the wheat, then harvest it and mill it” (Grace, personal communication, February 25, 2015). Some mentioned going to a mill, while others said their mothers ground the maize at home. Beyond that, some also grew up eating wild foods that they picked in the area around their homes—these greens were freely available and tend to be highly nutritious (T. Hart, 2010). By producing most of their own food, these households increased the food preparation burden of female members (discussed in the next section).

While the garden may have been a place of relative gender equality, people’s gendered roles in the home impacted on what happened at the garden. For instance, one participant at Vunani who was responsible for the care of two young grandchildren regularly had to leave early to look after them. During school holidays, she was not always able to come to the garden at all, if there was nobody to watch the kids. Her husband never appeared to be the one charged with childcare. At Sekelanani, some of the female participants needed to take time off to go and register their children at schools, or to look after them when they were sick. To my

⁶² Agriculture was on the curriculum under Bantu education, the apartheid-era inferior education that prepared black South Africans for low-paid, menial jobs. At some schools, agricultural tasks were also used as punishments. As a result, there is some reluctance amongst parents to have their children learn agriculture in schools (interviews with teachers and NGO personnel).

knowledge, this never happened with the male participants. In both urban and rural households, women are traditionally responsible for unremunerated care work in the home (T. Hart, 2010; Moser, 1989; Neves & Du Toit, 2013; White, 1991). Thus to understand constraints to women's empowerment in the garden, it is useful to consider the gendered division of labour they experienced at home.

10.3) Gender roles at home

The participants at both gardens came from a variety of different household types. There were participants who were part of two-parent households with children, and sometimes grandchildren as well. There were female-headed households, again with children and/or grandchildren. There were also households with only male members, either male relatives or simply housemates. Household size ranged from two to five people.

In all of the households with both men and women present, there was a gendered division of labour in the home. In all of those households, the women were responsible for cooking for the family (sometimes with help from the children). In many, they were responsible for shopping for food as well. One woman explained to me: "As the woman, I'm the one who knows these things" (Margaret, personal communication, December 19, 2014). However, in some cases the women and men shared the responsibility for shopping—this seemed to be a result of the fact that many households made large, infrequent purchases of key staples such as maize meal and bread, which would have been too much for one person to carry home on foot or by public transport.

The three men at Vunani indicated that they knew how to cook, but in all three cases, their wives did the cooking at home. One, who went home for lunch every day and then returned to work afterwards, specifically said that his wife didn't like for him to cook. Two of them had learned to cook when they stayed in all-male hostels.⁶³ Thus apartheid's migrant labour system, in which these men sought to fulfil their roles of providing for their families by migrating to work in cities, also led to them learning

⁶³ Under apartheid's migrant labour system and policies of influx control, men received permits to work in priority industries such as mines or factories. They then migrated without their families from their rural homes to cities, where they stayed in company-run or state-run all-male hostels (R. Smit, 2001).

what was traditionally a woman's task in the home. These men indicated that they enjoyed cooking, which suggests that men also feel limited by their prescribed gender roles. One man, who knew how to bake cakes, indicated that he was willing to teach others this skill so they could earn a living. But, as he explained, "the problem is, first point, I'm a man, I'm not supposed to be able to teach anybody something to cook. I was supposed to deal with things concerning men. ... So it's horrible" (Samuel, personal communication, March 11, 2015).

The women at the gardens shouldered a double burden of working all day in the garden, and then returning home to cook for their families. This 'double shift' for women is common in Johannesburg households (White, 1991, p. 83). Several indicated that they were extremely tired when they got home and therefore did not have the energy to cook vegetables from the garden, which required more preparation than other foods. One woman explained that she tried to cook a large amount of food on Sundays, so that she could eat leftovers on Monday and Tuesday instead of cooking after a long day at the garden. As a result, garden participation did not contribute to significant increases in vegetable consumption amongst these households.

In a study of UA in Cape Town, one of the women prepared a meatless meal of *imifino* (leafy greens), which she had grown in the garden, for her husband. This broke a cultural tradition, which reserved such meals for women. Her husband found this unacceptable and beat her. Another woman's husband threatened her with divorce for the same reason (Slater, 2001, p. 646). Thankfully, I never witnessed or heard about any such gender-based violence from the garden participants. Based on our conversations and the food diaries, I could see that all of the garden participants were willing to eat the vegetables from the garden, even if some expressed a preference for meat when it was available. However, these sorts of gendered divisions of household food consumption should not be overlooked when seeking to understand how food gardens impact on vegetable consumption and nutrition.

It would appear that the gendered division of labour in the customers' households was similar to that of the gardeners. The overwhelming majority of customers at Vunani were women, often accompanied by small children. The majority of customers at

Sekelanani were women as well, though perhaps due to its location on a busy, central street, more men came in to make purchases as they passed by. Given Vunani's relative distance from any grocery shops, women from the surrounding area were able to walk there with their small children, rather than paying for transport to the larger shops. Thus the garden helped to meet the women's practical gender needs—food provision for their families—while enabling them to bring their children to a pleasant, green space, of which there were few in the area. Sekelanani likewise provided a green space, in the middle of a highly built-up environment, in which children could play while waiting for their mothers to complete their purchases.

10.3.2) Childhood gender roles at home

The gendered division of labour in gardeners' households seemed to be the same as it had been in their childhood homes. Without exception, the gardeners grew up in homes where their mother (or the female relative in the home) did the cooking for the family. Usually the girl children assisted their mothers, while boys had other tasks, such as looking after cows. The high level of self-provisioning of these households meant a significant amount of domestic food processing was required (e.g. cleaning freshly-picked produce or grinding their own maize meal rather than buying it already ground), all of which fell to the women of the household. One gardener mentioned that his mother got up at 3:00 in the morning to grind maize meal for breakfast.

Several gardeners explained that when they were growing up, their fathers were away working in other parts of the country. When their fathers returned at holidays, the special occasion was marked by special foods. One gardener explained: "When our fathers came back we would have meat, they would slaughter a sheep. Most of the time when our fathers were gone for months to work, we did not eat meat" (Bongani, personal communication, February 25, 2015). Another gardener had a similar experience, but with different foods: "When our fathers are back, at least we'll have coffee and bread... We only ate bread when our fathers were back" (Isaac, personal communication, February 25, 2015). Foods such as meat and bread, that were rare and reserved for special occasions, have become a normal feature in gardeners' diets now that they live in urban areas and have cash incomes.

10.4) Gender-blind support for the gardens

While both men and women were involved in providing support for the gardens as extension officers, NGO personnel and food resilience officers, there was no indication that gender was incorporated into planning or implementation of UA programmes. In general, those supporting gardens indicated that more participants were women than men, and that frequently participants were pensioners. Indeed, one official expressed an interest in finding simple technologies to assist the farmers, since they were mostly older people (personal communication, GDARD official, 19 May 2015). I never heard the same sentiment expressed with regard to adapting the support to meet women's needs. There was no overt discrimination against women, and at the time of registration, the community development worker assisting Vunani insisted they have a gender-balanced membership. However, gender-blind programmes are never gender-neutral. Thus by failing to explicitly incorporate gender concerns into garden support, the programmes were developed with underlying assumptions about gender and household arrangements that may have been unfavourable to women. This is unsurprising given that local government is "embedded in asymmetrical social relations and informal institutional practice" which are similarly gender-biased (Beall, 2005, p. 271).

Caroline Moser suggests that for development projects to address women's practical and strategic gender needs, they need to take cognisance of women's triple burden of reproductive labour, productive labour and community managing work (Moser, 1989, p. 1801). The fact that many women were too tired at the end of a long day to go home and cook vegetables is an example of gender-blind planning. If one of government's objectives in supporting community gardens is to improve nutrition, women's triple burden should be taken into account when planning garden support, particularly since there are more women than men participating in such gardens. UA should not assume that gardeners will have energy to cook their own produce after working in the garden all day. Additional interventions, such as the community kitchens called for in the City of Joburg's Food Resilience Policy, would help to lessen this double burden and increase vegetable consumption.

Another city initiative was a cooking course for women involved in urban agriculture—reflecting a clear gender bias with regard to household division of labour. The objective was to teach women healthy recipes, though it was unclear

during the lesson I visited whether these were intended for home consumption or as an income-generating activity. It seemed to be a mix of both. During one lesson, which took place in Soweto in a teaching kitchen owned by the city, the participants made smoothies, onion jam and bread, amongst other things. While the recipes did seem to be healthy, they did not incorporate any vegetables that the women might be growing in their gardens, other than onions. Instead, they incorporated relatively expensive items such as balsamic vinegar and moringa leaf powder, which would not be in the budget of most garden participants. Further, they used kitchen equipment such as blenders and ovens, which many poor garden participants do not have in their homes (see Photo 23 below). Thus an intervention that specifically targeted women gardeners served to reinforce entrenched gender roles (through its assumption that women do the cooking), while providing participants with new skills and information they probably could not afford to put into practice. This speaks to the question of whether policies and programmes targeting women based on their traditional gender roles, serve to empower women or to further entrench their marginalisation.



Photo 23: Women gardeners at City of Joburg-sponsored cooking class

When the corporate sponsor began to assist Sekelanani, they provided coveralls and boots for all of the participants to wear. After that, the gardeners frequently, but not always, wore the new uniforms. At Vunani, the DSD provided similar uniforms—a

two-piece coverall and boots. On the rare occasions when the two women participants wore them, they only wore the jacket portion, not the trousers. These two elderly women never once wore trousers of any kind during the entire time I did my fieldwork—for them, appropriate women’s attire was a skirt, even for gardening (see Photo 24 below). I suspect that the difference between the women at Sekelanani, who usually wore skirts but were willing to wear the coverall trousers, and the women at Vunani, who would not wear trousers, was due to the age difference. The women at Vunani were 12-24 years older. It may also have related to the fact that those wearing the uniform at Sekelanani were receiving a salary at the time, which mean the uniform went along with the job. It may have been a requirement under the sponsor’s new hygiene requirements in the garden. By contrast, the gardeners at Vunani were not employed by the City, and therefore didn’t feel a need to wear a ‘uniform.’ In either case, the distribution of trousers to older women was not a form of assistance that they needed, and did not reflect gender awareness.



Photo 24: Woman weeding in skirt, Vunani

10.5) Discussion

While garden participation met many of women’s practical gender needs, in terms of providing food and some income, it did not address strategic gender needs. I did not

see evidence that women's participation transformed gender roles at home, for example, or empowered women to challenge their triple burden. Women at the case study gardens did not insist on leadership roles, as gardeners did in some research in Cape Town (Olivier, 2014). The point from the South African literature that women's empowerment results from their participation in organised groups (Slater, 2001), in which consciousness and solidarity can develop, provides some indication as to why there was not significant gender transformation in the case study gardens. I would argue that the levels of conflict and mistrust amongst the gardeners prevented the development of solidarity amongst the women in the gardens, thereby preventing them from seeing their individual struggles as shared social issues to be challenged.

It was interesting to note that in the gardens, men and women shared tasks quite equally, while in the home, there was a gendered division of labour. The household division of labour was the same as that in the gardeners' childhood homes, and in South Africa more generally (T. Hart, 2010; Ntombela & Mashiya, 2009; White, 1991). As for the relative equality of men and women in the gardens, this seemed to be a product of necessity, as there was insufficient labour in both gardens, and farming expertise was fairly evenly distributed between men and women. It may also have been related to women's traditional roles in agriculture in rural areas (Claassens, 2013; T. Hart, 2010). Women's household food production role in rural areas may have been linked to at least one male gardener's sense that gardening was shameful, though in other research this was linked to poverty more than gender (Ledger, 2015). More research is required to shed light on why the strong gender biases of the household did not seem to apply in the garden, and why the relative equality of the garden did not seem to influence the household.

While gender transformation was not an explicit programme goal for either the government or NGO support programmes, it should be, as it is certainly part of government's broader project of transformation. Furthermore, the gender-blindness of support frequently results in gender bias, as with the City of Johannesburg's cooking course and the coveralls provided to the gardeners. Support that focuses on not only skills development but also democratic decision-making and empowerment is more likely to address women's strategic gender needs (Tshishonga, 2012).

An excellent example of an agricultural project that *does* address strategic gender needs is the Soils, Food and Healthy Communities (SFHC) project in Malawi, mentioned in Chapter 2. Beginning with purely agricultural support, it expanded to include community recipe days that sought to transform gender relations and shift the household division of labour, in recognition of women's productive and reproductive labour. Unlike the City of Joburg's cooking programme, which started from an assumption of a particular household division of labour, the SFHC project explicitly sought to transform household gender roles in order to empower women and ultimately improve the project's impact on child malnutrition (Patel et al., 2015). The transformation of entrenched gender roles is not an easy task however. At the encampments in Brazil (discussed in the previous chapter on Empowerment and Democratisation), the MST attempted to shift gender roles and to value different types of work (traditionally assigned to men or to women) equally. Despite these efforts, "the [patriarchal] *machista* culture continues to assign traditional roles to men and women, thus reproducing gender roles and power structures" (Massicotte, 2014, p. 169).

Part II of this dissertation has examined the contribution of the gardens to each of the six components of food sovereignty. In Part III, I turn to key themes and issues that emerged from the findings, before drawing conclusions and suggesting areas for further research.

Part III: Discussion and conclusions

Chapter 11: Discussion of crosscutting themes

11.1) Introduction

Returning to the original research question, there is no simple ‘yes or no’ answer to the question of whether the community gardens are contributing to food sovereignty in Johannesburg. Given the complex and multi-faceted nature of food sovereignty, it is unsurprising that the answer to the question is complex and multi-faceted as well. In short, the previous six chapters on findings have demonstrated that the gardens do contribute to food sovereignty—to some components significantly more than others—and have sketched out some of the limitations of their contribution. This chapter delves more deeply into the questions: What obstacles inhibit their impact? And how can their contribution be enhanced? Herein lies the value of applying the food sovereignty framework to the community gardens—it enables us to consider what they are ‘doing’ for different actors at different scales, moving from individual garden participants to their surrounding communities and the city of Johannesburg. It also enables us to consider what influence the larger national and global political-economic system, and more specifically the food system, has on the gardens’ potential to contribute to the different components of food sovereignty.

This chapter will discuss the findings of this research as they relate to three key themes. The first theme, discussed in Section 11.2 below, is the importance of culture and worldviews in understanding the impacts, possibilities and limitations of community gardens. This includes the cultural backgrounds of participants and their surrounding communities, the broader prevailing neoliberal worldview and the space for cultivation of deep democracy and alternative worldviews within community gardens. The second theme, covered in Section 11.3, relates to the multi-functionality⁶⁴ of the gardens and the challenges this poses in terms of providing support—whether it comes from government agencies, NGOs or the private sector—in the context of neoliberalism. The third theme, addressed in Section 11.4, relates to scale and impact, including the challenges to localisation of the food system and how to scale up and/or out the impact of the community gardens. These three themes highlight the value of the food sovereignty framework in broadening and deepening

⁶⁴ In the UA literature, multi-functionality refers to “the multiple roles or objectives that society assigns to agriculture, including economic, social and environmental roles” (Aubry et al., 2012; de Bon et al., 2010, p. 26).

our understanding of the potential and limits of Johannesburg's community gardens, well beyond the traditional parameters of analysis used to discuss urban agriculture. Through these three themes, we can see how and why the community gardens are contributing to certain aspects of food sovereignty more than others, and where the greatest potential for building food sovereignty lies.

11.2) Culture and worldviews

The definition of food sovereignty used in this research refers explicitly to culture when it calls for “the right of peoples to healthy and culturally appropriate food” (*Nyéléni Declaration on Food Sovereignty*, 2007). Despite this, Sampson and Wills (2013) argue that cultural appropriateness is neglected in the food sovereignty literature, in particular the contested and changing nature of culture. Bringing culture into discussions of urban agriculture is important because the issues that affect UA are not simply technical, as the food security literature might suggest. Sub-section 11.2.1 below considers the findings of this research in terms of the importance of food culture to achieving food sovereignty, as issues of familiarity, custom and memory/nostalgia influence dietary patterns as well as agricultural practices. The next sub-section (11.2.2) then considers how the prevalence of a neoliberal mentality or worldview amongst garden participants and those tasked with supporting them has a significant influence on key aspects of food sovereignty, such as empowerment. Sub-section 11.2.3 turns to the challenge of creating a culture of democracy in the face of entrenched patriarchal and autocratic cultures, before sub-section 11.2.4 examines how alternative worldviews persist alongside the prevailing neoliberal mentalities, and how these might help gardeners to overcome their socio-economic marginalisation and move closer to food sovereignty.

11.2.1) Food cultures and memory

Culture is intimately linked to all aspects of food production, distribution, preparation and consumption. Bonnekesen (2010, p. 280) states that “cultures create ideas, rituals and rules around food that specify quite clearly what is good to eat by whom, how people may ‘reasonably’ be denied access, and how to reward or punish those who cultivate, prepare and serve food.”

The question of culture is key to understanding why garden participants do not consume the recommended daily amount of vegetables, despite having free access to them. Firstly, participants' ideas of the appropriate or desirable amount of vegetables to eat were determined by a combination of upbringing, education and cultural norms (Bonnekessen, 2010; Trefry, Parkins, & Cundill, 2014). Thus gardeners told me they consumed healthy diets, even though their diets appeared deficient in nutrients they could get through the consumption of additional vegetables from the gardens.

Second, familiarity with the vegetables also contributed to what was produced and consumed by gardeners.⁶⁵ Thus when NGOs planted unfamiliar plants, these simply went to waste. The gardeners did not know how to use them, nor did their customers, who therefore did not purchase them. In addition to limiting dietary diversity, this lack of familiarity with a wide range of edible plants also led to reduced production levels, as there was no market for the “companion” plants that would normally be grown in a permaculture production system to assist with pest control and soil health. For example, the farmers at Vunani would grow, eat and sell tomatoes, but there was no market for basil—a traditional companion plant for tomatoes—amongst the surrounding community. It may have been agroecologically beneficial, and culturally appropriate for NGO personnel, but it was not part of the customary diet of the gardeners or their customers.

Beyond food culture, South Africa's patriarchal culture also influenced gardeners' food consumption (Trefry et al., 2014). The gendered division of labour in the home, in which women are traditionally responsible for preparing food, meant that female food gardeners came home from working in the garden to face an additional burden of food preparation responsibilities, which male food gardeners generally did not share (T. Hart, 2010; Moser, 1989; White, 1991). Thus in households in which a male member participated in the garden, he could bring home free vegetables to be prepared by another member of the household. However in households in which a female member participated in the garden, she would return home too tired to prepare the vegetables, and thus participation in the garden did not translate into significant

⁶⁵ Studies suggest that introducing children to unfamiliar vegetables through school garden programmes is more likely to result in expanded preferences and increased consumption (Garnett, 2000, pp. 71–2).

increases in vegetable consumption. Given that the government and most NGOs see community gardens as contributing to improved nutrition, this gendered division of labour must be taken into account or gardens will not necessarily meet that objective. Further, such support programmes must recognise the interplay of gender, race and class differences, in order to address female gardeners' unique and multi-faceted experiences of oppression (Park, White, & Julia, 2013; White, 1991).

While some of the aspects of culture discussed above presented challenges, cultural memories also contributed positively to the surrounding communities' purchase and consumption of vegetables from the gardens. At Sekelanani, the African migrant population brought seeds to the garden so that they could access their traditional foods, not commonly available in shops. Being able to acquire these foods from Sekelanani helped them remain connected to their home cultures while living in Johannesburg (French, 2008; Mares & Peña, 2010; Tuomainen, 2009). Occasionally, though far less frequently, South African customers expressed interest in traditional, wild-harvested greens, such as *imbuya* (amaranth) that they knew from growing up in rural areas. One of the gardeners at Vunani was clearly moved by nostalgia when I brought her some *lengana* (African wormwood) from Sekelanani for her cough—the smell of the plant immediately reminded her of her childhood with her grandmother (see Photo 25 below). Thus memory and nostalgia also play a role in what is produced and consumed in the gardens, and could potentially be used to increase consumption of healthy indigenous vegetables (Abarca & Colby, 2016; Holtzman, 2006; Tuomainen, 2009).



Photo 25: Lengana, a traditional cough remedy

Even participation in urban agriculture was linked to culture, both positively and negatively. For many of the gardeners, the memory of childhood participation in agriculture was one of the reasons they were first interested in joining their community gardens. Growing food created a connection to their rural upbringing and to activities they had learned from their parents and grandparents as children. Yet for others, moving to Johannesburg was supposed to represent a break from rural, agricultural activities and therefore farming was considered an undesirable livelihood strategy. Though I never heard anyone express this view directly, many gardeners and garden support personnel told me that young people in particular felt farming was dirty and ‘uncool’. In this regard, ‘modern’ urban culture discouraged participation in agriculture. Changing the perception of agriculture amongst the youth was an oft-cited objective of gardeners and garden support personnel. It will certainly be necessary in order to create more localised food systems, which will require significantly higher levels of participation in agriculture amongst Johannesburg residents.

11.2.2 Neoliberal (govern)mentalities

Another aspect of culture that affects the contribution of gardens to food sovereignty is the pervasiveness of neoliberal mentalities amongst the gardeners and those tasked with providing support. David Harvey (2005, p. 2) defines neoliberalism as “a theory of political economic practices that proposes that human well-being can best be

advanced by liberating individual entrepreneurial freedoms and skills within an institutional framework characterised by strong private property rights, free markets, and free trade.” Neoliberal mentalities, or subjectivities, refer to “the ways that this market logic increasingly pervades individuals’ and communities’ everyday thoughts and practices as we embrace such ideals as individualism, efficiency and self-help” (Alkon & Mares, 2012, p. 348).

In conducting research in the gardens, it became apparent that the individualising, market logic of neoliberalism had been adopted by garden participants as well as government, corporate and NGO personnel assisting them. Neoliberal logic had become unquestionable “common sense” and seemed to foreclose any other possible way of thinking about food or agriculture. This is in line with Gramsci’s notion of hegemony, in which consent or acceptance (of the status quo) is achieved by “moulding personal convictions into a replica of prevailing norms” (Femia, 1981, p. 24; Harvey, 2005, pp. 39–40; Peet, 2002, p. 56). What this means for the support provided to gardens will be discussed in Section 11.3, below. In this section, I will limit my discussion of neoliberal mentalities to garden participants.

One of the disempowering elements of neoliberalism highlighted by Wendy Brown is its transformation of political and social problems into individual problems with market solutions (Brown, 2006, p. 704). Thus poverty and hunger are not viewed as challenges for political and economic policy, but as failures of individual entrepreneurship—food is viewed as a commodity, an item to be purchased through the market, and an inability to do so is blamed on the individual’s failure to develop his or her “human capital,” rather than on the economic system. This view was apparent amongst the gardeners, who were unfamiliar with the right to food and more importantly, failed to see how such a right could work. As one gardener succinctly put it, “A right to eat, but where will we get the food to eat? You’ll go to Spar [supermarket] and say, ‘I want to eat’, yet you don’t have money to buy food” (Grace, personal communication, February 25, 2015). It was inconceivable to her that food might be available by other means than purchasing it.

Likewise, gardeners blamed either unemployment, or the laziness of the hungry themselves, for the prevalence of hunger. Nobody mentioned injustice or

marginalisation as a cause of hunger. By attributing hunger to unemployment, the gardeners reinforced the notion of food as a commodity to be purchased. By blaming the hungry for being lazy, they individualised what is clearly a widespread social problem. In both instances, the multiple structural factors that lead to hunger—such as unequal access to education, massive un- and under-employment, racism, etc.—are rendered invisible and thus not open to discussion or political claims on the state.

The Foucauldian notion of neoliberal governmentality speaks to the way in which direct state control (or discipline) is replaced or reinforced by indirect techniques of government in which individuals employ “techniques of the self” to govern themselves. This “strategy of rendering individual subjects ‘responsible’ ... entails shifting the responsibility for social risks such as illness, unemployment, poverty, etc. and for life in society into the domain for which the individual is responsible and transforming it into a problem of ‘self-care’” (Lemke, 2001, p. 201). In line with the neoliberal cuts to budgets for social services, and with the neoliberal concept of the entrepreneurial consumer-citizen, individuals become responsible for their own well-being (renamed ‘human capital’) rather than looking to the state for any form of social welfare. This attitude was clearly displayed in the gardens, where even the types of support the gardeners felt the government should provide were limited to helping them and others to farm—to feed themselves—rather than providing any entitlements to the hungry.

The neoliberal transformation of social problems into personal problems inhibits mobilisation amongst the gardeners. If hunger is not recognised as shared, social and political, then there is no impetus to join together to make claims with regard to hunger. As long as gardeners do not recognise the structural causes of hunger and unemployment, they will not mobilise to change them. Nor will they make claims on a state that they do not see as having any responsibilities toward the hungry. Given that social mobilisation for structural change is a critical aspect of empowerment (as defined in Chapter 9), the pervasiveness of neoliberal mentalities amongst gardeners can be said to directly inhibit empowerment.

11.2.3) Culture of democracy

The “de-democratising”⁶⁶ aspects of neoliberalism are compounded by the fact that in the South African context, democracy is a new and apparently poorly consolidated concept. At the case study gardens, conflict amongst the gardeners seemed to flourish in the absence of democratic decision-making systems or a culture of open dialogue and participation. Given that the gardeners lived most of their lives under the authoritarian system of apartheid, there was no reason to assume that the gardeners were well versed in democratic practices (Diamond, 1997; Finkel, 2003). Further, most gardeners grew up in patriarchal families, attended schools in which strict discipline was enforced through corporal punishment, and had worked in hierarchical employment situations (such as the mines or domestic service) (Claassens, 2013; Ntombela & Mashiya, 2009). For many, the dawn of democracy in 1994 was their first contact with democratic participation, and voting in periodic elections may continue to be their only contact in this regard. Thus beyond formal democracy—whether at the level of the country or the garden cooperatives—many gardeners have limited experience with participatory deliberation, cooperative problem solving or other democratic practices (Finkel, 2003; Mattes, 2002).

A democratic culture must be learned, and in the case study gardens there had been no instruction on this subject (Council for Scientific and Industrial Research, 2015; Finkel, 2003). The support provided by corporate sponsors, NGO personnel and government representatives has not promoted democratic practices in either form or substance, as it has tended to be provided in a non-consultative, top-down fashion and to focus on technical agricultural production issues. Unlike the MST encampments (see Chapter 9), where political training ensures that conscientisation occurs and democratic practices are adopted, garden practices reflect and reinforce both the atomisation and lack of democratic participation typical of neoliberalism. Thus they are unlikely to contribute to a more democratic food system. In order “for citizens to first want, and then work toward, a more just and healthy food system, the deep democratisation of activities such as urban agriculture must be understood as both an end and as a means. ... The knowledge necessary to imagine and enact more egalitarian futures must come from somewhere” (McIvor & Hale, 2015, p. 738). Thus as a priority, support for UA projects should focus on promoting deep democracy by

⁶⁶ The term is Wendy Brown’s (2006).

cultivating civic relationships, exposing power dynamics and deliberately orienting participation toward the common (McIvor & Hale, 2015, p. 729).

11.2.4) Alternative worldviews

The food sovereignty discourse, as articulated by La Vía Campesina and their allies, represents an alternative worldview—one in which food is treated as a right, not a commodity; in which food producers work with nature, not against it; and in which communities, rather than corporations, govern food systems conceived at a human, rather than global, scale (La Vía Campesina, 2007). The promotion of alternative worldviews involves expanding the boundaries of the thinkable. Currently, the hegemony of neoliberal (govern)mentalities circumscribes the thinkable, imposing a market logic on not only the economic sphere, but also the political and social spheres of life in a way that is taken for granted as common sense (Guthman, 2008c).

In order to fight for an alternative to the current food system, people must first see the problems with that system, and then they must be able to imagine alternatives. For Michael Carolan, part of the value in alternative food practices (such as urban agriculture) lies in their ability to make new configurations of people and things possible, ultimately “to make the un-thought thinkable” (Carolan, 2013, p. 423). He argues that alternative imaginaries follow alternative practices, or as he puts it: “To think differently, we have to *do* differently” (Carolan, 2016, p. 142 emphasis in original). The act of doing something differently, he argues, “alters our capacity to act and makes the unthought-of thinkable” (Carolan, 2016, p. 145). Thus community gardens potentially have a ‘demonstration value’ in showing that other food practices are possible.

Like Carolan, Erik Olin Wright (2009) finds potential for transformation in ‘interstitial’ activities under the current globalised system of capitalism, which he finds antithetical to social justice and democracy. Wright argues that people’s *beliefs* about what is possible, forged through formal and informal education as well as through daily practice of mundane activities, influence what is *actually* possible (Wright, 2009, p. 200). Thus the development of viable alternatives—in theory and practice—is fundamental to opening the possibilities for social change, by demonstrating that ‘another world is possible’ (Wright, 2009, p. 255).

The MST encampments in Brazil share this emphasis on practice as a means of creating alternative norms and beliefs, though this daily practice of participatory democracy is supplemented with explicit political education (Massicotte, 2014). In the context of the largely undemocratic lived experience of the community gardeners, it seems likely that such political education, as well as training in deep democracy, will be necessary to expand the thinkable and create space for alternative imaginaries. It is hard to imagine that such political education would be provided by any agents of the neoliberal state (Bond, 2000), but perhaps some left-leaning NGOs, foundations or academics, or even labour unions or associations of cooperatives, might be interested in activities to deepen democracy.

Having considered the influence of culture and worldviews on the impact of the community gardens, the next section addresses the limits imposed by neoliberalism on garden support programmes, as well as the benefits to be gained by a more multi-functional approach to support.

11.3) The challenges of support: neoliberalism and multi-functionality

The dominance of neoliberal rationalities amongst those who design and implement support for the community gardens significantly influences the nature, quantity and quality of that assistance. With its emphasis on the market, neoliberalism constrains state budgets for social welfare programmes, leaving gaps that are then filled by NGOs and corporate social responsibility (CSR) programmes. The programmes of NGOs and corporates similarly reflect a market orientation, encouraging gardeners to view their activities in an entrepreneurial light and never raising the deeper social or political issues that create the need for their UA programmes in the first place. Subsections 11.3.1, 11.3.2 and 11.3.3 below examine the constraints neoliberalism places on government, private sector and NGO support to the gardens, respectively.

Beyond these constraints, the multi-functionality of UA—though increasingly recognised in the literature—does not appear to have filtered down into the support provided to community gardens in Johannesburg. These tend to focus on only one or two functions, such as food security and income, ignoring the myriad reasons why participants join community gardens. Subsection 11.3.4 examines how by failing to

recognise participants' multiple objectives, these support programmes fail to provide the kinds of assistance that would meet those objectives. Subsection 11.3.5 then considers training and other education, which is often provided in a formal, classroom-style environment, with technical information conveyed by 'experts' to the gardeners in a one-directional transmission. This method of training tends to be disempowering, and ignores the value of informal learning, practical training and peer-to-peer sharing of knowledge, all of which have proved very effective amongst farmers elsewhere (Altieri, 2010; Rosset & Martinez-Torres, 2013). Thus, the design of support programmes must account for multiple motivations and learning styles if they are to be successful.

11.3.1) Neoliberalism and the role of the state

The role of the state under neoliberalism, in its simplest form, is to create and maintain the optimal conditions for the operation of the market and profitable capital accumulation (Harvey, 2005). This has entailed the dismantling of the Keynesian welfare state, the privatisation of basic service provision and the adoption of managerial, market-oriented governance techniques. At the local level, city governments have been forced to 'compete' for investment capital, to adopt entrepreneurial strategies and undertake public-private partnerships to fulfil basic functions (Harvey, 2005). In South Africa, the adoption of the Growth Employment and Redistribution (GEAR) programme in 1996 signalled the ANC government's adoption of a neoliberal approach to development (Bond, 2000; P. Williams & Taylor, 2000). Beyond these practices, neoliberalism also operates as a political rationality, which involves "a specific and consequential organisation of the social, the subject, and the state. ... as Foucault inflected the term, a political rationality is a specific form of normative political reason organising the political sphere, governance practices, and citizenship. A political rationality governs the sayable, the intelligible, and the truth criteria of these domains" (Brown, 2006, p. 693).

It is worth noting that 'the state' is not a unitary, monolithic entity. Rather, it is comprised of different actors with different interests operating at different levels (e.g. municipal, provincial and national). Thus at times, policies and programmes of different arms of 'the state' appear contradictory, as different interests struggle for

dominance. This is certainly true with regard to the South African government's approach to hunger in general, and urban agriculture in particular.

While the South African constitution recognises the right to food (Section 27(1)b), this right is not being enjoyed by over a quarter of the population who remain hungry and an additional quarter at risk of hunger (Shisana et al., 2013). While there are numerous national-level policies related to food and agriculture, my focus in this section will be the provincial and municipal levels, as these impinge directly on the functioning of Johannesburg's community gardens. As described in Chapter 3, the Gauteng Department of Agriculture and Rural Development (GDARD) has two programmes that provide assistance to community gardens—the LandCare programme, which focuses on sustainable natural resource management, and the Food Security programme, which seeks to eradicate extreme hunger and poverty. Gardens in both programmes receive inputs (such as tools and seedlings) as well as training and advice from agricultural extension officers. Both programmes seek to promote job creation through agriculture. GDARD's approach has been criticised for measuring outcomes in terms of numbers of gardens established or starter packs distributed, rather than actual impacts on food security, nutritional status or economic benefits to participants (Ruysenaar, 2012, p. 5).

The City of Johannesburg's Food Resilience Programme, implemented by the Department of Social Development (DSD), includes a variety of activities designed to address hunger, such as emergency relief (food parcels and soup kitchens), support for home and community gardens, establishment of larger commercial farms, development of food hubs, procurement from small farmers and establishment of community farmers markets and people's restaurants that offer subsidised healthy food. The city provides support to gardens through agri-resource centres established in each of its seven sub-regions. These centres give out seeds, loan out tools and even tractors (see Photo 26 below), provide advice and training, and also seek to support access to markets (City of Johannesburg, 2012, p. 4). The food resilience policy appears to address a number of the critiques of the provincial garden support programme—e.g. by seeking to facilitate access to existing markets and to create additional markets, and through a wider range of interventions aimed at generating income and encouraging healthy eating. However, many of these have not yet been

implemented, so their effectiveness remains untested—the South African government has been criticised, at all levels, for its pattern of developing good policies but failing to allocate budgets to implement them⁶⁷ (Ruysenaar, 2009; UN Standing Committee on Nutrition, 2013). And as with the GDARD programmes, the key performance indicators (KPIs) of the city’s regional agri-resource centre coordinators are quantitative—numbers of forums held, market days organised, tractor services provided, etc.—rather than based on substantive impacts.



Photo 26: Tractor on loan from the City, Alexandra

Both the municipal and provincial garden support programmes frame UA as a potential remedy for hunger and poverty. The suggestion is that the poor can grow food to feed themselves, and then sell the surplus to earn an income. This approach has been criticised for failing to recognise how the very structural challenges that have created such high levels of hunger create obstacles that will inhibit any attempts by the poor to ‘grow themselves out of poverty’ (Battersby et al., 2015, p. 2; Ledger,

⁶⁷ Even the government’s own National Planning Commission cited failure to implement policies as a key factor in government’s slow progress on developmental objectives (National Planning Commission, 2011).

2016). These programmes also promote market solutions to hunger, encouraging gardeners to sell their surpluses to their communities, and seeking to facilitate their access to larger supermarkets. Beyond reinforcing the market logic of neoliberalism, rather than recognising state obligations towards citizens, these efforts fail to acknowledge the danger of adverse incorporation, whereby access to supermarkets—with their stringent quality standards and low prices paid to producers—may actually exacerbate the poverty of urban farmers (Greenberg, 2016; Philip, 2010). One GDARD official did recognise this challenge, stating that the “big retailers are not very friendly towards these small-scale producers” (personal communication, GDARD official, 19 May 2015).

The language of officials, programme officers and extension workers reflects the unevenness of neoliberalisation. For example, in one of the key informant interviews, a municipal official expressed concern with inequality and acknowledged that food is a human right. Yet in the next breath, the same official emphasised that South Africa was “not a welfare state” and expressed concern that “we have already created dependency with [social] grants and houses from government” (personal communication, City of Johannesburg official, 5 November 2014). The City of Joburg’s policy recognises that affordability of food is a key challenge, yet rather than removing food from the domain of the market, it seeks to lower prices through the market, by increasing production. The same official indicated the limited role of the state in food-related programmes and the importance of partnerships, stating that: “Funding is a challenge, but government doesn’t want to run it.” Rather, government would “introduce companies to people and then step back” and let the private sector step in (personal communication, City of Johannesburg official, 5 November 2014). Such an approach is perfectly aligned with neoliberal notions of governance (Harvey, 2005, p. 47).

Also in line with neoliberalism is the government’s approach to supporting UA, focusing on depoliticised technical assistance. Some of the support, such as training, is outsourced to external service providers, while materials such as tools and seeds are acquired through tender processes that lead to significant delays in delivery (personal communication, GDARD extension officer, 7 July 2015). The government also assists

interested groups to register cooperatives, but does not provide training on the democratic governance processes required to run such cooperatives (Council for Scientific and Industrial Research, 2015). GDARD extension officers are under pressure to meet numeric targets for garden visits, which limits their ability to provide meaningful advice and assistance. Both city and provincial programmes promote the “self-sufficiency” of gardens, suggesting that the goal is to provide support for a limited time, until the gardens no longer need assistance. Yet this objective ignores the many structural constraints that gardeners face, which cannot be overcome through provision of tools or seeds (Ledger, 2016). One GDARD official recognised this and indicated her frustration that many issues related to food security—such as jobs and transport—fall outside of her mandate, limiting her department’s ability to have an impact (personal communication, GDARD official, 19 May 2015).

A significant lack of coordination between and within government departments further hampers support⁶⁸ (South African Human Rights Commission, 2013). For example, there is no official coordination between the City of Joburg’s Food Resilience Programme and the GDARD Food Security Programme, despite the clear overlap in their areas of responsibility, objectives and activities. Even within GDARD, the markets section (which is supposed to help farmers access markets) does not coordinate with the extension officers (personal communication, GDARD extension officer, 7 July 2015). One official bemoaned the fact that there was no communication amongst the different arms of government supporting the gardens, especially since he believed that “the function of government is to coordinate everybody” (personal communication, GDARD official, 16 March 2015).

Given the numeric targets that support personnel have to meet, it is unsurprising that they do not have the time to promote democratic processes in the gardens. And with government limiting its role to that of a facilitator of partnerships and promoter of market solutions, it is unsurprising that government support for community gardens does not promote empowerment or transformation. As long as GDARD and the City

⁶⁸ As with poor implementation, lack of inter-departmental coordination is a commonly recognised challenge for the South African government at all levels (See, for example, Kraak, 2011; Naidoo, 2013).

of Johannesburg embrace (knowingly or unknowingly) neoliberal political rationalities, their support for UA will continue to reinforce this market logic.

11.3.2) Neoliberalism and the role of the private sector

Given that neoliberalism privileges market solutions to social problems, it is unsurprising that the private sector occupies a privileged role. Firstly, the commodification of food is taken as given, and the sale of food for profit is not questioned in any of the government or corporate proposals to combat hunger (Ledger, 2016, pp. 95–6). Within this market-oriented paradigm, UA programmes frame the hungry as entrepreneurs, who need support to successfully grow themselves out of hunger and poverty.

In conversations with garden participants, the high price of food was often raised. Yet when I asked about the responsibilities of companies, such as supermarkets, toward the hungry, participants did not appear to view high food prices as profiteering. Rather, they expressed the view that such companies should help the hungry, *if they could*. As one participant expressed it, “I think they must help, but if they’ve got money. Because also they must get something, and then they can manage to help people (Margaret, personal communication, February 26, 2015). This view, coming from a garden participant who struggled to feed her family, struck me as a poignant indication of just how thoroughly the neoliberal mentality had permeated South African society.

As discussed in the previous section, neoliberal governance relies heavily on partnerships between the public and private sector. Both the City of Johannesburg and GDARD sought partnerships with private companies to deliver support to the community gardens, and indeed indicated that such partnerships were a critical success factor. The NGO that assisted Vunani likewise relied on funding and other assistance from corporate partners to deliver its programmes. This role for corporates is seen as something extra, not a core role or responsibility towards the communities in which they operate. It is framed as CSR or in a South African context, as Black Economic Empowerment (BEE) spending. One of the gardeners at Sekelanani received her first gardening training, for example, through a programme sponsored by a large food manufacturer (Thato, personal communication, January 21, 2016).

Ironically, this manufacturer of highly-processed foods and sweets provided training on healthy eating and vegetable farming to the principals of early childhood development centres (ECDCs) so that they could feed their charges nutritious food.

The financial assistance provided to Sekelanani by a corporate sponsor as part of its BEE enterprise and supplier development⁶⁹ (ESD) programme provided a study in disempowerment, misunderstandings and dashed expectations (as discussed in Chapters 7 and 9). The gardener who facilitated the support was optimistic that the sponsor was committed to social upliftment, and that the support provided would enhance the operations and profitability of the garden. Yet as the partnership unfolded, it became clear that it was a highly unequal one, in which the corporate sponsor made decisions without consulting the gardeners, in line with their own plans rather than the gardeners' needs. The corporate sponsor also viewed the garden simply as a business, and the cooperative members as 'staff,' with little understanding of the consensual decision-making process that was supposed to occur in the cooperative. This view explains, to an extent, the way in which the corporate sponsor tended to communicate with only one member of the cooperative—the nominal president—rather than with the whole group. Over the course of the partnership, I watched conflicts develop amongst garden participants over the spending of the funds, as the garden's sales income declined due to delayed infrastructure installation that led to the loss of a planting season.

The challenges with the corporate sponsor at Sekelanani represented an exaggerated version of the challenges that tended to occur with all corporate sponsors, at both case study gardens. In general, these relationships were based on what was best for the sponsor, not the garden, and were characterised by poor communication, a lack of consultation, and top-down decision-making (Blowfield & Frynas, 2005; Frynas, 2005; Kapelus, 2002). Yet the gardeners were expected to be grateful for whatever assistance they received, whether it was needed or not (Ledger, 2015). This is hardly surprising, as the corporate sponsors viewed their assistance as either a charitable

⁶⁹ Black Economic Empowerment (BEE) is the framework for the transformation of the South African economy. Company progress is scored on five different elements (previously seven), one of which is enterprise and supplier development (ESD), in which large companies are required to develop small, black-owned businesses as potential suppliers. Companies are scored based on a target for expenditure on ESD, rather than impact on, or procurement from, black businesses.

extra, or a necessary step to acquiring points to improve their BEE scores (Eslava, 2008; Idemudia, 2011). Genuine empowerment, social transformation and democratisation were not the objective.

11.3.3) Neoliberalism and the role of NGOs

With the neoliberal pressure on state budgets for social welfare programmes and services, NGOs have stepped in to form ‘partnerships’ with government, providing basic services and softening the blow for those who experience economic marginalisation. Critical scholars have indicated how food security initiatives “enable a neoliberal state by assuming functions that were formerly its responsibility, such as feeding the hungry and nutrition education” (Alkon, 2013, p. 2). Urban agriculture has also been dubbed an “anti-politics machine” for de-politicising economic issues and re-directing people’s potential demands into self-help activities (Page, 2002). However, McClintock has argued that alternative food networks (AFNs) started in opposition to the dominant food system may well be both neoliberal and subversive, simultaneously embodying “*both* a form of actually existing neoliberalism *and* a simultaneous radical counter-movement” (McClintock, 2013, p. 2 emphasis in original).

Further, NGOs are reliant on donors—usually governments or corporations—in order to operate. Guthman (2008c) demonstrates the way NGO programmes are developed to conform to what NGO personnel see as ‘the possible’ within the current climate of neoliberalism, thereby precluding the need for donors to directly influence the ideological content of their programming. This narrowing of ‘the possible’ within the strictures of neoliberalism makes it extremely unlikely that NGOs will develop radically anti- neoliberal capitalist programming. Beyond this, donor reporting requirements often influence NGO programming and shift accountability upwards, towards donors, away from the communities NGOs are supposed to serve (Bornstein, 2006; Rauh, 2010).

In the case of NGO support to community gardens in Johannesburg, it is clear that the predominant NGO in the field has adopted a market-oriented approach. This NGO provides training on permaculture production methods, as well as business skills, in line with the gardeners’ subsistence and income motivations. The approach of the

NGO is to help gardens become financially sustainable, so that they provide sustainable livelihoods for participants (personal communication, NGO staff member, 18 March 2016). The NGO is also trying to promote agro-processing and value addition, to enhance the income potential of gardens. Of course, there is nothing wrong with this objective, particularly in the context of poverty and unemployment. Yet what is not included in the support but which is equally important in terms of food sovereignty is training on democratic processes for managing the garden, the right to food, and the functioning of the food system. As with government support, the existing corporate-controlled, profit-driven food system is taken as a given, and the NGO merely attempts to incorporate marginalised gardeners into this system. Its focus on financial sustainability unwittingly reinforces the entrepreneurial, self-help mentality of the neoliberal citizen-consumer (Alkon & Mares, 2012; McClintock, 2013).

As with other support provided to the gardens, the NGO's engagement seemed to be plagued by miscommunication. After the contract for assistance ended at Vunani, some gardeners thought the NGO had gone out of business or moved to another province, as they had not been aware of the fixed timeline for support. In addition, each time the NGO brought corporate volunteers to help at Vunani, they arrived with whatever tools and seedlings they wanted, without consulting the gardeners about their needs. They also planted 'unusual' items—such as herbs—in line with their permaculture principles, that were not wanted or needed by the gardeners or their customers. The NGO did not appear to provide information to the gardeners on how to use these 'unusual' plants in their cooking. These plants then ended up taking up space, or being pulled out by the gardeners so they could plant vegetables their customers would actually buy.

Without a doubt, NGOs provide much-needed material support and training to community gardens. However, this training reinforces neoliberal subjectivities through the emphasis on self-help and incorporation into the market system. Adding training on deep democratic practices and human rights would greatly enhance the value of NGO support, in terms of the empowerment of participants—understood as conscientisation and mobilisation for change (McIvor & Hale, 2015). Yet this is

unlikely to occur as long as NGOs depend upon government and corporate sources of funding (Bornstein, 2006; Guthman, 2008c).

Having examined the limitations imposed by neoliberalism on the support provided to gardens by government, the private sector and NGOs, the next section examines the multi-functionality of gardens in terms of what that means for the kinds of support they actually need.

11.3.4) Multi-functionality of UA: implications for support

The global literature on urban agriculture increasingly celebrates its multi-functionality, with social, economic and environmental benefits ranging from food security to social cohesion, poverty alleviation to local economic development and biodiversity promotion to waste recycling (Poulsen, McNab, Clayton, & Neff, 2015). The multi-functionality of UA applies to different actors at different scales, including garden participants, their immediate surrounding community, and the city as a whole (Aubry et al., 2012). In order to maximise the benefits of UA, this multi-functionality needs to be acknowledged by planners and policy-makers, as well as by those implementing UA support programmes (van Veenhuizen, 2006).

The support provided to the case study gardens in this research, and to the other Johannesburg gardens I surveyed, was all based on an assumption that the gardens had one or more of three objectives: food security, income generation and environmental sustainability. The NGO providing support to Vunani, and many other gardens, promoted all three of these objectives, through training on permaculture, nutrition and business skills. The City of Joburg's Food Resilience Programme focuses on food security and poverty alleviation, as does GDARD's Food Security programme. The LandCare programme prioritises environmental sustainability, while also incorporating food security and income. These three objectives are important, to both the gardeners and the state, yet there are many additional actual and potential benefits of UA that are not recognised, and therefore not supported, by these programmes.

The community gardeners interviewed for this research each highlighted a number of different motivations for their participation. They mentioned access to food and a

source of income, but also many others. A few of them referred to gardening as their hobby, or as something to keep them occupied since they were not working. Others pointed to health benefits, saying it was good exercise and helped to keep them fit and healthy. Beyond their physical health, some participants referred to gardening as free therapy, helping them to cope with stress. Many gardeners mentioned that they wanted to help their community, by making fresh, healthy food more accessible and even by donating it to the most vulnerable. While few gardeners specifically mentioned socialising, it was clear to me that this was an important part of being in the garden for many people. Also important, as discussed above, was the connection to their rural childhoods—the majority of the gardeners at the two community gardens said one of the reasons they joined was that they had grown up growing food, and that gardening reminded them of what they'd left behind.

At the level of the community, the gardens also fulfilled multiple functions. The surrounding community generally appreciated having a food garden in their midst. The gardens produced financial savings for the customers, both in terms of lower prices and, in the case of Vunani, by eliminating transport costs to the supermarket. Customers frequently mentioned that the garden produce was fresher than what they could find in the shops. Sekelanani also provided two other benefits: the produce was organic, and included traditional southern African vegetables. Nearby shops did not meet either of these criteria. The social aspect of the gardens also seemed to be important to many community members, as they spent time chatting with the gardeners while waiting for their vegetables to be picked, and even after their purchase was completed. Their children also enjoyed playing in the gardens. As with the gardeners, many of the customers also came from rural areas and liked to visit the gardens because it reminded them of home. In addition, members of the community around Vunani appreciated that the garden had turned an ugly dumping ground, which had served as a hiding place for thieves, into a beautiful green space.

At a city-wide level, gardens potentially contribute to public health, poverty alleviation, social cohesion, waste reduction and reduced carbon emissions, amongst other benefits. Yet if these are not incorporated into support programmes, they are less likely to be achieved. At present, by focusing so narrowly on food security and incomes, municipal and provincial UA programmes are missing opportunities to get

greater benefits out of UA at all levels. For example, if UA support programmes took into account the nostalgia that motivates many people's participation, they might provide indigenous/ traditional vegetable seeds and seedlings to the gardeners, rather than just 'mainstream' or 'European' vegetables. Such a move would not only appeal to people's memories of their rural childhoods, but would also have health and environmental benefits, since indigenous vegetables have been found to be very nutritious, and require less water and other inputs (Pasquini & Young, 2009; van der Merwe et al., 2016). Recognising people's different motivations for participating in community gardens would also enable the City of Joburg and GDARD to better fit their support to the needs of individual gardens, thereby making better use of scarce government resources. Instead, as one official complained: "Gardeners have different needs, different purposes, different educational levels. But GDARD treats every situation the same" (personal communication, GDARD official, 16 March 2015).

11.3.5) Informal learning and peer learning support

Just as people have multiple motivations for participating in UA, so they have multiple ways of learning. This was evident amongst the participants at the case study gardens, whose knowledge of farming had been derived from a wide variety of sources. Almost all of the gardeners had grown up in households that produced some, or most, of their own food. Quite a few participants had also studied agriculture as a subject in primary and secondary school, in which each student was responsible for their own small plot. The NGO that supported Vunani provided some training, as did GDARD. Gardeners were frequently invited to workshops and trainings by the City of Johannesburg and GDARD. Some of the gardeners also read farming magazines, watched agriculture programmes on television and read books on the topic. Beyond all of these sources of knowledge, gardeners learned through trial and error, testing out different growing methods and adapting them as needed.

Most of the training provided by government and NGOs involved an expert conveying knowledge to the participants. I attended various trainings alongside the gardeners, both in classrooms and at gardens, and witnessed this method of teaching used in almost all of them. At these workshops and trainings, teaching was often conducted in English, despite the fact that it was not the mother tongue of the gardeners. Furthermore, it often involved technical terminology that was not always

explained. The exception was a meeting of the LandCare forum participants, held at Sekelanani. At this meeting, participants were given a series of questions before breaking into groups to tour the garden. The groups developed their answers to the questions based on what they saw in the garden, and then reconvened to discuss them in plenary. This participatory, active method of peer learning was the closest I saw to the *campesino-a-campesino* (farmer-to-farmer) method practiced in South America. In this participatory, horizontal learning method, farmers “become the protagonists in their own processes of generating and sharing their own technologies” (Rosset & Martinez-Torres, 2013, p. 8). This is a form of social learning, adapted to local conditions and needs, which builds farmers’ capacity for problem-solving, rather than leaving them dependent on external experts (Altieri, 2010, p. 130). At the LandCare meeting, participants were treated as equals with valuable knowledge to share. This approach was significantly more engaging than most trainings I witnessed. However, as discussed in Chapter 9 (Empowerment and Democratisation), conflict amongst gardeners at the case study gardens (and others), as well as mistrust between different gardens in some areas, impeded knowledge-sharing and created obstacles to social learning.

A number of garden support personnel, from both government and NGOs, complained that even after teaching gardeners about organic production methods, the gardeners failed to adopt these methods. As discussed in Chapter 7 (Environmental sustainability), there are various reasons for this. One is the fact that there is no market around the gardens for the ‘companion plants’ that are normally used in agroecological production for both pest control and soil enrichment. These ‘companion plants’ are also unfamiliar to the gardeners, and harder to find in the shops where gardeners purchase their seeds. Beyond expanding the market for such crops, another way to encourage greater adoption of agroecological methods would be to utilise the farmer-to-farmer approach of demonstration, experimentation and knowledge sharing. This seemed to be working in the LandCare forum. This is particularly important where agroecological production methods seem to contradict the agricultural knowledge the gardeners gained through their childhood farming experience. Classroom-based learning is unlikely to be able to replace knowledge gained through experiential learning, but new experiences may do so. As one of the gardeners at Vunani said, “you can’t force people to change” the way they do things.

However, if they see with their own eyes the benefits of changing, and hear from a peer how he or she has benefited from changing, then they may decide to do so of their own accord. Thus making use of participatory, experiential learning instead of one-directional teaching by experts would significantly improve the learning outcomes for City of Joburg and GDARD trainings. This lesson is not limited to agricultural training; it also applies to training on democratic practices for managing garden cooperatives.

This section has considered the limiting influence of neoliberalism on the support provided by government, the private sector and NGOs, in terms of the types of assistance provided and the type of subjectivity the assistance produces. It has also examined the need for support programmes to recognise the multi-functionality of UA, the multiple motivations of participants, and the multiple ways of learning. The next section considers how questions of scale affect the contribution of community gardens to food sovereignty.

11.4) Scale and impact: the local and the global

In Chapter 9 (Empowerment and Democratisation), the question was raised whether local food initiatives ‘can effectively introduce any measure of democratic control over economic systems that are essentially nondemocratic or whether meaningful agrifood system change can only be accomplished by first transforming the larger society as a whole’ (Ostrom & Jussaume, 2007, p. 240). In other words, can food system transformation begin at the local level and be scaled up and out, or must the undemocratic global food system be changed at a higher scale in order to have a real impact?

The question of scale was also raised with regard to the notion of food sovereignty itself. While the definition of food sovereignty calls for localisation of the food system, the local is inherently difficult to define, and it is not entirely clear what food sovereignty would ‘look like’—to return to Raj Patel’s (2009) question—at different scales. The examples of the towns in Maine, the policies of Ecuador and Venezuela, as well as the Soils, Food and Healthy Communities (SFHC) project in Malawi (see Chapter 2, Conceptual Framework) provide some indication of what ‘actually existing

food sovereignty' might look like, as it is unfolding at community, town and national levels.

This section returns to the challenges of localisation, considering the unique difficulties posed by a highly unequal society in which poverty and marginalisation are highly spatialised. Then, I turn to the question of how the impact of community gardens might be scaled up and out in order to benefit gardeners and influence policy. This section concludes by considering some of the gaps and contradictions in neoliberalisation that provide opportunities for building food sovereignty.

11.4.1) The challenges of localisation

As discussed in Chapter 8 (Food system localisation), this aspect of food sovereignty entails three elements: i) re-embedding the market in face-to-face social relations; ii) the creation of a 'localised' food system through small-scale production and alternative distribution networks; and iii) shifting control over the food system to the local scale, and to food producers and consumers (Feagan, 2007; Feenstra, 1997; Hendrickson & Heffernan, 2002). My field research found that the gardens fare well with regard to the first element, as the gardeners and their customers have a direct relationship and the gardens are generally well integrated into their communities.

In terms of the second element, the gardens have a limited impact. While they do represent shortened supply chains and alternative distribution channels, the small size and limited number of community food gardens in Johannesburg means that they do not add up to a "local" food system, understood as one capable of meeting a significant portion of the local community's food needs. Further, due to limitations in the types of foods grown as well as the gardeners' own dietary habits, the gardens do not even meet a very significant portion of the gardeners' own food needs.

The lack of a significant 'local' food system creates a challenge in terms of shifting the locus of control to the local level. What, exactly, will the local community control, if there is limited food production and processing at the local level? How can the local community gain greater control over production decisions made by transnational corporations located thousands of kilometres away, producing for globalised markets? Some decisions, such as local zoning for agriculture and food retail, creation of

community farmers markets, etc., could certainly be shifted to the local level. But without increasing the size of the local food system, local control will always be limited—particularly in urban areas where there are land constraints.

It is here that the gardens' 'inspiration value' becomes important. By inspiring others to create their own home and community food gardens, the case study gardens contributed to the building of a more localised food system. This proliferation of gardens increases the amount of food produced locally, outside of the corporate-controlled food system. In addition, the interactions between gardeners in different gardens, in which they share knowledge and sometimes also tools or labour, create a space for alternatives to the market logic of the globalised, industrial food system. These interactions, based on sharing and mutual support, are precisely the kind of interstitial alternatives that build a base for food sovereignty.

Johannesburg's notoriously high rates of inequality, which are reflected in the spatial organisation of the city, further hinder prospects for localisation. Returning to the example of Vunani, located in Alexandra, and the nearby neighbourhood of Sandton (see Chapter 8), these two areas are separated by only 7.5km. Yet this geographical proximity belies the massive distance between the two areas in terms of socio-economic and cultural factors. Sandton is a world of whiteness and privilege, in which food choices are a matter of deciding which cuisine to try, and whether to eat at home or dine at a restaurant, while Alexandra is a marginalised black community in which food choices are a matter of figuring out how to feed one's family on an extremely tight budget, in the context of limited (and often unhealthy) food options. Integrating these two worlds into one food system represents a massive challenge, and one that extends far beyond the 'garden gate'—questions of employment, education, income, language, race and culture all come into play. Democratising control over the food system is fundamentally linked to localisation, but at present, the gardeners at Vunani would not be empowered to participate in democratic control over a localised food system that incorporated both Sandton and Alexandra.

11.4.2) The value of networks

A practical first step toward scaling the impact of community gardens, on the gardeners themselves and on the food system, is the creation of networks of food

gardens. While there are some networks or fora in existence in certain parts of Johannesburg, such as Orange Farm or Diepsloot, many gardeners remain somewhat isolated from each other. By joining together into networks, gardeners can engage in participatory, horizontal learning (like the *campesino-a-campesino* method described above), sharing their knowledge and experiences. The Diepsloot network, started by the gardeners themselves, has managed to secure training and other assistance for its members, conduct research, organise a farmers market, and serve as a focal point for communication between the City of Joburg and the gardeners (personal communication, Diepsloot Forum chair, 31 March 2015).

Beyond increasing gardeners' access to information and building skills, networking also creates a sense of community and shared challenges (see Photo 27 below). This can be empowering, as the recognition of common problems may help to reverse the neoliberal transformation of social problems into individual ones. While the case study gardens, and the others I surveyed, did not appear to automatically conscientise participants about the injustices of the food system, a network of gardeners might go further towards such conscientisation. Gardeners can then use their networks to mobilise to demand change (Dubbeling & Merzthal, 2006, p. 33; Lee-Smith, 2013, p. 79). Doing so as a group will amplify their voice and increase the likelihood of their demands being met, or at least heard, by the state (Hinrichs & Barham, 2007, p. 349).



Photo 27: Gardeners networking at Eikenhof farm launch

The creation and coordination of networks may also contribute to the spread of democratic practices amongst the gardeners, *if* these are emphasised within the network. Democratic election of representatives, participatory deliberation on matters of concern and other democratic practices within the network may then spread to the individual gardens, as well as to other (non-agricultural) groups in which network members participate. This is by no means guaranteed, but the potential is certainly present.

The creation and expansion of participatory guarantee systems (PGS) for organic or agroecological producers is another example of networking that can empower urban farmers. A PGS involves a group of farmers and other stakeholders in a locally oriented certification scheme “built on a foundation of trust, social networks and knowledge exchange. ... They focus on local markets, short supply chains and smallholder farmers” (South African Organic Sector Organisation, 2016, p. 5). Beyond monitoring and certification, a PGS involves knowledge sharing and support in order to improve the practices and outcomes of all members.

As mentioned earlier, the costs of communication technologies and transport, as well as a climate of suspicion in some communities, pose significant challenges to the formation of networks. The existence of regional networks demonstrates that these are not insurmountable, and as with the gardens themselves, successful networks have ‘inspiration value’. In other words, as gardeners see the benefits accruing to members of successful networks, they will be more likely to want to join. Efforts by the City of Johannesburg to catalyse the formation of regional farmers’ fora have had mixed results, while those started by the gardeners themselves seem to fare better. Learning visits to the strong networks by gardeners from regions without networks might help farmers to see what networks can offer, and how to build them.

11.4.3) Gaps and contradictions

Peck and Tickell (2002, p. 383) claim that neoliberalisation should be seen as a process, rather than an end-state, and that the process is “contradictory, it tends to provoke counter-tendencies, and it exists in historically and geographically contingent forms.” The global food sovereignty movement might be seen as one of these

counter-tendencies, made up of diverse locally-based interconnected struggles against dispossession and inequality (Desmarais, 2015). Neoliberalism's contradictory and contingent unfolding creates the gaps in which counter-tendencies like food sovereignty can grow and flourish. Such interstitial strategies, Wright (2009) argues, may bring about transformation.

Like neoliberalisation, food sovereignty is also more of a process than an end-state. Desmarais (2015) argues that food sovereignty is a constant struggle, involving the creation of new political spaces in which the messy process of building community and developing alternative social and political processes can take place. She further suggests that it is important to analyse how history, ecology, politics and culture influence food sovereignty struggles in specific places. Though I found no evidence of such new political spaces in the community gardens where I conducted my fieldwork, I believe it is worth considering the gaps and contradictions in neoliberalisation as observed in the gardens, since these may form the basis of a local food sovereignty struggle.

One of the key contradictions in neoliberalisation as observed at the level of the gardens is the presence of an older, communal worldview alongside the new individualising market logic. Many of the gardeners grew up with a culture of sharing, in rural areas in which households produced a significant portion of their own food (outside of the market) and shared or exchanged that food with their neighbours. As a gardener from an inner city Johannesburg garden explained about eating patterns in her rural childhood home: "The neighbours they come. You see at home, there's everybody there, they farm, they cook with a big pot" (inner city gardener, personal communication, February 23, 2015). People contributed what they had produced to a common pot to be cooked and shared communally. This gardener went on to explain that today, in Johannesburg, things are different because food must be purchased: "Now nobody can give you food because it's expensive. Nobody can give you food...[That's] why we are suffering, because it's too expensive" (inner city gardener, personal communication, February 23, 2015). This gardener did not blame people in Johannesburg for not sharing, since she was aware that they struggle to afford enough food for their own households.

This older culture of sharing and communalism can also be seen through the gardeners' donations of food to orphanages, rehabilitation centres and other institutions supporting the most vulnerable members of society. The fact that most of the gardeners mentioned helping their communities amongst their motivations for gardening also suggests that the validity of *homo economicus*, the economically-minded utility-maximising rational consumer, is challenged by the persistence of a more socially-minded compassionate citizen from a bygone era (Read, 2009). This other worldview represents an opportunity to build a solidarity economy⁷⁰ around the community gardens, in which people share and exchange knowledge, seeds and produce. Instead of hostile competition and profits, a solidarity economy is based on values of solidarity, collective ownership, community benefit and participatory democracy (Cooperative and Policy Alternative Center (COPAC), n.d.).

A second gap in the process of neoliberalisation can be seen in the support programmes for community gardens. The language of rights—e.g. the right to food—exists alongside the promotion of entrepreneurship and incorporation of the marginalised into the existing food system. The presence of the right to food in the South African constitution, despite its limitations, provides an opportunity for social mobilisation (de Schutter, 2012, 2014; Moyo, 2015). If NGOs or others who support community gardens focused more of their attention on educating people about their rights, and on democratic participation, people might mobilise to demand entitlements from government that they are currently not aware they possess.

A third opportunity, which has not been explored in depth in this research, is the fact that nature⁷¹ can never fully be subjected to the logic of the market (Classens, 2015). Despite the best efforts of the transnational seed and pesticide companies, large-scale commercial farmers and food manufacturers, natural systems retain their own logic and biophysical processes can never be fully controlled or standardised. Recent extreme weather events and pest outbreaks highlight this challenge. Thus the adoption of agroecological processes that respect and seek to work with natural processes,

⁷⁰ The solidarity economy refers to “an *explicitly sociopolitical and emancipatory* project designed and appropriated by core participants to open up opportunities and to foster greater equality, democracy and cooperation among themselves” (Massicotte, 2014, p. 161).

⁷¹ Recognising that ‘nature’ is socially constructed, and perhaps better understood as socio-nature, does not diminish the reality of biophysical processes and organisms that remain outside of human control (Classens, 2015; Heynen, Kaika, & Swyngedouw, 2006).

rather than trying to dominate them, represents another opportunity to move beyond the market logic of neoliberalism and adopt a more holistic worldview.

In this chapter, the findings from my research were discussed in terms of three themes that help to explain the limitations of community gardens' contribution to food sovereignty—the importance of culture and worldviews in the struggle for food sovereignty; the restrictions placed on support for community gardens by neoliberal rationalities; and the potential to enhance localisation, scale up impact and begin to build a real food sovereignty alternative to the current food system. This dissertation concludes, in the next chapter, with a review of the research process and findings and some suggestions for future research.

Chapter 12: Conclusion

This thesis has examined the contribution of community food gardens to food sovereignty in Johannesburg. For the purposes of this research, food sovereignty was broken down into six key components:

- i) access to sufficient, healthy and culturally appropriate food;
- ii) sustainable livelihoods;
- iii) environmental sustainability;
- iv) food system localisation;
- v) empowerment and food system democratisation;
- vi) gender equality.

Using a comparative case study approach, I employed participant observation at two case study gardens in order to understand the experiences and perceptions of participants. This was combined with a number of other research instruments, including desktop research, an informal survey of community gardens, food diaries, food/life history interviews, garden participant interviews and key informant interviews. Through all of these research techniques, I sought to construct an understanding of how community gardens contribute to each of the elements of food sovereignty listed above, what obstacles inhibit this contribution and how it could be enhanced.

The goal of the research was primarily to understand, but also through a critical approach, to contribute to improving the situation (Fals Borda, 1979; Kindon, Pain, & Kesby, 2007). Given the high levels of poverty, unemployment, hunger and diet-related diseases in Johannesburg, research on community gardens cannot be done for its own sake. Thus the findings from this research, in addition to making an academic contribution, also have direct relevance to the government and NGO programmes that support urban agriculture in Johannesburg. While I have not yet made a formal presentation of the results to the gardeners, NGO personnel or government officials, I informed them of my findings as the research progressed, as part of my ongoing engagement. This also served as a form of validation, checking my analysis with the relevant stakeholders.

12.1) Review of the contribution of the gardens to food sovereignty

The research found that the gardens did contribute to food sovereignty, though their contribution was quite uneven and faced many obstacles. In the case of access to sufficient, healthy and culturally appropriate food, the gardens improved both geographic and economic access, and produced more than enough vegetables to meet the needs of participants. They did not, however, produce enough vegetables to provide for their surrounding communities or challenge the mainstream industrial food system in any way. Beyond the usual challenges with access to inputs, agricultural knowledge, and labour shortages, the critical issues in this regard were cultural. Dietary preferences, lack of familiarity with certain vegetables, household gender roles and the resultant triple burden for women, all contributed to garden participants eating nutritionally inadequate diets, *despite* their access to abundant vegetables.

With regard to the second aspect of food sovereignty, the contribution of the gardens to participants' livelihoods was extremely limited. Food expenditure savings were limited, due to participants' limited consumption of vegetables, while income from sales at Vunani was enough for only a small annual payout. At current production levels, sales income from the gardens would leave participants below the poverty line. However, the provision of salaries at Sekelanani changed the picture somewhat, for a limited time period. The gardens' contribution to their local economies was also minimal—due to limited upstream and downstream linkages.

In terms of environmental sustainability, both gardens contributed to waste reduction and recycling. Sekelanani was committed to organic production methods, while Vunani had a more flexible approach to chemical use. In general, the affordability and efficacy of environmental methods seemed to be more important than any philosophical commitment to sustainability. Limited familiarity with 'unusual' vegetables amongst both gardeners and their customers also inhibited the use of agroecological methods such as companion planting. A corporate sponsor's efforts toward environmental risk management at Sekelanani represented a striking mismatch between needs and support.

The fourth element of food sovereignty, food system localisation, seemed more challenging to assess and to achieve. Both gardens definitely re-embedded food

transactions in face-to-face social relations between producers and customers, though at times the gardeners felt the customers abused their familiarity. The gardens also used alternative distribution methods, including on-site sales, sales to food hawkers and in the case of Sekelanani, weekend markets, internet-based grocers and the local supermarket. The contribution to local control over the food system, however, was limited by the low production levels and limited variety of produce (thereby leaving most of the food system outside of the gardens) as well as by insecure tenure and top-down forms of support. However, customers at both gardens did influence what was produced, in a way they could not influence supermarket produce selection. A critical challenge of localisation, however, is the enduring legacy of apartheid, in the form of racialised inequality.

The contribution of the gardens to empowerment and the democratisation of the food system, the fifth aspect of food sovereignty, was somewhat limited. This is a complex and extremely important component of food sovereignty, as it is directly linked to the radical democratic project of social transformation that distinguishes food sovereignty from food security. While gardeners gained knowledge and skills through their participation in the gardens, these seemed to be largely confined to agriculture, rather than encompassing more fundamental skills such as deliberative decision-making and cooperative governance. Conflict and mistrust amongst gardeners inhibited knowledge sharing, while top-down support was similarly disempowering. I was unable to locate evidence of the development of consciousness of the injustices of the food system, or any sign of mobilisation for change. While disappointing, this is unsurprising, as education on these issues is required to raise their visibility and challenge the hegemonic neoliberal mentality. Insofar as democratisation is concerned, I found a lack of democratic practices within the gardens, alongside significant obstacles to participation in food-related policy processes at higher levels.

With regard to the sixth element of food sovereignty, I found a slightly puzzling dichotomy with regard to gender roles in the gardens and in the home. While men and women shared tasks and seemed to participate equally in the gardens, they maintained a traditional, gendered division of labour in the home. Thus relative equality in the gardens was not reflected in their households, where women were responsible for all food preparation. As a result, female participants were often too tired after a hard

day's work to cook vegetables from the garden, whereas male gardeners returned home to find cooked meals prepared for them by wives or other female family members. Gender-blind support for the gardens tended to reinforce traditional gender roles and therefore disadvantaged women.

12.2) Key challenges limiting the gardens' contribution to food sovereignty

The literature on urban agriculture contains a litany of challenges commonly faced by food gardeners, including insecure land tenure, challenges accessing water and agricultural inputs, poor market access and limited agricultural knowledge. All of these issues were relevant in the context of Johannesburg's community gardens as well, but three other issues emerged that are not so commonly found in the literature. Foremost amongst these were a number of challenges that I grouped under the theme of culture and worldviews. In addition, the neoliberal rationality underpinning support for the gardens—whether from government, NGOs or the private sector—restricted the objectives of the assistance, the types of support that could be given, and the approach to providing it. Further, conflicts and a climate of suspicion inhibited knowledge sharing, development of critical consciousness and social mobilisation.

12.2.1) Culture and worldviews

The issue of food customs and dietary preferences was important in terms of the nutritional adequacy of gardeners' diets, the ability to sell a more diverse range of produce as well as the potential for agroecological planting methods. Thus, the customary practice of consuming a small portion of vegetables alongside a meal composed mainly of starch limited demand for and consumption of vegetables amongst gardeners and their customers. In addition, the gendered division of labour in the home contributed to lower levels of vegetable consumption amongst households of female gardeners, as they were too tired to cook the vegetables after a day of working in the fields. Familiarity with only a narrow range of vegetables limited the market for 'unusual vegetables,' which might have increased incomes and which also constituted part of an agroecological production system of companion planting. Despite familiarity with traditional or indigenous vegetables from their rural childhoods, few gardeners expressed interest in growing these vegetables—perhaps as a result of the racist denigration of traditional diets under colonialism and apartheid (Raschke & Cheema, 2008; Steckley, 2016). This was unfortunate, as these

vegetables tended to have higher nutritional value and lower input requirements than the non-indigenous vegetables commonly grown in the gardens (Wenhold et al., 2012). By contrast, customers from neighbouring African countries brought seeds to Sekelanani so that they could have access to traditional foods and thereby maintain a connection to their home cultures.

The second issue under this theme is the prevalence of neoliberal mentalities amongst the food gardeners. Garden participants were largely unaware of the right to food, or of any state obligation toward the hungry. Many food garden participants said the cause of hunger in Johannesburg was laziness, blaming the hungry and not recognising the structural impediments to accessing food. Others cited unemployment as a cause of hunger, buying into the commodification of food. Garden participants embraced the neoliberal notion of the entrepreneurial consumer-citizen, in which individuals are responsible for their own well-being, rather than looking to the state for any form of social welfare (Brown, 2006; Lemke, 2002). Social problems are seen as individual problems, and therefore no social mobilisation for change takes place. The persistence amongst the gardeners of a different worldview, based on an earlier rural culture of sharing, suggests incompleteness of neoliberalisation and thus the potential for alternatives, to be discussed in Section 12.3 below.

Finally, I noted a lack of a culture of democracy in the gardens. Despite being nominal cooperatives, there was no culture of consensual decision-making. It was difficult to determine whether this was a result of the conflicts amongst the gardeners (especially at Vunani) or whether the conflicts may have resulted, in part, from this lack of democratic practice. A history of authoritarian rule under apartheid, combined with patriarchal families, strict discipline in schools and hierarchical employment did nothing to instil a culture of egalitarian decision-making (Claassens, 2013; O’Laughlin, Bernstein, Cousins, & Peters, 2013). In order “for citizens to first want, and then work toward, a more just and healthy food system, the deep democratisation of activities such as urban agriculture must be understood as both an end and as a means. ... The knowledge necessary to imagine and enact more egalitarian futures must come from somewhere” (McIvor & Hale, 2015, p. 738).

12.2.2) Neoliberalism and support

Both of the case study gardens received assistance from governmental and non-governmental sources. When I selected the case study gardens, one factor was precisely this support— Vunani was supported by an NGO while Sekelanani received significant assistance from the City of Johannesburg’s Department of Social Development (DSD). I hoped to compare how government and NGO support differed, and how this affected the gardens. Over time, the picture changed somewhat, as the NGO’s contract with Vunani ended and they were left with only occasional support from the DSD and from GDARD, while a new corporate sponsor brought significant funds to Sekelanani.

The support programmes of government, NGOs and corporates were all underpinned by neoliberal rationalities. They all had a market-oriented, entrepreneurial approach, and shied away from the deeper social or political issues that created the need for their UA programmes in the first place. None of the support programmes questioned the structure of the corporate-controlled food system—instead, they simply sought to incorporate the gardeners into it, ignoring the reality of adverse incorporation (Greenberg, 2016; Philip, 2010). Further, as a result of the values of self-help and market solutions underpinning the assistance, it was generally viewed as a gift or charity, rather than an entitlement, which appeared to encourage a more top-down approach rather than a consultative, participatory one. This shared neoliberal rationality was the greatest shortcoming of the support programmes, though its effects played out differently.

Government policy documents occasionally made reference to the right to food, though the UA support programmes demonstrated no awareness of this right in practice, nor did they seek to communicate it to gardeners. It is misleading to speak of “government” support as a unitary entity, since each programme reflected a different confluence of actors, interests and possibilities. The City of Johannesburg’s Food Resilience Policy reflected the greatest awareness of the need to intervene in terms of gardeners’ access to markets, yet the market-transforming aspects of the policy—government procurement, people’s restaurants, community markets—were not implemented. Instead, the City focused on measurable deliverables such as distribution of inputs and provision of training. If we were to reconstruct the City’s

policy based on what has been implemented,⁷² it would appear to be a fairly narrow UA support policy.

Within GDARD, the two main programmes supporting UA took slightly different approaches, with the LandCare programme promoting ecologically sustainable practices while the Food Security programme focused on addressing poverty and hunger through market-oriented production. In both cases, the principal activities of personnel included extension services, training and provision of infrastructure and inputs. LandCare's use of garden visits and peer learning represented an effective attempt at a more participatory, horizontal learning approach. In general, municipal and provincial government support for gardens was limited to a narrow range of technical agricultural interventions and plagued by poor communication between personnel and gardeners and slow delivery of promised assistance. It also emphasised partnership, looking to NGOs and the private sector to pick up the slack left by shrinking government budgets.

My assessment of NGO support for food gardens is based largely on the work of one organisation, FTFA, the most prominent in Johannesburg in terms of UA. This NGO was committed to organic, permaculture production, though the degree to which these principles and practices were embraced by the gardens they supported varied. As a result of this approach, this NGO provided a wider range of seeds and seedlings to gardens than DSD or GDARD, and provided training on a range of sustainable practices such as composting and mulching. This NGO also claimed to teach gardeners about the uses of the 'unusual' plants they provided, but at Vunani the gardeners did not appear to have received (or absorbed) such teaching, leaving those 'unusual' vegetables to go to waste. While this NGO had a market-oriented approach, it failed to consider the lack of a market for such unusual vegetables when it brought them to the garden. Based on budgetary constraints, as well as past experience, the NGO limited its support for a garden to occasional visits over a period of three years. This was insufficient to develop a culture of ecologically sustainable production or to overcome the structural challenges at a garden like Vunani.

⁷² Emergency food assistance and programmes promoting healthy lifestyles were also implemented, but are not directly relevant to this discussion.

This NGO relied on corporate support and funding for much of its work, and often brought corporate volunteer groups to its gardens. However, much more evidence of corporate support was visible at Sekelanani, where a number of corporate sponsors provided material support, volunteer labour as well as advice. The two-year support programme of a major corporate sponsor during my fieldwork provided a case study in how the logic of CSR clashes with the goal of empowerment (Eslava, 2008; Frynas, 2005). The corporate sponsor made decisions without consulting the gardeners, encouraged the garden to purchase inputs and services from the sponsor (leading to some of the donated funds going back to the company), failed to live up to promises to purchase from the garden and generally provided assistance based on its own ideas rather than the gardeners' expressed needs. While the two-year programme did yield some benefits, in terms of new garden infrastructure, it was largely disempowering and created significant conflict amongst the gardeners. Further, it reinforced the market logic behind UA support programmes, while simultaneously creating the impression that the gardeners were 'failing' as entrepreneurs.

12.2.3) Conflict and divisions

The sporadic but persistent conflicts amongst participants at both case study gardens were a source of distress to those involved. Despite my participation at both gardens over an extended period, I was unable to identify with certainty the causes of the conflicts. At Vunani, gardeners criticised each other's work, in terms of time spent, progress made and methods used, yet this alone did not seem to justify the levels of hostility. At Sekelanani, issues of access to the corporate sponsor's funding certainly increased conflict, but disagreements over perceived imbalances in work allocation preceded and followed the sponsor's involvement. Broadly, the distribution of tasks and perceptions of unfairness seemed to be behind much of the day-to-day conflict.

At Vunani, numerous attempts at conflict resolution by two GDARD extension officers yielded short-term truces, which would then degenerate into conflict once again. At Sekelanani, a senior government official from DSD enlisted me into his attempts at conflict resolution, to no avail. At both gardens, communication amongst the participants was poor, and it seemed to me that the absence of institutionalised structures for consensual decision-making, allocation and monitoring of tasks significantly exacerbated conflicts.

Beyond causing emotional distress to participants, the conflicts inhibited knowledge-sharing, leading to less than optimal production as well as lower levels of empowerment (in terms of skills). This was especially true at Vunani. Beyond this, conflicts amongst gardeners robbed them of opportunities—e.g. for training—as the climate of suspicion prevented them from accepting invitations that might be perceived as favouring one side or the other.

At the neighbourhood scale, suspicion prevented formation of a garden network in the area around Vunani. In other areas, such as Diepsloot, gardeners formed networks to coordinate training, share knowledge, start farmers' markets and serve as a bridge between gardeners and government. The suspicion of gardeners around Vunani, who allegedly believed that Vunani received preferential treatment from government, impeded their access to these kinds of benefits.

Finally at a larger scale, the deep racial inequalities of apartheid continue to have spatial manifestations that inhibit the development of localised food systems. The socio-economic gap between wealthy, white Sandton and marginalised, black Alexandra township is far greater than the 7.5km distance between them. Bridging such deep divisions and finding common interests amongst residents of Sandton and Alexandra will require concerted efforts by government (in terms of socio-economic development) as well as the communities involved.

12.3) Ways to enhance the gardens' contribution to food sovereignty

Based on the challenges discussed in the previous section, there are a number of potential avenues for support that could enhance the gardens' contribution to food sovereignty. Such support must take as its point of departure the structural context in which the gardens operate in Johannesburg, where the combination of corporate control over the food system, neoliberal policies and the socio-economic, cultural and spatial legacies of apartheid make it virtually impossible for the poor and marginalised to 'grow themselves out of poverty' (Battersby et al., 2015; Philip, 2010). As government support is currently premised on the hope of gardeners doing just that, it will require a significant re-think. It would be more realistic, and ultimately more effective, to focus on other goals for the gardens, in line with

gardeners' own motivations for participation and with the objective of real empowerment. I have identified three broad areas of focus: inspiration, conscientisation and demonstration.

12.3.1) Inspiration value

The 'inspiration value' of the gardens, as mentioned in Chapter 8 (Food System Localisation), refers to the way the presence of a visible community garden in an area inspires others in that area to start food gardens of their own. In this way, the case study gardens contributed to the building of a more localised food system. This proliferation of gardens increases the amount of food produced locally, outside of the corporate-controlled food system. The DSD leverages this inspiration value by placing its regional agri-resource centres next to gardens, which attract the interest of passers-by who then visit the centres for assistance.

Beyond simply inspiring others to grow some of their own food, community gardens could inspire others to embrace their food heritage and to try new and different foods. If those who support the gardens provided education and support on the growing and preparation of traditional/indigenous vegetables, the gardeners could then pass this on to their communities. Such support would have to include not only seeds/seedlings, nutritional information, historical information and recipes, but also markets—at least in the beginning—to ensure that the traditional vegetables did not go to waste as other 'unusual' vegetables did. Promotion of indigenous vegetables as a valuable food heritage might also contribute to decolonisation efforts. Similar support could be provided for other 'unusual' vegetables, in order to enhance dietary diversity, improve agroecological methods and increase overall levels of production.

In the previous chapter, I considered the merits of the *campesino-a-campesino* (or farmer-to-farmer) method of participatory, horizontal learning. This form of social learning is facilitated through the creation of networks of participating farmers. The existing networks or fora of gardeners in Johannesburg demonstrate the potential benefits of organisation and collective action. Successful networks, like visible gardens, have 'inspiration value'—they are likely to inspire other gardeners to want to join once they see the benefits. Thus government or NGOs could facilitate learning exchanges, so that gardeners from regions without networks can see the benefits of

organising them. Eventually, regional networks could link up into city-wide and even national networks to influence policy around food (Hinrichs & Barham, 2007, p. 349). Spaces like the City of Johannesburg's Food Empowerment Zones, which bring together large numbers of farmer cooperatives in a relatively concentrated space, might make an excellent starting point for such networks and learning exchanges.

12.3.2) Conscientisation value

The UA literature frequently suggests that participation in community gardens could lead to development of critical consciousness and social mobilisation (Greenberg, 2006; Hinrichs, 2007; McClintock, 2013; Reynolds, 2010, pp. 138–9). Yet this research found that the participants at the case study gardens did not develop critical consciousness about the food system or other structural barriers they faced, and thus I observed no evidence of social mobilisation. This critical element of empowerment (as defined in Chapter 9) was absent for various reasons, including the prevalence of neoliberal mentalities, conflict amongst participants (which prevented critical reflection), scepticism about government (Mosoetsa, 2004) and the absence of explicit political education.

It appears that conscientisation requires explicit political education on rights and entitlements as well as the injustices of the food system (Massicotte, 2014). At the same time, the development of deep democratic practices also must be actively cultivated (McIvor & Hale, 2015). The example of the MST encampments demonstrates that principles of solidarity, processes of political education and the daily practices of alternative economic relations and governance mechanisms are mutually reinforcing and can actually create new norms and practices (Massicotte, 2014). Clearly, government departments are not likely to have the time or the inclination to provide such training. However, NGOs or community organisations might do so—they could learn from the existing political education processes of some of the trade unions. Cooperative organisations could also provide support on democratic governance.

12.3.3) Demonstration value

In Chapter 11 (Discussion), I considered how the presence of an older, communal worldview alongside the new individualising market logic of neoliberalism

demonstrated the incompleteness of neoliberalisation (Peck & Tickell, 2002). This communal worldview, I argued, represents an important opportunity to push back against neoliberal mentalities and to cultivate food sovereignty alternatives. Based on this worldview, NGOs could support the creation of a solidarity economy around the community gardens, in which people share and exchange knowledge, seeds and produce. Wright (2009, p. 255) argues that by demonstrating that ‘another world is possible,’ these alternatives convince people of the possibility of change. Similarly, Carolan (2016, p. 145) contends that the act of doing something differently “alters our capacity to act and makes the unthought-of thinkable.” Thus community gardens potentially have a ‘demonstration value’ in showing that other food practices are possible.

At present, there is limited evidence of these alternatives at the community gardens. Participants express a desire to help their communities, and do so by donating food to the most vulnerable. Some of them also speak fondly of times in their childhood when food was freely available—through own production and an economy of sharing amongst community members. The ongoing presence of this communally oriented culture of sharing represents an opportunity to promote a solidarity economy—rather than inventing entirely new alternatives, the alternatives can be built on the basis of older ways of doing things, which many participants remember affectionately. In addition, at some of the formal gatherings of urban farmers that I attended, I witnessed a strong desire to share knowledge and experiences amongst the gardeners, sometimes accompanied by exchanges of seeds. It seemed that once the farmers from different areas were brought together in one place (e.g. by the City of Johannesburg for a meeting), suspicion was not as significant as the desire to talk shop. Thus the conflict and suspicion I witnessed in some instances were not omnipresent, and with the proper support for building networks, these could surely be overcome.

In addition, the gardens could have an agroecological demonstration value. Support for learning visits to gardens practicing agroecological production methods could help to spread such practices amongst gardeners throughout the city. At a regional or citywide scale, agroecological practices could be facilitated through improved recycling of organic waste, to be redirected to the gardens as compost. At present, individual gardens struggle to implement ecologically sustainable practices due to

their impracticality. Composting would be far more efficient on a regional scale than it is at individual garden level. At present City Parks creates compost from organic matter and redistributes it through the park system. Household and commercial organic waste, however, is not recycled in the same way. This is a lost opportunity for the city, in terms of waste reduction and reduced greenhouse gas emissions. If even one region of the city—or even one industry—succeeded in improving organic waste recycling in this way, it would serve as a demonstration to the rest of the city, and to other cities, of the environmental benefits of urban agriculture.

This section has considered how reorienting support towards amplifying the gardens' inspiration, conscientisation and demonstration values would enhance their contribution to food sovereignty. In the next section, I consider some outstanding questions that warrant further research.

12.4) Areas for further research

By applying the food sovereignty framework to community food gardens in Johannesburg, this research has contributed to improving our understanding of the benefits and challenges of urban agriculture, while also pointing to some unexplored issues within the food sovereignty framework. In terms of food sovereignty, I would highlight the following four contributions:

- i) the challenge of defining 'culturally appropriate' food in a post-colonial, multi-ethnic city undergoing a nutrition transition;
- ii) potential contradictions between culturally appropriate foods, sustainable livelihoods for food producers and agroecological production methods;
- iii) ways in which issues of race and inequality create obstacles to food system localisation in a highly unequal society like South Africa;
- iv) how traditional gender roles, and particularly women's triple burden of productive, reproductive and community work, impinge on women's ability to derive the same benefits from UA as men and affect nutrition outcomes for all household members. This is true even if women are treated as equals in the fields.

With regard to the literature on urban agriculture, the application of a food sovereignty framework has enabled a multi-scalar analysis that considered structural

issues beyond the ‘garden gate.’ As a result, it has been possible to consider alternative objectives for UA support, rather than simply food security or poverty reduction. Returning to the debate around whether UA is transformational or neoliberal, I must agree with McClintock (2013) that it is (potentially) both. However, this research has raised the importance of providing political education or conscientisation for food gardeners, so that they can be empowered to mobilise for social change. On the one hand, the material benefits of UA (e.g., food security, income) are limited by the context of poverty, marginalisation and limited support; on the other hand, its radical potential will not be realised without an explicit commitment to promoting democratisation and conscientisation in the gardens, which is currently absent from all of the support provided. Thus in order for UA to be transformative, support for UA must have transformation as a principal objective.

Beyond these contributions, this research has raised a number of additional questions that merit further research. I include six of them here.

Traditional and indigenous vegetables: In general, very little is known about why people do or do not grow indigenous vegetables in community gardens (Pasquini & Young, 2009). Further research should investigate this question, as well as the related issues around people’s attitudes toward preparing and eating traditional foods (“cultural appropriateness”); people’s knowledge of the nutritional benefits of indigenous vegetables; the environmental benefits of growing indigenous vegetables; and how they might work as companion plants with other, non-indigenous vegetables.

Youth attitudes towards urban agriculture: The commonly held belief amongst food gardeners and those who provide support is that young people do not wish to dirty their hands in food gardens. Anecdotal evidence from school gardens suggests that children enjoy gardening, but become less interested as they get older. If nostalgia for their rural upbringing is a component of many gardeners’ motivation for participating in community gardens, what might motivate urban young people to participate? Longitudinal studies tracing the attitudes toward agriculture of children involved in school gardens would be highly beneficial in this regard.

Race and food sovereignty: The global literature on food sovereignty has tended to focus more on decolonisation and indigenous peoples (Desmarais & Wittman, 2013; Grey & Patel, 2015) than on questions of race, which has been central to notions of food justice in the United States (Guthman, 2012; Slocum, 2011). A notable exception is Steckley's (2015, 2016) work on food sovereignty in Haiti. Her exhortation that "we need to consider how colonial legacies, and processes of globalisation and Westernisation in many contexts can influence food preferences in ways that perpetuate social inequality and undermine healthy and pro-poor food systems" is highly relevant in the Johannesburg context (Steckley, 2016, p. 27). There is a need for research on how colonialism and apartheid shaped, and continue to shape, people's dietary preferences. Slocum and Cadieux's work on race, trauma and food justice (Slocum & Cadieux, 2015) is a good starting point.⁷³

Deep democratisation: Literature from the first democratic elections in South Africa, and from other transitional societies, suggests that democratic norms and values can, indeed, be taught (Finkel, 2003). Beyond political, procedural democracy, however, there is a need for research on how to create a culture of democracy in community gardens or other places where people's daily micro-practices are currently not democratic. Trauger (2014, p. 1132) posits that food sovereignty "draws on alternative notions of power, territory and economy to establish new modes of decision-making as well as generate new subjectivities." Unlike the neoliberal subject who is constructed as a self-reliant entrepreneur in his or her own life, and a rational consumer in the public arena, the new subject of food sovereignty will be a community-oriented, actively engaged citizen. Research on how this new subject can be 'cultivated,' in community gardens and other places where people live and work, would contribute to the food sovereignty and urban agriculture literatures.

Neoliberal mentalities and shifting worldviews: While the prevalence of neoliberal mentalities amongst the gardeners and those who support them was obvious, it was less clear how these mentalities were adopted. In the case of the gardeners, the

⁷³ Slocum and Cadieux (2015, p. 32) explain that 'trauma' is used in the food justice movement to "conceptualise the present day experience of significant historical and contemporary harm done especially to indigenous people and people of colour" and serves as the basis of "demands that efforts to change the food system acknowledge its historical basis in forced labour and stolen land." This notion seems extremely apt in the South African context.

persistence of alternative worldviews suggests that they experienced a significant shift in their outlook. How exactly did this occur? How did they experience this shift? Was it abrupt and traumatic, or gradual and subconscious? A better understanding of how neoliberal mentalities came to dominate would shed light on how they can be supplanted by alternative worldviews.

Gender roles and UA: It would be worthwhile to conduct research on gender roles and UA, in order to assess whether the relative equality between men and women in my case study gardens reflects a general trend or is an exception. Further, UA and other food-related interventions should be informed by a more thorough understanding of men's and women's perceptions of the gendered division of labour with regard to food production as well as food procurement, preparation and consumption, in order to ensure that everyone benefits from such interventions. This is also necessary to ensure that such programmes meet women's strategic gender needs and promote social justice.

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Appendix 1: Research instruments

List of instruments:

- 1) survey questions
- 2) interview questions for NGO personnel
- 3) interview questions for government officials
- 4) sample food diary and instructions
- 5) food/life history questions
- 6) interview questions for garden participants
- 7) interview questions for garden customers
- 8) interview questions for food vendors

Indicative survey questions for garden managers

SECTION A: HISTORY

- A1. Who had the idea to start this garden?
- A2. Was the local community involved in planning the garden?
- A3. When was the garden started?
- A4. What was the process to get the garden started?
- A5. Who provided support to start the garden?
- government departments? _____
 - NGOs or community groups _____
 - private companies _____
 - other (please specify) _____
- A6. Were people in the neighbourhood happy about the starting of the garden?
- A6.1 What do they think of the garden now?

SECTION B: GARDEN FUNCTIONING

- B1. What is the management structure of the garden?
- B2. How are decisions made about what to plant, what methods to use?
- B3. How are the plots organized? Is the garden communal or do members have individual plots?
- B4. How do people join the garden? Do they have to pay?
- B5. How many members does the garden have now?
- B6. How do most members find out about the garden?
- B7. Does the garden offer training to members?

SECTION C: GARDEN INFRASTRUCTURE / PRODUCTION

- C1. Who owns the land the garden is on? What form of tenure does the garden have (own, rent, informal permission to use, etc.)?
- C2. Where does the garden get the following resources, and do you have to pay for them?
- | | |
|----------------------------|-------------|
| water _____ | cost? _____ |
| seeds/seedlings _____ | cost? _____ |
| fertilizer _____ | cost? _____ |
| compost _____ | cost? _____ |
| pesticide/ herbicide _____ | cost? _____ |

infrastructure (e.g. fence, shade) _____ cost? _____
tools/ equipment _____ cost? _____
transport (e.g. for sales) _____ cost? _____

C3. Has the water ever been tested for contamination?

C4. Has the soil ever been tested for contamination?

C5. Do you currently receive any assistance from any of the following institutions? If so, from whom and what kind?

- government departments? _____
- NGOs or community groups _____
- private companies _____
- other (please specify) _____

C6. What is growing in the garden now?

C7. What else has been grown in the past 12 months?

C8. Does the garden use organic/ permaculture growing methods?

SECTION D: BENEFITS

D1. How much does the garden produce (e.g. in kg per week or month and monetary value)?

D2. What happens to the food that is produced? (check all that apply, and indicate percent of total if possible)

- Taken home/ eaten by members _____
- Sold by individual members _____
- Sold to nearby vendors/ shops _____
- Sold to food chains/ restaurants _____
- Donated _____
- Processed on site (e.g. jam/cream) _____
- other (please specify) _____

D3. What happens to revenue from sales of garden produce?

D4. How many people are employed at/ by the garden? For each, please indicate role, frequency of work (e.g. full-time, one day per week, etc.) and average weekly salary?

1. Role: _____ Frequency _____ Weekly salary _____
2. Role: _____ Frequency _____ Weekly salary _____
3. Role: _____ Frequency _____ Weekly salary _____
4. Role: _____ Frequency _____ Weekly salary _____

D5. Does the garden produce and use compost?

D6. Does the garden collect rainwater? Or recycle grey water?

D7. Why do participants generally join the garden?

SECTION E: CHALLENGES/ CONSTRAINTS

E1. How could the garden be improved?

E2. Does the garden have enough land? Security of tenure?

E3. Does the garden have access to enough of the following resources?

water _____
seeds/ seedlings _____
fertilizer _____
compost _____
pesticide/ herbicide _____
infrastructure (e.g. fence) _____
tools/ equipment _____
transport _____

E4. Is there a problem of theft? Who steals, what do they steal and how do you prevent this?

E5. Is there a problem of rats or other pests?

E6. Do participants have sufficient knowledge of gardening?

E7. Does the garden have sufficient access to markets for its produce?

E8. On average, how long do participants remain members?

E9. Why do participants stop participating?

E10. What are the main challenges facing the garden?

SECTION F: DEMOGRAPHICS

F1. Name

F2. Age

F3. Gender

F4. How long have you managed the garden?

F5. How did you become garden manager?

F6. What do you like best about working in the garden?

F7. What if anything do you dislike about working in the garden?

F8. Do you live in this neighbourhood? If not, how far away do you stay?

F9. How do you get to the garden (walking, bus, taxi etc.)?

F10. Do you grow any food at home? Why or why not?

F10.1 If yes, did you grow food at home before you started working at the garden?

F11. Do most members of the garden have jobs/ other sources of income?

F12. What percent of garden members are:

Male _____ female _____

Under 30 _____ 31-55 _____ over 55 _____

Living in walking distance _____ Using transport to come to garden _____

Formally employed _____ Informally employed _____

Indicative interview questions for NGO personnel

1. Please provide an overview of your food garden programme.
2. How long has the programme been running?
3. How many gardens are there in the programme?
4. What are the objectives of the food gardens?
5. How are participants selected?
6. What kind of support is provided to participants?
 - _____ training?
 - _____ seeds/ plants?
 - _____ water?
 - _____ access to land?
 - _____ inputs (e.g. fertilizer, compost, pesticides)?
 - _____ tools?
 - _____ processing/marketing?
 - _____ other? (please specify) _____
7. What is the time frame for support?
8. How do you promote the long-term sustainability of the gardens?
9. What is the budget for the programme? For each garden?
10. Do you promote any particular growing methods (e.g. organic, permaculture)?
11. What is your assessment of the garden programme so far? (official evaluation?)
12. What has the impact of the programme been? How do participants benefit?
13. What are the main challenges facing the programme?
14. What do you think characterises a successful garden?
15. Why do some gardens succeed and others fail?
16. How could the programme be improved?
17. Do you cooperate with any partners? Is there a framework for such cooperation?
 - a. in civil society? _____
 - b. in the private sector? _____
 - c. government? _____
 - d. schools/ universities? _____
 - e. other? _____
18. Why do you think more people in Johannesburg are not growing food?
19. Are there any issues linked to the programme that you believe need additional research?

Indicative interview questions for government officials

1. Please provide an overview of your department's food garden programmes.
2. How long has the programme been running?
3. How many gardens are there in the programme?
4. What are the objectives of the food gardens?
5. How are participants selected?
6. What kind of support is provided to participants?
 - _____ training?
 - _____ seeds/ plants?
 - _____ water?
 - _____ access to land?
 - _____ inputs (e.g. fertilizer, compost, pesticides)?
 - _____ tools?
 - _____ other? (please specify) _____
7. What is the time frame for support?
8. How do you promote the long-term sustainability of the gardens?
9. What is the budget for the programme? For each garden?
10. Do you promote any particular growing methods (e.g. organic, permaculture)?
11. What is your assessment of the garden programme so far? (Is there any official evaluation of the programme?)
12. What has the impact of the programme been? How do participants benefit?
13. What are the main challenges facing the programme?
14. What makes some garden succeed and others fail?
15. How could the programme be improved?
16. Do you cooperate with any partners? Is there a framework for such cooperation?
 - a. in civil society? _____
 - b. in the private sector? _____
 - c. other government departments? _____
 - d. schools/ universities? _____
 - e. other? _____
17. Why do you think more people in Johannesburg are not growing food?
18. Are there any issues linked to the programme that you believe need additional research?

Sample food diary

Instructions:

- 1) Please keep this diary for three days—2 weekdays and 1 on the weekend (Sunday, Monday and Tuesday).
- 2) Each time you eat or drink, take a photo of the food or drink (if you can).
- 3) Each time you eat or drink, write it down, noting the day or date, the time and a description of the food or drink (including the type of food or drink and the amount). Check ✓ the “Consumed” column.
- 4) Each time you purchase or get food or drink, take a photo of the food or drink, and the place where you purchased it or got it (if you can).
- 5) Each time you purchase or get food or drink, either to consume or to take home for later use, note the day or date, the time, a description of the food or drink (including the type of food or drink and the amount), and the cost. Check ✓ the “Purchased/ acquired” column.
- 6) If you are buying or getting food or drink to consume right away (e.g. from a take-away or at work/church etc.), check ✓ both the “Consumed” and “Purchased/ Acquired” columns.
- 7) After you return the diary and camera to me, I will develop the photos and then we will discuss what you’ve recorded (in writing and/or visually).

Date/ Day	Time	Description (kind and amount of food or drink)	Check one (or both)		If purchased, Cost (R)
			Consumed	Purchased/ acquired	

Indicative Life/ Food History Interview Guide

CHILDHOOD

1. Where and when were you born? Did you grow up there? If yes, what was it like—rural, urban, small town, big city? If no, where did you grow up?
2. Who were the members of your household as a child? How many in total?
3. Did your family grow any food when you were young?
 - 5a. If yes, what foods? Who was responsible for it? Did you help?
4. Where else did your family get food when you were a child?
5. Do you think the food in the shops was produced in your area? Was it from South Africa or other countries?
6. Did your neighbours, or others in the community, grow any food?
7. When you were young, who prepared the food in the house?
 - 7a. As a child, did you help to prepare the food?
8. What did you usually eat as a child? Give examples of typical meals (breakfast, lunch, supper).
9. What was your favourite food as a child?
10. Did you have to eat foods that you didn't like?
 - 10a. If so, which were those?
11. What foods did you eat on special occasions?
12. As a child, did you ever eat outside the house? e.g. school, church, houses of friends or family, restaurants?
 - 12a. If so, was that food the same as what you ate at home? If different, how?
13. Were there times when the family didn't have enough food?
14. How was your health as a child?
15. Did you learn anything about nutrition at school?
16. Was it important in your household to try to eat healthy foods?
 - 16a. Which were those?

ADULT LIFE

1. When you grew up, where did you live? (Name all the places)
2. What was/is it like in those places—urban, rural, township, etc.?

3. Who did/do you stay with?
4. Usually, as an adult, who prepared the food in your household?
 - 4a. If not you, did you help?
5. As an adult, did you grow any of your food at home or in other gardens, before this one?
6. As an adult, where else did/do you acquire food?
7. Where do you think the food that you buy was produced?
8. How much of the food that you buy do you think is produced in Johannesburg? In South Africa?
9. As an adult, have many of your neighbours/community grown any food?
10. What kinds of food do you typically eat?
11. Do you ever eat outside the house?
 - 11a. If yes, how often? Where? What kinds of foods?
12. As an adult, have there been times when you didn't have enough food at home? What was the reason for that?
13. Do you try to eat healthy foods? Which ones?

IDEAS ABOUT FOOD

1. In your life, who taught you the most about food?
2. Do you know how to cook?
 - 2a. If yes, do you enjoy preparing food?
3. How is your diet now different from when you were young?
4. Do you prefer eating at home or outside the home?
5. What criteria do you use to decide where you will buy food (e.g. price, quality, freshness, type of products available, etc.)?
6. If you won the lotto, would you eat differently? What would you eat?
7. Why do you think some people don't have enough to eat in South Africa?
8. Who (if anyone) is to blame for hunger?
9. Should the government help people who are hungry?
 - 9a. If yes, how?
10. Who do you think controls the decisions about food production and distribution in South Africa?

- 10a. Should the people have more control over those decisions?
10b. If yes, how could they get more control over those decisions?

11. Have you heard of the right to food? [In the SA constitution]
11a. What do you think it means, in practice?

12. Do you think people in South Africa currently benefit from the right to food?
12a. How could more people enjoy the right to food?

IDEAS ABOUT AGRICULTURE

1. When did you first learn to grow food, and who taught you?
2. Do you enjoy growing food?
2a. If yes, what do you like about it? If not, why not?
3. [for members] In the beginning, why did you first join the community garden?
4. [for members] Now, why do you continue to participate?
5. What do you like best about the garden?
6. What would you like to change about the garden?
7. Have you gone to any events as a result of being a member of the garden? Describe one or two. (Where, with whom, what about?)
8. Have you joined any groups as a result of being a member of the garden? Describe one or two. (With whom, what about?)
9. Have you had interactions with government agencies or representatives as a result of being a member of the garden? Describe one or two. (Where, with whom, what about?)
10. Do you think growing food is work for women, for men, or for everyone?
11. Would you rather grow food at your home or in a community garden, in a group? Why?
12. Do you think people in Johannesburg would benefit from growing food in the city?
12a. If yes, how would they benefit? If not, why not?
13. Why do you think some people who are hungry do not grow their own food?
14. Do you think the government should help people to grow their own food? What kind of help should government provide?

**Indicative interview questions for garden participants
(Case Study Gardens)**

DEMOGRAPHIC INFORMATION

- D1. Name
- D2. Age
- D3. Gender

SECTION A: GARDEN PARTICIPATION

A1. Are you a member of the cooperative? When did you join? If not, what is your relationship to the garden? How long have you been working at the garden?

A2. Were you involved in starting the garden?

A2.1 If yes, how did it start? If not, how did you first learn about this garden?

A3. Why did you join the garden? What did you expect to get out of it?

A3.1 Is it what you expected? Do you still participate now for the same reasons?

A3.2 When you started, did you expect the garden to be like this one day?

A4. How do you get to the garden (e.g. walk, bus, taxi...)? How long does it take you to get here?

A5. How do you decide what to plant? How do you decide the prices of the vegetables?

A6. Do you use any chemicals (fertilizer, pesticide, etc.)? Why or why not?

A7. When you arrive at the garden each day, how do you know what to do? Do you discuss it with the other garden members?

A8. How are decisions made at the garden? Do you have group meetings?

A9. Are there ever disagreements or conflicts amongst members of the garden? If yes, please give an example and explain how it was resolved.

A10. Do you feel like you have a say in what happens at the garden?

A11. What happens to the food grown at the garden? (Check all that apply, estimate percentage if possible)

- participants eat it/ take it home to eat
- participants sell it directly from the garden
- participants sell it to local hawkers/ vendors
- participants sell it to local shops/ spaza
- participants sell it to large retailers (e.g. Shoprite)
- participants sell it to institution (e.g. school/ hospital _____)
- participants donate it (indicate to whom _____)

A12. If you could do whatever you wanted, what would you do each day? (If not garden, why not?)

SECTION B: FOOD

B1. Do you or members of your household eat food from this garden?

B1.1 If yes, how often?

B1.2 Would you like to eat more food from the garden?

B1.3 How much money do you think you (or your household) save as a result of getting food from the garden? What do you do with the savings?

B2. Has your diet, or that of members of your household, changed since you've been participating in the garden? If yes, how?

B3. Has participating in the garden affected your health in any way? Has it affected the health of members of your household in any way?

B4. Are there foods you would like to grow, but don't? Why not? (e.g. climate, no seeds)

B5. Are there foods that community members ask you to grow? Which ones? Are you able to grow them?

B6. Are there similar vegetables available nearby (e.g. from hawkers, spaza shops or grocery stores)? How do they compare in terms of quality, price, type of vegetables available?

B7. When you eat vegetables from the garden, is it different from eating vegetables from the shop? If so, how?

SECTION C: LIVELIHOODS

C1. About how much is sold each week (in Rand value, and in quantity/ kilos)? What happens to the funds from sales?

C2. Do you get any money from working in the garden? How often? If yes, is the garden an important source of income for you and your household?

C3. Does the garden buy or get any goods or services from the local community? Which ones?

SECTION D: LOCALIZATION/ DEMOCRATISATION

D1. Do you socialise with other members of the garden? If yes, do you only do this at the garden or also outside of it? What about with customers?

D2. What do your family members think of your participation in the garden?

D3. What do your friends think of your participation in the garden?

D4. How do people in this neighbourhood feel about the garden?

D5. Do people ever come to the garden just to visit (not to buy), to enjoy the space?

D6. Do children from the community use the garden? How/when?

D7. Who are your customers?

D7.1 Why do you think they come to buy food at the garden?

D8. Do you view the foods in the shops differently since working in the garden? Do you ever think about who grew them, or where?

SECTION E: EMPOWERMENT & GENDER

E1. Have you learned about any new foods as a result of working in the garden? Give an example.

E2. Have you learned anything about nutrition or health from working in the garden? Give an example.

E3. Have you learned any skills in the garden that you now use in other parts of your life (e.g. with family, etc.)?

E4. Has working in the garden changed the way you relate to (or interact with) other people, in your household or in the community?

E5. Has working in the garden affected your opinion of yourself? Have you learned anything about yourself?

E6. Have you received any training since starting to work at the garden? When/ what was it about?

E7. Would you like to learn additional skills related to the garden? Any specific ones?

E8. In the time that you've been a member, have many people stopped coming to the garden? Why have they stopped participating?

E9. Has there been a time when you stopped coming to the garden. Why was that? Why did you come back?

E10. Would anything make you want to stop working in the garden? (For example...)

- New job for you with a salary that meets household needs
- New job for a household member, with a salary that meets household needs
- New responsibilities at home that take more of your time
- Change in the management of the garden
- Reduced availability of land
- Reduced availability of inputs
- New inexpensive food shop/vendor in your neighbourhood
- Other (please explain) _____

E11. Is there ever conflict between garden members and others—e.g. the landlord, the authorities, neighbours, etc.? If yes, please explain. How is such conflict resolved?

E12. If the garden needs something, do you feel you can go to government to ask for it? Or to another source, like an NGO or a company?

E13. If you could change anything in your life, what would it be? Why? Do you think you are able to make that change? What would you need to be able to do it?

SECTION F: DIETARY DIVERSITY

F1. On average, how often do people in your household eat the following foods:

___ grains (e.g. pap, samp, bread, rice, noodles, or other cereals)

___ potatoes or other roots

___ orange vegetables (butternut, pumpkin, sweet potato)

___ green vegetables (spinach, morogo, etc.)

___ fruits

___ meat

___ eggs

___ fish

___ foods made from beans, peas, lentils, nuts or seeds

___ cheese, yogurt, milk, amasi or other dairy

___ foods made with oil, butter, rama or other fat

___ sugar, honey or other sweeteners

___ other foods such as coffee, tea, or condiments

a) never

b) 1-2 times per month

c) once a week

d) two-four days per week

e) 5-7 days per week

f) multiple times per day, every day

Indicative questions for customers at food gardens

SECTION A: FOOD PURCHASES

A1. What are you buying today?

A2. How will you prepare the vegetables you bought? Who will eat them? How often do you eat ___ (product bought)?

A3. Have you bought from the garden before? If yes, how often do you buy from the garden? What do you normally buy (what items/ quantities/costs)?

A4. Why do you buy food from the garden? (price, quality, convenience, selection, social relationships)

A5. How does the food from the garden compare with food from other nearby sources?

Cost _____

Quality _____

Freshness _____

Variety _____

A6. How did you first find out about the garden?

A7. Where do most people buy food in this neighbourhood? (bread, pap, meat, vegetables)

SECTION B: GARDEN

B1. Do you think the garden affects the neighbourhood? If so, how?

B2. Do you know any of the people who participate in the garden?

B3. Why do you think people participate in this garden?

B4. Why don't you participate in the garden?

B5. Can you imagine any circumstances in which you might want to join the garden? What would those be?

B6. Do you know how to grow food?

B6.1 If yes, do you grow any food at home? Why or why not?

B6.2 Have you ever grown food at home? Was this at your current home or a different place? If different, please indicate where _____

SECTION C: DEMOGRAPHICS

C1. Name

C2. Age

C3. Gender

C4. Do you stay in this neighbourhood? If not, how far away do you stay? How long have you lived at your current address?

C5. Where does your household get most of its food? (rank those that apply, with 1 being the most important. Leave blank if not a source of food for the household)

___ street vendors of fresh produce/
meat

___ street vendors of prepared meals

___ spaza shops

___ supermarkets or chain stores

___ gifts from friends/ family

___ grow it (home/ community garden)

___ food bank/ government food

parcels/ NGO/ church

___ provided by employer/ educational
institution

___ restaurants/ fast food outlets

Indicative questions for food vendors

SECTION A: FOOD SALES

A1. What food do you normally have available for sale? Do you also sell non-food items?

A2. What are the most popular items?

A3. [if not onsite] Where do you sell? How long have you been selling there? Why did you choose your location? What days/hours do you sell?

A4. Who are your main customers? (Age, gender, living/working in the area, regulars vs. occasional passers-by etc.)

A5. Why do you think they buy from you? [price, quality, convenience, selection, social relationship, etc.]

A6. Where do most people buy food in this neighbourhood? [bread, pap, meat, vegetables]

A7. Where do you get the food you sell? Why do you get it there?

A7.1 If any is from a community garden—which products do you get from a garden? How much of weekly sales are from the community garden?

A8. How much are your total sales in the average week? (quantity/ value)

SECTION B: GARDEN

B1. (If food not from the garden) Have you considered buying food from the garden? What influenced your decision?

B2. What do you think of the garden?

B3. Why do you think people participate in this garden?

B4. Do you think the garden affects the neighbourhood? If so, how?

SECTION C: DEMOGRAPHICS

C1. Name

C2. Age

C3. Gender

C4. Do you stay in this neighbourhood? If not, how far away do you stay? How long have you stayed at your current address?

C5. Where does your household get most of its food? (rank those that apply, with 1 being the most important. Leave blank if not a source of food for the household)

- _____ street vendors of fresh produce/ meat
- _____ street vendors of prepared meals
- _____ spaza shops
- _____ supermarkets or chain stores
- _____ gifts from friends/ family
- _____ grow it (home/community garden)
- _____ food bank/ govt food parcels/ NGO/ church
- _____ provided by employer/ educational institution
- _____ restaurants/ fast food outlets

Appendix 2: List of key informant interviews

Date	Type	Organisation	Job title/ function
2013/05/08	NGO	Food and Trees for Africa (FTFA)	Director
2013/07/24	NGO	Food and Trees for Africa (FTFA)	Head of Food Gardens Programme
2013/07/23	Govt/ NGO	GDARD & Land Access Movement of South Africa (LAMOSA)	LandCare, programme development, schools programme medicinal plant programme
2014/03/25	Academic/NGO	Siyakhana	volunteer and Director
2014/06/10	NGO	Food and Trees for Africa (FTFA)	Head of Food Gardens Programme
2014/07/17	NGO	Ekukhanyeni Relief Organisation	(telephone interview)
2014/10/17	Academic	Gauteng City-Region Observatory (GCRO)	various
2014/11/05	Govt	Johannesburg Department of Social Development (DSD)	Executive Head
2014/11/11	Govt	Johannesburg Department of Social Development (DSD)	Region G coordinator
2015/03/16	Govt	GDARD	Urban agriculture policy advisor
2015/04/09	Govt	DSD	Region F coordinator
2015/05/19	Govt	GDARD	Head of Food Security Programme
2015/07/07	Govt	GDARD	Extension officer
2016/03/18	NGO	Food and Trees for Africa (FTFA)	Head of Food Gardens Programme (new)
2016/03/29	Govt	Johannesburg Department of Social Development (DSD)	Executive Head
2016/04/08	Academic	University of Johannesburg	Lecturer, Head of Izindaba Zokudla farmer school

Appendix 3: Overview of survey gardens

Number	Garden location	Year started	Organisation	# of members	Garden objectives	Land tenure	Environmental features	Support/ partners	Products	Other activities	Market
1	Midrand/ ward 110	2005	NGO		a) sustainability- feed the family b) demonstration c) teaching	private	Organic, permaculture, vermiculture, nitrogen-fixing plants, rainwater, grey water	International donors, corporate foundations	vegetables, fruit, fish, honey, small livestock	training, nursery, seed bank, private functions	Family, local community
2	Joubert Park/ ward 59	2011	Coop	6	a) teaching/ demonstration b) food security/ livelihoods	Permission from City Parks	organic, compost	GDARD, CWP volunteers, NGO	vegetables, herbs	training, herbal ointments, school visits	street vendors, shop: local community
3	Central Joburg rooftop/ ward 60	2011	Coop	6	food security/ livelihoods	Permission from building owner		GDARD, CWP volunteers, NGO, building owner	vegetables, fruit, herbs		building residents, street vendors
4	Ivory Park/ ward 77	2005	Coop	7			organic	NGOs, GDARD, Rand water	vegetables	sewing, paper products	community, street vendors
5	Bez Valley/ ward 118	2005	University project/ Coop		a) demonstration b) education & research c) empowerment d) employment	Permission from City Parks	organic, permaculture	Wits, COJ, GDARD,	vegetables, fruit, herbs	training, creams (when possible)	community, street vendors, previously donated to ECDCs
6	Bertrams/ ward 66	2006	Coop	6	food for the vulnerable	Permission from COJ	organic, compost, companion planting, mulch	COJ, GDARD, corporate sponsors, school volunteers	vegetables, fruit, herbs	training	community, street vendors, markets, supermarket
7	Yeoville/ ward 67	2011	School	n/a	a) education b) food for feeding scheme	School	organic, vermiculture	Wits, CWP, City Parks, NGO, corporate sponsor	vegetables	school lessons	provides 10% of food of the feeding scheme for 600 kids, used to sell extra spinach to parents
8	Westbury/ ward 69	2013	NGO project	n/a	feed kids at school/ youth centre	Permission from Westbury High school	organic, vermiculture	corporate sponsor, international donor, NGO	vegetables	lessons	vegetables for school feeding scheme (70) and youth centre feeding scheme (200), community
9	Soweto/ ward 41	2010	NGO project	n/a	feed those receiving home-based care (elderly, HIV/AIDS) & kids on site		compost	NGO, corporate sponsor	vegetables		
10	Soweto/ ward 44	2013	School		a) education b) food for feeding scheme	School	organic, compost, drip irrigation	NGO, corporate sponsor	vegetables, herbs	lessons	use food in school kitchen, sell extra to staff
11	East bank/ ward 105	2010	Coop	7	food for community and members	Permission from Eskom	compost, vermiculture	COJ, GDARD, Eskom, NGO, City Parks	vegetables		community, street vendors
12	Alexandra/ ward 105	2002	NGO project	n/a	a) food for orphans and grannies b) exercise for grannies	Permission from COJ	organic	NGO, school in Sandton,	vegetables, herbs		participating families get food
13	Alexandra/ ward 105	1998	School	eco-club	a) education b) food for feeding scheme	School	organic	NGO, corporate sponsors, CWP, ANC, Rand water, GDARD	vegetables, fruit, herbs	lessons, herbal remedies	school feeding, sell to community,
14	Hillbrow/ ward 123	2013	Informal group	10	food for members and building residents	Permission from building owner	organic	NGO, building owner	vegetables		members and building residents
15	Hillbrow/ ward 63	2012	Informal group	4	food for members	Permission from building owner	organic	NGO, building owner	vegetables		members
16	Joubert Park (ward 123)	2012	Informal group	18	food for community and members	Permission from building owner	organic	NGO, building owner	vegetables	social space	members, and sell to building/ neighbourhood
17	Newtown/ ward 60	2011	Informal group	03-Jan	food for members/ community	Permission from building owner	organic, permaculture, compost	NGO, building owner	vegetables, herbs	training	members/ community
18	Newtown/ ward 60	2012	Informal group	4	food for members	Permission from building owner	organic	NGO, building owner	vegetables, herbs	social space	members, community
19	Troyeville/ ward 61	2012	Informal group	6	food for community and members	Permission from building owner		NGO, building owner	vegetables	social space	members, community

Num ber	Garden location	Year started	Organis ation	# of membe rs	Garden objectives	Land tenure	Environmental features	Support/ partners	Products	Other activities	Market
20	Orange farm/ ward 3	2011	NGO	7	a) food for members b) exercise	Permission from COJ	permaculture	COJ, GDARD	vegetables, fruit, herbs		members, community
21	Orange farm/ ward 2	2007	Coops (25)	150 people (in 25 coops)	a) feed members b) help community	Permission from COJ	organic, permaculture	COJ, NGO, GDARD	vegetables, herbal remedies	some coops have other activities	members, community
22	Diepsloot/ ward 113	after 1999	NGO project	18 users	a) skills development b) income for NGO c) savings for users/ community d) fresh food	NGO	organic	DTI, COJ, GDARD, corporate sponsors, donors	vegetables		users, community
23	Diepsloot/ ward 96	2013	Coop	10	food for members and community	Permission from City Parks		City Parks	vegetables		street vendors
24	Diepsloot/ ward 96	2012	Coop	6	food for members and community	Permission from COJ	organic	COJ, GDARD	vegetables		members, stall at taxi rank, community
25	Diepsloot/ ward 96	2006	Coop	9	food for members and community	Permission from COJ		COJ	vegetables, fruit		