Urban Agriculture and Sustainable Livelihoods: the Siyakhana Initiative

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Declaration

I, Bianca van Niekerk, hereby declare that the work submitted for the Honours Degree of Urban and Regional Planning, to the University of the Witwatersrand is a product of my own investigation, and all citations and references have been acknowledged. It has not been submitted before for any degree or examination to any other University.

Signature:

Date:

Abstract

This Honours research report assesses whether participation in urban agriculture helps reduce poverty in Johannesburg and improves the livelihoods of its inner city poor. The investigation was undertaken in Bez Valley, Bezuidenhout Park, where the Siyakhana food garden is located. The findings of the investigation revealed that the Siyakhana Initiative has improved the livelihoods of its gardeners by improving their food security, helping them gain an income and has become a place where the gardeners are able to benefit by learning about permaculture. However, the findings also revealed that the gardeners have not fully benefitted from the food garden, but rather that they have been able to receive income simply due to external funding the Initiative has received. Also, the report shows that the Siyakhana garden has not been able to extend its benefits to the broader community, mainly due to its poor business model. This nevertheless laid bare the fact that the Initiative is in need of more support from the CoJ despite their attempts to put food security on the policy agenda. It has also emphasised that support from urban planning and local government as a whole is needed in order to ensure that urban agricultural projects such as Siyakhana become more sustainable in the future.

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CoJ	City of Johannesburg
DFID	UK Department for International Development
ECDC	Early Childhood Development Centres
FAO	Food and Agriculture Organisation of the United Nations
GDS	Growth and Development Strategy
IDP	Integrated Development Plan
JDA	Johannesburg Development Agency
NDP	National Development Plan
NPC	National Planning Commission
PDG	Palmer Development Group
SL	Sustainable Livelihoods
UA	Urban agriculture

Chapter One: Introduction

The first chapter presents the overall idea and purpose for the research. The chapter develops a contextual understanding of urban agriculture in South Africa and elsewhere in the developing world. The chapter makes a case for the research and outlines why the topic is necessary for investigation. The chapter closes by discussing the methodological considerations which identifies the appropriate methods for studying the topic.

1.1 Background

Urbanisation and urban growth have increased rapidly in developing countries. It is widely recognised that although natural growth in the population plays a large role, rural to urban migration is also a significant contributor to urbanisation (Masika, 1997). In South Africa and in much of sub-Saharan Africa rapid economic growth is related to urbanisation. Often cities in the developing world experience economic growth combined with extreme rates of urban poverty and unemployment within their urban centres (Molelu, 2014). In most cases the cause of urban poverty and unemployment in cities is closely linked to population growth and the subsequent backlog in basic services and infrastructure. This is the case for Johannesburg, where “Aggregate measures of Johannesburg’s demographic and economic growth prosperity mask complex underlying socio-economic inequalities and cultural tension” (Rudolph *et al.* 2012: 1).

A definition of urban poverty can encompass both an economic and a social perspective. Most commonly, urban poverty has been associated with lack of income or consumption. However, recent definitions of urban poverty tend to include “non-material deprivation and social differentiation” (Masika *et al.* 1997: 2).

In the past, poverty and a lack of basic services had generally characterised rural areas, but more recently the ’urbanisation of poverty’ is apparent, where the trend of poverty is moving from rural to urban areas. Statistics South Africa (2014) indicated that in 2011 the percentage of people living in poverty in rural areas amounted to approximately 68,8%, while in urban areas it was significantly lower with a percentage of 30,9%.

Due to urban conditions many more urban residents are considered to be poor. Lekganayne-Maleka (2013: 2) asserts that “the incidence of poverty in urban areas may be underestimated by poverty lines that take no account of the higher costs of many necessities. Many urban households face serious deprivations, despite having incomes above the US$1 a day poverty line.” Urban poverty is strongly linked to the purchasing power (Lekganayne-Maleka, 2013) of a household. Richards and Taylor (2012: 8) remind us that “in the urban context, households are forced to purchase most of their food for consumption, but their ability to obtain nutritious and healthy food is determined by their access to income and employment”. For rural residents it is easier to generate food for themselves because they have access to agricultural land. In urban areas, land is mostly used for property development or for commercial activities that contribute to a city’s economic growth. Urban areas are mainly characterised by built-up developments, such as apartment buildings and offices, and one will rarely see agricultural activities taking place in these areas.

In Johannesburg, for example, urban areas incorporate mostly office, apartment or educational buildings. Although there are open spaces such as parks, this is a rare occurrence. This leaves hardly any opportunities for people to start their own agricultural production in urban areas and is often as a result of the fact that many city officials believe that agricultural land in urban areas should be used for future city construction and that agricultural activities should be left to rural areas (De Zeeuw *et al*. 2011).

Poverty alleviation has been on the policy agenda for years now. Both national and provincial governments have functions that are related to poverty alleviation, which include housing, education and healthcare services (Republic of South Africa, 1996). In response to this ongoing challenge, the National Development Plan (NDP) (2011) aimed to eradicate poverty and inequality by 2030 (NPC, 2011). However, the rapid increase in urban population still creates challenges for both city managers and residents. According to the Johannesburg Poverty and Livelihoods Study of 2008, the city’s poor are vulnerable and find it very difficult to access services and opportunities to better their lives (Rudolph *et al.* 2012).

The rise of poverty in urban areas has led people to adopt various livelihood strategies. Richards and Taylor (2012) mention the various livelihoods strategies that

both rural and urban households use to deal with poverty, some of which are diversification of economic activities; saving on expenses by only spending on essentials; or selling assets. In the face of rising food prices, unemployment and poverty, many people in urban areas of cities in South Africa have resorted to a number of informal activities. These include street trading, setting up of *stokvels* (informal savings accounts), or even running a business out of their households (hairdressing or *spaza* shops). How the urban poor have developed various livelihoods strategies in Johannesburg is important to the research and will be further elaborated in the chapters that follow.

Urban agriculture is a growing phenomenon and much recent research has been dedicated to the topic. Although not a new concept, it has become a major defence against food insecurity and also has the potential for people to generate income. Its ability to feed people in poverty and its capacity to do this in a sustainable way has made it an interesting subject for research, future policy development and urban planning approaches in South Africa. While many authors have seen the potential of urban agriculture in contributing to poverty alleviation, food insecurity and vulnerability issues, others have emphasised caution when considering urban agriculture as a poverty alleviation strategy.

1.2 Research Questions

This section outlines the research questions which covers the overall concern that the study aims to address and is followed by a set of sub-questions which explore the underlying points for focus within the investigation. The research question and sub-questions are as follows:

Research Question: To what extent does the Siyakhana urban food garden improve the livelihoods of Johannesburg's urban poor, and what are the implications of such initiatives for urban planning?

- What are the expectations and experiences of food gardens in reducing vulnerability of the urban poor?
- How does the Siyakhana Initiative respond to the challenges of the urban poor?

- How has involvement in the Siyakhana Initiative impacted upon the livelihoods of its current members/employees?

- What are the implications of the Siyakhana experience for planning that is responsive to the urban poor?

The above research question narrows down the investigation to a more targeted aspect of urban agriculture that the research aims to explore. Although there are many aspects within the urban agricultural field, such as the raising of livestock, the study aims to focus only on those aspects related to urban food gardening. The Siyakhana Initiative has been chosen as the case study for the investigation as it represents a suitable example of urban food gardens in Johannesburg. The initiative has been running for years, which is important and valuable to the research because of its sustainability and evident experience as an urban food garden.

The research question aims to investigate various factors of vulnerability within households in Johannesburg and whether urban food gardens are able to alleviate these vulnerability issues and facilitate resilience for the city's poor population. In considering this, the research question aims to investigate what this means for the urban planning profession and the role that municipal planning and policy can play in facilitating urban food gardens and what recommendations can be made.

Sub-question one relates to the literature to be explored on urban agriculture as it asks what already has been experienced with regards to urban food gardens for the poor. It also investigates urban food gardens' experiences in reducing vulnerability in other countries by researching the various benefits and challenges that have been faced. It also focuses on understanding the concepts of vulnerability, sustainability and livelihoods.

Sub-question two aims to assess the institutional structures and support for urban food gardens. Therefore it relates to what mechanisms Siyakhana has put in place or aims to put in place that make it possible for the poor to participate in and benefit from urban food gardens. The sub-question also explores the nature of support urban food gardens require from other stakeholders (local government, Non-governmental organisations (NGOs) and private donor organisations) which will ensure the food gardens' ongoing institutional sustainability.

Sub-question three aims to investigate the experiences of members of the initiative and explores whether their livelihoods have been substantially improved or whether they have faced any new challenges since joining the initiative. This question also aims to understand why they have joined the initiative, and includes those factors such as difficulty finding employment and household food insecurity levels. The sub-question explores whether participation in urban agriculture is a useful livelihood strategy for them in terms of mitigating the worst effects of poverty and improving their lives.

Sub-question four attempts to extrapolate from the findings some implications for the broader realm of urban planning in facilitating initiatives that assist in improving the resilience of the urban poor. Addressing this question will involve an investigation into whether planning is or should aid in creating environments which would allow urban food gardens and initiatives like Siyakhana to thrive. The question also aims to develop a set of recommendations for urban planning and local government on how they can incorporate urban agriculture into urban policy and development. Depending on findings and analysis of the Siyakhana food garden the sub-question also aims to develop suggestions relating to what is needed in order to sustain initiatives such as Siyakhana, so that the urban poor are able to truly benefit from urban food gardens.

1.3 Aims and Objectives/Purpose of the Research

The overall intention of this research is to investigate urban agriculture as a response to addressing urban poverty in Johannesburg. It does this by exploring the extent to which it has served as a mechanism to create sustainable livelihoods for farmers working at the Siyakhana Initiative. The research therefore explores how urban agriculture may be able to create social, economic and environmental improvements for the urban poor and considers the need for urban planning to contribute to the success of urban agriculture as a livelihood strategy.

- Therefore the study looked at key literature that formed the basis for framing the empirical research and assessing the findings.

- Through the detailed enquiry, the research drew on the experiences of participants in a well-established urban food garden (i.e. Siyakhana)

- By looking at principles that describe what a sustainable livelihood would entail, the study aimed to assess them against the results from the investigation.

- It obtained tentative conclusions/recommendations about the significance of urban food gardens in reducing urban poverty and vulnerability/improving livelihoods, and what this means for municipal planning and policy support.

1.4 Rationale

Recent research done on the topic of urban agriculture includes a dissertation done by Nicolle (2011) which looks at urban food gardens and empowerment. But what is closely related to the current topic of the report is a paper by Dawson (2008) who investigates whether the Siyakhana garden can be a suitable model of urban agriculture.

Most research done on urban food gardens and particularly research focusing on the Siyakhana Initiative has been concerned with food insecurity. The purpose of this research report is to contribute to existing research by proving that vulnerability issues go beyond food insecurity and include deprivation and income poverty.

What is different about this investigation is that it focuses on the extent to which the Siyakhana urban food garden contributes towards reducing vulnerability and strengthening the livelihoods of poor urban households in Johannesburg. An important contribution that the research makes is that it not only considers Siyakhana as a livelihood strategy for the urban poor but also builds on recent studies by exploring new solutions to the challenges of inner city poverty.

The study also examines the role that urban planning plays (or should play) in the growth of the urban agricultural sector. Therefore, the study analyses how urban planning can be used to further and facilitate the development of initiatives such as Siyakhana in the city of Johannesburg.

1.5 Research methods

1.5.1 Qualitative Method

Qualitative methods are aimed at investigating aspects of social life such as experiences rather than obtaining information that can be sampled statistically (Patton and Cochran, 2002). The most commonly used methods in qualitative research are participant observation, in-depth interviews, and focus groups. This research will mainly be focusing on participant observations and in-depth interviews as tools in the investigation.

Qualitative methods aim to ask the 'what, how and why' of the study (Patton and Cochran, 2002) which will assist in investigating the perspectives of Siyakhana members, both those benefiting from the gardens and those in management, as well as their experiences and challenges. A qualitative research method offers the freedom to conduct the interview in the form of a conversation, thus possibly gaining unanticipated information from the respondents that might make significant contribution to the study. Given that the research is exploring vulnerability, a qualitative method proved to be a suitable method because it helps gain information in a flexible way.

Even though it is possible to obtain levels of vulnerability quantitatively, the current research was able to obtain information that assesses the experiences of those who are vulnerable. This included gaining information by asking 'why?', 'what?' and 'how?' which obtains the opinions of members and their reasoning for doing certain things. While quantitative data might be useful in gaining information on household food consumption of the gardeners, the information derived from this can be quite rigid in the sense that although it might indicate that food consumption has improved since working at the garden it does not help in understanding whether the gardeners have gained a sense of empowerment since joining the food garden.

The study utilised the DFID Livelihoods Framework to structure the questionnaires, and to assess the livelihoods of members by using data from the interviews. The livelihoods framework is useful because it is able to analyse micro environments such as urban food gardens and can therefore show how households of different

categories are able to improve and become more resilient. The framework investigated the Siyakhana Initiative through the use of the following criteria:

1. The Vulnerability Context

- In order to fully understand the livelihoods of the gardeners, the investigation needed to obtain an understanding of the various factors that shape their livelihoods. What was explored was the shocks, trends and seasonalities that affect the livelihoods of the gardeners. For example, it could be aspects as loss of employment or fluctuations in food prices.

2. Livelihoods Assets

- The study investigated the human, natural, financial, social and physical capital to examine the strengths of the gardeners. The argument is that people need all five capitals to achieve a decent livelihood. Therefore the study investigated what assets the gardeners have access to and what assets the Siyakhana initiative supplies them with.

3. Livelihoods strategies

- Important to the study are the ways in which the gardeners are able to translate their livelihood assets into livelihood outcomes. Therefore, the study investigated the various livelihoods strategies they have or are still employing in an effort to improve their livelihoods. These strategies may include residing in close to place of work or obtain social grants from the government.

4. Institutional support

- The livelihoods of people are influenced by more than the vulnerability context or the livelihoods assets and strategies. It is therefore important to the study that the institutional context was explored because these are often the structures put in place that can either give access to or deny certain assets.

1.5.2 Case study method

According to Bromley (1990: 8), a case study is a “systematic inquiry into an event of a set of related events which aims to describe and explain the phenomenon of interest”. Using a case study for the research is important because it contributes by giving an actual example of how a group of poor people carry out their livelihoods through making use of urban food gardens as a livelihood strategy. The case study is therefore important because it helps connect the phenomenon of urban agriculture

with a real-world case. A case study method plays a significant role in obtaining “an up-close or otherwise in-depth understanding of a single or small number of “cases” set in their real-world context. The closeness aims to produce an invaluable and deep understanding - that is, an insightful appreciation of the “case(s)” – hopefully resulting in new learning about real-world behaviour and its meaning” (Yin, 2012: 5). Data collection from case study research usually involves the use of documents, archives, interviews, direct and participant observation, as well as physical artefacts (Zucker, 2009). The current research makes use of a qualitative interview process to study the members of the food garden, as well as the staff members.

There are different types of case studies. The type of case study that will be used for the research is an instrumental case study. Stake (1995) notes that an instrumental case study is used to provide insight into a particular issue (Zucker, 2009). The purpose is often to gain an in-depth understanding of its contexts and activities. The Siyakhana Initiative was used as the case study for urban food gardens in Johannesburg. It is used as an instrumental case study because the research looks at urban agriculture as a broader issue for consideration. Therefore the Siyakhana Initiative is used as a real-life illustration of urban agriculture taking place in urban areas of Johannesburg. For that reason the study is concerned with all aspects within urban agriculture, however, in order to understand its context and how it is practised the use of a case study was important.

The Siyakhana Initiative was formerly known as the Siyakhana Food Garden Project facilitated by the University of the Witwatersrand’s Health Promotion Unit. The Siyakhana Permaculture Food Garden is located in the residential area of Bezuidenhout Valley on the premises of the Bezuidenhout Park. The urban food garden is situated on the fringes of the city centre, where development issues such as food insecurity, unemployment and poverty occupy the area (Nicolle, 2011).

1.5.3 Data Collection

Table 1: Summary of data collection for the research according to each research question

Methods / Sub-questions	Information required	Data required	Data Collection
What are the expectations and experiences of food gardens in reducing vulnerability of the urban poor?	Experiences/challenges of people working involved in urban agriculture; Impacts of urban agriculture on the livelihoods of the urban poor	Advantages/disadvantages of participating in urban agriculture; Spatial and institutional considerations for urban agriculture	Drawing on literature exploring urban agriculture, vulnerability and livelihoods of the urban poor
How does Siyakhana respond to the challenges of the urban poor?	Aims, activities and future prospects of the organisation	Data on various partnerships Siyakhana is involved in; Services the initiative provides; Process of establishing a food garden (resources, responsibilities, funding)	Annual reports on Siyakhana (SIEHFS of 2011); Observation of activities in the food garden; Interview with Siyakhana partners i.e. the Director/founder
How has involvement in Siyakhana impacted upon the livelihoods of its current members?	Have the members benefitted from the initiative; Require personal information about the livelihoods of the members (prev. employment status, food security, etc.)	Ability to provide meals to for household; No. of family members supported; Different livelihood strategies	Conduct 5-8 semi-structured interviews with Siyakhana members; Utilise DFID framework to assess livelihoods of members by using data from interviews
What are the implications of Siyakhana experiences for planning that are responsive to the urban poor?	How urban planners can assist urban agriculture projects such as food gardens; What are the current/future plans for urban agriculture at policy level	Information on the process of establishing urban food gardens will assist in obtaining whether municipal planning plays any part in it and whether there is a need for urban policy to provide focus on urban agriculture as a livelihoods strategy.	Literature on urban policy in Johannesburg (CoJ IDP and Joburg 2040); Data on services provided by Siyakhana; What processes are involved in urban food gardens; Future prospects of Siyakhana; Views of Siyakhana members and partners and how they feel urban planning could play a role in urban food gardens;

Methods **Sub-questions**	**Information required**	**Data required**	**Data collection**
			Interviews with one CoJ Official who will provide an understanding of their role in assisting urban agricultural initiatives as well as policy on it

The above table is a brief summary of the information and data needed for collection. It describes how each question was answered for the study and how the information was collected. It is important to note that the study focuses only on a single case study, thus findings might be limited. Therefore it is important to interview several members in order to gain a broad understanding of the issues at hand.

An important part of the collection of data is the utilisation of the DFID Livelihoods Framework to the livelihoods of members by using data from the interviews. The livelihoods framework is useful because it is able to analyse micro environments such as urban food gardens and can therefore show how households of different categories are able to improve and become more resilient.

1.5.4 Data Analysis

Qualitative data analysis takes place when “a researcher is constructing a ‘reality’ with his or her interpretations of a text provided by the subjects of research” (Schutt, 2011: 322). Therefore, the purpose of qualitative data analysis is to understand the people being studied and gain an understanding of their lives in natural settings. This type of data analysis was important to the study because the research aims to use the information from the data collection and to make sense of it through the perspectives of the Siyakhana gardeners themselves.

During the data analysis process, the researcher followed a process which enabled him/her to interpret the data. The process involved:

1. Documentation of the data through transcribing each interview. Information was written down on paper.

2. The data was thoroughly read through and important ideas and issues were highlighted.
3. Ideas and issues were sorted and categorised into various themes/concepts which were outlined in the DFID Livelihoods Framework (i.e. assets, strategies and institutional factors).
4. The data was then considered broadly to observe whether it can be related to any current issues and which may confirm or counter current literature on certain issues.
5. Conclusions and recommendations were made.

1.6 Ethical Considerations

For the duration of the study, the research adhered to the Wits University procedures and principles regarding ethical considerations of the study. These principles and procedures were thoroughly considered, particularly during the interview processes.

The research took into account the context within which the study is being undertaken and recognised the sensitivity of certain individuals. Many of the gardeners with whom the research engaged may have been previously unemployed, have experienced extreme hunger or may know what it feels like not being able to earn enough income to care for their families. Therefore, it is essential that the research considers the vulnerability of the gardeners with whom it engages.

A very important part in ethical concerns is how one communicates with the individuals being studied. This could be how different forms are presented or the kind of language used when conducting an interview. There were two important factors to consider for the following study. Firstly, for many of the gardeners, they may be living in what is considered as poverty, however, some may not consider themselves to be poor. It was important to consider what is said when having conversations with these individuals or structuring interview questions in such a way as not to offend them. Secondly, many of the gardeners might not have had the opportunity to attend school or may not be able to read. Therefore, careful consideration of how information is presented and how interview questions are conducted is important. The level of language is an important factor. When drawing up consent and information sheets, the researcher ensured that it uses words that are easy to

understand, so that participants are able to understand what they are getting involved in.

In order to conduct the study, the research required the use of the following ethical tools:

Participant Information Sheet (PIS)

- The study began by drawing up a Participant Information Sheet which conveyed how confidentiality and anonymity was protected. This included outlining what was expected of the participant and the reassurance that he/she is welcome to withdraw from the study at any time.
- The sheet indicated the purpose and a brief explanation of the topic of the study.
- The Participant Information Sheet is an important ethical consideration because the research deals with investigating the livelihoods of the vulnerable which means that certain questions might be personal and may have an effect on members of the initiative. Therefore the PIS gave them information into the processes within the study, which informed them in their decision to participate.
- The PIS also included steps that may be taken if the participant feels unsafe or uncomfortable, such as immediate termination of the interview.
- The sheet indicated that the study being conducted is only for academic use and that no participant may be rewarded for their involvement in the study.

Formal Consent Form

- The Formal Consent Form was given to Siyakhana in order gain access to the site and staff members. The Formal Consent Form was given to those members of Siyakhana who agreed to participate in the study, and agreed to be interviewed.

Informal consent

- When the PIS and the Formal Consent Form was given it was important to verbally introduce myself as the researcher, what organization the research is conducted for, a brief description of what the study entails, etc.

1.7 Chapter Outline

Chapter 1: Overview of the Study

In this chapter the research topic of Urban Food Gardens and Sustainable Livelihoods describes the background and introductory part of the report. This chapter discusses the problem statement; how the research topic is uniquely positioned amongst other research in the similar field and why the research is an important topic for study. The chapter describes the objectives of the study which looks at what information the research intends to find. The chapter also elaborates on the research design for the study. It discusses the research method chosen to assist in conducting the study and how the data was collected. In essence, this chapter is a summary of what the whole report is about and provides an outline for the reader.

Chapter 2: Literature Review

This chapter discusses the various relevant literatures on urban agriculture and livelihoods approaches. It discusses different concepts, arguments and criticisms of these themes and how they have been practiced elsewhere. The chapter expands on themes such as urban policy and planning, as well as vulnerability issues and how they relate to urban agriculture. The chapter then developed a conceptual framework of the study and how it links to the research.

Chapter 3: Case Study: Overview

This chapter develops a profile of urban poverty in Johannesburg. It looks at the various challenges the city faces with relation to urban poverty and how it affects the livelihoods of the poor. It discusses the various policies and approaches to poverty alleviation in the city and develops an understanding of the various livelihoods strategies that are adopted in the city. Additionally, the chapter considers the various urban agriculture activities taking place in Johannesburg and closes by discussing the case study for the research, which is the Siyakhana Initiative.

Chapter 4: Presentation of Findings

This chapter presents the findings that have been collected on the Siyakhana Initiative in a coherent report. This means the key points and themes arising from the

interviews that have taken place with members of the Initiative. The chapter interpreted the findings and discuss the relevance and importance of it.

Chapter 5: Analysis of Findings

This chapter of the report presents a coherent discussion on the findings of the interviews. It makes use of the DFID Sustainable Livelihoods Framework discussed in the literature review chapter and analyses the findings from the interview using this framework as a tool. Therefore it linked the findings to vulnerability, assets and livelihoods strategies of the gardeners. This chapter represents an important section of the report as it begins to draw conclusions to the study.

Chapter 6: Conclusions and Recommendations

This chapter concludes the report by answering the research question and sub-questions and begins to summarise and make recommendations. This chapter relates the findings to urban planning and how it can be applied as a solution to the situation within the topic.

2 Chapter Two: Literature Review

This chapter aims to understand the various concepts, approaches and debates regarding the experiences and challenges of urban food gardens and their impacts on the livelihoods of the urban poor. This section discusses the scholarship relating to urban agriculture (UA) and sustainable livelihoods (SL). Both urban agriculture and sustainable livelihoods are contextually linked, especially with regards to vulnerability. While urban agriculture proposes a strategy for urban poverty reduction, SL is regarded as the outcome. This relationship is central to the conceptualisation of the research because the purpose of the study is to make a case for urban agriculture as a strategy to improve the livelihoods of the poor. What the research aims to prove is that urban agriculture can create sustainable livelihoods, because it is able to provide benefits holistically – that is social, economic and environmental benefits.

The chapter also investigates the response by local governments to the possibilities presented by urban agriculture, and what adopting urban agriculture as a formal policy intervention may mean for urban planning.

2.1 Urban Agriculture and Vulnerable Households

2.1.1 Urban Agriculture

While urban food production is well established in cities of the developing world, the concept of urban agriculture has only recently gained momentum (Rogerson, 1993). Social and economic issues, such as poverty and unemployment, which are prevalent in developing countries have led people to adopt survival tactics to fight against poverty and vulnerability. People have adopted urban farming as a means to feed their families or derive an income for their households. As a result, the impact of urban agriculture has been argued by many researchers as an important strategy in poverty alleviation.

The growing interest in urban agriculture has led researchers to adopt various definitions of the concept. Smit *et al.* (2001:1) defined urban agriculture as “an industry that produces processes and markets food and fuel on land and water dispersed throughout the urban and peri-urban area.” This is a very brief description

of urban agriculture and might not be appropriate in every situation. The definition describes the ‘how’ and ‘where’ aspects of urban agriculture and leaves out the ‘what’ and ‘who’ aspects such as crops, livestock, and fish.

Most definitions of urban agriculture involve the production and cultivation of food crops, herbs, flowers, livestock or fishing and that this occurs within the city or on the urban periphery (George, 2013). This is correct, but more recently, urban agriculture has come to encompass a number of other activities as well. Ngcamphalala (2013) asserts that urban agriculture now also includes those activities such as the processing, marketing and trading of the urban farming produce.

Urban agriculture encompasses more than subsistence farming which is commonly undertaken by poor urban households. It also involves production, processing at household level, through to commercialised agriculture (FAO, 2007). For example, the Bambanani Food and Herb Garden located in the suburb of Bertrams in Johannesburg sells cheap organic vegetables to the local community, to street hawkers and the Bertrams Spar supermarket. Thus, urban agriculture has the potential to go beyond food security (where farmers only use the produce they grow to feed their families) but rather that income can be generated from the produce. In addition, urban agriculture concerns more than produce. Urban agriculture has the potential to be profitable because of the diversity of its activities. Therefore, a definition of urban agriculture must consider all those aspects that are important for the research.

For the research, it was important to use a definition that is unique to the particular situation which is urban agriculture practised in response to social, economic and environmental insecurities. Therefore the study utilised a definition adjusting both George (2013) and Ngcamphalala’s (2013) description. The definition that is used for the study is:

> Urban agriculture is the practice of farming, processing, marketing and trading of produce such as livestock, food crops, herbs, or aquaculture etc. within urban and peri-urban areas, often in response to crisis or vulnerability of urban populations.

However, the research focused on that aspect of urban agriculture that involves urban food gardening. This means farming with fruits and vegetables or herbs. This is known as horticulture. According to Smit *et al.* (2001) horticulture is the process of farming with fruits, vegetables and compost in locations such as parks, roof-tops, wetlands and greenhouses.

2.1.2 Urban Agriculture and Vulnerability

Vulnerability is an important aspect of the research. Therefore the concept of vulnerability in relation to urban poverty and urban agriculture requires attention in order to understand its meaning within the study. Phillip and Rayan (2004) note that there are two approaches to vulnerability: the biophysical approach which involves vulnerability to environmental conditions; and the political economic approach which involves the idea that human beings are entitled to certain things such as food and the idea that marginalisation is a form of vulnerability. In essence, on the one hand, vulnerability encompasses factors such as climate change and natural disasters that can make people vulnerable to danger and loss; and on the other hand, it includes factors such as food insecurity, malnutrition and income generation.

Income poverty is part of vulnerability. Not having access to a constant income hinders an individual's ability to purchase food or to provide for their health needs and other aspects required to achieve a full life. Income is thus an important factor for the livelihoods of households. However, it is also important to bear in mind that it is not the only measure of vulnerability. For example, the well-being of a person cannot only be measured by a person's level of income but must consider the level of his/her utility (happiness or satisfaction) and political situation (civil rights) (Pramono and Woltjer, 2011). Therefore, a household can be considered vulnerable, when it is deprived of one or more of these factors.

Deprivations hinder an individual's ability to perform an array of human functionings and are linked to vulnerability. Masika (1997) notes that analysis of poverty must focus more broadly on assets and exclusion, and it has been argued that the low-income of urban residents is not only the reason for the deprivations they experience. The blame has been placed on the lack of capacity from the private and public sector in reducing poverty and that many governments in fact contribute to impoverishment by enacting restrictive and unreasonable regulations or through

eviction and harassing informal traders. However, while this may be true, it is important to realise that income plays a significant role in the lives of urban dwellers because of the higher costs of living and different contexts in which they live, as opposed to rural areas. Therefore, income must be considered to play a large role in the vulnerability of the poor.

Vulnerability refers to the absence or insufficiency of assets and/or capabilities necessary to overcome/address the shocks and stresses of life. Moser (1998: 11) refers to the importance of exploring vulnerability and how it can lead to "resilience or responsiveness in exploiting opportunities and resisting or recovering from the negative effects of a changing environment". People living in poverty are often considered vulnerable because they are not capable of guarding themselves against shocks or disasters. For example, for many people, even though there is employment available in an area, they might not be employed because of lack of skill and education. Sen (2005: 153) asserts that "capability allows us to distinguish appropriately between (i) whether a person is actually able to do things she would value doing, and (ii) whether she possesses the means or instruments or permissions to pursue what she would like to do".

Capabilities and assets are closely related. On the one hand, the concept of capability means that an individual/household/community has the ability or potential realise their "human functionings" (Sen, 2005: 153). On the other hand, assets are characterised as those "material (money, goods, and infrastructure), or non-material (health, knowledge, skills/abilities, relationships, organization, social environment, political condition, property right or access rights…" (Pramano and Woltjer, 2011: 9). The idea is that an individual will benefit from having access to these assets, therefore allowing an individual to achieve his/her capabilities.

Understanding capabilities is important because it helps to recognise why people are living in poverty, why they are food insecure, unable to generate income or are suffering from malnutrition. For example, just because employment generation may be a result of economic development, does not mean that people are able to find jobs. An individual needs to be capable of finding a job; which means he or she must have the skills or qualifications to be suitable for a certain occupation. It also helps to

understand the livelihood strategies people have adopted in order to respond to their vulnerability.

Food insecurity and malnutrition are vulnerabilities often faced by the urban poor. Van der Merwe (2011: 1) describes food security "as physical and economic access to sufficient, safe and nutritious foods which meet an individual's dietary needs and preferences for an active and healthy life". He also notes key dimensions of urban household food security, two of which are food availability and food access (Van der Merwe, 2011). Amar-Klemesu (2000) states that access to food has a larger impact on food insecurity than the availability of food and that there are three issues affecting access. Firstly, macroeconomic aspects such as food policies result in the rise of food prices, making access to food an even greater concern for poor households. In South Africa, for example, the poor spend 37 percent more on food due to the rise in prices of maize, and dairy products (Van der Merwe, 2011).

Secondly, there is employment and cash income. Poor households often do not have formal employment which makes generating income difficult. The Global Food Security Index of 2014 notes that in many developing countries, the lack of basic infrastructure and income affect people's ability to afford an access nutritious food (The Economist Intelligence Unit, 2014). It was found in an urban food security study on Cape Town, Msunduzi and Johannesburg that there is a close relation between income levels and food security. The study indicated that households with the lowest income had the highest levels of food insecurity (Frayne *et al.* 2009).

Lastly, food insecurity is affected by markets and food prices. A major reason for food insecurity in urban areas is the increases in food prices. Phillip and Rayan (2004) discuss the notion of economic vulnerability where vulnerability is associated with trade and foreign exchange and the effects on international prices for commodities. Often various economic forces affect food prices and in turn negatively affect food security in a country. The Health, Environment and Development study reviewed levels of food insecurity in an informal settlement in Johannesburg. It was found that between the periods of 2006 and 2012, there was a drop in food insecurity levels (from 85% to 71%). However it was also noted that there was a significant rise in food insecurity (91%) in 2009 due to a rise in global food prices (Naicker *et al.* 2015). Similarly, in a survey done on food insecurity in the areas of the inner city of

Johannesburg, Alexandra and Orange Farm, it was found that more than half of households stated that they went without food once a month as a result of food that was unaffordable (Rudolph *et al.* 2012).

Food insecurity and nutrition are issues that are often related to urban agriculture. Urban agriculture is argued to present a means through which people are able to reduce vulnerability by increasing access to food of the urban poor. Urban agriculture is an activity that may be regarded as a sustainable way of making a living.

On a social level, urban agriculture has been argued to improve livelihoods because it creates food security and nutrition for poor households (Battersby, 2010). Through food production urban agriculture is able to provide poor households with immediate household needs, such as nutritious fruits and vegetables which can present poor households with a buffer against extreme hunger and malnutrition. Urban dwellers also benefit by saving on food purchasing costs, which can be used for important needs such as health.

Human health is an important asset that individuals rely on to stay alive. A large part of that involves the types and quality of food that people should consume every day. Therefore, food security has more to do with the categories of food people have access to rather than simply access to any kind of food. In order for an individual to be food secure, he/she needs to have access to nutritious food for a decent livelihood. This may include consuming all the necessary food groups on a daily basis. Urban agriculture makes access to nutritious food easier because urban farmers do not have to rely on expensive store-bought items, when they can produce healthy food themselves. Increases in food prices have forced the urban poor to find other alternatives given that they spend most of their money on food purchases. Nugent (1999: 72) notes that the “removal of subsidies and price controls, accompanying structural adjustment policies in the 1980s and 1990s” have led to significant increases in food prices which have forced people to provide food through home production. Crush *et al.* (2010) support the argument that households who grow their own food seemed to be more food secure and were nutritiously healthier than others.

On an economic level the proponents argue that urban agriculture represents a way for poor households to sustain a livelihood by producing food as an income-generating strategy. Richards and Taylor (2012) point out that globally, approximately 200 million urban residents produce their own food for urban markets and that urban agriculture is a useful way for a household to generate income and employment for themselves. Like food insecurity, unemployment is a cause for concern for many cities in southern Africa. Employment is one of the main ways in which urban households are able to derive an income for themselves and being unemployed leaves many vulnerable to food insecurity and poverty. Urban agriculture presents an opportunity for urban residents to use as an alternative or additional measure to the more commonly practiced employment generation strategies.

Urban poverty is not something that will disappear very soon and urban agriculture has been the response for many people. Nugent (1999) notes surveys done in several cities in Africa. An investigation was made on the reasons why people participated in urban agriculture and the majority of the responses were related to economic benefits and income was one reason. It was noted that income generated significantly motivated people to farm. For example in Lusaka, people who had their own home gardens produced almost three months worth of income at the average worker level in 1992 (Nugent, 1999).

As mentioned before, not only do urban households have the opportunity to generate income, they are able to save income that can be used to purchase these fruits and vegetables. The location of urban agriculture is also beneficial for urban farmers. Drechsel *et al.* (2008) note that the market proximity of urban agriculture allows farmers to easily monitor price developments and reduces transportation costs.

A small amount of research has been dedicated to the environmental benefits of urban agriculture. Most arguments regarding the environmental aspects of urban agriculture have looked at the possible damaging ecological effects of it. However authors like Heather (2012) note that using vacant lots for urban agriculture can provide a number of environmental benefits. Vacant lots can be harmful (attracting crime and pollution) and can put a strain on the local economies of city. Developing urban agriculture on vacant lots can reduce pollution by greening the buildings and

can promote some aspects of health for farmers and the surroundings (Heather, 2012).

Smit *et al.* (2001) assert that urban farming reduces pollution and protects the environment by contributing to waste management and by conserving resources. They also discuss the fact that in many low-income countries, cities are faced with extreme pollution of air, water and soil, reduced biodiversity, and risk of disasters. It is argued that through urban food production cities are able to reduce the negative impacts of population growth and expansion.

Given the numerous ways in which it can benefit the urban poor and the environment, a strong case can be made for urban agriculture as a strategy to alleviate poverty and create sustainable livelihoods. Urban agriculture contributes to enhanced skills and training; it can be environmentally sustainable with the reuse of land and resources and innovations in technology can contribute to reduced energy usage and expenditure; and food produced is usually low cost, good quality and accessible (Quon, 1999). Evidence has shown that it has a positive impact in the livelihoods of urban households.

However, others argue that we must take caution when disputing the benefits of urban agriculture. White and Hamm (2014) point to the fact that even though it presents an appealing approach to food security and income generation, various authors believe that we need to be careful, as urban agriculture neglects various urban issues. For White and Hamm (2014: 3), urban agriculture neglects the fact that "poor people do not have access or have only insecure access to productive resources in an urban environment". Here it is being argued that urban agriculture might not create the expected benefits for many of the urban poor because of their ability to access certain urban goods. Crush *et al.* (2010) indicate that opponents of urban agriculture have said that it is given too much credit in terms of offering food security because there is not enough evidence to prove that poor people derive any benefit from urban agriculture.

White and Hamm (2014: 3) also note that "municipal officials are often antagonistic towards urban agriculture for a number of reasons. For example, they are cautious about hygiene and safe food production and proper use of city space. However, Mougeot (1998) asserts that some of the risks of urban agriculture have been

exaggerated and that more attention is given to how these risks can be mitigated. But even though the risks of urban agriculture can be managed, cities need to make better use of prevention measures to adequately enhance the environment (Mougeot, 1998)

Despite the fact that urban agriculture has flaws, the activity is still practised by households in many countries of the developing world as a buffer from extreme impoverishment. White and Hamm (2014) report that although families who worked in the Philippi Horticulture Area of Cape Town were still considered to be food insecure, it was noted that without the produce and income derived from the horticulture area, the households would be in a worse state. It is clear that people all over the developing world rely heavily on urban agriculture. Onyango (2010) observes that urban agriculture can be found in almost every city in sub-Saharan Africa, and it "arises from the need for solutions to wide range of problems" (Onyango, 2010: 39).

2.2 The Response of Urban Planning to Urban Agriculture

2.2.1 Making a Case for Urban Agriculture in City Planning

Although urban agriculture is gradually being recognised as playing an important role in poverty alleviation in urban areas, it is still not being integrated into agricultural policies and the urban planning of cities (De Zeeuw *et al*. 2011). White and Hamm (2014) note that those involved in urban farming need to collaborate with municipal officials to develop strategies that cater to the specific requirements of food provisioning if cities are going to feed those working in urban food systems in a healthy and safe manner. Van Staden (2014: 116) noted that in order for urban food production to remain sustainable and feasible, the "professional industry, academic environment and city administration" need to offer more support if people are going to benefit.

De Zeeuw *et al.* (2011: 3) note that there are various constraints that affect development of urban agriculture. These constraints are:

- prohibitive urban planning policies and regulations;
- limited access to productive resources and insecure land tenure;

- lack of support services; and
- lack of organisation among urban farmers.

One of the most significant contributions to poverty in many cities in Africa is the lack of support from local governments and urban planning in the livelihood strategies of the poor. This is particularly evident in the informal sector. The state is often hostile towards this sector because it does not fit the ideal vision cities value. The responses to urban informality have either been through slum upgrading and land titling (Roy, 2005) or through eviction. In the same way, municipal governments are not very enthusiastic about urban agriculture for reasons that often can be mitigated and managed. Many of these reasons are related to environmental concerns and were mentioned previously in the chapter.

Mubvami and Mushamba (2006) believe that urban planning must incorporate and embrace UA in its plans and policies because it provides a number of benefits for the city. Apart from functioning as a means to alleviate vulnerability issues in cities, UA can reduce transportation costs of produce because it is undertaken in urban areas. Urban planners are key players in land use and the built environment which is aimed at developing a desired future for cities and that has the interests of the public good in mind (Quon, 1999).

There are certain resources that urban agriculture needs in order to remain sustainable and feasible as a poverty alleviation strategy. Most of these elements are the mandate of municipal governments. Municipal governments control access to resources and infrastructure development within their jurisdictions. Therefore they are in the best position to support urban food strategies (White and Hamm, 2014). With appropriate support from municipal governments urban agriculture may be able to be more responsive to urban poverty and food insecurity. This means that local government needs to become involved in urban food strategies on a number of levels. For instance, urban agriculture needs to be incorporated into the planning process. By integrating urban agriculture into the planning process of a city, urban agriculture will be able to benefit from the infrastructure and services needed for it to flourish and properly respond to urban conditions.

Because land also plays an important role in urban agriculture and because local governments have control over land and how it is utilised they also need to play a

part in making it easier for people to access land for food production. Garret (2008) asserts that city planning need to make urban land available for growing food and that this needs to be done by finding ways to utilise unused land in order to make it more productive and profitable through urban agriculture. In order for land to be made available, it needs to be prioritised in urban planning policies. Howe (2002) describes the challenge of urban food production coming under threat by pressure to develop land for other purposes such as housing developments and that planning needs to "go a lot further in terms of a pro-active approach to promoting the allocation of inner city spaces for food production" (Garret, 2008: 8). There is thus a need for local government to regard land for urban agriculture as equally as it would for any other development. For example, city officials consent to a number of green open spaces such as parks or golf courses. In the same way, urban agriculture should be integrated into the planning process (De Zeeuw *et al.* 2011).

Other than land, there are other factors that need to be considered if urban agriculture is to be a sustainable practice. Technology and innovation plays an important part in the sustainable use of energy and resources. According to Van Staden (2014: 115), "Technology, whether in the form of tunnels, automated irrigation composting or aquaponics, can sustainably intensify production". Composting plays a major role in urban farming. Through technological innovation urban farmers are able to use biomass recycling for producing compost. Methods like these demonstrate the sustainable practices needed in urban agriculture. However, in order to incorporate the technologies needed for urban agriculture, farmers need financial, resource and knowledge support.

Part of the reason why urban agriculture is not able to adequately help the poor is because most urban farmers have to rely on their own resources and abilities to grow food. In order for urban agriculture to be sustainable, it needs to be supported by state and developmental agencies. For example, according to City Farmer News, in 2009 Affordable Housing Company (Afhco) (the property management division of the Afhco Group) partnered with the Johannesburg Development Agency (JDA) in developing a roof-top vegetable garden pilot project. The JDA assisted ADHCO with financial resources in order to obtain the necessary tools and installations to get the garden project underway.

On the one hand, it will be important that local governments provide support via facilitating access to information on innovative farming technologies. And on the other, urban agriculture needs to be incorporated into agricultural policy which will ensure financial and resource support from the national of government (De Zeeuw *et al*. 2011). Integrating urban agriculture into urban policy is an important way of prioritising urban food production strategies. Once urban agriculture is adopted in urban policy, local governments can begin to implement programmes aimed at reducing urban poverty through urban food production.

Havana, Cuba, for example, boasts one of the most successful models of UA in the world. Almost 35 000 hectares of land is used for UA in Havana. It spreads across the entire province of the city and also includes the city's urban fringes and suburban areas (Novo and Murphy, 1998). Although UA in Havana is not directly a response to urban poverty, it is a response to a shock that the country and its people faced. Urban agriculture in Havana developed out of the collapse of the Soviet Union, which meant the end of trade with Comecon, which is an organisation established in 1949 to facilitate and coordinate the economic development of the eastern European countries belonging to the Soviet bloc. This meant that the country started to run short of vital resources including petroleum, agricultural machinery and fertilizers. People therefore responded with UA because, urban production reduced the costs of transporting and encouraged production to take place near living areas to reduce food costs (Novo and Murphy, 1998) which improves accessibility. In addition, the urban agriculture programme in Havana includes a set of sub-programmes dealing with crops, livestock and various support areas. These sub-programmes have contributed to a number of jobs in the city. More than 350 000 jobs have been created as a result of the programme and its most successful sub-programme – the growing of fresh vegetables and herbs – increased in production from 4000 tons in 1994 to 4,2 million in 2005 (Novo and Murphy, 1998). Although the development of urban agriculture in Havana is grounded in a different context to that of cities in Africa, the benefits of the activity is still evident. Not only does it have the ability to provide nutritional food, it can also contribute to generating thousands of jobs for people.

Other examples of urban agriculture include the Izindaba Zokudla (Conversations about Food) project which is located in Soweto, Johannesburg. According to

Architecture Otherwhere Durban (2014), the Izindaba Zokudla project is a multi-stakeholder engagement that is aimed at creating opportunities for urban farmers in Soweto as well as sustainable food production. The Design Society Development (DSD) Community of Practice at the University of Johannesburg is involved in the project. The project has led the City of Johannesburg to implement an urban agriculture policy that is aimed at multi-stakeholder engagement between the city, and urban farmers in urban food systems.

Possibilities for urban agriculture have been provided in some South African policies. In the National Strategy on Sustainable Development and Action Plan 2011-2014, some of its interventions include *Promoting conservation farming, permaculture and organic farming* and *increasing support to urban good growing initiatives*, but the policy does not indicate any specific strategies regarding urban agriculture. Support for urban agriculture has been outlined in the City of Johannesburg IDP (2012), and the Joburg 2040 Strategy aims to respond to a number of issues through a *sustainable services cluster*. The aim is to promote and support urban agriculture in order to address food scarcity. Urban agriculture is also a component in one of the city's key flagship programmes where, in the medium term the city aims to focus on food security and urban agriculture.

The City of Cape Town has implemented its urban agriculture policy since 2007. The policy focuses on agricultural activities undertaken by the poorest people and discusses a number of strategies that will assist the development of urban agriculture in the city. An important strategic objective is the City's aim to *include urban agriculture in land use management and physical planning***.** By incorporating urban agriculture into physical planning, it is able to obtain more support from the City because land and resources will be prioritised for it.

There is a good argument for urban agriculture, and authors have outlined its benefits, and there are clear attempts at incorporating it into policy development. However, some authors still argue that there is a lack of support from municipal government and urban planning.

If we look at cities today, there is always a competition to be the best and many cities focus on creating an image and often urban planners are at the origin of these plans. Cities and branding have become a crucial part of a continuously modernising world.

Kavaratzis and Ashworth (2005) argue that the purpose of place branding is to create distinctiveness of a location or city and to show that what it has to offer makes it better than other cities (Kavaratzis and Ashworth, 2005).

The City of Johannesburg has branded itself as a *World-class African City* and often brands such as these come with expected perceptions of what the city should be and look like or different ideas and plans in order to create the envisioned city status. These brands have placed emphasis on the image of the city, therefore, it is essential that anything that does not adhere to the city's image, must be removed. This can be related to the idea of modernisation, which can be understood as the imperative that people with traditional cultures must change these lifestyles and adopt the western culture. Many people perceive the western culture to be progressive and that by adopting these approaches will ensure economic development (Onyango, 2010). Anything that opposes this must be rejected. Urban agriculture is viewed in a similar light where the farming practices of the urban poor are seen as traditional and not seen as advanced, and therefore is often not supported by local governments and urban planners.

Onyango (2010) notes the constraints that limit the development of safe and sustainable urban agriculture. These constraints include lack of support services, limited recognition of its value by city officials; and lack of formal recognition of farmers (Onyango, 2010). One of the constraints is that urban agriculture is not recognised within the modern developing city. Local government's attitude towards urban agriculture is derived from the belief that agriculture is a traditional practice and that it should be left to rural areas. The lack of recognition, negative perceptions and decision-making stimulated by growth and profit accumulation has led to uneven development, where certain interests are privileged over others.

2.3 Sustainable Livelihoods Framework: DFID

This section develops an appropriate analytical model through which to assess and investigate the Siyakhana Initiative. The study argues that urban agriculture can be considered a sustainable livelihoods approach, therefore the research assesses Siyakhana against this model as well as what this means for urban planning. The section relates to sub-question two and three (indicated in Chapter One) which

involves the findings of the research that are used to evaluate Siyakhana in creating sustainable livelihoods for the urban poor.

The section develops a common understanding of the Sustainable Livelihoods Framework and how it can be understood in relation to UA. The section develops an appropriate definition for the livelihoods model and explains why this was to used to assess the case study. The section also derives a set of principles by which the case study findings are analysed and discusses the impact of these principles upon local governments and urban planners.

2.3.1 Sustainable livelihoods approach and Urban Agriculture

In order to understand sustainable livelihoods, it is important to develop an understanding of what a livelihood is, how it is commonly understood, and what it means in the current research. One of the most common definitions of livelihoods is Chamber and Conway's (1991: i): "A livelihood comprises the capabilities, assets (stores, resources, claims and access) and activities required for a means of living." This definition describes how people develop a livelihood for themselves, but it does not consider socio-economic and environmental implications of livelihoods. Therefore, the research must adopt a definition of livelihoods that is more suited and considerate of sustainability. Thus, a livelihood is defined as:

> People's capacity to generate and maintain their means of living, enhance their well-being, and that of future generations. These capacities are contingent upon the availability and accessibility of options which are ecological, economic and political and which are predicated on equity, ownership of resources and participatory decision making (De Satge, 2002: 4).

The Sustainable Livelihoods concept was introduced into global policy discourse when the Brundtland Commission on Environment and Development identified it as a goal for poverty alleviation. Sustainable livelihoods now consider those factors that either limit or improve poor people's capabilities that enable them to develop a livelihood in a socially, economically and environmentally sustainable way (Krantz, 2001).

According to Carney (1999) livelihoods approaches are people-centred: they assist people in developing their own potential while also taking into account the need for policy and institutional support. The research investigates whether urban agriculture can create sustainable livelihoods. There are a number of aspects that confirm urban agriculture to be a sustainable livelihoods approach. Farrington *et al.* (2002) note that sustainable livelihoods analysis requires qualitative research tools, which relates to the research methods used for this study. Farrington *et al.* (2002: 42) assert that the approach must encompass the following:

- Sustainable livelihoods approaches concentrate on concepts related to vulnerability, social capital or institutional processes and relations which cannot be usefully quantified
- people-centred focus of SL approaches, which means that research needs to be based on participatory approaches and thus makes a pre-defined research agenda difficult
- The need to highlight the priorities and rationales of poor women and men in pursuing their livelihoods – information which only can be attracted through qualitative approaches.

The concept of urban agriculture explored in the research relates to the above mentioned points in the sense that similar concepts have been explored. For example, vulnerability has been explored in the research in relation to how urban agriculture is able to reduce food insecurity and poverty. Urban agriculture is also a livelihood strategy for many poor households and the reasons why it is pursued has been previously discussed.

Assessing urban agriculture against sustainable livelihoods is important for the research because it helps to understand how it is able to create sustainable livelihoods for the poor as well as what the implications are and what is necessary for it to be a successful approach. The figure below indicates the principles outlined in the DFID Sustainable Livelihoods Framework.

People-centred: People rather than the resources they use are the priority concern in the livelihoods approach, since problems associated to development often root in adverse institutional structures impossible to be overcome through simple asset creation.
Holistic: A holistic view is aspired in understanding the stakeholders' livelihoods as a whole, with all its facets, by a manageable model that helps to identify the most pressing constraints people have to face.
Dynamic: Just as people's livelihoods and the institutions that shape their life are highly dynamic, so is the approach in order to learn from changes and help mitigating negative impacts, whilst supporting positive effects.
Building on strengths: A central issue of the approach is the recognition of everyone's inherent potential for his/her removal of constraints and realisation of potentials. Identifying these strengths rather than the needs and problems is the starting point of this approach, in order to contribute to the stakeholders' robustness and ability to achieve their own objectives.
Macro-micro links: Development activity tends to focus at *either* the macro *or* the micro level, whereas the SLA tries to bridge this gap in stressing the links between the two levels. As people are often affected from decisions at the macro policy level and vice-versa, this relation needs to be considered in order to achieve sustainable development.
Sustainability: A livelihood can be classified as sustainable, if it is resilient in the face of external shocks and stresses, if it is independent from external support, if it is able to maintain the long-term productivity of natural resources and if it does not undermine the livelihood options of others.

(Kollmair *et al*., 2002)

Figure A: Livelihoods framework core principles (GLOPP, 2008)

The first principle is that a sustainable livelihood approach needs to be *people-centred*. On the one hand urban agriculture can be considered people-centred because a great deal of the research done on the topic focuses on the poor and how they can benefit and improve their livelihoods through urban food production. On the other hand, in order for urban agriculture to be considered a sustainable livelihoods approach, the poor need to be given a voice. For example, if local government is to incorporate plans for urban agriculture within policy, it would need to consider a bottom-up approach where the needs and views of the people are taken into account. Participatory and bottom-up approaches in policy making can be considered more effective in creating sustainable development at the local level (Nicolle, 2011). For example, if urban agriculture is going to be people-centred, local

government must incorporate the poor through community-based projects, public participation, or public-private partnerships.

The second principle is that the approach needs to be *holistic*. Farrington *et al.* (2002) assert that if a sustainable livelihoods approach is going to achieve its objectives it needs to be based on the fact that people adopt a variety of livelihood strategies and rely on various assets for survival. If urban agriculture is going to be considered within urban planning and development it needs to become multi-sectoral in that it is able to diversify its activities and become more than a food security strategy. A sustainable livelihoods approach may also be considered to be holistic in the sense that it forms a deeper analysis of poverty in that it considers the fact that it is more than lack of income and that it also includes vulnerability, lack of basic infrastructure, health and access to assets (Farrington *et al.* 2002).

The third principle is that it needs to be dynamic. If people are to adequately benefit from urban agriculture, support from organisations or institutions need to develop an understanding of the dynamic nature of the livelihoods of the people and how they have been able to reduce their vulnerability. Carney (1999: 13) notes that "external support must recognise the dynamic nature of livelihoods strategies, respond flexibly to changes in people's situation and develop longer-term commitments". Therefore, for urban agricultural initiatives to assist poor households to overcome vulnerability, they will need organisational structures that are able to support them for long periods of time. For example, if a project depends highly upon the income derived from the produce grown, it will need external support because benefits are often accrued seasonally.

The fourth principle is that the approach must build on the strengths of people. Urban agriculture has the potential to build on people's strength and assist them in using it to improve their livelihoods. Many of the people have received training in farming and basic agricultural activities, such as in Siyakhana and Bambanani as mentioned previously. Training individuals in farming practices helps improve the sustainability of an urban agricultural activity and develops human capital of individuals.

Macro-micro links are important in successful sustainable livelihoods approaches. They help link the perspectives of people on the ground to that in policy development. It is not sustainable, for example, to develop a strategy on urban

agriculture without the inputs and consideration of the needs of those at whom the policy is directed. Therefore, support for urban agriculture needs to create a link between those involved in urban farming and those involved in the development of new policy. It has also been indicated that it is not sufficient to focus exclusively on the micro context, but that the macro perspective plays a significant role in livelihoods. If a flood occurs, various capitals will be affected by processes and structures that are in place. For example, physical assets may be lost and vulnerability might depend upon how emergency feeding and employment systems are implemented (Farrington *et al.* 2002).

The last principle is that it needs to be sustainable. Urban agriculture has been argued to be sustainable in that it incorporates aspects on social, economic and environmental levels. Heather (2012: 1) notes that "…urban farms are known to provide a number of social, health, economic and environmental benefits." However, urban agricultural activities may not survive long enough without the support from institutional structures, which may provide capital or resources.

Carney (1999) discusses sustainable livelihood approaches and believes that SL thinking is much more than the economic benefits of poverty reduction and income generation. She believes that SL approaches provide a social benefit for the poor which goes as far as giving the poor a voice. This relates to Nicolle's (2011) assertion that UA provides more than economic impacts and gives the urban poor a sense of empowerment. Empowerment means to provide people with the "skills and knowledge that will enable them to challenge normative values and engage more deeply in political, social and economic activities" (Diepeveen, 2008: 8). This relates to the fact that urban agriculture is able to go beyond simply survival and can give those involved in it a sense of purpose.

Those who participate in urban agriculture have the opportunity to learn agricultural skills such as horticultural knowledge or learn about the soil. The skills and training they receive can benefit them in the long term and empowers them to apply what they have learnt elsewhere. However, in order for the urban poor to genuinely become empowered, there is a need for institutional support. Richards and Taylor (2012) noted in a study conducted in four urban centres in South Africa that urban farmers felt that they were not receiving the required technical support that would

allow them to obtain the knowledge and training they needed for agricultural sustainability.

2.3.2 Livelihoods Framework

The livelihoods framework is a research tool used to understand how households are able to develop a sustainable livelihood for themselves, through the use of their capabilities and assets to generate various livelihood strategies (De Satge, 2002). Bank (2008) explains that the sustainable livelihoods framework investigates how people use their resources to make a living for themselves. He discusses how the framework utilises this information to assess how people avoid poverty. Therefore, the livelihoods framework attempts to understand livelihoods, what influences poverty, and how best to resolve the issues of those living in vulnerability (Farrington *et al.* 2002). The purpose of this approach for this research is to investigate how poor people, through their involvement in Siyakhana, make use of various means to reduce household vulnerability.

The DFID Framework is the livelihoods framework that will be used for the current research because of its emphasis on sustainable livelihoods and it also incorporates a number of elements that will assist in developing a detailed analysis of people's livelihoods.

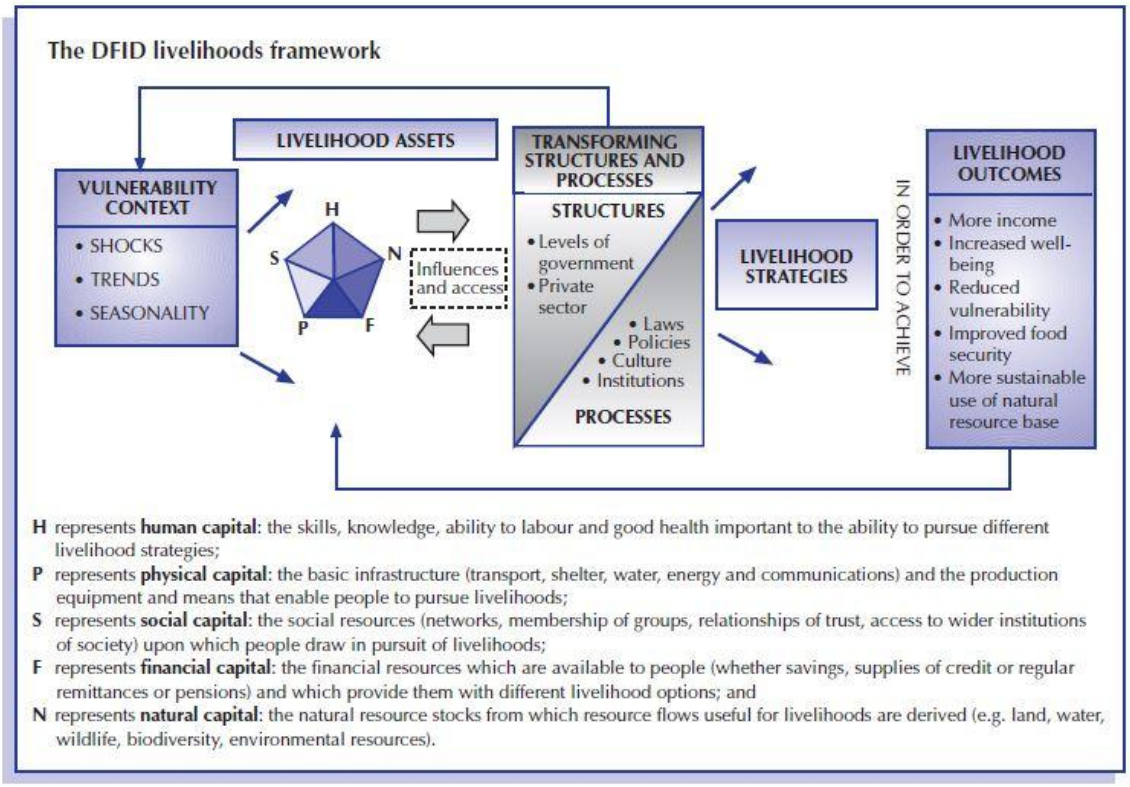

Figure B: DFID Livelihoods Framework. (De Satge, 2002)

Therefore, by looking at Figure B above the Livelihoods Framework assesses the livelihoods of people through the following criteria:

1. Vulnerability context

The level of vulnerability among the participants will be investigated through assessment of the external risks their households face. For example, examining their household composition will help assess how many people contribute to household income or by looking at whether they have experienced loss of income at any point. What also needs to be investigated is the resilience of the respondents and their ability to recover from the external risks that they face (Farrington *et al.* 2002). Examining vulnerability of livelihoods is an important feature of the sustainable livelihoods framework. Norton and Foster (2001: 9) note that this stems from the belief that poverty is a consequence of an absence of “secure conditions of life”. Investigating the vulnerability context is important because it provides reasoning as to why people adopt certain livelihood strategies. By analysing the vulnerability

context, the research must look at the shocks, trends and seasonalities that affect the livelihoods of the poor (DFID, 1999).

2. Livelihood Assets

Livelihood assets are important because people are in need of various assets that enable them to build their livelihoods. The asset pentagon is a key aspect of the livelihoods framework. These assets are summarised in Table 3 shown below. Krantz (2001) notes that livelihood assets are tangible and intangible and are used to develop people's livelihoods and Farrington *et al.* (1999) mention that assets can be substituted for one another.

Human capital involves having the education, health or skills that enable a person to sustain a livelihood. Human capital can be improved and relies on various livelihood strategies to obtain it. Building human capital involves going to school or ensuring that an individual's health is taken care of (DFID, 1999). Social capital incorporates those networks and connections people rely on to improve their livelihoods. It can involve close connections with neighbours or with family members. Many people rely on relations with their family members as a livelihood strategy for shelter or for income.

The study must therefore develop an understanding of the types of social resources households depend on (DFID, 1999). Natural capital is important because it has a strong link to vulnerability. Natural capital is important for production; however, it may also be the reason people experience shocks and seasonalities (floods or droughts). Natural capital is therefore important for the study as urban agriculture relies very heavily on natural resources such as land and water.

Physical capital comprises those assets such as basic infrastructure (DFID, 1999). It is an important asset because many people relate their levels of poverty to their general ability to obtain housing. Physical capital needs to be investigated in terms of its quality and whether it is suitable to improve the livelihoods of people.

Financial capital can be considered one of the most important assets, especially in an urban context. Income plays a significant role in vulnerability and poverty levels of individuals (Krantz, 2001). Therefore, what will need to be investigated in this study

are the types of financial capitals people hold such as savings, or government welfare and how it impacts on their livelihoods.

Table 2: Livelihoods assets (Molelu, 2014)

Livelihoods Assets					
	Human	**Social**	**Physical**	**Financial**	**Natural**
Definition	Individuals who can actively participate in income generation activities in order to build a livelihood Or those who have skill and education e.g. parents	Those relationships with other people which are used in building a livelihood e.g. Community members or family members	Basic infrastructure/ services needed to sustain a livelihood e.g. Transport or shelter	The financial resources available that provide people with different livelihoods options e.g. government welfares or wages	Those resources that are derived from the earth e.g. Land and water

3. Policies and institutions and Processes

The policy and institutional context is important when understanding how people are being supported in building sustainable livelihoods. Morse *et al.* (2009) assert that the vulnerability context is greatly influenced by policies and institutions. They observe that while a certain asset might be vulnerable to shocks or seasonality, there may be structure in place to reduce the threat. What will be important about this component is that the research aims to explore the implications of UA for local government and urban planning. Therefore, an understanding of possible policy interventions and institutional support for it may make this possible. These structures determine access to income and livelihood strategies; terms of exchange of the various forms of assets; and returns that are received when conducting a livelihood strategy (DFID, 1999).

4. Livelihood strategies

Livelihood strategies involve an arrangement of activities that are undertaken by people (Krantz, 2001) and they help to understand how people are able to survive within vulnerable conditions. Urban agriculture is considered a livelihood strategy. It

has also been argued in previous sections of the report that it is a strategy that is undertaken by many poor households as an approach to reduce the risk that comes with lack of income.

5. Livelihood Outcomes/Objectives

Kappel *et al.* (2010:8) note that "livelihood outcomes are the achievements of people's livelihood strategies". It is the intention of the study to investigate how the gardeners have developed livelihoods for themselves and how they have become more resilient and less vulnerable through urban food gardening. This was done through the analysis of the various livelihoods assets that they have acquired in pursuit of the various livelihood outcomes.

Conclusion

In conclusion, the literature review chapter has discussed the various concepts related to UA and sustainable livelihoods. It found that there is a large amount of support for the development of UA in cities characterised with increasing vulnerability amongst its urban residents. The chapter, however, also discusses the criticisms and arguments of UA and urban planning's lack of support for the activity.

3. Chapter Three: Case Study: Overview

The purpose of this chapter is to develop an understanding of the context within which the case study is located. It expands upon urban poverty and livelihoods and elaborates on issues such as vulnerability and deprivation in Johannesburg. It indicates the various food gardens located in Johannesburg, including those at household, community or public sectors. The research therefore makes use of a case study, the Siyakhana initiative, and discusses how the initiative responds to the challenges of the urban poor in Johannesburg.

3.1 Urban poverty in Johannesburg

All over the world many cities are facing various developmental challenges and Johannesburg experiences many of the same issues. Many of the challenges the city faces are as a result of its ever increasing population. Over the years the city attracted migrants from rural areas, as well as people from other countries who are in search of better economic opportunities (De Wet *et al.* 2008). As a result the city now suffers challenges such as urban poverty and inequality. A considerable amount of the urban population is poor and unable to participate in the formal urban economy (access to formal housing, services, and employment) which results in them residing on the outskirts of the city (Planact, 2007).

Johannesburg is known for being South Africa's economic heartland, and there is often a preconceived notion that the levels of poverty in rural areas are greater than in urban areas. However, in areas such as Diepsloot, Orange Farm and Alexandra, the degree of poverty can be considered to be much higher than poverty in some rural areas (Beall *et al.* 2000).

The urban poor are often exposed to issues such as "unemployment, urban violence, insecure housing tenure, a high prevalence of HIV/AIDS, chronic disease and food security" (De Wet *et al.* 2008: 4). Trends have indicated that there is a direct link between unemployment, income and food security. This is no exception for Johannesburg. In Johannesburg, income is related to an individual's ability to purchase food (Rudolph *et al.* 2012). This means, if an individual is unemployed, he or she will find it difficult to generate an income, which will in turn affect their ability to feed their families. The inability of people to access formal employment results in

deprivation and vulnerability, which leads to food insecurity (Beall *et al.* 2000). It has been found that food insecurity has increased sharply in South Africa's cities, mostly due to rapid increases in global food prices. Food insecurity in the country is standing at approximately 42 percent (COJ, 2012).

Approximately 18,5 percent of Johannesburg's urban households have no access to income. It is also indicated that in Johannesburg there are almost 700 000 adults who are dependent on others for income while 300 000 people earn less than R800 per month (PDG, 2004). Bearing in mind that these figures have increased since 2004 the figures nevertheless indicate that a considerable amount of people in the city are suffering from income poverty.

In the Johannesburg Poverty and Livelihoods Study (2008) the extent of vulnerability was studied amongst a number of households in different areas of the city. It was indicated that many of the causes of vulnerability in the city included the fact that poor people in the city are exposed to a range of risks and shocks, such as the death of a family member which could mean a loss of income; illness, leading to money spent on health needs; as well as increasing prices (De Wet *et al.* 2008). The study also noted the various effects of household vulnerability on food insecurity in these areas and found that due to aspects such as loss of income or illness approximately 66 percent of the households were considered to be either moderately or severely food insecure (De Wet *et al.* 2008).

Lack of access to basic services remains a key issue and contributing factor to urban poverty in Johannesburg. Capacity to deliver services in the most crucial areas of the city has become a problem and has led to service delivery protests. In Johannesburg, one is able to identify the spatial disparities with the extremely poor living on the urban fringes with almost no basic services while the rich live in areas provided with services. An example is the spatial differences between Alexandra and Sandton. The figures below indicate the differences in infrastructure and basic services development in these two areas of Johannesburg.

Figure B1 (www.flickr.com) and B2 (www.raysofhope.co.za) Infrastructure and basic services inequality, comparing Sandton and Alexandra

According to SA Commercial Prop News (2011) there were a large number of development plans happening for the Sandton business district. It appeared that approximately 30 proposals were underway which included new zoning and renovations. One of these new developments included the development of the Gautrain station to mixed-use developments. The level of attention given to townships such as Alexandra is inequitable and can be clearly understood by the above figures.

There are so many areas with large scale poverty and most of them not being able to acquire the necessary services for survival. This contributes to a large economically unviable population that burdens the economy of the city. The city has, over the years, attempted to overcome poverty through various policies which aimed to transform the spatially dysfunctional nature of the city. However, at present, there are still high poverty levels, which therefore need innovative strategies to alleviate these challenges.

3.2 Urban Agricultural Policy in Johannesburg

The CoJ currently does not have any specific strategies for urban agriculture, although, at a national scale there has been policy for food security. Malan (2015) notes that the CoJ has prepared a food security policy that relates to the 2002 National Integrated Food Security Strategy. The City of Johannesburg has recently put food insecurity as one of its top ten priorities. Part Seven of the City's Integrated Development Plan (IDP) discusses the City's priority implementation plans and agriculture and food security are noted priorities. The City developed the COJ Food

Resilience Framework in 2012 which was to reduce food insecurity by tackling *individual hunger* through the provision of food vouchers, parcels or backyard gardens. The framework supports the *informal food sector* by providing supplies or farming information. Urban agriculture is supported to a certain extent through assistance with requirements like packaging houses and distribution networks. (CoJ, 2012).

According to Malan (2015) the City's Food Resilience Policy encompasses strategies for agriculture. The policy also points out that the Agri-Resource centres allow urban farmers to obtain information on food gardening, access to land or gain help from extension officers. The policy also emphasises *Food Empowerment Zones* where larger farmers are able to access both Agri-Resource centres and the Hub and Spoke centres which give access to the Johannesburg Fresh Produce Market. However, Malan (2015) observes that the policy gives no indication about the instruments for implementation, which could mean that the policy may only apply to specific areas of Johannesburg.

The CoJ has also been able to incorporate urban agriculture into its strategies not only through food security but by covering attributes of it in its larger policy agenda. On a broader scale the City has begun to recognise the importance of concepts such as sustainability and resilience in human development in policy development. There are important features within the Joburg 2040 Growth and Development Strategy (GDS) that relates to urban agriculture. Chapter Two of the Strategy addresses the various paradigms that will guide the city's future. The chapter discusses concepts such as *resilience, sustainability and liveability*, *environment and services* and *human and social development* (CoJ, 2012)

It is important to note that the CoJ has an urban agriculture policy underway and that it will follow the multi-stakeholder engagement approach that is seen in the Izindaba Zokudla project. Malan (2015) states that multi-stakeholder engagement is useful because it brings about change through giving farmers control over farming systems. This approach is aligned with the IDP which emphasises the need for stakeholder engagement and participation. Urban agriculture in Johannesburg will thus be organisationally structured in such a way that stakeholders such as the concerned

citizens, Farmers Fora and other stakeholders that are involved in garden projects engage with one another.

3.3 Livelihood strategies of Johannesburg's urban poor

Johannesburg's urban poor population are faced with a number of shocks and risks that determine the range of survival strategies they employ. Loss of income or employment, for example, will require a household to adopt various livelihood strategies that assist them in becoming less vulnerable. The urban poor adopt a number of formal or informal ways of making a living which include activities such as driving or domestic work (cleaning homes) or they set up their might decide to set their own child care or street trading businesses (PDG, 2004).

Informal trading is one of the most recognised ways in which the urban poor generate income for their households. There are traders located along various streets such as Eloff Street, Kerk Street, and Noord Street.

Figure C: Informal trading along Noord Street. Maduna, L and Daeepp, M (2013) www.goethe.de/

Other ways in which the urban poor generate a livelihood for themselves is through government welfare grants, such as pensions or child support (PDG, 2004). For many of the poor these grants may represent a significant share of their monthly household income. In extreme cases, some even rely exclusively on government grants to survive hunger and to be able to afford food for their households. Many urban poor households have adopted multiple livelihood strategies where they would combine both formal and informal activities. For example, households in Alexandra, Orange Farm, or Diepsloot receive formal grants from the government while also ensuring they have financial support and assistance from family members and neighbours (De Wet *et al.* 2008).

Many people in Johannesburg have also made the decision to reside closer to the city centre or employment. This is another form of livelihood strategy that is adopted by many urban households, because they are able to reduce transport costs and thus save on income. However, urban areas of Johannesburg are characterised by high rental prices which defeats the purpose of saving on transport costs (PDG, 2004). Therefore, many urban residents have responded by residing informally on the periphery of the city, thus acquiring little or no transport and rental costs.

An important livelihood strategy of the urban poor is the development of urban agriculture in Johannesburg. There are a range of urban agriculture activities taking place (subsistence farming strategies) in Johannesburg, which are at various levels. These include the household, community, public sector, as well as NGO and CBO levels. Like many other livelihood strategies in Johannesburg, subsistence farming activities in urban areas are a response to vulnerability and deprivation and are either the direct response of households or are developed out of the support of different organisations.

As noted earlier, urban food production takes place in suburbs such as Soweto, where the Izindaba Zokudla projects are located. The project is aimed at sustainable food production and is closely linked to the development of the urban agriculture policy being implemented by the CoJ. Other projects include the Bambanani Food and Herb Garden in Bertram's. The project was acknowledged for its commitment to natural resources management and won an award from the Gauteng Department of Agriculture and Rural Development. One of the volunteers at the food garden

boasted that they grow kale and that it costs approximately R30 at a supermarket, while at the food garden it is half that price (Sulaiman, 2013).

According to Richards and Taylor (2012), in Orange Farm, there exists a wide variety of urban agricultural activities. They provided a list of the different types which included:

- Homestead and supplementary homestead gardens located in the backyards of RDP houses
- School yard gardens
- Project gardens in crèches and day-care centres
- Community gardens where the land is farmed in order to produce food or income for those members of the garden.

Figure D: School yard project at Langalibalele Dube Primary School. Adapted from Richards and Taylor (2012)

Figure E: Community food garden uses water from households about 50 m away. Orange Farm. Adapted from Richards and Taylor (2012)

Onyango (2010) notes in his study on urban and peri-urban agriculture in Orange Farm the various reasons why many of the people participate in urban farming. He found that the need for food was the biggest reason why many of the residents grew food, with 78 respondents out of 100 who said it was their main reason. Following this was the fact food was expensive, some of them were unemployed and others needed income.

3.4 The Siyakhana Initiative

3.4.1 Introduction of the Siyakhana Initiative

The Siyakhana Initiative was an urban food programme that started out of an idea to feed inner city food insecure children and people who live with HIV (Nicolle, 2011). The idea to create an initiative to feed food insecure children came out of a process established by the Director and Founder of the Siyakhana Initiative when he created a unit called the Health Promotion Unit. Within this process medical, dental, nursing and pharmaceutical students were taken to conduct various projects and assignments. In conducting these projects the students realised that food insecurity was a major problem in the inner city. The Director stated that "when we would recommend people to promote their health with physical activity or better eating, the responses were always that what you are recommending is either not available or it is not accessible or not affordable" (Director, 2015).

When the students realised that something needed to be done about food insecurity in the inner city, they collaborated with various organisations such as the Early Childhood Development Centres (ECDCs) and other NGOs that provide homecare for people living with HIV. They then came up with the idea of creating a food garden to feed inner city children. The City of Johannesburg assisted them in locating an appropriate location to start the food garden, which was Bezuidenhout Park in Bez Valley just outside the city centre. The Siyakhana urban food garden commenced in 2005, joining forces with organisations such as Food and Trees for Africa, Cape Gate, Urban Greening Fund, and others (Nicolle, 2011).

In their annual report of 2009, the objective of the food garden was to *"*Establish a model permaculture food garden system for food production, education, research and empowerment of the community (particularly women) through training, employment and income generating opportunities*"* (Siyakhana, 2009: 5). The initiative has evolved since then and encompasses a range of other objectives. According to the Annual Siyakhana Report of 2011 the initiative included elements such as sustainably produced food, stimulating social change, financial sustainability and economic sustainability (Siyakhana, 2011). Sustainable food production and ecological health promotion is a focal point for the initiative and its efforts have been

established within principles of the Primary Health Care Approach and the Ottawa Charter for Health Promotion, through which they are able to team up with various institutions and departments to work towards the social, economic and environmental aspects of livelihoods (Siyakhana, 2011).

The Siyakhana food garden has been the subject for research of a number of topics over the years. These topics range from food security and nutrition through to food gardening as an ecological practice. Research includes work done by Wilfred Bengnwi who studied *Sustainable Urban Livelihood Challenges – A case for urban agro-ecology in Johannesburg (2010)* and a dissertation by Trixie-Belle Nicolle, whose focus was on *The Role of urban food gardens in creating an enabling environment for empowerment (2012*)*.*

3.4.2 Siyakhana's stakeholders

The Siyakhana stakeholders include those who were involved in the establishment of the food garden, the organisations and departments, as well as the gardeners; these included key stakeholders within the initiative such as various NGOs and the ECDCs which assisted with the garden. As the food garden developed, it required the necessary infrastructure in order for it to be maintained. As such, a pond was constructed, and was used for rain water harvesting. Fencing around the garden was also needed to ensure safety within the garden. Thus, various Wits University departments supported the initiative with technical and expert assistance in order to realise these infrastructural requirements (Nicolle, 2011).

The Siyakhana staff members are some of the most important stakeholders within the food garden. The project director and is the founder of the Siyakhana Initiative is responsible for managing the garden and is teamed with the programme head of the initiative. The programme head is mainly concerned with research and consulting (Nicolle, 2011). The programme head has attended a conference in Holland on Metropolitan Agriculture where he discovered new connections with people for training, and the use of innovative technologies and has also researched food security and nutrition (Siyakhana, 2011).

In 2008, there were fifteen people working at the garden (Nicolle, 2011), currently there are only seven employed gardeners and one new gardener who is not permanent. According to the Director of Siyakhana, one of the reasons is that the workers find other opportunities after they have gained experience from the food garden. The gardeners are considered as staff members in the food garden and those managing the garden have always tried to create an environment where the gardeners feel as though they are working under formal working conditions. They are given uniforms and boots, they have regular wages paid to them, and they are able to take leave. However, they do not have formal contracts; but, they will be given these in the near future. One the oldest gardeners began at Siyakhana as a volunteer but soon learnt how to farm. He is now considered permanent staff and is given an income.

3.4.3 Sustainable farming practices

A large part of what is interesting about Siyakhana is its environmentally conscious gardening practices. The supervisor, who can be considered as one of the gardeners and is involved in the overall management of the garden, noted some of the innovations they utilised in running the garden and some interesting eco-friendly mechanisms that had been made use of.

Figures F1 and F2: The Siyakhana field office which is made of entirely natural materials and eco-friendly structure made out of broom sticks (right). Photos by Van Niekerk (2015)

Figures G and H: Innovative toilet system (right). Photos by Van Niekerk

These are some of the buildings that are being utilised to run the garden. They have even made their own toilet system that is used by the gardeners. They have also created a building that was made out of broom sticks. Other innovations that they have adopted are the use of earthworms in which they are used to make compost for the food garden. The supervisor said that “what they produce are so valuable to farmers as sources of nutrients and compost, as well as a source of healthy bacteria.”

Figure I: Earthworm compost. Photo: Van Niekerk (2015)

It was also found that the food garden utilised materials and resources that could be found on site, which meant that less external resources were required. He also indicated that since they do not have any electricity coming into the garden they had to develop a battery-operated sprinkler system. The sprinkler system would operate on a battery-powered timer and therefore it would not be necessary for any of the gardeners to constantly get up to turn the water on.

Conclusion

This chapter commenced with a discussion on urban poverty in Johannesburg. It was found that much like other cities of the developing world, Johannesburg faces major issues with food insecurity, poverty and unemployment. The chapter also discussed urban agricultural policy in Johannesburg and found that the City has indicated a start in support for urban agriculture through its food resilience framework and its imminent urban agricultural policy. In addition, the various livelihoods strategies that the city's urban poor undertake have been examined as well as the other examples of urban agriculture elsewhere in Johannesburg.

4 Chapter Four: Presentation of Findings

The purpose of this chapter is to discuss the findings obtained from the interviews undertaken with Siyakhana gardeners, staff members and a CoJ official. The aim of the chapter is to highlight the perspectives of the gardeners and how direct involvement in the food garden has impacted upon their livelihoods. The chapter also outlines the views of staff members which look at the overall performance of the garden, and how it has affected their future plans and prospects.

Overall, only one staff member was interviewed, who was the Director of the Siyakhana Initiative. Although, other staff members were not interviewed, the Director's contribution was nevertheless essential to the study. Eight gardeners and one volunteer gardener were interviewed. A volunteer gardener, who is responsible for operating the food garden, made an important contribution to the research as he worked with the gardeners on a daily basis. He cannot be considered to be a beneficiary of the food garden as he is largely involved in the operational aspects of the garden. Throughout the report, he will be referred to as the garden supervisor. A CoJ official was interviewed to gain his views on possible and current plans for urban agriculture in Johannesburg. His perspectives are important to the research from a policy perspective, given that he is considerably involved in the Joburg 2040 Growth and Development Strategy.

4.1 Overview of Respondents

4.1.1 The Gardeners

The overall number of interviews conducted in the investigation was eight. Six of the gardeners interviewed were male, while only two were female. All of the gardeners considered themselves to be formal employees of the Siyakhana urban food garden. According to the gardeners, they worked from 7:30 in the morning until 15:00 in the afternoon, five days a week. A few of the gardeners indicated that they often work on Saturdays as well.

Most of the gardeners are not from Johannesburg and were born elsewhere. Two of the gardeners are Zimbabweans, but stay in Johannesburg because they work here. Other gardeners come from places such as KwaZulu-Natal (KZN) and the North

West. Three gardeners are married and are between the ages of forty and fifty. Most of the gardeners are young, and are below the age 36. The youngest gardener is 21 years old and is a resident at the park.

In gaining an understanding as to the background of the initiative and finding out the future prospects it was important to interview those involved in the management of the food garden. Therefore the Director and Founder of the Siyakhana Initiative was interviewed, as he is involved in the overall operations of the Siyakhana. One of his biggest roles is ensuring funding for the sustainability of the initiative through research and making networks with various organisations. The Director is not hired by the University of Witwatersrand to run the Siyakhana initiative. All his efforts are done voluntarily as he does not profit from the funding raised by the initiative.

In addition to the gardeners and founder of the initiative, the study conducted an interview with a CoJ official. The interview conducted with the Deputy Director of Strategy and Research at the CoJ, is largely involved in reviewing the Joburg 2040 Growth and Development Strategy, and the development and implementation of policy at the City. Therefore the CoJ official's opinion on urban agriculture was important because he holds an understanding of the City's strategic future and it was important to explore whether the City has any current plans or support for urban agriculture.

4.2 Vulnerability: Factors affecting the Gardeners

Understanding the vulnerability context of the gardeners is important because it helps grasp why they engage in certain livelihood strategies. The livelihood strategies of the gardeners are influenced by external forces such as food price hikes and lack of production during certain seasons. Therefore this section of the chapter observes some of these factors.

4.2.1 Effect of seasonal production on gardeners

Agriculture is affected by lack of production during certain seasons such as winter. Winter is often cold and dry and not much produce grows during this time. During

investigation of the Siyakhana garden, there was an opportunity to witness the difference in the growth of the produce during winter as opposed to spring time.

Figures J1 and J2: Indicating the difference in the food garden early August and mid October. Photos Van Niekerk (2015)

The two figures above indicate the difference in the amount of vegetables that are grown during the different seasons. This can have a negative impact on the poor because they are not growing as much produce for their households and this may lead to higher food insecurity levels. However, the conditions at Siyakhana are different because the gardeners are not heavily reliant on the food gardens to feed their families every day. They are provided with an income that they use to feed their households.

A large part of the benefit of subsistence farming for poor urban households is that the produce obtained from it allows families to protect themselves against severe hunger and poverty. For the gardeners at the Siyakhana food garden, the benefits are gained through receiving income. It was noted by the supervisor that Siyakhana did not rely heavily on its produce to derive an income to pay the gardeners. Rather, it relies on donor funding to be able to give the gardeners salaries. Therefore, the gardeners' ability to avoid vulnerability from seasonal factors is due to the fact that they are not only reliant on the produce.

4.3 Livelihoods Assets and Strategies of the Gardeners

The livelihood assets and strategies are an important part of the findings for the report. It indicates the various struggles the gardeners face and illustrates how they are able to make use of different methods to maintain their households and alleviate vulnerability.

4.3.1 Household income

Household income is a very important asset for the gardeners and represents their financial capital. Observing where the gardeners derive their income is important in understanding the types of livelihoods strategies they have had to employ.

Of all the gardeners that were interviewed, many indicated that on the earnings from the food gardens most of them were supporting between two and five family members. It was only two of the gardeners who said that there was another family member bringing in an additional income for the family. The one member said that his brother helped support the family and the other indicated that his mother was also working to support the family. However, most of the gardeners said that they were the only member of the family who was supporting the household.

Upon interviewing the gardeners, they were asked if they believed that the food gardens provided enough income for their households. Six of the seven gardeners interviewed indicated that they felt that the income that they received from the food gardens was enough to support their household. Although they felt that it was bringing in enough income, one of the gardeners pointed out that she enjoys gardening but wishes she could do something that brought in even more income for her family. However, one of the gardeners who had been working at the gardens for only three months felt that it was not enough for his family.

When asked whether they had any additional means of income, six of the permanent gardeners said that the food garden was the only source of income. One of the younger gardeners who had been working there for almost three years said that he does do some work on weekends. He said that “I am an artist, I do pop/rap on weekends and so I perform. If I go on weekends, I sometimes get paid…they give a little bit extra, you know” (Gardener One, August, 2015).

On a short follow-up interview with the gardeners a while after the initial interview a question was posed to them whether they had access to any social grants. All but one of the gardeners had a social grant. They were asked why they did not have a social grant and two of the respondents indicated that they were Zimbabwean, which may be standing in the way of a social grant. Other gardeners pointed out that they had issues with gaining social grants because he/she did not have the necessary

documents. It was noted during the interview that most of the gardeners who said that they did not have a social grant were not pensioners and had adult children. The one gardener said he had access to social grants and he has three young children who all still attend school. Social grants can be an important extra form of income for families because the gardener who indicated that he makes use of social grants also indicated that he has not experienced difficulties with being able to feed his family.

4.3.2 Perceived food security levels

The gardeners were asked whether they thought that they had any problems with feeding their families. None of the gardeners indicated that they had any severe food insecurity issues in their households. However, they did indicate that they would struggle now and then, but not often. They also indicated during the research that the food garden was helping, such as when they are given some of the produce to take home to their families, once or twice a week. It was also noted during the interviews that many of the gardeners indicated that they did struggle with purchasing food for their households before they started working at Siyakhana. About six of the gardeners who were interviewed observed that since joining the initiative, the health of their families has improved because they have access to fruits and vegetables on a weekly basis and that the income generated assists with this as well.

4.3.3 Previous employment of gardeners

The livelihood strategies of the gardeners before they began working at the Siyakhana food garden is important because it helps examine the reasons why the gardeners started working at Siyakhana where they might have felt that they had no other means to support their families. Employment is also important because in certain ways it helps people have access to various assets such as physical capital or financial capital.

The gardeners were asked if they had any employment before they started working at the food gardens. About five of the gardeners indicated that they had other employment before they worked at the food gardens. One of the gardeners said that he has had employment in packaging chicken. When asked why he was not working there anymore he replied by saying: “because if you go there during the week, you

stand in front of the gate and they choose. So if you end up not getting chosen, you won't get paid" (Gardener Two, August, 2015). When he was asked whether it was difficult to find employment before the food garden he said: "It was very hard. I was with my friend for almost two and half month, going out there struggling. So it was a relief when I started at the garden" (Gardener Two, August, 2015).

Another of the gardeners said he did not leave by choice but that the company he worked for retrenched him. One of the gardeners also indicated that he was self-employed and painted houses for people. When asked if it brought in enough income for his family he said that it was because he was able to charge his customers his own rates. However, it was not indicated as to the reasons why he left.

The gardeners who indicated that they were not employed before they started working at the garden were the younger employees. They began working at the garden immediately after they either finished high school or dropped out. One of the recent gardeners said he came to work at the garden as soon as he finished matric.

4.3.4 Levels of education of gardeners

Human capital is a very important aspect in the livelihoods of individuals because it often determines what livelihood strategies a person is able to employ. Therefore the gardeners were interviewed about their highest levels of education. The results of this were that only one of the gardeners was able to complete his matric. When one of the female gardeners was asked why she dropped out of school she indicated that it was because she had fallen pregnant.

The gardener who indicated that he was able to finish his last year of high school pointed out that he was now able to enrol at a college to study marketing management. This is an indication that human capital such as education plays a large role in the capabilities of poor individuals. The fact that many of the gardeners did not complete their high school education may have been a factor contributing to their previous struggles with finding appropriate employment to provide for their households. Evidently, the food garden has presented them with an opportunity to develop their human capital and to avoid exposure to the consequences of unemployment.

4.3.5 Learning and training opportunities

Siyakhana is known for training its members, so it was important to the investigation to find out how the gardeners experienced the food garden and how they benefited. The gardeners were asked whether they had any farming experience before working at Siyakhana. All of the gardeners indicated that they learnt everything about farming with fruits and vegetables through working at the food garden.


Figures K1 and K2: Mushroom house (left) and cabbages (right) Photos Van Niekerk (2015)

Many of the gardeners indicated that they enjoyed working at the gardens because they felt that it was a good opportunity for them and they learnt many skills by working there. One of the gardeners said that he is proud to work at the food garden because he has learnt a lot. He also said that he wishes to apply what he has learnt elsewhere one day, such as starting his own garden. Another gardener said that "now I am doing it because I enjoy it and it helps me with a lot of things. First it taught me that you don't have to work for big companies to make money…you can do things on your own, just using the ground" (Gardener Two, August, 2015).

Another gardener indicated that he has already started his own garden. When asked what kind of produce he grows he said vegetables and herbs. He replied with: "I am a doctor now", indicating that he can now use the herbs he grows to heal his family, rather than having to spend money on expensive medicines (Gardener Three, August, 2015). A beginner at the food garden indicated during the interview that when he started working at the food garden he did not enjoy it, but he is not starting to enjoy it. He stated that: "My mother forced me. I didn't want to come and work here, but now I am enjoying it because when I came here I started doing work like

anyone, with the weeding. But now I am working with the irrigation" (Gardener Four, October, 2015).

Seemingly, the Siyakhana food garden has created a platform for the gardeners to develop their human capital. Therefore, despite having very little education, the gardeners are given the opportunity to progress by becoming skilled in farming practices.

4.3.6 Accommodation of Gardeners

Physical capital is important because basic infrastructure plays an important role in improving livelihoods. In addition, it is important to understand the conditions the gardeners live under and the type of housing they have access to or have acquired for themselves. It also represents an added livelihood strategy they have employed.

The gardeners were questioned whether they owned their own homes or rented property somewhere. Most of the gardeners responded by saying that they did not have their own property. However, two gardeners did indicate that they rented property. One gardener said that he rented in Yeoville. Another gardener indicated that he has his own house because he inherited it when his mother passed away, and he shares the property with his brother. However, he indicated that he does not live in the property. He only stays on the property when he travels back to Durban during December. He and many other gardeners stay at the park for work.

The living arrangements at the park represent a livelihood strategy because most of the gardeners are staying there. It was indicated by the gardeners that they do not have to pay any rental costs by staying on the park property. This offers the gardeners an opportunity to save on their income which would mean that they are able to spend money on other things. It was also specified that there are about nine people staying in one house which has to be sectioned off between households. The gardeners were asked how they felt about the crowded conditions they were living under and they responded by saying that it was uncomfortable and often created conflict between people. One gardener said that, "You can't stay quietly, because one day you might have a misunderstanding with someone because you don't want to listen" (Gardener Five, October, 2015).

Nevertheless, despite the conflict that occurs between people, the gardeners continue to stay on the property. For many of the gardeners it might be that they have no other choice, especially when they are not able to afford staying elsewhere. The gardeners are also able to cut costs that they may have incurred if they had to travel daily to get to work. Siyakhana is currently in process of renting the property on the park so that the gardeners have a more secure form of shelter. The food garden in this sense has provided the gardeners with physical capital so that they do not have to worry about finding accommodation somewhere else.

4.4 Institutional and structural factors

4.4.1 Institutional and financial arrangement

According to the Director, some of the first forms of institutional support that were gained when they started the food gardens were when they collaborated with the Early Childhood Development Centres (ECDC) and the NGOs that provided shelters and home-care for HIV patients. They approached the City of Johannesburg and they were involved in a mapping exercise in which they were to identify all the suitable areas that were in close proximity to the inner city. They were able to start the project because of their relationships with these organisations and government departments.

In terms of the financial arrangement and funding within the food garden, the Director was asked whether he personally profited from the gardens and how funds were gained and allocated within the Initiative. He indicated that he did not profit at all from the food gardens and that if anything the food garden was costing him money. He emphasised that Siyakhana was more than just a food garden and that it involved research, consultation, training and teaching, and allocation and gaining of funds depended upon this. He said, “For example, we got funding from the United Nations (UN) to develop this online course on food security; to develop partnerships with southern African universities such as Alongwe University of Agriculture and Natural Resources and the University of Namibia and two European universities” (Director, August 2015). He therefore emphasised that most of the funding comes from these organisations that they liaise with or do research for and very little comes from the food garden. Another example he used was: “that applies to work we did for

WesBank and FirstRand, where they asked us to do research related to their projects they are funding. And again we send them a proposal and a budget" (Director, August, 2015). In other words, the financial viability of the organisation is extremely dependent on the continued existence of these partnerships and networks. He indicated that he is not employed by Wits but runs a unit within Wits and that all their funding is generated through consultation and research or even contracts with the UN which provides the funding occasionally.

4.4.2 Role of the City and Urban Planning

Upon interviewing both the Director and supervisor at Siyakhana, they were asked whether they thought that the food garden received adequate support from the City. They both recognise that the City is attempting to help initiatives such as Siyakhana but they believed that it is still not enough. The supervisor asserted that, "I think that there is definitely a start of support. I mean, they implemented the Agri-Resource centres, not that I can say that they are being managed effectively, but at least it's a start" (August, 2015). He noted that in the past, different departments had tried to reach out through community forums and workshops, and that there was the effort, however, they still have a long way to go and much more effort is needed. He expressed the need for support on training and funding.

The Director, however, expressed a deeper concern for the lack of support from the City. He believes "that there is much more that can be done to facilitate initiatives like Siyakhana" (August, 2015). He spoke about the resistance towards the food garden and gave an example of how he had invited the Vice Chancellor (who is not the current one) to visit the garden to see what the university was involved in and the Vice Chancellor expressed embarrassment because it did not follow the image that the university was trying to portray. But he believes that the resistance towards urban agriculture is a part of a process. He relates it back to the time there was resistance towards the concept of primary health care and that eventually became a formal policy. Therefore, he believes that in time there will be acceptance and formal support for projects like Siyakhana. Ultimately, what those involved in the food garden believe is that there is some form of recognition of urban agriculture, but what needs to be done now is to translate it into action i.e. doing projects or setting up models that can be replicated to the people (Director, August, 2015).

The CoJ official, however, asserted that claims that the CoJ was not doing enough to support urban agriculture was “complete nonsense”. He said that “the view that the city is not doing enough…unfortunately we will defend that very much because we don’t agree” (August, 2015). The CoJ official stated that he did not understand why the city is being criticised for not doing enough when there are strategies put in place in support for things such as food security. In the interview he explained that the Joburg 2040 GDS was addressing many of the concepts that are linked to support for urban agriculture. Chapter Two of the GDS discusses the paradigms of the city (resilience, sustainability, liveability; human and social development; environment and services; etc.). He notes that the strategies are connected. For example, food security is linked to sustainability, to the green economy, and to resources in the inner city. He also noted the food security strategy within the CoJ IDP. Evidently, the city also has an urban food agriculture policy underway. This was his response when asked about what the city was doing to develop the idea of sustainability and resilience thinking.

The CoJ official’s point was very important, considering that the research aims to understand the policies and processes that are in place that support urban agriculture. However, the purpose was to find out what the city has implemented so far, that have reflected those concepts within the GDS. Nevertheless, it was interesting for the research to note that the City is focused on concepts that are particularly valuable to urban agriculture.

Food security is highlighted as a priority for the City, thus it has become a strategy, and it recognises the importance of urban agriculture in creating food security. It appeared that the City seemed to associate urban agriculture with food security and that food security would be how they show their support for urban agriculture activities. It is correct, because food security plays a huge role in urban food production, however, if urban food gardens are going to be sustainable, the City might need to show support in terms of other aspects within urban agriculture such as training and marketing.

Conclusion

This chapter presented a thorough understanding of the findings gained from the interview process. It presented the findings according to the Livelihoods Framework outlined in the literature review chapter and gained a useful understanding of the various factors that affect the livelihoods of the gardeners. The chapter discussed the importance of factors such as assets and strategies in understanding how the gardeners have been able to benefit from the initiative. In addition the chapter helped reveal the most important findings that will be discussed in the following chapters.

5 Chapter Five: Analysis of Findings

With regards to the presentation of findings discussed in the preceding chapter, this chapter discusses what the findings mean in relation to the context and literature outlined in the previous chapters of the report. The findings point to the number of issues for people involved in urban food gardens. The findings also indicate the reasons why people are involved in urban food gardens and how it has improved their livelihoods. It develops a positive motivation for the Siyakhana Initiative, as one is able to extrapolate from the findings the livelihood assets that have been derived when being involved in the food garden. The findings also discuss the structures and processes that are in place to support urban food gardens as well as the need for improved support from local government.

The analysis of the findings is structured into two main sections where it firstly discusses how the livelihoods of the gardeners have been affected by their involvement in the Siyakhana Initiative. This section analyses the various livelihoods assets and strategies they now may have access to and considers them in terms of the themes addressed in the literature review. The chapter then outlines the support that is being provided to the gardeners and the food garden, as well as considering additional support needed for the garden to facilitate resilience and create sustainable livelihoods.

5.1 Siyakhana's impact on the livelihoods of the gardeners

In the preceding chapters of the report it has been indicated that due to various socio-economic issues facing cities, people have been forced to adopt survival tactics to protect themselves against vulnerability. Aspects such as lack of income or low levels of education can seriously hinder an individual's ability acquire what is needed to achieve a full life and Masik (1997) notes that deprivation of urban residents can occur when there is low income within households. Vulnerability and deprivation have led households to adapt to their environment by adopting various livelihoods strategies as a response as noted by Moser (1998).

Urban Agriculture can be considered a survival strategy practiced by poor households to improve their livelihoods. Earlier sections in the report have mentioned positive arguments for the activity pertaining to its ability to provide food

security and income generation. However, opponents have emphasised caution concerning the activity in terms of lack of proof and giving it too much credit with regards to poverty alleviation. This chapter therefore observes the impact Siyakhana has had on the livelihoods of the gardeners and whether it potentially creates sustainable livelihoods.

5.1.1 Saving money and generating income

Generating income and saving on money is an important feature in improving the livelihoods and reducing vulnerability of the urban poor. It was mentioned elsewhere in the report that income plays an important role in the lives of urban residents because of the high living costs of urban areas. The Global Food Security Index (2014) notes this by stating that the costs of living in urban areas is significantly higher than in rural areas and due to the lack of economic opportunities in sub-Saharan Africa (SSA) it is much more difficult to escape poverty. Therefore, an important part of the report has been investigating the income situation of the gardeners.

Chapter Four of the report discussed that the food garden helped to promote income generation and savings. In section 4.3.1 of the findings chapter, six out of the seven gardeners who were asked whether they felt that the garden helped them earn enough income for their households, indicated that it did provide them with enough income. This relates back to the literature explored on urban agriculture and its benefits for those living in vulnerability. Urban food production represents a way for poor households to generate income for their families and it is pointed out by Richards and Taylor (2012) that millions of people make use of urban agricultural activities to generate income for their families. As such, participation in the urban food garden has improved the financial capital of the gardeners, which is important because, Farrington *et al.* (2002) note that income is often one of the most essential assets needed for survival, especially in an urban context where various household needs have to be purchased.

It is, however, important to note that the income generated from working at Siyakhana is not derived from the food garden itself. It was not indicated throughout the interviewing process that Siyakhana relied on the produce to receive an income. Therefore, even though it was indicated in the literature review chapter of the report,

it is essential to mention that the benefit that was obtained by the gardeners themselves was not a benefit from the urban agricultural activity itself but a benefit of the initiative being able to secure donor funding to pay the gardeners.

This underlines an important critique of the initiative in the sense that there is a lack of a business model. It was indicated in the literature review that urban agriculture now encompasses more than growing food to feed the household. It was noted by Ngcamphalala (2013) that urban agriculture covers processing, marketing and trading. It is important, especially in ensuring the sustainability of a project such as Siyakhana that it considers other ways of bringing in an income. Relying on donor funding is unsustainable because, they are not receiving income that they are able to depend upon on a constant basis. At a certain point, those managing Siyakhana may not be able to secure funding for the garden from willing organisations. It was already indicated during the interview with the Director of Siyakhana that it was becoming harder to obtain funding for the food garden. However, it was indicated in the findings of the report that Siyakhana is in the process of establishing an operations plan, but it was not revealed as to the details of this plan.

It was noted in the report that urban agriculture tends to take a social and environmental focus. It is important however, particularly if urban agriculture is going to be considered sustainable, that it takes into account possible economic implications of the activity. The FAO (2007: 28) notes the economic impacts of urban agriculture at households level and observes that it can involve aspects such as “self-employment, income from processing, sales of surpluses, savings on food and health expenditures, exchange of agricultural products for other economic goods”. Therefore, it is possible for urban agriculture to engage a wide range of income generating activities. However, it must be understood that implementation of the activities might require support from various stakeholders.

The lack of a business model and the fact that the gardeners do not benefit from the produce means there might be a need for support in order to help improve overall operations in the food garden. Being self-sustainable as a project is important because in order for the gardeners to feel secure in their ability to receive income on a regular basis, needs there to be a firm plan in place on how Siyakhana will generate income as a food garden.

It was indicated earlier that the Siyakhana Initiative gave the gardeners an opportunity to save on income by giving them access to certain assets. In section 4.3.6, the findings indicated that the gardeners had access to free accommodation on the park premises. Owing to the free accommodation they received they are able to save income that would have otherwise been used on rent or other housing. It was noted in the findings that due to arrangements made between Siyakhana and the owners of the property, the gardeners were able to share the property with one another. However, there are more formal arrangements being put in place, where Siyakhana is able to formally lease the property. Having access to physical capital is important for people because often many people relate being poor to the inability to obtain housing.

5.1.2 Improved food security and nutrition

Food security and nutrition were issues that were explored in the literature review chapter. Van der Merwe (2011) gave a definition of food security that does not only consider having access to food alone, but that food security means having access to nutritious food for healthy living. Urban agriculture has been linked to food security and nutrition because it is able to improve the livelihoods of poor households, as noted by Battersby (2010).

Positive links between urban agriculture and food security were found in the literature review chapter and was therefore an important issue that was explored in the findings of the investigation. It is important to understand whether the food garden has provided for the gardeners in such a way that they are able to receive food from the garden or purchase their own food through income derived from the produced

In section 4.2.2, the gardeners were interviewed concerning the difficulty in feeding their families. Most of the gardeners noted that before they started working at the food garden they struggled to feed their families, but since they joined Siyakhana their ability to provide food has improved. They indicated that this was particularly due the fact that they were either unemployed or struggling to find employment that would generate enough income. It was also found that because Siyakhana supplies them with some of the produce from the food garden on a weekly basis, it helps them with feeding their households.

It was indicated in section 4.3.4 of the findings that many of the gardeners were not able to finish school, which may have contributed to their inability to find employment. It was noted by Amar-Klemesu (2000) that food security is affected by three issues and one of them is employment and cash income. It is observed that due to lack of formal employment, it is difficult to obtain income and thus afford nutritious food for a household. However, it has been argued that urban agriculture has the ability to provide resilience and a response to vulnerability that result from lack of employment and income. Around 200 million urban households grow food for urban markets, making urban agriculture an effective way of generating income (Richards and Taylor, 2012). Similarily, Siyakhana has been able to improve the livelihoods of the gardeners by increasing their access to food through the produce and income, despite their lack of human capital. These were the kinds of benefits that were observed in the scholarship explored on urban agriculture.

5.1.3 Siyakhana as a platform for learning

An important finding in the investigation is that many of the gardeners were unable to complete school. Evidently, it led to a struggle to find employment and played a role in the livelihoods strategies undertaken by the gardeners. None of the gardeners have had any other means of income generation, other than the food garden itself. It is therefore clear that working at the food garden is by no means a part-time job or something done on a volunteer basis. The gardeners rely a great deal on the income they receive from Siyakhana.

Considerable emphasis has been placed on how Siyakhana has improved the livelihoods of its gardeners through increased food security and income generation. However, Siyakhana has improved the human capital of the gardeners as well. In section 4.3.5 of the findings, learning opportunities available in Siyakhana was discussed. It was indicated in the annual report of Siyakhana for 2011 that it has previously provided training courses to many people in permaculture and health promotion. However, the study focused how the gardeners themselves have learnt from involvement in the food garden. It was observed in the findings that none of the gardeners had any farming experience before they began working at Siyakhana. Therefore everything they learnt regarding permaculture had been taught to them while working at the food garden.

The fact that the gardeners were able to become trained in farming with vegetables, fruits and herbs owing to their involvement in Siyakhana relates to what Carney (1999) observes about livelihoods approaches. For Carney (1999), livelihoods approaches assist people in developing their own potential. Therefore, in the same way, Siyakhana has helped the gardeners to develop their own potential by teaching the gardeners. This is very important in creating sustainable livelihoods where people are not only ensured food security or income temporarily, but that these benefits can be experienced in the long term.

Training the gardeners in farming practices may give them the opportunity to adopt added livelihoods strategies. Krantz (2001) noted that people have to undertake combinations of livelihood strategies for survival, but that these livelihood strategies vary according to different households and their different situations. For the gardeners, due to their lack of human capital, their ability to undertake livelihood strategies such as formal employment has proven to be difficult. Therefore, it may be essential for them to adopt more livelihood strategies than those who receive a steady income. Siyakhana has thus given the gardeners the ability to adopt added livelihoods strategies by skilling them in farming. It was noted in section 4.3.5 of the findings that one of the gardeners had taken what he had learnt from the garden and applied it elsewhere. He currently has created his own garden where he grows herbs to help his family overcome illnesses. He indicated that this gives him the opportunity to save money that would have otherwise been spent on expensive pharmaceutical medication.

5.2 Institutional support for Siyakhana

An important part of the investigation on Siyakhana was looking into the institutional support for the Siyakhana initiative and urban agriculture as a whole. The research has thus far discussed and analysed the vulnerability context, livelihoods assets and livelihoods strategies of the gardeners. However, it has been noted by Krantz (2001) that it is not sufficient to simply observe these components only, but that institutional processes and structures are important as well. Serrat (2008) observes that livelihood strategies are not just influenced by access to assets or the vulnerability context but that they are also impacted by structures and processes.

Institutional processes and structures are important to food garden projects and initiatives such as Siyakhana because it contributes to the overall sustainability of a food garden. Without resources or financial support it becomes very difficult for urban farms to survive on their own means. Therefore, in an attempt to understand the institutional scope within Siyakhana, interviews with the Director of Siyakhana and the CoJ official was a key component in the findings.

In section 4.4.1 of the findings chapter, it was found that Siyakhana received a considerable amount of support when the project began. It was noted that the City of Johannesburg extended their support by initiating a mapping exercise to find an appropriate area for the food garden to take place. An important finding was that the Director revealed that most of the funding that Siyakhana received was as a result of research, consultation and training and that they derived very little funding from the food garden itself. This emphasises the importance of institutional processes and structures and links to Solesburg's (2003) point that institutional factors largely impact upon the scope of sustainable livelihoods outcomes. The purpose of Siyakhana is to improve the livelihoods of the urban poor, although it may not be able to do so without the support of various organisations. The Director indicated that Siyakhana is financially dependent on these organisations, which means that their constant liaising with these organisations to create networks is paramount. Van Staden (2014) observes that urban food production needs structural support such as the city administration if it at all is going to be sustainable.

Another important finding in the investigation was discussed in section 4.4.2. The role of the City in urban agriculture was an important issue to explore because it produces an understanding of the implications of urban agriculture for urban planning. It was found in this section that there was a difference in the perceptions of the members of Siyakhana compared to that of the City. Firstly, both the Director and supervisor felt that there needed to be more support for initiatives such as Siyakhana and for urban agriculture as a whole. For the supervisor, the concern lies with the fact that although there has been support through workshops and forums, there is still a need for assistance with training and funding. His point relates to Morse *et al.* (2009) argument that observing the institutional context is important. The point made was that institutions can provide support with various necessities such as providing information to farmers, as well as assistance with farming affairs. Similarly, this is the

nature of support that is required by Siyakhana and may be the kind of support that many other urban food gardens in Johannesburg may require. Malan (2015) explains that currently there is support through training but that the training on things such as permaculture is often not done properly. This proves what the supervisor pointed out in the findings that even though the City has set up the Agri-Resource Centres, they have not been managed properly. Therefore, they cannot be seen as reasonable support from the City.

Malan (2015), however, does point out that if organisations are going to be able to help with training programmes the farmers need to be well organised. It is also suggested that the City consider funding links with Sector Education and Training Authority (SETA) and Broad-based Black Economic Empowerment (B-BBEE) and the Agri-Resource Centres. Siyakhana is a well organised food garden project but if urban agriculture is going to gain support there may be a need for collaboration by all farmers or urban agriculture initiatives to become more structured which could lead to more efficient cooperation and recognition from the City.

Nevertheless much like the supervisor, the Director expressed the need for much more recognition of urban agriculture and food garden projects. He suggested that the City needs to show its support by incorporating urban agriculture into plans by engaging in projects that can be replicated to communities. The need for institutional involvement in urban agriculture is evidently a shared view in much research done on urban agriculture. There is the perception that if urban food production is going to continue to be rewarding to the urban poor, those involved in urban farming need to team up with local government to develop new approaches that are specific to the needs of poor households (White and Hamm, 2014).

This leads to the second point where in section 4.4.2 of the findings the CoJ official expressed serious concern as to the lack of recognition of the City's support. He indicated that were in place that support urban agriculture such as food security. He mentioned the CoJ IDP made food security a priority, which has been explored in Chapter Three of the report. His argument centred on the fact that the Joburg 2040 GDS aimed to address many of the issues that are related to urban agriculture and the focus of the discussion was the City's paradigms (resilience, sustainability and environment, etc.). It was important to know that the City has taken into

consideration all the factors that involve urban agriculture such as food security, but it was also essential to understand that urban agriculture warrants a more diverse understanding. It has been highlighted in the literature review that urban agriculture cannot be defined simply.

Therefore, despite the fact that the City has made food security a priority there still is a need for deeper support. In essence, while urban agriculture has been mentioned within the strategy, its narrow focus deals with food security and does not cover other aspects of urban agriculture as a whole. It was, however, noted that the City is in process of implementing an urban agriculture policy, but it is not quite certain as to the details of the policy. However, if the urban agriculture policy is going to make a difference at all, it needs to consider aspects such as access to land; finding ways to make regulations less restrictive and support services to farmers. White and Hamm (2014) assert that municipal governments are in the best position to support urban food production. Municipal governments have control over activities that take place on land and in that way can ensure that land is not predominantly prioritised for development.

Conclusion

It is clear from the analysis that firstly, the Siyakhana Initiative has been able to help gardeners obtain an income, as well as save money. Secondly, the initiative helped the gardeners become more food secure, because of the access to income and some of the produce. Thirdly, the initiative has created an opportunity for the gardeners to learn from the farming practices and to replicate their knowledge elsewhere. Lastly, the analysis of the initiative has however brought to light a critique of its business model due to the fact that the gardeners have not benefitted directly from the produce derived from the food garden.

6 Chapter Six: Conclusions and Recommendations

This chapter brings together the key findings and analysis that were investigated through studying the Siyakhana Initiative. The chapter begins by discussing whether the Siyakhana Initiative has been able to improve the livelihoods of the gardeners and in essence, whether it has been able to create sustainable livelihoods. The chapter then discusses the implications of urban food gardens like Siyakhana and more broadly urban agriculture on urban planning. The chapter then closes by making further recommendations that can be implemented by various institutions and stakeholders such as the CoJ.

6.1 Conclusions

At the very beginning, Chapter One discussed the aims and objectives of the research and it was emphasised that the purpose of the study was to assess whether urban agriculture is able to reduce urban poverty in Johannesburg. The study attempted to do this by observing whether the Siyakhana Initiative was able to improve the livelihoods of it gardeners. As such, the research attempted to explore the social, economic and environmental benefits of being involved in urban agriculture. With respect to these benefits, the end goal was to provide evidence that urban agriculture does in fact improve the livelihoods through food security, nutrition, and income generation. However, owing to the use of the Livelihoods Framework to assess the Siyakhana Initiative, conclusions were made that did not have the exact outcome that was expected.

Various findings were obtained from the investigation which were ultimately analysed against the findings from the literature review. Thus, a number of conclusions were made about the ability of the Siyakhana Initiative to create sustainable livelihoods for the gardeners. The conclusions from the analysis were made as follows:

1. **The gardeners have been able to benefit through savings and income generation, due to their involvement in the Siyakhana Initiative**. It was noted in the analysis that the gardeners were able to generate income through Siyakhana because they were receiving salaries on a regular basis for their work in the food garden. The gardeners were essentially employees of the Siyakhana Initiative and were not like the usual urban farmers who

were discussed in the literature review. Unlike the urban farmers, the Siyakhana gardeners were not heavily dependent on the produce that was derived from the food garden and therefore were not at risk of seasonal trends affecting their income. In addition to improving the livelihoods of its gardeners through increasing their capital assets, the Siyakhana Initiative has also helped them by giving them access to physical capital (in the form of accommodation) which allowed them to save money.

2. **Involvement in the Siyakhana Initiative has given them access to improved food security and nutrition.** Food security played an important role in the investigation because much of the literature found that an increasingly larger number of urban residents have been found to go hungry on a daily basis. This required an analysis into how the Siyakhana Initiative has improved food security and nutrition amongst its gardeners since they began working at the food garden. It was found in the investigation that the gardeners did indeed experience improved food security levels since working at Siyakhana. This was due to the fact that they had been struggling to find employment before becoming a gardener and now have been able to receive a constant income for their households. The gardeners have also been able to receive some of the produce derived from the food garden.

3. **Siyakhana has given the gardeners the ability to become skilled in permaculture.** An interesting finding in the research was that not only has Siyakhana trained members of the public on permaculture, but that the gardeners themselves have become more skilled in farming and have expressed their enjoyment of working in the food garden. Human development is an important part of creating sustainable livelihoods and through learning, the gardeners have been given the opportunity to progress and develop their human capital, which gives them the ability to replicate their knowledge elsewhere.

4. **There is still a lack of appropriate support from local government.** In the analysis it was observed that although there is some form of recognition, the City of Johannesburg has still not adequately incorporated urban agriculture into its strategies. It is, however, only fair to acknowledge the upcoming urban agriculture policy and the fact that food security has been made a priority.

Owing to the conclusions discussed above, there is a clear indication that the Siyakhana Initiative has been able to improve the livelihoods of it gardeners. However, when considering the main purpose of the research, which was to investigate whether urban agriculture has the ability to improve livelihoods, there is a problem with the accuracy of this conclusion. The analysis recognised the fact that although the gardeners have benefitted overall, they have benefitted from the ability of the initiative to collect donor funding and not from the food garden itself. Siyakhana can mainly be seen as a food security programme; however, it provides added benefits that further enhance the gardeners' livelihoods. On an individual basis they are food secure, and have sufficient income to cover their basic household needs.

However, the initiative can be considered unsustainable mainly due to its inadequate business model. The initiative depends heavily on external funding and has no other means to keep it afloat. Therefore, the benefits of the initiative are not able to reach the wider community of Johannesburg's urban poor. Currently, the initiative does not have the ability to market its own produce to the urban poor or various formal and informal markets. Though, it is apparent that an operations plan is underway which is geared towards a model that has a deeper urban agricultural focus, rather than purely food security and nutrition.

In addition, although there may be a lack of support from the CoJ, there is the recognition of urban agriculture and the need to generate new possibilities for the urban poor. Broad strategies have been laid out within policy by the CoJ, such as the food resilience framework; however, it is important to note that although food security is important, the potential to improve livelihoods of the urban poor deals with issues much deeper than food security, and this understanding needs to be recognised by the CoJ. Urban agriculture has the potential to provide a broader benefit to the urban

poor through linkages to the urban economy, where employment creation, entrepreneurialism and further commercialisation of urban food production can take place.

The conclusion is disappointing; however, it leads to view that there might be a need for improvement both internally and externally to the initiative. This means there will be various important implications for urban planning and how it can support urban agriculture in Johannesburg. Therefore, a set of recommendations are outlined in the below.

6.2 Recommendations

It is evident that there is a serious need for support from the CoJ. Municipal governments have a significant amount of influence on the sustainability of initiative such as Siyakhana and it is therefore necessary that they extend stronger support for urban agriculture. It is recommended that the CoJ increase their support in the following ways:

1. On a policy level, there needs to be a strategy for urban agriculture. The strategy needs to take into account all aspects of urban agriculture and acknowledge that although policy already addresses many of the issues, urban agriculture warrants a deeper understanding of its attributes. Simply because the Joburg 2040 GDS paradigms address sustainability and resilience does not mean that it addresses the issue of urban agriculture. Urban agriculture requires support, which means security of tenure, processing and marketing, and assistance with training on farming. Therefore, the CoJ needs to take consideration of all these facets.
2. Urban agriculture needs to be incorporated into the planning processes. This means making sure that those who are the beneficiaries of a project or programme are included in the decision making. A policy or programme is doomed to fail if stakeholders are not consulted because they are the most knowledgeable about their own needs.
3. If benefits are going to be felt throughout the wider urban poor community, the CoJ needs to make it easier for people to start their own food gardens. This may include releasing some of the regulations on farming in urban areas or even making land available for food production. However, the CoJ may be

forced to replace old regulations with a set of new regulations that are focused on health and sanitation guidelines farmers need to adhere to.

4. Assistance with technology and innovation is another way in which the city can help those involved in urban agriculture. It was noted by Van Staden (2014) that technology is an important way in which can be practiced sustainably. Therefore, by helping farmers become more sustainable through information and resources on innovative technologies, the city is able to ensure that urban agricultural developments are ecologically conscious.

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Appendixes

University of the Witwatersrand School of Architecture and Planning

Participant Information Sheet

Study title: URBAN FOOD GARDENS AND SUSTAINABLE LIVELIHOODS

Locality: Siyakhana Initiative – Bezuidenhout Park

Lead investigator: Bianca van Niekerk

Contact number: 0724645264

You are invited to take part in a study on evaluating urban food gardens and their ability to reduce poverty and make a living for poor people. Whether or not you take part is your choice. If you don't want to take part, you don't have to give a reason, and it won't affect the care you receive. If you do want to take part now, but change your mind later, you can pull out of the study at any time.

The following Participant Information Sheet will help you make the decision as to whether you would like to take part in the study. It describes why the study is being done, what your participation will involve and what is expected of you, what advantages or risks the study might impose upon you and what will happen after the study ends. The lead investigator will go through the form with you and answer any

questions about any concerns you may have. You do not have to decide immediately. It is okay if you want to talk about the study with your friends and family first so that you can be sure of your decision.

If you decide to take part in this study, you will have to sign a consent form and will be given a copy of both the Participant Information Sheet and the consent form. Please note that the consent form does not force you to keep participating in the study, you can pull out of the study at any time.

Please make sure you have read and understood each section

What is the purpose of the study?

The purpose of the study is to research urban food gardens and how they have impacted on the lives of poor people. The study wants to use the Siyakhana food garden as an example and investigate the impacts (challenges and experiences) it has had on the living conditions of those who have joined the food garden. It wants to research the relationship between the services provided by Siyakhana and what is happening in reality.

The study will contribute to further knowledge on urban food gardens in the city of Johannesburg and how they can benefit communities. The study is facilitated by the School of Architecture and Planning at the University of the Witwatersrand with the lead researcher as Bianca van Niekerk

What will my participation in the study involve?

Your participation in the study will involve:

1. An interview process
2. An investigation into your daily work schedule i.e. joint meetings with staff etc

Please note that your participation will be important to the study. As a member of the Siyakhana food garden you play an important role in the

research and gaining information on how the practice of food gardens play out in reality.

For the study, the research investigator would be required to do a number of visits to the food garden for research purposes and follow up interviews, if necessary. Please note that the finish date for the study is expected to take place on the **28 October 2015**, which makes the study approximately four months long.

There will be an official interview, which will be the first interview. And following any further gaps in the research, the researcher will require a follow up interview. The interview process will go as follows:

1. The researcher will ask you a set of questions which you would answer
2. The researcher will take notes of your responses by means of taking notes and by means of a recorder
3. Please note that the interview process will stop immediately if you are uncomfortable with the questions
4. If you wish to remain anonymous in the interview, the researcher is required to respect your wishes.

What are the possible benefits and risks of the study?

Whilst you may be asked personal question on your livelihoods such as questions on household income, all information provided by you will be kept confidential at all times. No personal details, relating to you or where you work will be recorded anywhere. Only members of the research team will have access to the information you provide.

Although there may be no personal benefits to your participation in the study, the information you provide may contribute to future knowledge of food gardening in Johannesburg.

Who pays for the study?

Please note that upon signing the consent form for participation in the study, you will not be liable for any costs.

What rights do I have?

The participant has the free will to:

1. Decline to participate in the study
2. Withdraw from the research at any time
3. Access all information collected from the participant in the study
4. Express concerns about the provisions made for privacy and confidentiality of participants

Who can I contact?

If you have any question or concerns about the study, you can contact:

Research investigator: Bianca van Niekerk

072 464 5264

Bianca.vanniekerk05@gmail.com

Who can I contact if I have any concerns?

If you have any concerns regarding any ethical situation, you can contact:

The Human Research Ethics Committee

University of the Witwatersrand School of Architecture and Planning

Consent Form for Participation in Interview Research

I have read and understood the contents in the Participation Information Sheet	Yes □	No □
I have been given adequate time to consider my decision to participate in the study	Yes □	No □
I have been given a copy of the Participant Information Sheet and the Consent Form	Yes □	No □
I understand that taking part in this study is entirely my choice and that I am free to withdraw from the research at any time	Yes □	No □
I consent to the research investigator collecting and processing my information	Yes □	No □
I consent to having the information I have provided be processed should I withdraw from the study	Yes □	No □
I understand that my participation in this research is entirely confidential and that no information that would identify me personally will be used in any reports in this study	Yes □	No □
I am aware of who to contact if I have any concerns about the study	Yes □	No □
I understand what is expected of me as a participant	Yes □	No □
I wish to receive feedback from the study about the collection of the information I provided	Yes □	No □

Declaration by Participant:

I hereby consent to take part in this study.

Participant's name: _____

Signature: _____

Date: _____

Declaration by Research investigator:

I have given verbal explanation of the research project to the participant and believe that the participant understands the study has given informed consent to participate.

Researchers name: _____

Signature: _____

Date: _____

Questionnaire One: Interview with Siyakhana Gardeners

1. How long have you been with Siyakhana?
2. How many times a week do you work in the gardens and how many hours do you spend a day?
3. During which times of the year do you benefit the most from the gardens?
4. Do you use the food gardens as a source of income or as a way to access food for your family?
5. How many family members do you support?
6. Are you the only member of the family who generates income for the household? If so, why? Does the household only consist of children and elderly?
7. How did you make a living for yourself or your family before joining the Siyakhana food gardens?
8. If you were unemployed before joining the Initiative, describe what it was like for you. What problems did you face?
9. If you had any, could you recall some of the problems you had with feeding your family?
10. Why was it difficult for you to find employment?
11. Could you describe your daily tasks from the time you wake up in the morning to the time you go home?
12. When you learnt about the Siyakhana food garden, how did it make you feel? Were you relieved to find a new way to make a living?
13. Describe how your life changed when you started working at Siyakhana.
14. Describe what your definition of a successful livelihood would be to you.
15. What is your honest opinion of the Siyakhana food garden?
16. What services does Siyakhana supply you with that help you with the gardens?
17. What other ways has Siyakhana assisted you with in making a living for yourself and your family?
18. What role do you play in Siyakhana other than the food gardens?
19. Could you describe the process of farming with fruits and vegetables?
20. What new problems have you been faced with since joining Siyakhana?

21. What are some improvements that you think need to be made in the food garden currently?

Questionnaire 2: Interview with Siyakhana Staff Members

1. How did the idea for the Initiative come about and why was it started?
2. At the beginning in the brainstorming stage, who was involved in making the idea become a reality?
3. What is your current role in the initiative?
4. What was the process of establishing the food garden?
5. How many members have joined the initiative since its inauguration?
6. What are some of the successes the initiative has had?
7. In your annual report for 2011, it said that the initiative gained financial support from Food and Trees for Africa. What involvement do they currently have in the initiative?
8. What benefits do you think that the food garden provides other than health promotion?
9. Do you think the city is doing enough to support initiatives like Siyakhana? If not, how do you think their assistance would help the food garden?
10. You website says that you offer training and work opportunities for the youth…could you explain to me how it is offered and what type of training is done?
11. How do you think urban planning can improve the process of establishing a food garden?
12. One of the Initiatives objectives is that you enable economic sustainability through training in sustainable livelihood development. Could you describe how this is done?
13. What are the future prospects for the Initiative? What do you see happening in the next few years?