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CREATING URBAN AGRICULTURE IN THE CORRIDORS OF FREEDOM - THE CASE OF THE TURFFONTEIN NODE

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This research report has been completed submitted to the Faculty of Engineering and the Built Environment, University of the Witwatersrand, in partial fulfilment of the degree of Bachelor of Science with Honours in Urban and Regional Planning.

CREATING URBAN AGRICULTURE IN THE CORRIDORS OF FREEDOM - THE CASE OF THE TURFFONTEIN NODE

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DECLARATION

I declare that this research report is my own work unless otherwise indicated. It is being submitted in partial fulfilment of the degree of Bachelor of Science with Honours in Urban and Regional Planning at the University of the Witwatersrand. It has not been submitted before for any degree or examination to any other university.

UNIVERSITY OF THE WITWATERSRAND
JOHANNESBURG



_____

Signed (Candidate)

_____day of _____

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CREATING URBAN AGRICULTURE IN THE CORRIDORS OF FREEDOM - THE CASE OF THE TURFFONTEIN NODE

ABSTRACT

The concept of urban agriculture as a phenomenon is fast gaining momentum throughout the world. Although there has been great recognition of the social benefits associated with urban agricultural initiatives, such as poverty reduction, increasing food security and creating employment opportunities, this research focuses on the spatial design and planning of urban food gardens and how urban agriculture is manifesting in the City of Johannesburg. This research sought to establish how urban agriculture manifests in the City of Johannesburg with a focus on the Corridors of Freedom plans, which are being put forward by the City of Johannesburg, of which special attention has been given to the Turffontein Node in this report. Despite the spatial and physical orientation of the paper, the effects of aspects such as safety, security, education and management of space has been touched on and assists in the understanding of the nature of various spaces available for urban food gardens. Viewing urban agriculture as an 'in-fill' activity means that it is not seen as something that the city is responsible for implementing but instead is something that anyone can begin if they are able to identify the correct spaces available.



(De Sa Santos, 2014)


















Chapter 1:

Background, Context and Key Definitions

"The most important freedom is freedom from want. Food comes first. As nations, communities or individuals, there can be no real independence unless we can feed ourselves and all our people. There can be no lasting peace or security for anyone while hunger and poverty (and in their wake disease, frustration and degradation) stalk our land."

"We have an enormous potential of untrained human beings in this country who all have to eat, need to work and have a right to a decent, satisfying life. We need to give ordinary folk back their self-respect as providers of food and shelter for their families"

(Featherstone, 2009: vi-vii).

1.1 INTRODUCTION

According to authors such as Lenhart (2013), Kamenetz (2012) and Mitchell (2013), amongst many others, the concept of urban agriculture has become what some have considered a fashionable activity globally in recent years, infiltrating the spaces of often trendy areas of the urban. Saying that "a band of 'rurbanites' is getting in touch with the green side of the city" (Mitchell, 2013:6), and with "City planners, architects, school teachers, restaurant owners, NGOs and urban dwellers eager to re-define the buzz around 'local food' – so local it may be grown on your roof, balcony, backyard or city park", shows that it is a phenomenon which any city dweller can be involved in. Others, like Ghelani (2014) and Campbell *et al* (2014), have suggested that many of the city's residents who consider themselves to be 'foodies', or simply trying to lead 'greener' lives, are advocating for urban food gardens, while some are even taking it a step further and are growing their own gardens in the city. Cities such as Amsterdam, London and Paris are amongst those boasting beautifully abundant city food gardens

(Lenhart, 2013). However, in developing countries, urban food gardens are not so much existent due to them being seen as trendy, or striving to be more sustainable and 'green', instead they exist because it assists individuals and communities who cannot afford to buy food, to grow it themselves. Philips (2013:4) adds that food "is essential to human life" and is an obvious necessity. She goes on to add that, "Food provides a new perspective for answering the question about how we make our cities more liveable places." Lenhart (2013) talks about how cities such as Toronto, New York, San Francisco, London and Amsterdam have adopted urban food policies aimed at ensuring sustainable urban food systems, suggesting that this may well be more than just a trend. It is, in many cases, becoming an indispensable part of life in the city.

1.2 PERSONAL INTEREST IN THE TOPIC

Personal interest around the topic stems from the fact that urban 'backyard' farming has always been part of family life for me. From my grandparents to my great-grandparents, and generations before them, sustaining the family through subsistence farming has always been a way of life. My mother's family originates from the villages of Santa Cruz and Estreito da Calheta in Madeira where plots were used for farming both produce and livestock.



Above: View overlooking the village of Santa Cruz, Madeira (De Sa Santos, 1993).



Above: The landing strip the airport can be seen in the distance. (De Sa Santos, 1993)



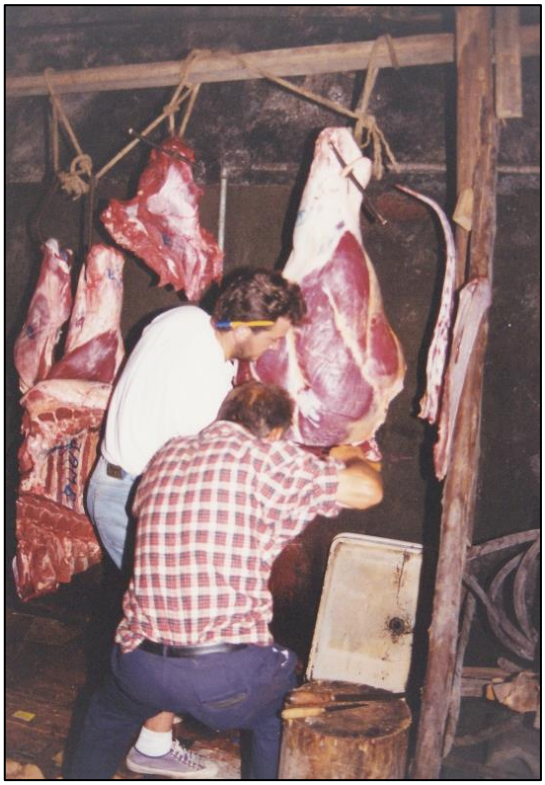
Above: Corn which has been harvested from the crops is put out to dry. Once dry it is ground into maize meal (De Sa Santos, 1993).



Above: My Grandfather and family from Estreito de Calhenta. What interests me most here is that even though the village is considered to be home to a low income group, the family was able to sustain themselves through subsistence farming. (De Sa Santos, 1993).



Above: Livestock farming that has been used as a business. Meat is smoked and sold to surrounding neighbours. Here a cut of meat was being selected from the smokehouse (De Sa Santos, 1993).



My fathers' family originates in Porto, Portugal, where they too have farmed their own produce and livestock. Growing up, I spent many days with my grandparents and as far back as I can remember, I have been encouraged to learn from them and grow my own fruits and vegetables.

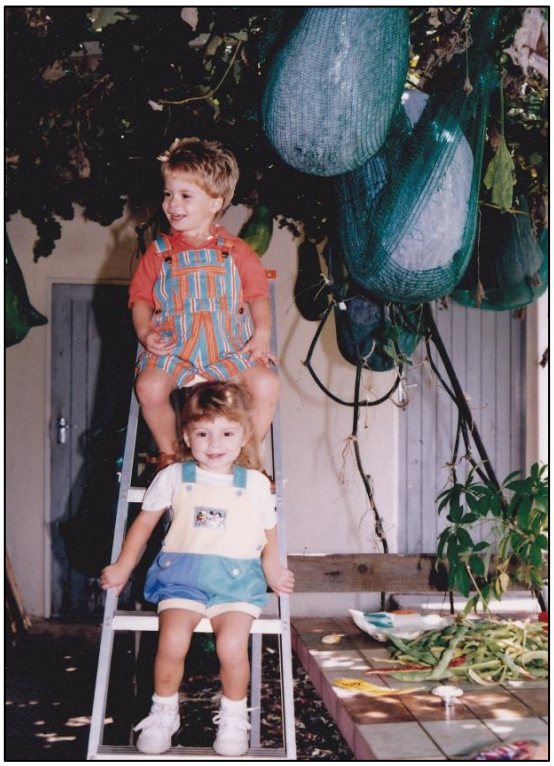


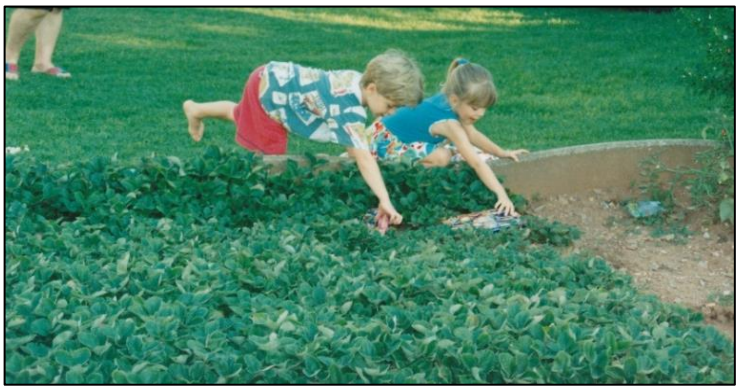
Left: My paternal grandparents' food garden. They still reside in Porto, Portugal. Although my Grandfather is now unable to work the land, my Grandmother still does and is passionate about it, to say the least. She also farms livestock such as chickens and rabbits. This is a component of life that they cannot go without (De Sa Santos, 1993).



Left: Captured back in Madeira, and is a fond childhood memory. Harvesting grapes to make wine and which could also be sold to earn an income (De Sa Santos, 1993).

Many homes that are, or used to be, occupied by Portuguese families in the study area can still be found with grape vines in the driveway.





Above: The kinds of subsistence farming which I was exposed to as a child. Whether it was a huge (considering this is a private garden) strawberry patch, or, image to the left, where pumpkins so big that they were the same size as my 3 year old self, growing amongst the grape vines above (Both images: De Sa Santos, 1994). I have many fond childhood memories growing up in such an environment, it's no wonder I have had such passionate interest in the topic.

Studying as an urban and regional planning student over the past few years, and discovering more about the complexities of the urban environment, has been a significant factor in strengthening the interest of the topic from an alternative standpoint. Combined with a keen interest in urban design and the usefulness of public spaces designed for communities within the urban, accompanied by classic urban design theorists such as Jacobs (1961) and Lynch (1960), have shaped my intellectual and academic interest in the topic.

1.3 UNDERSTANDING THE CONTEXT

Many people have flocked to the city in search of what they hope will be a better quality of life (Mokonyane, 2011); (Dgmt-community.co.za, 2014); (Thomas, 2014). As the urban densities increase, with inward migration playing a role, food security becomes an issue burning in the stomachs of much of the urban poor. As the populations continue to grow, challenges become tedious and unmanageable, and it is generally the poorer income groups who suffer the consequences (De Wet *et al*, 2008).

More than half of the world's population is living in cities, and most people will be by 2050. Urban populations in Asia and Africa are expected to double over the next 25 years. By 2030, it is predicted that approximately 80% of the world's towns and cities will be in the developing world (UNFPA 2007 as cited in De Wet *et al.*, 2008). The Gauteng city-region of South Africa is expected to grow to 14 million inhabitants by 2015, making it one of the top 15 biggest urban areas in the world (South African Cities Network 2006 as cited in De Wet *et al.,* 2008). The Turffontein node, (which will be discussed later in this chapter and is the case study used in this research report) in region F, falls under the City of Johannesburg which is a component of the Gauteng city-region (Joburg.org.za, 2014).

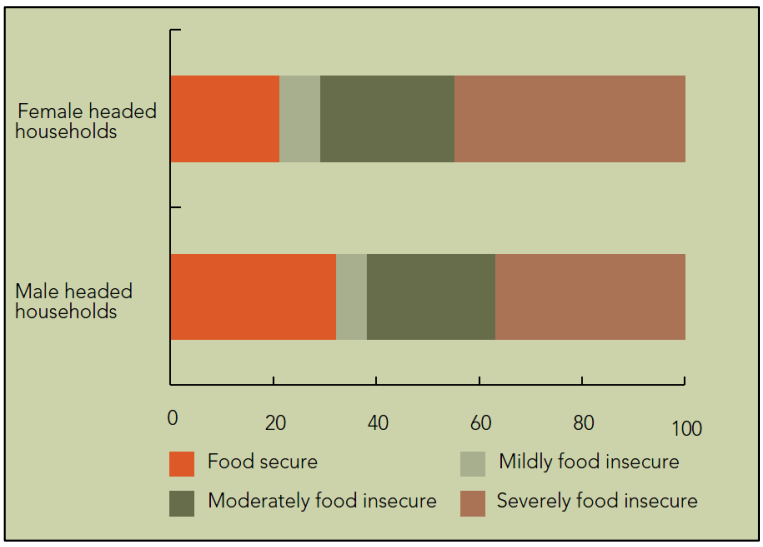


Figure to the left indicates Food security in male and female-headed households in Johannesburg (% of households). Adapted from: (De Wet *et al*, 2008: 21).

1.4 THE CORRIDORS OF FREEDOM

Apartheid left behind a legacy of a spatially segregated city. Johannesburg is divided into rich areas and poor areas, townships and sprawling suburbs. Lower income groups have often had to travel long distances between their places of work, leisure, education, and where they live. As a response, the City of Johannesburg is attempting to "re-stitch our City to create a different future for our residents where jobs can be linked to people and people to jobs." (City of Johannesburg, 2013a: 1). The city attempts to achieve this through transit-oriented development along transport corridors where there are existing Rea Vaya BRT systems. These transit corridors have been entitled the *Corridors of Freedom* and the aim is to strive for a future where, "The City will consist of well-planned transport arteries:- the "Corridors of Freedom" – linked to mixed-use development nodes with high density accommodation, supported by office buildings, retail developments and opportunities for education, leisure and recreation." (City of Johannesburg, 2013b: 1). "There are seven focus areas:

In the medium term – 2016; In the long term – 2040

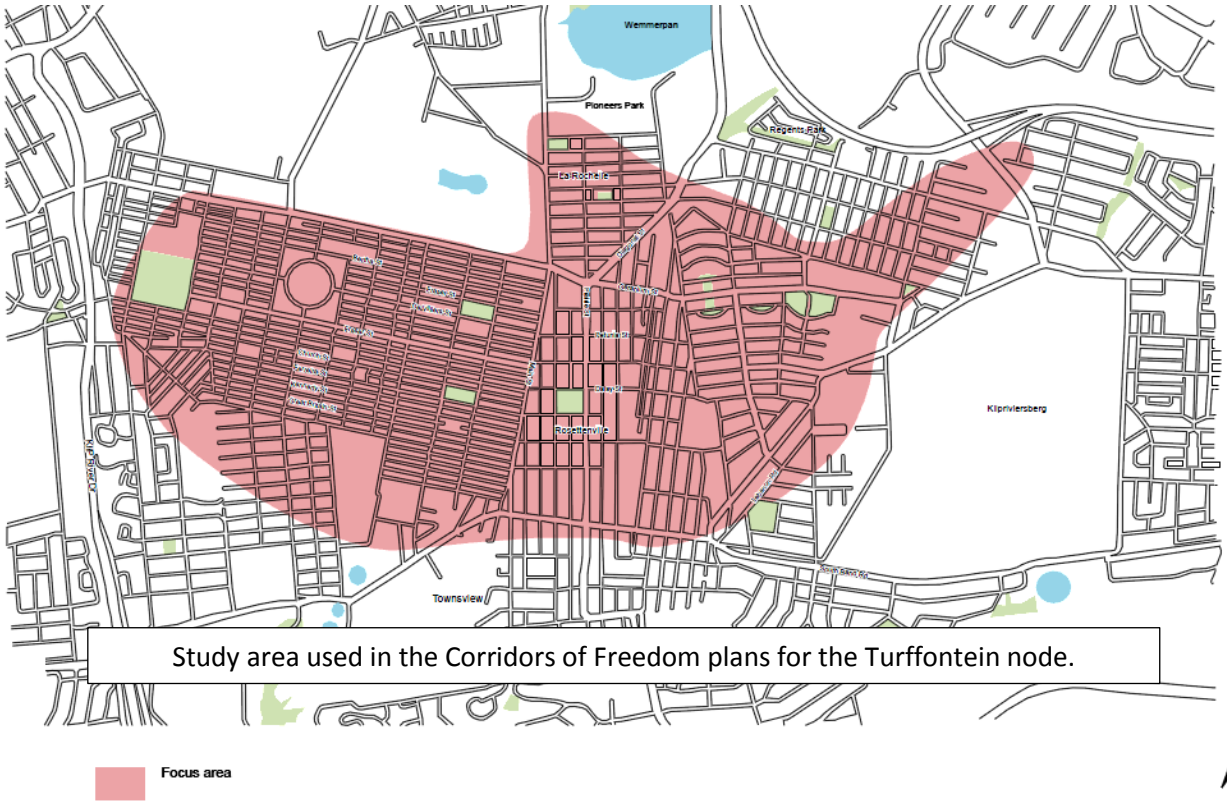
- Soweto to CBD along Perth Empire

- CBD to Alex
- Alex to Sandton
- Turffontein Node
- Mining Belt
- Sandton/ Randburg to Diepsloot
- Alex to Ivory Park

These public transport corridors dubbed *"Corridors of Freedom"*, will lead to residents having freedom of choice, freedom of movement, and most importantly, connections to employment opportunities, economic freedom." (City of Johannesburg, 2013a:6).

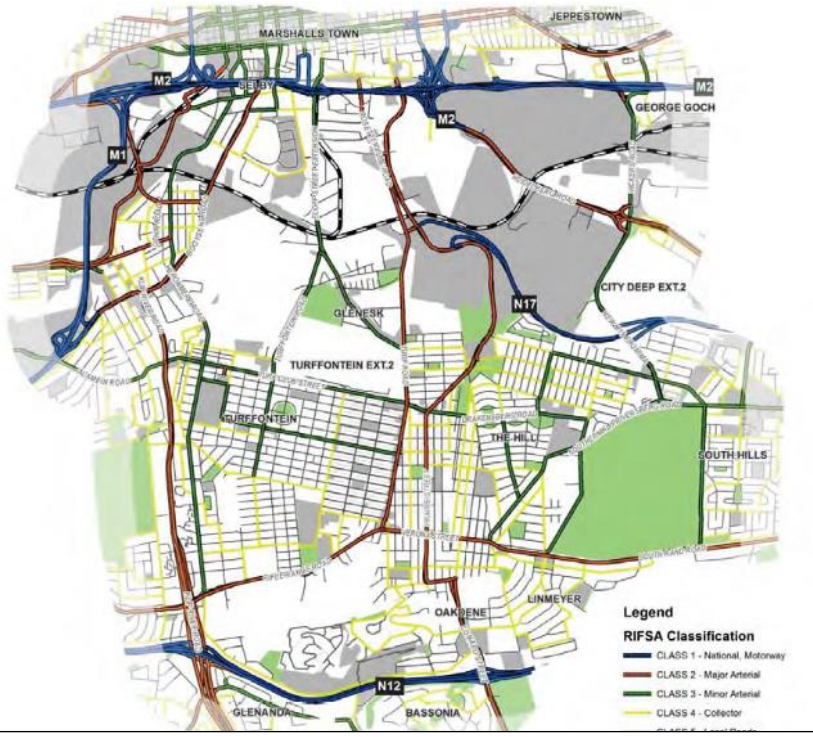
Within the Corridors of Freedom there are various corridors and nodes that have been planned for. One of which is the Turffontein node, and it is in this region, where the same focus area being used in this research report is situated (also the Turffontein Node). The Turffontein node is in close proximity to the inner city and "functions as a point of entry into Johannesburg from Southern Gauteng"(City of Johannesburg, 2013b:15). The result is that the area is treated as a thoroughfare and loses a substantial amount of economic benefits. This close proximity of the area to the city means that the possibility of urban farming occurring in the area would be able to deliver fresher produce to the residents sooner, and at a more affordable rate due to saving costs on transporting produce.

Below is a map of the Focus area used for this study preceded by a map of the Turffontein Node being used in the Corridors of Freedom Plans.



Study area used in the Corridors of Freedom plans for the Turffontein node.

(Source, Google Maps; Adapted by De Sa Santos, 2014).



The Turffontein Node as shown in the Draft plans of the Corridors of Freedom.

(City of Johannesburg, 2013b:25).

The area that has been selected for this research report is based on the area being targeted in the Turffontein node, looking specifically at the residential component of the focus area. The majority of the study area is of residential usage and provides a base of community members which may find urban agriculture to be beneficial in meeting the needs of the community. There are a variety of spatial typologies available in residential areas and this will be explored later in the research report.

1.5 RATIONALE

Urban agriculture has been recognised as having the potential to change the face of the city, as well as the lives of the residents which inhabit it in terms of food security, employment opportunities and poverty reduction (Mougeot, 2005), thus the reason for carrying out research in this field. The *Corridors of Freedom* had first identified urban agriculture, or what Andrew Barker (2013) termed an 'agritropolis', as being a possible component of the project. The following quote has been cited from the article at hand: "There will also be corridors of organic farming opportunities, giving Joburgers food security and jobs – which is also in the mayor's plans. Barker, a development consultant, refers to this as an 'agritropolis'. His vision is to create gardens for the unemployed, where they can grow vegetables to sell. This would be aimed at residents in Soweto, Lenasia, Ennerdale, and Orange Farm." (Johannesburg Development Agency, 2013). Since the publication of this article, more recent documents on the Corridors of Freedom have been developed, all of which have seemingly dropped the entire notion of urban agriculture possibly being integrated into the project, suggesting that the term 'agritropolis' may have been used inaccurately or out of context. This is not to say that there is no longer a possibility of urban agriculture being found in the Corridors of Freedom - viewing urban agriculture as an 'in-fill' activity that can be brought in at a later stage, perhaps through an organisation or even the city, is always a possibility. The aim of this study is spoken about in greater detail later in this chapter, and entails identifying appropriate spaces to create urban agricultural spaces.

1.6 PROBLEM STATEMENT

South Africa's urban population, like many other countries around the world, is continuing to grow. This in turn leads to challenges that the city faces growing more complex each day. Amongst these are challenges such as unemployment and poverty (City of Johannesburg, 2010: 5). These are obstacles which are all too familiar, often identified in policy documents published by the city through Integrated Development Plans (IDP), Spatial Development Frameworks (SDF), Growth and Development Strategy (GDS), and the city often lacks the resources (in terms of budget) required to cope. For the residents having to live with these realities, it is all too easy to get 'stuck in a rut' and battle to improve their quality of life.

Many people who find themselves unable to find employment in the city, have come from a background where they have had some experience, or skill, in living off the land. Often in rural areas, communities will have small subsistence farms, or gardens, that are taken care of and are able to sustain the community when money is not plentiful. If the unemployed are unable to buy food due to lack of income and are going to bed on empty stomachs, simply because they do not have the opportunity in the city to sustain themselves from the land (due to the lack of space available for agricultural activity), as they would do so in the rural areas, this is seen as a lost opportunity in this study.

This is where the importance of understanding the spatial requirements needed for the creation of urban agricultural gardens comes in. The Corridors of Freedom Plans are an example used in this study to demonstrate the viability for urban food garden initiatives to be integrated into spatial plans set out for an area. Whether or not urban agriculture is already a component taken into consideration by the authorities who draw up plans, or if it can be seen as an 'in-fill' activity whereby spaces that are appropriate for urban farming are identified, used, and made to be productive, are yet to be explored. This brings me to the aim of the research being carried out.

1.7 AIM OF THE RESEARCH

The social benefits of urban agriculture have been explored on many occasions. It seems clear that the challenges of food security in the urban can be addressed with urban agriculture, and that stronger communities are formed when they begin to gather and learn together around their edible gardens- enforcing a sense of collective ownership. The employment and other economic opportunities that are associated with such projects are also noted, and I recognise that the social aspect of urban agriculture is a component that cannot be divorced from the spatial element of how to go about implementing the urban food garden projects/initiatives. Although these social benefits mentioned are all very important, the aim of this study was to discover how urban agriculture manifests in the City of Johannesburg and how to ensure the success of urban agriculture projects. In doing this, the concepts that have been dealt with in this study will be deliberated and better understood.

1.8 KEY DEFINITIONS/ CONCEPTS

The key concepts that would be essential in this research project would be to find a definition for what is understood, or meant by urban agriculture. This has looked at understanding the urban agricultural aspect of the research question. The corridor, or ‘Corridors of Freedom’, aspect aims to understand the concept of transit corridors and the importance/relationship they could potentially have with regard to urban agriculture projects. Lastly, the concept of defining and understanding what is referred to as ‘open space’ is essential as the urban agriculture would take place in open spaces, whether on the ground or on roof tops of buildings and so on.

1.8.1 URBAN AGRICULTURE

Urban agriculture has been defined by Luc Mougeot asUrban agriculture is “*an industry located within (intra-urban) or on the fringe (peri-urban) of a town, a city or a metropolis, which grows and raises, processes and distributes a diversity of food and*

non-food products, (re-)using largely human and material resources, products and services found in and around that urban area, and in turn supplying human and material resources, products and services largely to that urban area". (Mougeot, 2000: 10 as cited in Mougeot, 2005: 2).

It is important to note that while the social implications such as poverty reduction, assisting in food security and creating economic opportunities are very real and important, that it is equally, if not more important, to account for the variety of spaces where urban agriculture could take place. "These include (i) houses, on terraces and balconies; (ii) private plots, even if without property title, around the home; (iii) along highways, railways and pathways; (iv) public parks and open spaces; (v) non urbanised patches of land within and on the fringes of the city; (vi) areas where construction should not be taking place, such as along water beds and other risk-prone lands; and (vii) institutional properties (for instance schools, hospitals or large enterprises)." (Cabannes, 2012:5). In essence, it is to determine where, or how, to go about implementing urban agriculture projects.

1.8.2 CORRIDORS

According to the policy, development and implementation office of the Development Planning Department of Gauteng, a corridor is defined as a track of land forming a passageway "which allows access from one point to another. Jordaan (2003), states that corridors as a planning concept are mainly associated with linear developments, in which all main activities are located along the linear development.

Jordaan also looks at what a corridor is from an economic perspective and the main characteristics of what makes up a corridor have been identified from this view point, they are as follows:

- Connectivity between major nodes
- Density and continuity
- Occupation of significant land uses

- Existence of multi-nodal transportation
- Propensity of development
- Absence of inhibitors to development
- High levels of accessibility and mobility

  (Jordaan, 2003: 2)

1.8.3 OPEN SPACE

To begin, an understanding of open space needed to be established. In general terms, open space can be understood as, “all open space of public value, including not just land, but also inland bodies of water such as rivers, canals, lakes and reservoirs which offer important opportunities for sport and outdoor recreation and can also act as a visual amenity.” (Planningni.gov.uk, 2014).

The Johannesburg Municipal Open Space System document (City of Johannesburg, 2002) draws its definition of open space from various sources. These suggest that “Open space is land, which is not intensively developed for residential, commercial, industrial or institutional use. Open space can be publicly or privately owned” (State of New York, 2001). There are both public and private open spaces” which are mainly undeveloped (City of Corvallis, Oregon, 2002). Finally their own conclusion as to what open space is, is the following: *“Any undeveloped vegetated land within and beyond the urban edge, belonging to any of the following six open space categories: ecological, social, institutional, heritage, agricultural and prospective (degraded land).”*(JMOSS, 2002: 6). The document then goes on to speak about the purpose of open space and lists 7 uses. One of which is to “provide concrete opportunity for urban agriculture” (2002, pp.8)

1.9 RESEARCH METHODS

The strategic methods that have been used were selected based on suitability to the topic at hand. A case study has been used and has been identified as a common strategy in collecting empirical data. Experts with special knowledge on aspects such

as urban agriculture and transit corridors were contacted and asked to take part in (qualitative) semi-structured interviews. Questions asked during these interviews were designed in order to retrieve as much useful information from the respondents as possible. Use of a photographic inventory was also used, and research on the use of visual aids as part of a research strategy was deliberated due to the many criticisms associated with this method and has been discussed in greater detail in chapter 3. These research methods were selected as they best suited the research question and sub-questions stated below.

1.10 RESEARCH QUESTION AND SUB-QUESTIONS

Research Question: How is urban agriculture manifesting in the City of Johannesburg, with a focus on the Turffontein Node (Corridors of Freedom)?

Sub-questions:

- What is urban agriculture (agritropolis)?
- What is the food resilience policy being used in Johannesburg?
- What is open space, and what kinds of open space are appropriate for urban farming?
- What kinds of spaces is urban agriculture currently occurring in?
- What is the Corridors of Freedom policy and what would you define as being ‘within’ the corridor?

1.11 CHAPTER OUTLINE

In Chapter 1, an introduction on urban agriculture as the main topic of focus has been outlined with a background/context and a problem statement that reinforced the reason for carrying out the study. Key definitions of open space, transit corridors and urban agriculture were briefly discussed leading to what kinds of research strategies would be best suited, and made use of, in the study. These strategies are followed by the research question and sub-questions and a chapter outline of the complete research report.

Chapter 2 is important as it sets the foundation in terms of understanding the key concepts that are deliberated in this research report. Literature on the key concepts of open space, transit corridors and urban agriculture have been discussed and better understood.

Chapter 3 entails the various research strategies that have been employed in this study. Strategies employed include the use of a case study, based in the Corridors of Freedom Turffontein Node, qualitative data has been gathered through the use of semi-structured interview questions, and respondents were selected based on the knowledge they have on the topics of focus. A photographic inventory was the final strategy made use of and was used to document the variety of typologies of spaces found in the area that could possibly be areas for urban agriculture to occur in.

The results and analysis of the data collected in chapter 3 has been analysed in chapter 4. Experiences of the past, and existing urban agriculture gardens, have been discussed in which aspects such as challenges and the repurposing of neglected spaces have been discussed. The viability of urban agriculture being incorporated has also been deliberated.

Chapter 5 focuses on the implications of the study, potential and recommendations made for the community, in terms of access and what can be learnt after findings have been analysed (of this study), and also from the literature covered in chapter 2. The spatial requirements are also discussed in this chapter.

Chapter 6, the final chapter, covers an overall assessment of the study in which limitations experienced during the course of the research has been discussed and thoughts on what future research on the topic may involve.

1.12 CONCLUSION

Understanding that one cannot divorce the social aspect of urban agriculture from the spatial aspect, and acknowledging that the social benefits that are associated with urban agriculture are equally important and prominent in much of the literature that has been covered in this study, the aim of this research report will be to discover how urban agriculture manifests in the City of Johannesburg with a focus on the Turffontein Node of the Corridors of Freedom.

This first chapter has laid out the topic background and context of the research report. Problems and issues surrounding the topic of urban agriculture has been highlighted and key definitions of open space, corridors and urban agriculture has also been discussed. The research question, sub-questions, as well as a chapter outline of the report, form part of this chapter.

A clear understanding and discussion around the key concepts of the study and various adjoining concepts are dealt with in chapter 2. These key concepts, as well as the understanding of how they play an important role in attempting to answer the research question at hand, will be seen throughout the report and should be reflected in the findings of the research conducted, as well as inform any recommendations that are to be made later in the report regarding the spatial requirements for creating urban agriculture - especially looking at the Corridors of Freedom, the case of the Turffontein node.


















2.1 INTRODUCTION

In the previous chapter, a general outline of what this research report aimed to uncover about urban agriculture and the reasoning behind why such a study was necessary, was discussed. To better appreciate the necessity of the study, this chapter deliberates and debates the central ideas of open space, transit corridors and lastly urban agriculture. The importance of understanding what is meant by open space, what transit corridors are, and what is identified as urban agriculture has informed the subsequent chapters such as, through advising what research methods should be employed (and be most beneficial), what results might be anticipated and any possible recommendations there might be based on all the information being digested in this chapter.

2.2 THE IMPACT OF CRIME ON PUBLIC SPACE

Crime, or the fear of crime, is one of the contributing causes to people withdrawing from using public space and in doing so, leads to the decline of public space (Carmona *et al,* 2008). Boddy (1992 as cited in Carmona *et al,* 2008), argues that people feel safer when they are indoors, and vulnerable while outdoors. This results in spatial segregation gaps to increase, according to class, age, ethnicity and occupations, as certain people will be able to use certain spaces that others who fall into a different 'category' will be unable to use. Newman (1975) argues that security measures are often employed after-the-fact (1975:1) in the way of fences, alarms and so on. He argues that it is a factor that should be considered in the initial design process and "requires an understanding of many factors: the security needs and concerns of different types of residential groups; the use each group makes of its respective home environments; the capacity each group has to contribute to its own security; the building types available to answer the needs of different groups at different densities; the design options possible in site planning; and finally, how all these interact to maximise residents' control of their environments" (Newman, 1975:1). Crime reduction strategies may include defensive design (Newman, 1975), surveillance, street animation, active control as well as social and educational

approaches taken to reduce crime (Carmona *et al,* 2008: 52). The design of spaces, in the public or private sphere, that will be used for urban agriculture is an important component. This is due to the need for urban agriculture spaces to be perceived in a positive light and in doing so, aids in their success through community and residents involvement. If the spaces are perceived as dangerous to be used, they will be avoided, resulting in neglected and unproductive space. Watchful eyes may serve as an effective form of surveillance and the design of spaces insuch a way that a community, or surrounding residents, may look over a space and so act as a security system is a soft control. This form of security through surveillance, street animation and social and educational approaches are closely linked to the concept of ownership of space and will be discussed below.

Loukaitou-Sideris and Banerjee (1998: 183-5, as cited in Carmona, 2008: 56), have identified two ways in which public space can be controlled, and are described as hard and soft controls. Hard controls involve aspects such as the use of security CCTV, private security systems and rules and regulations which restrict activities which may take place in an area. Soft controls, on the other hand, are passive and are designed to deter the kinds of behaviour that are undesirable.

It is important to note that urban agriculture may occur within the private sphere and is in no way restricted to the public sphere. The concept of crime and its impact on private space differs from public space as access is restricted whereby security systems, fences and boundaries are some of the tools used to ensure the security of private spaces. Various typologies of space are therefore affected by crime in different manners. These typologies will be looked at and discussed further later in the report.

2.3 OWNERSHIP OF SPACES SUITABLE FOR URBAN AGRICULTURE

Ownership has been defined by the Oxford Dictionary (1984) as being “one who owns and occupies”, and legal is defined as “based on law, concerned with,

appointed or required or permitted by law." This means that legal ownership is defined as "The basic distinction between legal and equitable ownership is quite simple. The legal owner of the property (trustee) has the right to possession, the privilege of use, and the power to convey those rights and privileges. The trustee thus appears by all counts to be the owner of the property, or so it appears to all but one person, the beneficial owner" **(**Encyclopaedia Britannica, 2014). The legal ownership of land or property will affect who condones a food garden to be established in a space and who does not possess the authority to do so.

Another aspect regarding 'ownership' is not looking at the notion through a legal perspective. Newman (1975) refers to ownership as the sense of responsibility and ownership a community may share over an area. Referring to the sense of belonging and pride that the community may have over a food garden that exists within their locality may make the area safer and that intruders, or unwanted visitors, can feel a sense of a watchful community (Newman, 1975). This is important as it encourages the food garden to become a success and also involves the community taking responsibility for the welfare of the garden either by working in the garden, or even supporting it by purchasing produce and goods grown there. If the community feels disjointed from a food garden initiative, it will prove to be an uphill battle in ensuring success. Community members in this way may feel as though they are not benefiting from the garden, and instead of buying the food they need from the garden, they may go to bigger and better-known commercial stores.

Carmona *et al* (2008:123) states that in many cases, most open public space is, "*owned and managed by the state and, in the main, this ownership is exercised through local government in various guises. The exceptions to local government ownership and management include open space controlled by national or regional government because of its present or past strategic nature. Open space along major roads, riverbanks, canals, and other waterways often fall into this category*."

There are some cities which also have spaces which are managed by the communities which use the space themselves with the assistance of voluntary and non-profit organisations.

Aspects such as the management and ownership of space are key principles of space that, although are not the focus of the research, are important aspects to be considered due to the impact they may have on the physical, if not dealt with effectively. They are important concepts in understanding what the spatial requirements would be for creating successful, productive and beneficial urban agriculture (and so influencing the recommendations that will be made) in the Corridors of Freedom - the Turffontein Node and how urban agriculture manifests in these spaces.

2.3.1 IMPORTANCE OF QUALITY OPEN SPACE

Urbanisation describes the migration of rural dwellers to urban centres and is associated with shifts from an agriculture-based economy to mass industry, technology and service. Currently, the majority of the world's population live in urban areas. "By 1990, less than 40% of the global population lived in a city, however, since 2010, more than half of all people live in an urban area. By 2030, 6 out of every 10 people will live in a city, and by 2050, this proportion will increase to 7 out of 10 people" (World Health Organisation, 2014). And with urbanisation occurring in many cities around the world, issues of a declining environment are at the head of global planning. There has been an intense demand for outdoor recreation and a growing realisation of the need for conservation, arguably brought on by the rapid urbanisation stated above. In Lynch's *Site Planning* (1984: 325), it is noted that "Parks are heavily used, some so heavily loaded that their plant cover is breaking down, and the natural character that made them attractive is disappearing", demonstrating the vital importance of preserving open space that is beneficial and appropriate for urban dwellers.

According to the Johannesburg Open Municipal Space System (JMOSS), "pollution of resources, global climate change, species extinction and inappropriate development in natural areas are *inter alia* the challenges facing sustainable development. When seen in the context of the impact of humans on world ecosystems, it is clear that the links between cities, nature and sustainability have

profound impacts on the global environment. Hence it is vital that networks of open space, which form an integral part of resource conservation, use and management, be identified." (City of Johannesburg, 2002: 5). When attempting to define the concept of open space, it is found that definitions from international sources as well as national sources differ.

Below are international definitions to open space (City of Johannesburg, 2002: 5-6).

> *State of New York, 2001*
> *"Open space is land, which is not intensively developed for residential, commercial, industrial or institutional use. Open space can be publicly or privately owned. It includes agricultural and forest land, undeveloped shorelines, undeveloped scenic lands, public parks and preserves as well as water bodies. Internationally, land that is defined as open space is dependant, in part, on its surroundings. For example, a vacant lot or a small marsh can be an open space in a big city, or a narrow corridor or pathway for walking or bicycling is open space even though developed areas surround it."*

The example of what may constitute as an open space in a 'big city', from the above definition has been identified as a narrow corridor or a vacant lot. This study has looked specifically at open spaces that fall within the urban domain, and may include both private and public spaces that are suitable for implementing urban food gardens.

> *Marin County, California (Open Space Preservation Program Policy, 1985)*
> *"An area of natural landscape essentially undeveloped, such as ridges, streams, natural shorelines, scenic buffer areas, and agricultural lands."*

The above definition of what is defined, or understood, as open space is looking at the concept from a different angle altogether. This definition defines open space as space that has been relatively untouched by urban developments, commonly found in peri-urban and rural settings. Although agricultural land has been included here, the typology of 'agriculture' is not on necessarily of a commercial scale where masses of space may be required.

City of Corvallis, Oregon (2002)

"Open space is any undeveloped or predominantly undeveloped land, including waterways, in and around an urban area. There are both public and private open spaces. For example, meadows, hilltops, orchards, farms, and marshes are all open spaces. Parks, too, may be open spaces in some cases, where they include one or more of these features."

The definition provided by the City of Corvallis in Oregon recognises spaces in the urban domain. The open spaces that are available to the public and also to private owners, to grow their own food gardens may also include open spaces that are found within developed spaces. This may include for example, roof-tops and building balconies, or perhaps even the sides of buildings

National sources according to the JMOSS document states that open space can be defined as the following (JMOSS, 2002: 6):

Cape MOSS (Chittenden Nicks de Villiers, 2000)

"Open space is principally the un-built component inside the urban edgethat serves a variety of purposes and functions."

Although considerably vague, the definition above can be applied to the understanding of what urban open space is understood as for the purposes of this study. The spaces are found within the urban edge and serve multiple functions and services. One of these functions may be an urban food garden.

Durban MOSS (Durban Metropolitan Council, 1999)

Two types of open space were identified for the DMOSS:

Urban open spaces

"…are the human made or legally designated places and areas within the DMA that are developed for community use. They include parks, sports fields, agricultural fields, streets, town squares, road reserves, servitudes for services such as electricity transmission line, dams, private gardens, etc."

Natural open spaces

"…are the remaining undisturbed natural and undeveloped areas within the DMA. They are the areas that contain the core terrestrial, freshwater, estuarine and marine ecosystems. These ecosystems include land cover types such as grasslands, forests, beaches, estuaries, rivers, wetlands, etc."

The Durban MOSS definition of urban open space is the best-suited definition regarding this research report. Spaces that are created through human intervention and are available for use to the community (as a food garden would be). These may include small portions of parks, agricultural fields and private gardens in which produce can be successfully grown and harvested.

Finally a definition of open space that is used in the JMOSS document is: "*Any undeveloped vegetated land within and beyond the urban edge, belonging to any of the following six open space categories: ecological, social, institutional, heritage, agricultural and prospective (degraded land)"* (JMOSS, 2002:6) the focus on the JMOSS is on environmental or 'green' space and therefore does not include spaces such as sidewalks or streets as these spaces are seen as hard-surface open spaces. A municipal open space system is defined by the Metropolitan Spatial Development Framework (2000), as follows:

"A Metropolitan Open Space System (MOSS) is an inter-connected and managed network of open space, which supports interactions between social, economic and

ecological activities, sustaining and enhancing both ecological processes and human settlements. MOSS comprises public and private spaces, human-made or delineated spaces, undeveloped spaces, disturbed 'natural' spaces, and undisturbed or pristine natural spaces." (JMOSS, 2002: 7).

According to the Department of Environmental Affairs and Tourism (1995, as cited in JMOSS, 2002: 8-9), there are seven purposes of open space, these are:

1. **Provide recreation opportunities** (The Trust for Public Land, 2002).
2. **Conserve natural resources** (Department of Environmental Affairs and Tourism, 1995).
3. **Be ecologically productive** –i.e. exploit the potential of the site to improve the microclimate, air and water quality, (Department of Environmental Affairs and Tourism, 1995), Food gardens have the ability, as any other plant matter, to improve the quality of the air in the city and assist with managing the microclimate challenges that a city may face.
4. **Provide opportunity for environmental education**. Open space offers opportunities for education of people of all ages about environment. The City of Joburg'sopen spaces provide a common ground, and can potentially bind citizens together, give a sense of belonging, are able to create spaces of learning and are the foundation for the future (The Trust for Public Land, 2002). Food gardens have been argued to bring communities together and form strong bonds through sharing of knowledge which in turn will look to create a future where the people are able to feed themselves (Featherstone, 2009).
5. **Provide concrete opportunity for urban agriculture**– food gardens, woodlots, medicinal plant materials, handcraft projects, agriculture, rabbit farming etc. (Department of Environmental Affairs and Tourism, 1995).
6. **Be a viable economic entity** –careful planning and management of the open space system can improve the image of a town as a tourist destination (Department of Environmental Affairs and Tourism, 1995), on a smaller scale, popular parks and greenways also foster entrepreneurial economic development.

Typical examples include food services (like the company The Urban Basket is doing in the Maboneng precinct of Jeppestown in JHB. This kind of local economic activity also helps keep residents' expenditures in their own communities (The Trust for Public Land, 2002).

7. **Enhance the city's appearance**. The sight of a productive, well-cared for food garden is a sight of success and strength. Should urban food gardens become a common prospect in the city, the same image of health and in general striving to become better is generated to investors and visitors.

Urban agriculture can be argued to relate to all of these points or purposes of open space. Urban food gardens provide a space where residents can spend leisure time and communities can learn and discover new skills. Not only do these gardens help manage the microclimates created by urban areas, but they can create economic opportunities and really demonstrate the city's appearance in a positive manner through beautiful and productive food gardens. The prospect of urban food gardens may possibly be integrated into spatial visions for the city such as the Corridors of Freedom. Understanding the notion of corridors and transit oriented developments will enable us to understand how the open spaces produced through spatial plans, such as the Corridors of Freedom, can be used for urban agriculture and how the transit corridors may be beneficial to urban gardens and vice versa.

2.4 TRANSIT CORRIDORS

Along with urban agriculture, one should consider the notion of transit corridors which are often being used as tools to increase accessibility and mobility in South African cities, and the connection or relationship that corridors could potentially have with urban agriculture. In order to establish and better understand this connection, it is important to first understand what a corridor is, and how transit corridors are being used in South African cities.

South African cities have inherited spatially segregated city lay-outs that were formed during the apartheid regime, and as a result, many travel vast distances to places of work from where they live.

According to Bickford (2014: 1), "*This is a result of the segregatory and exclusionary spatial planning, as well as the particular nature of transport investment which has accompanied South African cites' growth and development over the past half century. It is explicitly understood that levels of access and mobility across cities are directly impacted by spatial land use patterns and urban morphology. As such, any attempts to intervene in improving the levels of access and mobility for people living in cities has to be concerned with both transport and urban spatial planning.*"

Urban agglomeration (Bickford, 2014) in terms of transit corridors is another concept that would be necessary in demonstrating the importance of them in relation to urban agriculture, making them more accessible in spatial terms. Barker speaks about the *Gauteng 25 year Integrated Transport Master Plan* (2013). He suggests that transport around urban agriculture areas, including alternative modes of transport and so make it accessible to many people, in the city would allow for a lot more accessibility to the area and that it could possibly even incorporate "ecotourism and agri-tourism goods and services" (2013, pp.2) leading to an agriculture based economic hub. The alternative modes of transport along a transit corridor would enable a development zone which is economically and socially functional. The development zone would look to include "ecological infrastructure for agricultural, recreational" and "biodiversity" (Barker, 2013, pp.2).

Bertolini*et al* (2009), have recognised that the basic philosophy of transit oriented developments (TOD) appears to be the same in all contexts. This is to focus urban development around public transport nodes to support transit use, and to develop the transit systems further so as to connect existing and future planned spatial visions of development (of which urban agriculture could form part of). The reasons behind advocating for transit oriented development being similar to other contexts seeking to implement TOD's, is due to the positive characteristics associated with it.

These include accessibility due to the provision of alternative modes of transport, and sustainability due to resource efficiency as is associated with public transportation. So the question of, 'well how do we go about implementing TOD's?' comes to mind. The answer to this question has been attempted by Bertolini (*et al,* 2009), it is argued in the book titled *'Transit Oriented Development: Making it Happen'*, that TOD needs to be understood as more than just a physical concept. Looking at how TOD can be implemented in a range of various and differing scenarios, aspects such as social, economic and technical aspects need to be considered in order to see the feasibility of implementing such a concept. Barriers such as those created by institutions need to be overcome and requires the legislation, policies and the relationships that exist between organisations, players within institutions, organisations and the community at large (Bertolini *et al*, 2009: 4), reinforcing the point made by Madanipour earlier in this chapter that understanding the context from the users perspective is of vital importance and although the same concept of TOD may be applied to a diverse range of contexts, the manner in which it is applied must be tailor-made, taking into consideration all the elements that make the locality, or region, to which the TOD is being applied to unique, so as to ensure its success.

2.5 URBAN AGRICULTURE

It has been suggested for many years, that the concept of urban agriculture possesses the potential to alleviate poverty through the creation of employment opportunities, and can lead to a general improvement in the quality of life experienced in the urban by vulnerable, or marginalised, groups such as those which exist in South Africa. Rogerson (1993) looks at the issues existing in policy, surrounding the notion of urban agriculture in early post-apartheid urban construction in South Africa. Thornton (2008) also acknowledges that urban agriculture, or more specifically, peri-urban agriculture was promoted in post-apartheid South Africa as a tool to alleviate poverty in several key policy documents. However, he noted that peri-urban agriculture does not play a very important role in the households which

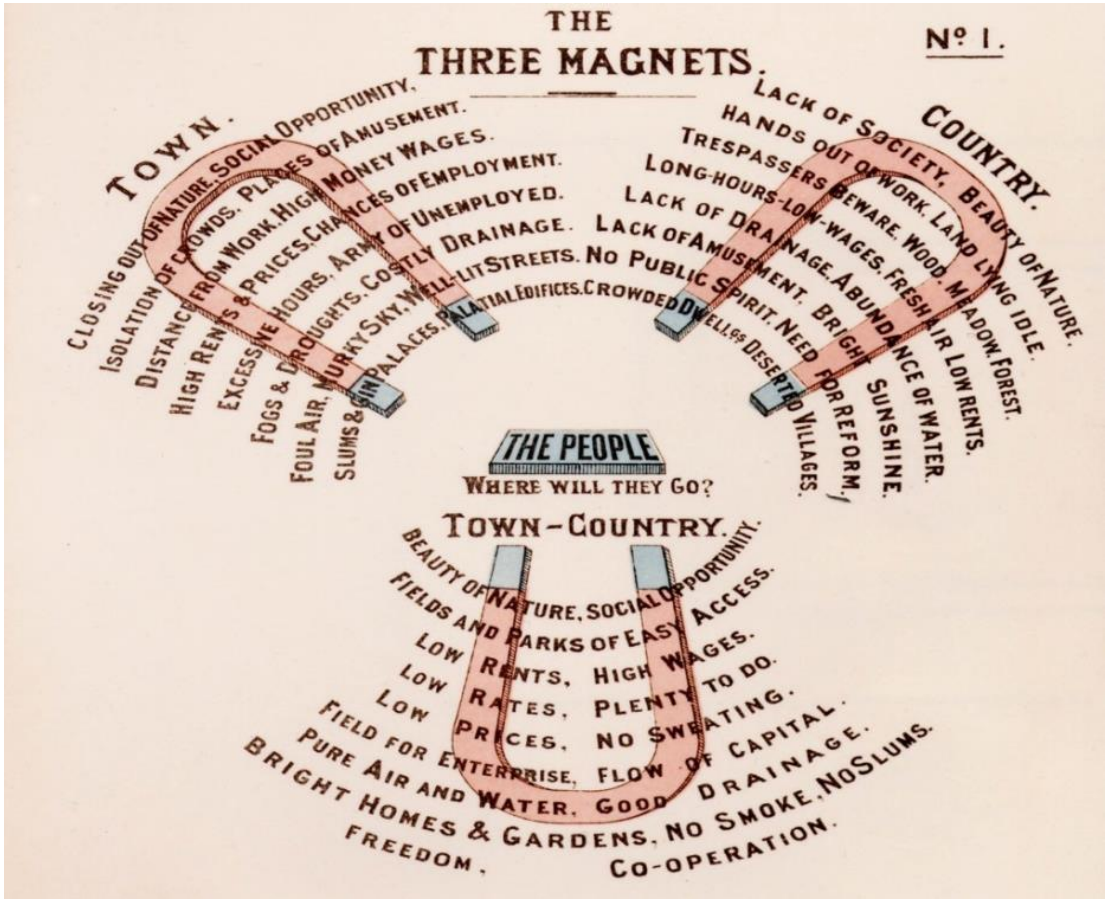
the policies aim to benefit and explores the possible reasons as to why this is the case.

Lee-Smith(2010) has used empirical data in understanding the function of cases of urban agriculture in Equatorial Africa. It is argued here that poverty in these cities can be better understood through urban agriculture, and supported through more comprehensive policies, as currently it tends to benefit the wealthier families more than it does the poorer ones. Philips (2013) looks at how urban agricultural spaces can be designed and maintained, intersecting “ecology, design and community” (pp.vii) and argues that urban agriculture can make for healthier communities and environments in the urban landscape.

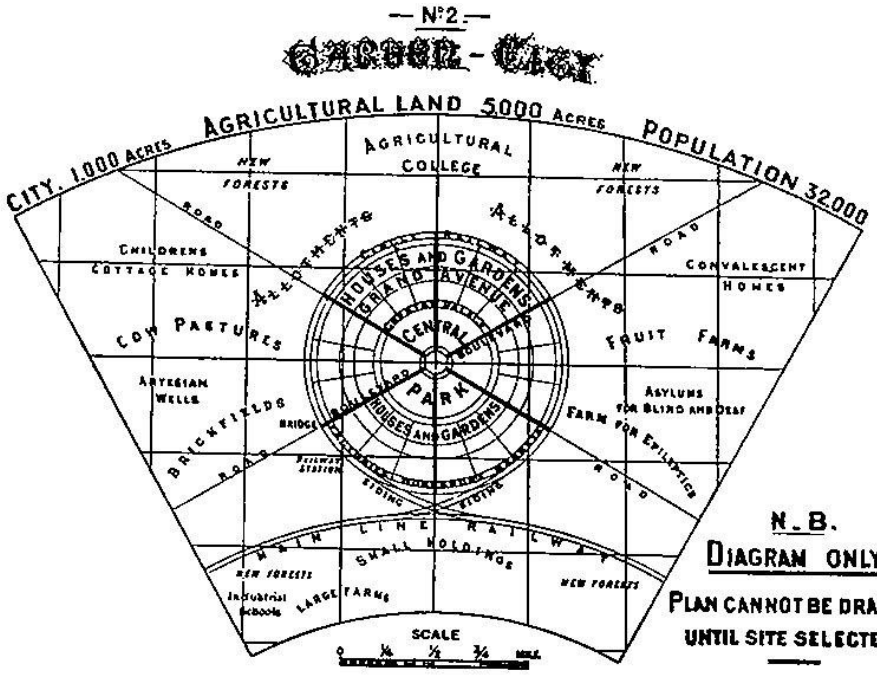
2.5.1 EBENEZER HOWARD‘S GARDEN CITY

Considered to be a utopian form of planning, the Garden City aimed to reduce the alienation of society from nature and was a response to the industrial city after the industrial revolution where there were squalid living conditions and where the working class population was unable to afford homes. Population densities were extremely high and disease spread rapidly (Mumford, 1961). Howard’s thoughts were that the city lacked a connection with nature or the country-side, and thus created a model that aimed to produce a scheme that was in his opinion, realistic and attainable while harbouring characteristics of being socialist and self-sustaining.

howard believed in the ‘3 magnets’ depicted in the image alongside. The way in which the 3 magnets works is that it draws the best characteristics of country living and city living to culminate and form the garden city or ‘Town-Country’. The model was intended for no more than 32000 and should not grow too rapidly, and green belts were used to contain the city. The image below shows the utopian garden city, and although the model appears as a master plan, there has been emphasis placed on adapting the plan to suit the contexts strong points and make the most of these attributes (Howard, 1965).



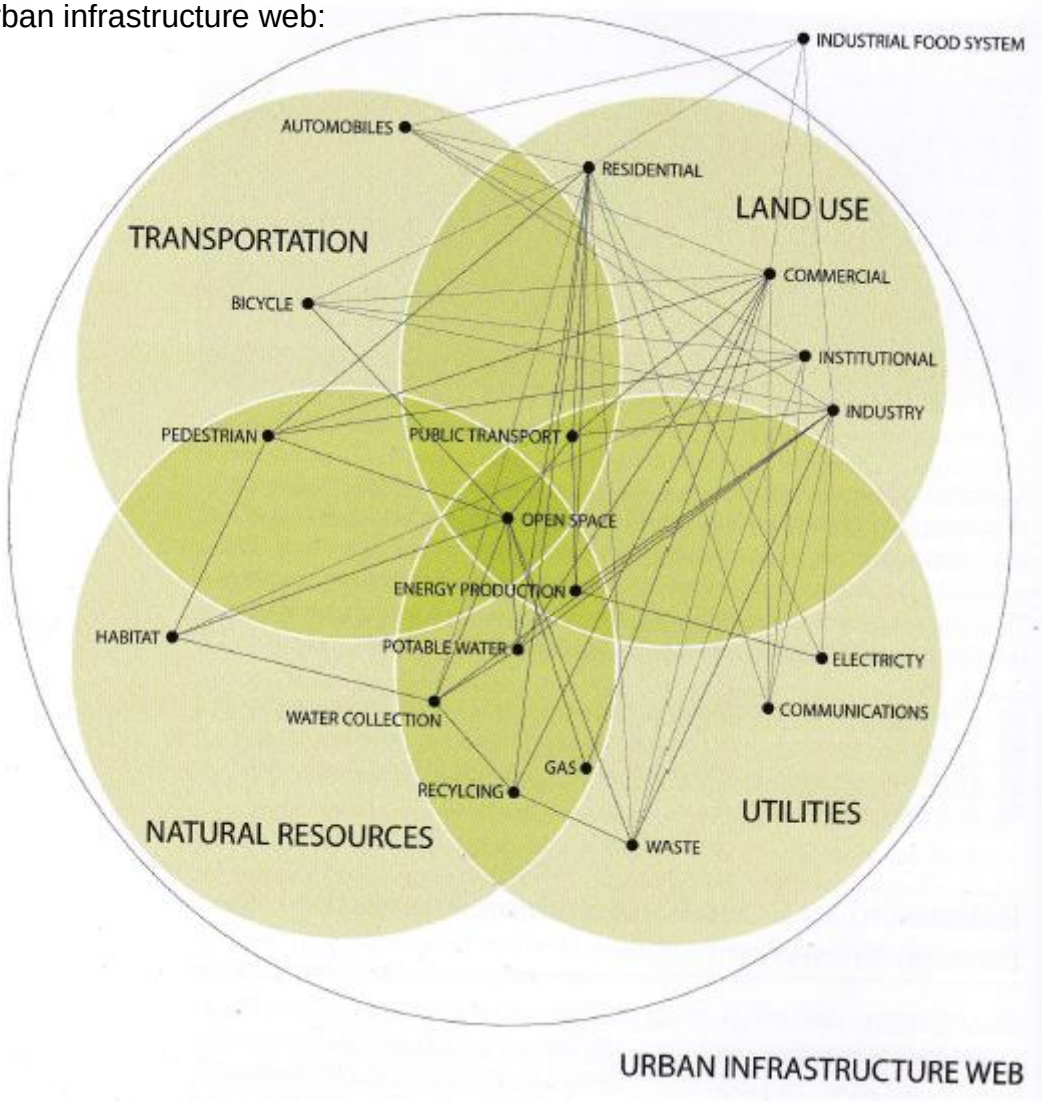
Howard, (1965: 46), Ebenezer Howard's 3 Magnets



Howard, (1965: 52), Garden City Diagram

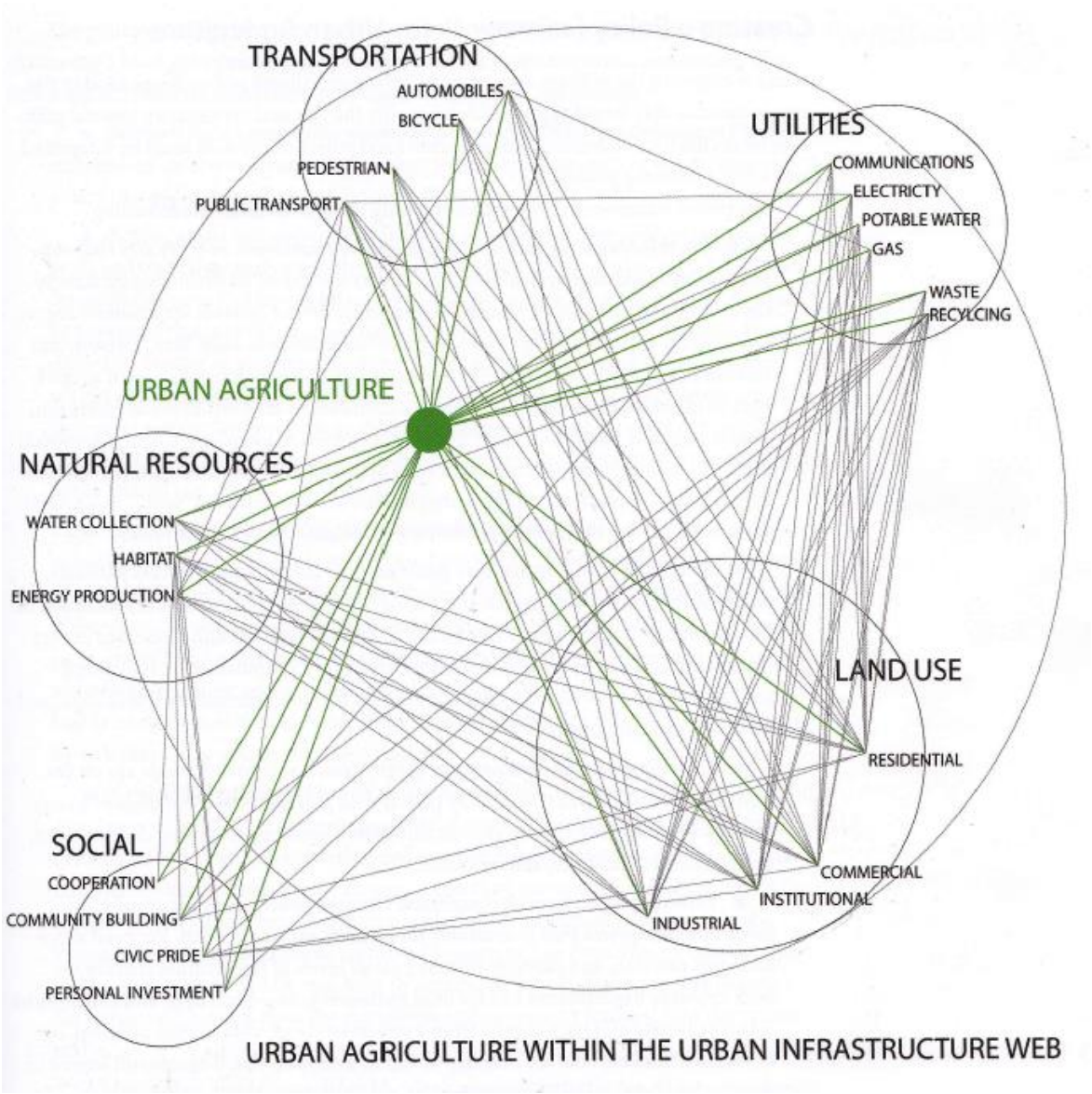
2.5.2 URBAN AGRICULTURE IN THE URBAN INFRASTRUCTURE WEB

Philips (2013) talks of the lack of legislation protecting agricultural land around cities in the USA. Some do not allow urban agriculture in the city and condones this form of land use only on large scales (anything over 1 acre). Noting a relationship blossoming between agriculture and city planning, she has developed a new planning approach which considers integrated systems thinking, placing focus on the bigger picture (urban infrastructure web). This has been argued here due to the system of networks functioning more efficiently as an integrated, interdependent process as opposed to separate components functioning on their own. Below is a diagram adapted from Philips (2013: 60), demonstrating the interconnectedness of the urban infrastructure web:



Adapted from Philips, 2013:60

Philips (2013) goes on to say that the integration of natural and urban systems into the city's infrastructure is where urban agriculture models should be found and referred to as "urban food systems" (Philips, 2013: 60). Below is a diagram adapted from Philips (2013: 61) which demonstrates urban agriculture within the urban infrastructure web:



Adapted from Philips, 2013:61

Infrastructure systems become more efficient, the more integrating there is between the various components. The introduction of urban agriculture as a component of the urban infrastructure web allows the web to become stronger and needs less inputs

coming from outside the urban system. Currently in cities across the world, including South Africa, there are challenges of various governmental departments not collaborating and communicating sufficiently with other departments. Philips argues that if anything, this lack of communication between departments “creates layers of bureaucracy and red tape that preclude an integrated systems thinking approach.” (Philips, 2013: 61).

2.5.3 PROMOTING A SYSTEMS THINKING APPROACH FOR URBAN AGRICULTURE

If the goal is to create an integrated system (of which urban agriculture will form a part of) maximising the efficiency of the urban infrastructure, 15 principles promoting an integrated approach are established in the creating of urban agriculture models are established. These are (Philips, 2013: 64):

1. Promoting biodiversity
2. Increase food security and food safety
3. Incorporate education and outreach for awareness
4. Be climate adaptive for environmental resilience
5. Maximise water accessibility, availability, quality and address the value of one drop
6. Maximise waste and energy effectiveness
7. Provide for soil resiliency and soil health
8. Develop a systems network that is both regionally and locally appropriate
9. Promote social responsibility
10. Protect and increase human health benefits
11. Provide for the connection of people with nature to the enrichment of both
12. Foster community, place-making, and social resilience
13. Develop dynamic connectivity between the human and ecological systems
14. Promote sustainable economic benefits and opportunities
15. Increase the treatment of waste as a resource for a zero-waste outcome

2.6 THE IMPORTANCE OF EDUCATION AND TRAINING.

"Give a man fresh produce, and he'll eat for a day. Teach him to grow food himself and he'll eat for the rest of his life"

(Adapted from Confucius proverb Circa 500)

Philips (2013: 70) argues for the importance of "on-site education, training and mentoring of students, community members, and staff as well as the outreach associated with the marketing and branding of the urban agriculture development to address ecoliteracy and benefits provided to community and the city.

Mentoring programmes which are provided by those who manage the public spaces (which has been discussed earlier in this chapter), ensures that people will be able to grow their own food. Creating a platform whereby mentors that possess skills in growing their own produce are paid to share their knowledge and equip others with the same skills and to become mentors themselves. In these spaces of education, community members who are learning together are able to share any knowledge that they may have gained through their own efforts in growing their own produce. With regards to education, funding may be an issue as the various stakeholders managing the gardens may not have the financial capacity to carry out such programmes. This means that partnerships need to be created, or agreements set up with bodies that have the financial capacity to assist.

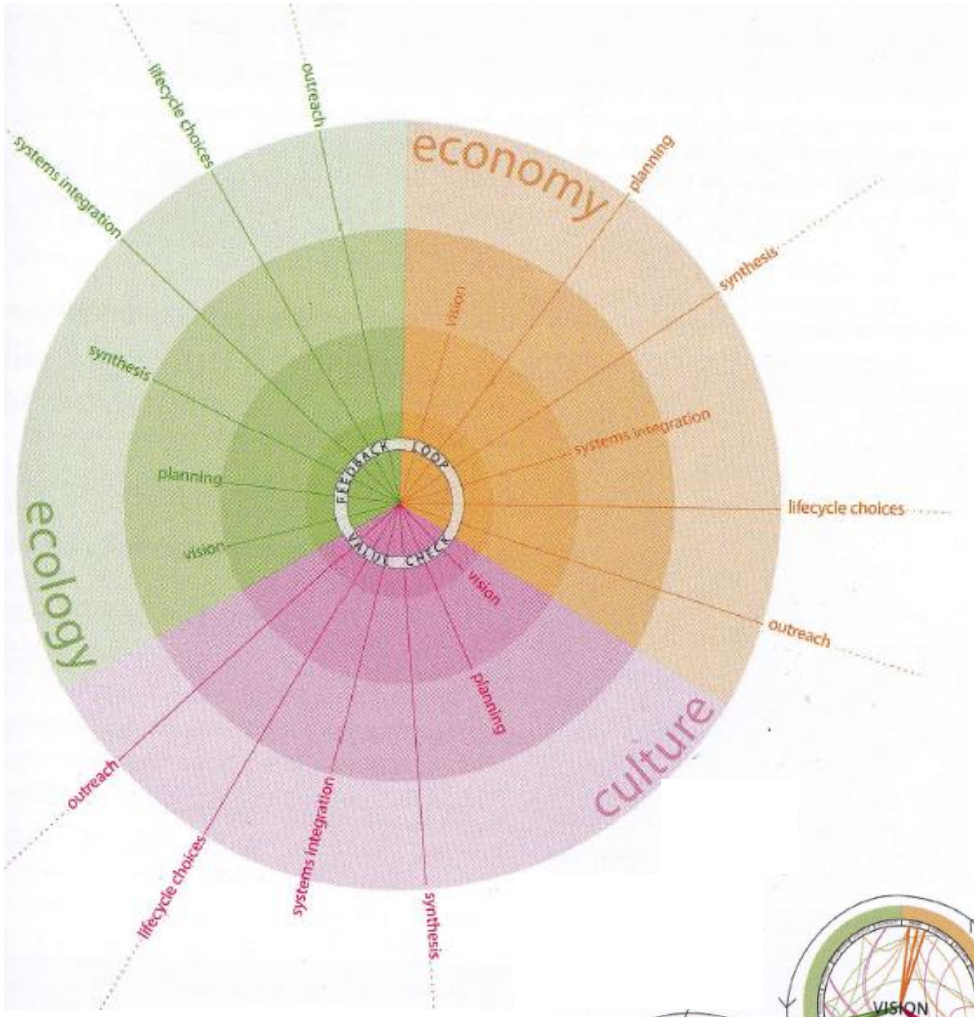
2.7 INTEGRATING URBAN AGRICULTURE DESIGN PROCESS SPHERES

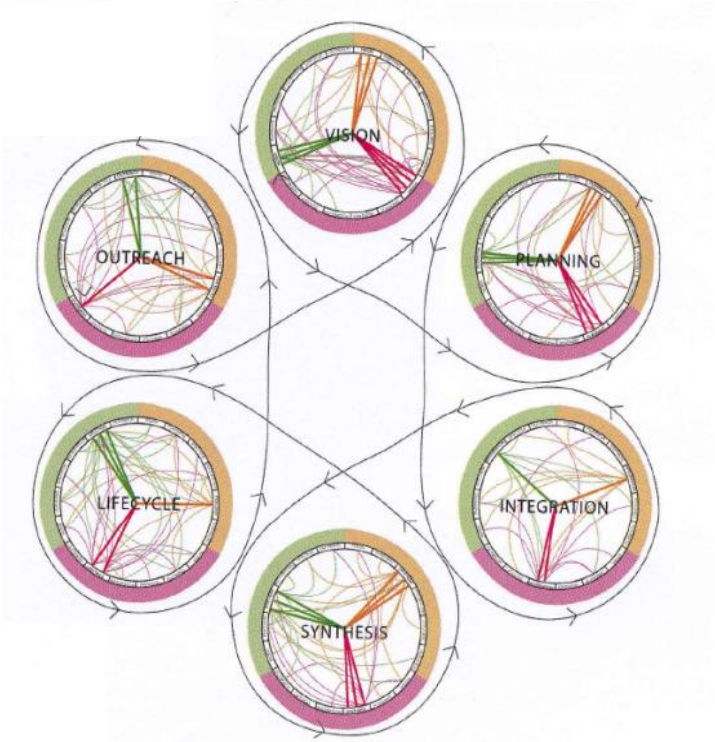
Philips' work (2013), forms the basis of what this research is attempting to uncover, the "Planning, Design, Maintenance, and Management" of urban agriculture are aspects that have been thoroughly investigated in her work. Fully recognising that the context which is being dealt with is set mainly in North and South America, the value which this body of work can bring to this research is assisting in the

understanding of how to go about integrating urban agriculture into an already existing infrastructure web as well as the design process that one would need to go through in order to create urban agriculture. These principles that will be discussed later in the report, will enable urban agriculture to be well integrated and should provide an outline of the process that can be taken if urban agriculture is to be successfully integrated into the Strategic Area Framework (SAF) and the Turffontein Node.

According to Philips (2013), integrating urban food gardens into the city may follow the same processes used for traditional design processes. A cyclical design process would ensure a well-integrated system framework. A design process created by Philips (2013: 85) is shown below and includes the connection of the following spheres: policy, planning, vision, synthesis, integration, lifecycle operations and outreach.

2.7.1 THE URBAN AGRICULTURE DESIGN PROCESS SPHERES





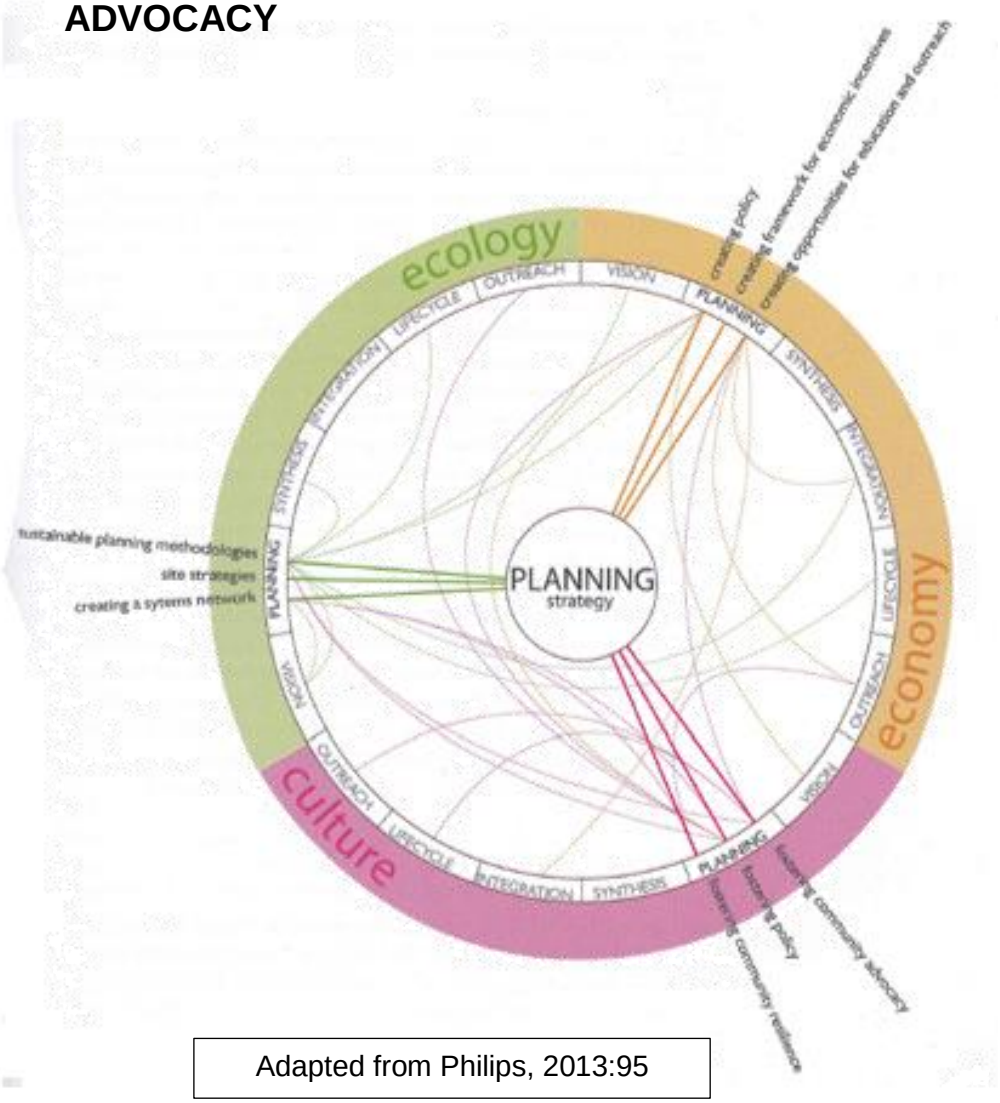
The urban agriculture design process spheres create a lifecycle approach

Above: Adapted from Philips, 2013:85

Right: Adapted from Philips, 2013:91

2.7.1.1 DISCUSSING THE DESIGN PROCESS SPHERES

2.7.1.1.1 THE PLANNING SPHERE: PLANNING, POLICY AND ADVOCACY



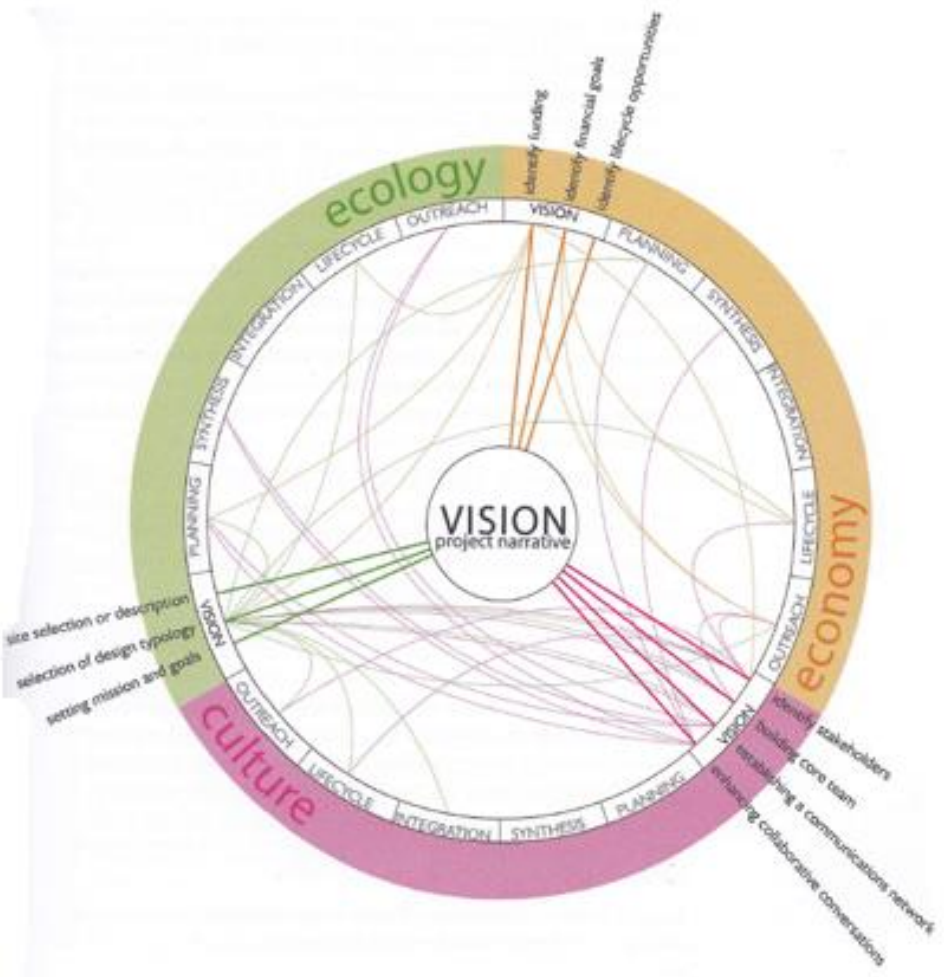
Adapted from Philips, 2013:95

The purpose of policy and advocacy is to ensure the support of urban agriculture as a component of the urban. The policy supporting urban agriculture needs to be in place, this is important as without it, many envisioned projects may not materialise. Planning is the sphere between vision and outreach and supports sustainable city planning strategies as well as promotes governmental departments to interconnect and communicate with one another. It is here where urban agriculture design guidelines may be used to mark policy and be created as a consequence of policy

(Philips, 2013:95). The integration of urban agriculture in the Corridors of Freedom plans could be afforded a higher level of assurance in the success of projects and initiatives.

The planning sphere aims to harness sustainable planning methods aiding the 'vision sphere'. Aspects in this sphere that are focused on include integration of infrastructure, urban open space design, human scale agriculture and the creation of flexible food resilience policies (Such as the newly developed food resilience policy for the City of Johannesburg discussed later in this chapter).

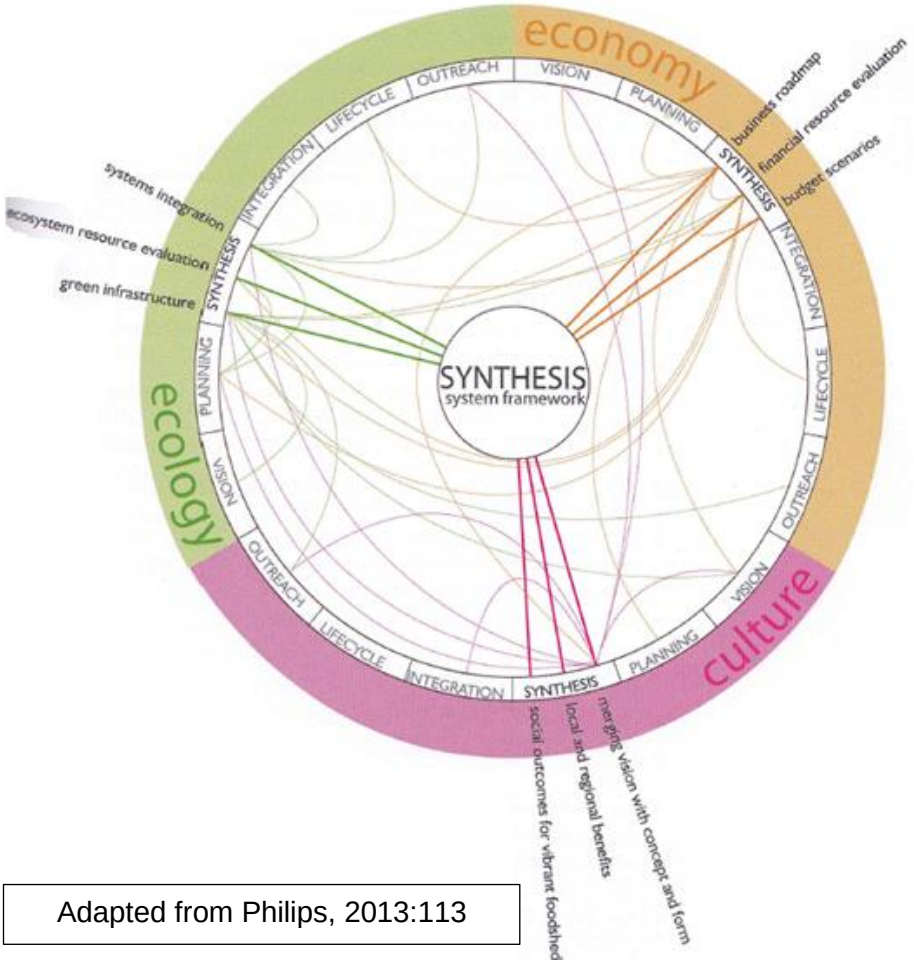
2.7.1.1.2 THE VISION SPHERE



Adapted from Philips, 2013:101

The main idea of the 'vision sphere' is to set aside the goals and objectives that are aiming to be achieved in the bigger picture and created the "big idea into physical form" (Philips, 2013: 96). Ideally, the goals that are formulated should be the product of collaborative conversation based on the notion of a more holistic decision being made, and encompass the passion and excitement behind wanting a better city. The objectives that are laid out in the Corridor of Freedom plans are: "access to opportunity, attractive environments, people-centered city, transit oriented development, mixed use development and to have sustainable travel alternatives" (Turffontein Draft SAF Report for public comment, 2013:11). Creating a vision for urban agriculture requires creativity and a perceptive nature and should result in a statement that is succinct and clear about what the desired result will look like.

2.7.1.1.3 THE SYNTHESIS SPHERE

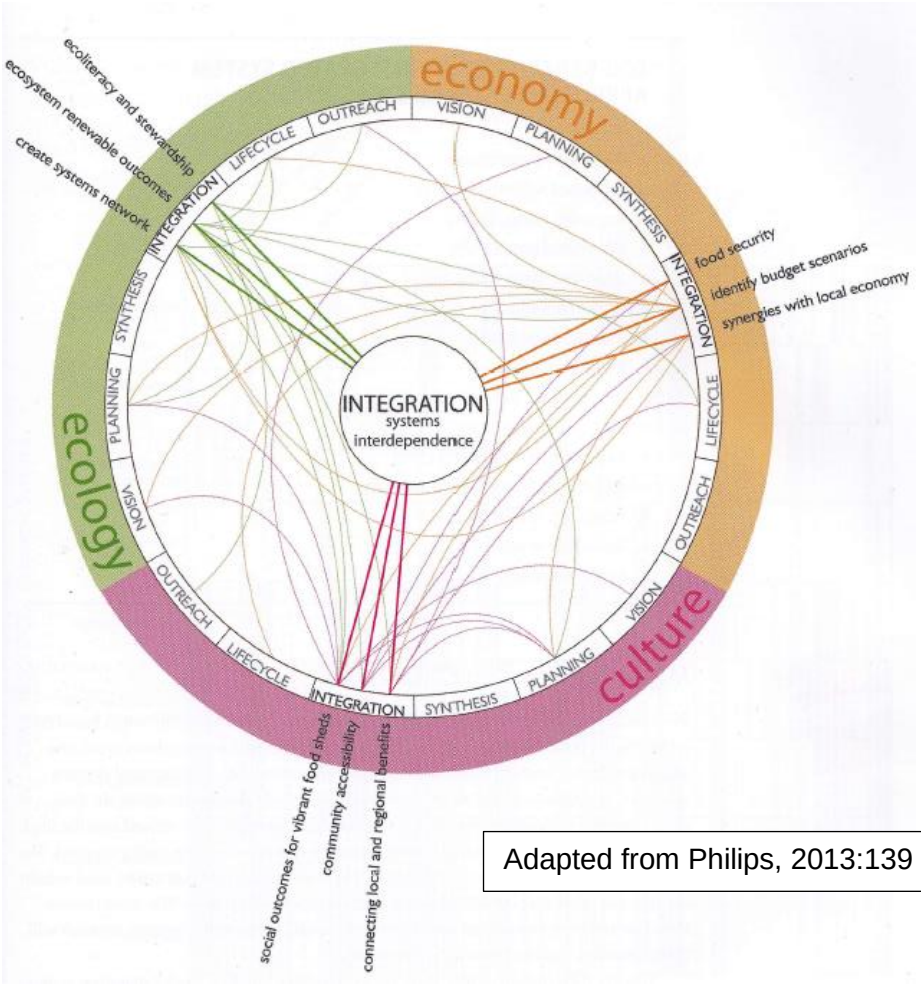


Adapted from Philips, 2013:113

Synthesis in essence is resulted from site analysis and the evaluation of any information that may have been gathered through the use of community systems and resources. It is in this sphere that a framework is established providing for the inputs and outputs of feedback loops (used to analyse data). At this stage of the design process, stakeholders have been identified and conversed with, a vision developed along with objectives and goals, the planning element has been engaged with on multiple levels and this step is where the synthesis occurs. In this case, the residents of the Turffontein Node would have to be consulted with and the needs and requirements of the residents understood. This would also ensure the success of the initiatives, which are carefully tailor-fitted to the needs, and sensitive to the context, of the community.

Synthesis of information gathered by way of a site analysis is conducted. Information gathered here may include the climate experienced in the area, ecosystem components, soils, vegetation and biodiversity. Existing food systems and the possibility of new connections are evaluated, so any existing urban food gardens within the Turffontein Node study area need to be considered and their role in the community evaluated.

2.7.1.1.4 THE INTEGRATION SPHERE

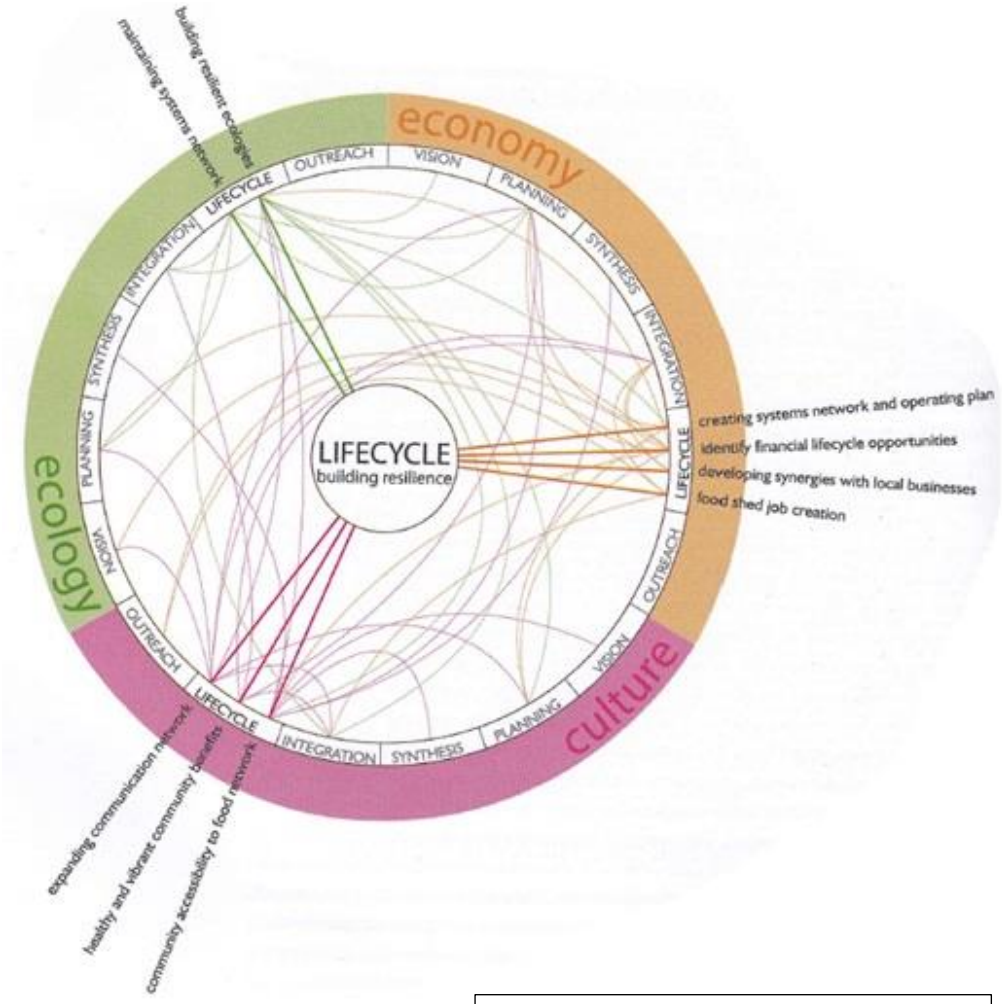


Adapted from Philips, 2013:139

After plans have been synthesised, an integration systems approach is used in this integration sphere. This step is vital in the design process as it ensures that all the components work together harmoniously. “Planning for system connections will not always provide a predictable outcome.” (Philips, 2013: 138). Using this approach, the “evolution for how systems are designed for integration in a final design output - is what supports a living system” (Philips 2013: 140). Systems need to be refined into a final design, this is achieved through proposed system connections that can be mapped between the proposal of urban agricultural initiatives and the Corridors of Freedom plans for the Turffontein Node, and are usually used for the evaluation of possible connections of proposed systems - recollection from the planning sphere suggests that the more connections which are established, the more sustainable the

outcome will be. This reinforces the importance of management of space that was described earlier, in which all stakeholders involved in the management of space need to communicate effectively in order to achieve an optimum outcome regarding the functionality of space.

2.7.1.1.5 THE LIFECYCLE SPHERE

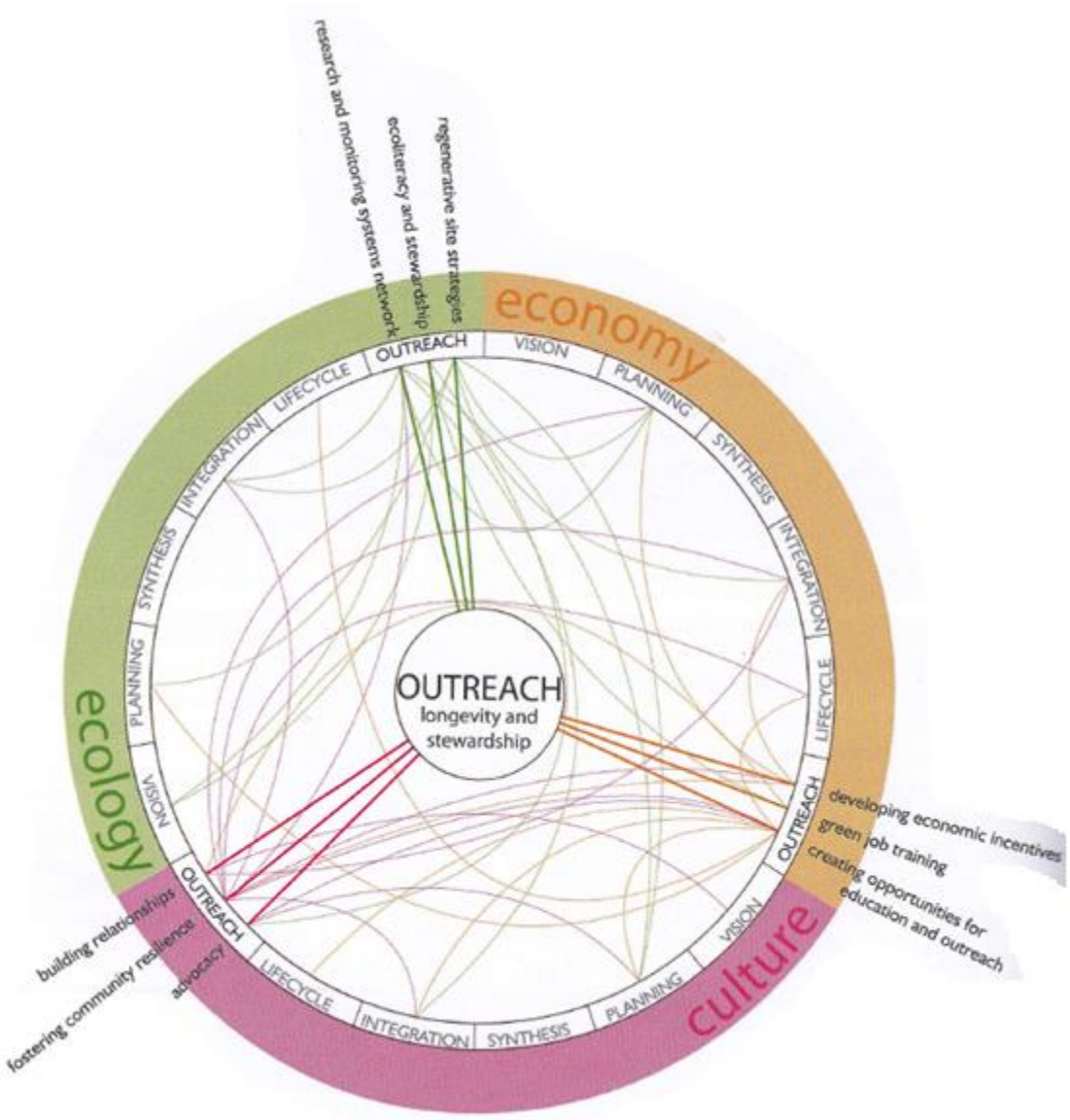


Adapted from Philips, 2013:188

Any project has a lifecycle. This sphere deals with the lifecycle operations that include development of a chain of plans that ultimately form a network of connections among one another (Philips, 2014: 188). The development of mechanisms which create synergies between maintenance and management

operations should be both beneficial and interdependent of one another. This sphere is directly linked to marketing outreach plans that are developed and put in place and have been discussed below.

2.7.1.1.6 THE OUTREACH SPHERE



Adapted from Philips, 2013:232

This sphere is the link to the design process and entails the designing and construction of urban agriculture gardens (Philips, 2013), forming the last step in the process that one would need to consider. This sphere also includes components

such as funding, marketing, education, stewardship, research, policy and advocacy. In essence, this is the sphere where many of the benefits associated with urban agricultural gardens are included, and it is the business plan that is the main tool used in achieving these outreach outcomes.

The outreach plan differs depending on the type of food garden being established, including the variation in the vision and goals of the project and is important to have identified what the desired outcomes are of the outreach plan. Regarding this research report, and the focus area of the Turffontein Node, the importance of the context and designing a garden that is sensitive to the needs and requirements of the area is important. The study area is characterised as being a lower income area and therefore the above mentioned aspects such as funding, marketing and education may prove to be challenging. There is a need for the assistance of agencies, NGO's or perhaps even government regarding the financing in order to get initiatives off the ground. If the initiative aims to benefit the community then the outreach plans should also be aimed at the needs of the community. Careful consideration regarding the uniqueness of a context is an essential component of this process and the outreach plan may be adjusted accordingly in order to achieve the best possible outcomes.

2.8 CURRENT POLICIES IN SOUTH AFRICA AND JOHANNESBURG

2.8.1 THE CORRIDORS OF FREEDOM

Initially, in an article published on the Johannesburg Development Agency website, there was talk around the Corridors of Freedom and suggested that this notion of creating an 'agritropolis' would be a component of the Corridors of Freedom. This term described what would eventually materialise as corridors of urban farming that would produce the social and economic benefits of poverty reduction and employment opportunities. Areas that were mentioned and aimed at being the main beneficiaries included Soweto, Lenasia, Ennerdale and Orange Farm. The open land

south of Johannesburg would be targeted for creating an 'agritropolis' and could potentially be used for eco-tourism, as well as food gardens. According to Mougeot, the word 'agropolis' combines the Latin word *ager,* meaning fields and the Greek word *polis* meaning city, which together suggest a city of fields, or an agricultural city.

The overall objective of the Corridors of Freedom is to re-stitch the city and attempt to overcome the spatially segregated city which was left by the apartheid regime (City of Johannesburg, Group Communication and Tourism Department, 2013), and aims to achieve this through the use of Transit Oriented Development (TOD). In the Turffontein Draft SAF (Strategic Area Framework) Report for Public Comment (2013:8), TOD corridors are defined as, "the walkable areas around all of the stations along a transit line. Different transit technologies will define different areas of influence". Some key features of the Corridors of Freedom are (Turffontein Draft SAF Report for Public Comment, 2013:6):

- Safe neighbourhoods designed for cycling and walking with sufficient facilities and attractive street conditions;
- Safe complete streets with features to calm traffic, control vehicle traffic speeds and discourage the use of private transport;
- Mixed-use developments where residential areas, office parks, shops, schools and other public services are close together, stimulating economic activity
- and creating opportunities for emerging entrepreneurs;
- Rich and poor, black and white living side by side - housing options provided cover a range of types and prices including rental accommodation;
- Convenient transit stops and stations.

There will be a clean break with apartheid spatial distribution and people living on the periphery will be able to move closer to economic opportunities (Turffontein Draft SAF Report for Public Comment, 2013:6).

Although urban agriculture is not a focus area of the SAF for the Turffontein Corridor, it may still be a viable component of the plan if integrated efficiently. For example, one of the thematic elements and principles in the vision set out for the Turffontein Node is a healthy environment which is environmentally sustainable and health conscious. If one looks at the opportunities associated with urban agriculture, it could be suggested that the implementation of urban agriculture gardens may assist in achieving the healthy environment referred to in the SAF document. The production of food in the inner city would require less travel time, and thus less carbon emissions as well as lowering the costs of transporting produce. It may also assist in the promotion of healthier and more active lifestyles as community members will have access to affordable and nutritious food at their doorstep, and are also encouraged to participate in either community gardens or their own food gardens in the private sphere. This demonstrates how, despite urban farming not being a priority focus area in the strategies for the Corridor plans, such initiatives may assist some of the desired themes and principles to be achieved.

2.8.2 A CITY WHERE NONE GO HUNGRY: THE CITY OF JOHANNESBURG'S FOOD RESILIENCE POLICY

The City of Johannesburg has developed a policy which aims to combat the challenge of food insecurity. The GDS 2040 has set out the task for the city to commit to a "principle of development driven resilience for all" (2014: 1). The bill of rights sets out the right to access to food and water as a basic condition for survival. In developing this policy a study was carried out in attempt to determine the level of food insecurity in Johannesburg. It was found that food insecurity was at 27% at a city-wide level and 41% in the poorest neighbourhoods. This refers to the amount of people who go with at least one meal between 3-10 days in a month.

The city, working under the Department of Agriculture's Integrated Food Security Strategy (IFSS) which is a cross-departmental programme aiming to tie together various efforts around food security. There is a question regarding South Africa's ability to produce enough food in order to be able to feed itself (often defining food

security at a national level) is actually different from the question of the poor population having access to food. In order to answer this question, the process of food in the city was looked at. In other words, the process of the production of food, how it is distributed and bought, and lastly how it is consumed in the City of Johannesburg needed to be understood. Countries that have managed to ensure the availability of healthy food to all their populations were studied and it was deduced that there are 5 areas in which the City of Johannesburg can intervene to ensure the same for its people. These are:

- • The City needs better information on exactly where the pockets of food insecurity are.
- • The City needs to enable all those who wish to grow their own food, both to feed themselves and to sell to others.
- • The City needs to ensure that healthy food is available throughout the City at affordable prices
- • The City needs to educate and mobilise all communities around the concept of food security and food resilience.
- • The City needs to promote and enable healthy eating wherever possible.

(Adapted from: City of Johannesburg, 2014a:2)

The Policy aims to combat food insecurity through various methods. One of these is through assisting those who wish to grow their own food by providing them with the means to do so. These gardens may be in backyards, on rooftops, or in open spaces close to where they live. In this way spaces which are suitable for growing produce have been identified.

In this aim, the city will look to maintain at least one agri-resource centre in each administrative region which are to be located at points most accessible to those carrying out the urban farms and to ensure this as a livelihood. Apart from each satellite site being offered the various skills and equipment required to establish successful food gardens, each site will also maintain satellite sites that will have scheduled outreach services. These satellite sites will keep information on how to

grow food gardens as well as how to get access to land. There will also be a data base for active and potential agricultural space in the region.

A further section of the policy looks at a hub and spoke support for small farms in which the city will create at least two hubs (acting as a central point) which aim to serve the small farms in Joburg city. A variety of services aimed at supporting small farms will allow for the same level of functionality as those available to large farms. This service will be paid for through a share of the profit to fund the operations being provided. Services will include the following (adapted from: City of Johannesburg, 2014a: 6):

1. A direct liaison with the Joburg Market to manage the process of receiving produce from the hub for sale on the market floor.
2. A desk which can take orders via phone, fax and e-mail from the Joburg Market and other customers.
3. A customer relations office which can issue and collect payments due to the hub from customers.
4. A common, managed packing house with refrigerated (cold-chain) trucks to transport fresh produce, including secure parking and maintenance equipment for the cold-chain delivery trucks. Delivery trucks will also collect produce from member farms for storage in the packing house.
5. A common record-keeping system for the amount of each fruit, vegetable or other product being ordered from the hub and the stocks the hub holds at any given time.
6. An accounting service that keeps track of all costs to the hub and keeps records for all financial transactions managed through the hub point, providing monthly reports to the member farms.
7. An administration office that will take care of all compliance documentation needed by the hub and its members, including audited financial statements.
8. Providing a training and capacity building programme to member farms to allow them to graduate the hub within 5 years of initial membership.

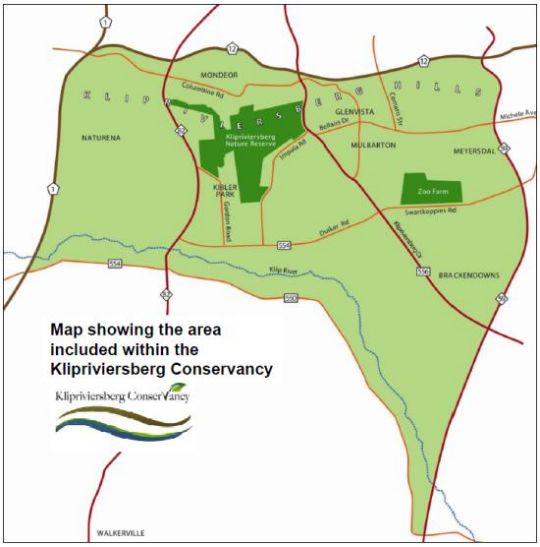
Each hub is to be run according to a constitution of which a number of rules are laid out. The policy looks to assist the hungry through the use of food parcels and food banks. These food parcels are to be distributed by the city and will be considered as a form of 'pay-back' of fresh produce from the farms supported by the policy. Households qualifying for the food parcels and access to food banks (city-managed and city-partnered) are households which are categorised as falling under the city of Johannesburg's poverty index and are therefore identified as being severely food insecure. There are a number of terms and conditions that are attached to who gets what and when, so as to ensure the maximum amount of people in need are benefiting from the policy. Aims of the policy include all that has been discussed above, as well as creating public awareness of the challenges being faced regarding food insecurity in the city, as well as encouraging citizen mobilisation, improving access to food, the support of micro-farmers and any emerging forms of agriculture in the city.

This support of urban agriculture will occur at 3 levels. These are through:

1. Agri-resource centres (training curriculum at Agri-resource centres looking at aspects of soils, plants, animals and management skills);
2. Hub-and-spoke sites and;
3. Food empowerment zones.

Examples of food security interventions were taken from Brazil and India, with which the strategies used in these countries showed a level of success, and have been discussed in greater detail in the policy document itself and evidently have served as precedence in the creation of this food resilience policy. This food resilience policy for the city of Johannesburg seems to be a promising shift towards urban food gardens becoming an integral part of the urban fabric. The question of how well this policy will be integrated with the Corridors of Freedom plans, have been discussed in a later chapter.

2.9 FUTURE MODELS: KLIPRIVIERSBERG AGRITROPOLIS - KEY PROJECTS & PROGRAMMES



http://www.klipsa.org.za/background.aspx, Accessed: 03 October, 2014

The Klipriviersberg Sustainability Association (KlipSA) is an organisation based in the south of Johannesburg and includes open and unspoilt land. This land is rich in natural resources and the entire nature reserve is 680 hectares, making it the largest proclaimed nature reserve in Johannesburg (KlipSA, 2014). The land is owned by the City of Johannesburg, although is located within the municipal areas of Johannesburg, Ekurhuleni and Midvaal, and the Klipriviersberg Nature Reserve Association assists with the management of the area.

The area has been identified as having potential for attractions of tourism, recreation, cultural activities, education and development. However, having said this, correct environmental management and protection are put at the forefront of the priority list. This is not to say that due to the richness of the natural environment of the area, that no development should take place here, or that it should be left untouched, what it does mean, is that the development needs to be carefully considered and sensitive to the character of the area so as to ensure the richness is not lost and rather becomes the main 'pull-factor' for the area.

The opportunity and promotions being pushed for by the Klipriviersberg Economic and Ecosystem Development Zone (KEEDZ) has placed special focus on identifying and defining the opportunities that the South of Johannesburg can offer, aiming to "protect, promote and enhance the value of the natural assets and biodiversity" (SOJO &KlipSA, 2014: 31). Amongst the projects



http://www.klipsa.org.za/background.aspx, Accessed: 03 October, 2014

proposed for the Klipriviersberg Agritropolis is an organic farming initiative whereby focus is placed on food security, community upliftment and job creation. A component of this project is working through what has been termed, 'the bakers dozen principle', in which 1 hectare is allocated to each individual or family that works the land, in order to produce fruit or veg. All families, or individuals which are involved in this project are encouraged by one another to work hard in order to achieve the best possible outcomes and so forms a strong bond between those involved in the project.

The bakers dozen principles are used here in which the amount of produce produced are divided into 13 groups. 3 of these units go to the family working the land and are then used for their own consumption. 3 units go to the community whereby produce is processed into items such as jams and preserves to be sold. A further 3 units, usually the best quality goods of the crop, go to the commercial sector and may be sold to hotels and high-profile restaurants looking for high-quality organic produce. Lastly, the remaining 4 units go back to the earth. This ensures that the land is respected and well taken care of.

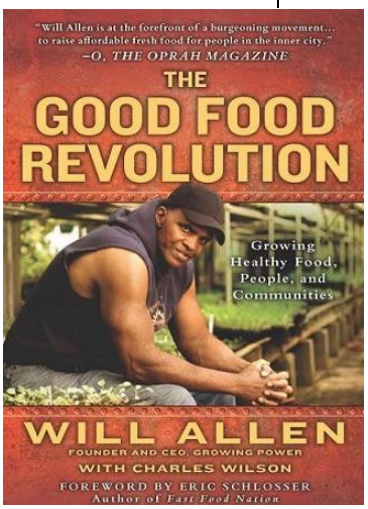
2.10 SUCCESSFUL URBAN AGRICULTURE PROJECTS FROM ABROAD

The following two examples of successful urban farming projects from abroad will give particular insight on what did, or did not, work for them in their contexts, and perhaps give a general idea as to what may be required in achieving success as well as what should be avoided.

2.10.1 CASE #1: PRESERVING URBAN OPEN SPACES

The second case is of The Casablanca Project in the city of Casablanca, Morocco, which looks at urban agriculture "as an integrated factor in climate optimised urban development and the search for an open space system that is adapted to the challenges confronting today's cities." (www.uac-m.org/uac-project/). Here, the ability to preserve the urban open spaces and use them to improve the quality of life in the urban and understanding how urban agriculture can be integrated into the open spaces. Specifically, the Casablanca Project places focus on the concept of urban agriculture and how it can be used as a strategic spatial approach in sustainable growth centres where the challenge of urban sprawl is a reality.

2.10.2 CASE #2: THE GOOD FOOD REVOLUTION



A Wisconsin (USA) resident named Will Allen saw potential in open spaces that were neglected within the urban areas. Allen possessed background knowledge of agriculture, and used this knowledge to ensure a project of great success in the private sphere. He states that the small and simple idea of an urban farm and community food centre have generated many employment opportunities.

Will's urban farm and community food centre called 'Growing Power' is located in Milwaukee, Wisconsin, and started at a run-down nursery with neglected greenhouses and abandoned buildings, has become an internationally recognised non-profit organisation that comprises more than 100 employees, a 100-acre farm in Wisconsin, a 40-acre farm in Chicago, and 15 training centres across the United States. Ripple effects have also occurred as a result of the success of the project. There is a stronger sense of community where once abandoned open spaces existed, and now gives the youth a place to learn and more importantly- stay out of trouble. The community can be fed with healthy food, supplying small stores and restaurants with organically grown produce and create employment opportunities. However challenges in the process have also been acknowledged such as often needing grants or some form of financial aid in order to keep growing and even the social challenges faced.

2.11 CONCLUSION

The key concepts that can be drawn from the above literature on the topic demonstrate a relationship between physical space and other aspects (while still spatial but not necessarily the focus of this study), and have shown the impact they may have on space itself. Key concepts of open space, transit corridors and urban agriculture have been grappled with, and are clear spatial aspects. Understanding what open space is, as well as the importance of public space, has been discussed and although public space is one of the typologies which is an option for urban agriculture to occur in, it has been noted that urban agriculture may occur in the private sphere as well.

Other concepts that affect space is the management of space, challenges around ownership of space, safety and security associated with space are some of the attributing spatial concepts which are linked to the identification of how urban agriculture may manifest in the Turffontein Node. Philips' work (2013) which had informed the basis of what this research is aiming to understand, has described a design process aiming to guide the successful implementation of urban farming initiatives into the urban environment, while being considerate to the differences in context that may be encountered, and in this way addresses many of the aspects regarding the research question of this research report.

The Corridors of Freedom and Joburg's Food Resilience Policy were also considered. The Corridors of Freedom does not have a focus on urban agriculture. However, the concepts and key principles that have been identified and understood in the literature above, has informed what aspects and processes need to be considered and carried out if urban agriculture is to be integrated into the plans for the area by interested agencies and stakeholders. The food resilience policy has, in many aspects, reiterated the key principles being brought forward in the literature such as the importance of training, management, outreach, lifecycle and ownership amongst others. Ebenezer Howards Garden City plan (Mumford, 1964), demonstrates qualities that can be found in urban agriculture. The lack of connection that the urban has with the country side is an example and so is the desire to be self-

sustaining. Aimed at bettering the quality of life of the residents, urban agriculture has a direct link to the concept of garden cities whereby farming would occur in close proximity to the urban centre.

Included in this chapter was a future model for urban farming which is to be implemented in close proximity to the study area, as well as two international case studies of successful urban agriculture initiatives. In doing this, it has supplied insight on how other initiatives are going about implementing and strengthening the concept of urban agriculture, which will prove to be most useful in formulating recommendations on what the spatial requirements would be for creating urban agriculture in the Corridors of Freedom looking specifically at the case of the Turffontein Node. The following chapter has been informed by the literature discussed above. An understanding of what is meant by open space, corridors and what urban agriculture may mean for the city has informed the methods discussed and deliberated in the following chapter.

Urban Agriculture projects such as the Bambanani and Siyakhana projects based in Johannesburg City are examples of successful projects that have seen accomplishment in concepts of potentially creating employment opportunities and the many other social benefits that are associated with urban agriculture projects. The initiatives have grappled with the above discussed concepts of the management and running of public spaces and various spatial typologies in which the initiatives are taking place, challenges of safety and security in and around these open spaces of the urban and how education plays a role in ensuring the success as well as a legacy of urban agriculture in the city. Members of these initiatives have been interviewed and findings have been presented and discussed in a later chapter.


















Chapter 3:

Research Methods

3.1 INTRODUCTION

This chapter will look at the approaches that were used in the research process of attempting to find out how urban agriculture manifests in the City of Johannesburg with a focus on the Corridors of Freedom, considering specifically the case of the Turffontein Node. These methods will be explored looking at some background information on the methods employed, and thereafter linked back with the contents discussed in previous chapters which had informed which research approaches were to be used. The description of these various approaches to researching used in this research report are to be made useful to, and compared by, other researchers.

3.2 UNDERSTANDING THE CASE STUDY STRATEGY

Since this research report makes use of a case study, this section of the chapter will discuss the use of case studies as a research method. According to Yin (1994) there are several manners in which social science research can be conducted such as experiments, surveys, histories and analysis of archival information. Case studies also form part of these research methods. Each method comes with their own strengths and weaknesses, dependent on three conditions. The first condition is the type of research question. Second, is the control the researcher has on actual behavioural events and lastly, whether the focus is on contemporary, as opposed to historical phenomena. Yin goes on to state that, “Case studies are the preferred strategy when how” or “why” questions are being posed, when the investigator has little control over events, and when the focus is on a contemporary phenomenon within some real-life context” (1994:1). Yin adds that explanatory case studies may be accompanied by exploratory and descriptive case studies, but that irrespective of the nature of case study being used, it is essential that the researchers take a great deal of care in the design and carrying out of case studies if they wish to avoid any traditional criticisms associated with the case study method.

Case studies are often created in the qualitative paradigm, but there are those which are quantitative in nature (Sarantakos, 2005). Stake (1995 as cited in Sarantakos,

2005), like Yin, has identified 3 types of case studies. He identifies them as the intrinsic, the instrumental and the collective case study (1995: 237 as cited in Sarantakos, 2005:211). To better understand what distinguishes one from the next, an intrinsic case study is carried out for its own purpose, and looks specifically at the context or situation being dealt with so that any results or findings cannot be generalised, or used to understand, other scenarios. An instrumental case study on the other hand is "used to inquire into a social issue or to refine a theory" (Sarantakos, 2005: 211). The findings that are acquired from such a study may be applied to other situations and contexts. Lastly, the collective study is essentially a number of smaller cases that are investigated together to understand a problem more efficiently.

When comparing the TurffonteinNode (Corridors of Freedom) case study as an appropriate way of conducting research, with other research methods, we will find that case studies are only one of many ways of collecting empirical data. Empirical data is defined as relying on observation and experiment on gaining information, and not on theory (The Pocket Oxford Dictionary, 1984). Other methods of collecting such data may include experiments, carrying out of surveys, analysing patterns in history, a computer-based analysis based on archival records and so on. In the past, it was believed that case studies were only appropriate to be used as an exploratory tool in an investigation (Platt, 1992 a, as cited in Yin, 1994). However, there are famous case studies which have proven to be both descriptive and explanatory, and case studies which are exploratory as well (Yin 1981).

It is a question of which strategy (descriptive, explanatory or exploratory) will best fit an investigation. It is rather important to note that although each strategy has their characteristics, there are sections that overlap, and that when selecting a specific strategy, that you are selecting the one that will be most beneficial to the investigation. Characteristics that are common in all types of case studies have been identified by Sarantakos (2005 as cited in Ahmed Musbah El-Gomla, 2011) as follows:

- It is conducted in natural settings.
- It is suitable for following profound analysis.

- It studies entire units and not components of units.
- It involves a single case or a few cases.
- It reviews classic cases.
- It distinguishes respondents as specialists, not as sources of data.
- It makes use of varied methods.
- It employs several sources of information.

As discussed above, the three conditions identified by Yin to consider when selecting a research method are depicted in the table below, and demonstrates how each of these relate to 5 main research strategies (Yin, 1994:6 as cited in Forsman, 2005:96).

Strategy	Form of research question	Requires control over behavioural events?	Focuses on contemporary events?
Experiment	How, Why	Yes	Yes
Survey	Who, What, Where, How many, How much	No	Yes
Archival analysis	Who, What, Where, How many, How much	No	Yes/No
History	How, Why	No	No
Case study	How, Why	No	Yes

The research question that was being dealt with in this report was a ‘how’ question, and according to the table above a few options may be chosen. One of these options is the is the exploratory option that looks for a defensible justification for carrying out an explanatory study, in which the objective is to develop appropriate hypotheses and intentions for further inquiry. Yin however notes that with exploratory studies, any of the 5 research strategies in the table may be used such as an exploratory case study which was the approach used in this study, looking to explore the variety of spatial typologies that would be appropriate for urban agricultural projects or initiatives to occur in.

The second form of the 'how' question refers to the 'how many' or 'how much' form of the question, which would favour strategies such as surveys or, archival analysis, as these easily allow the researcher to derive an appropriate finding. Being able to distinguish what kind of a research question the researcher is actually asking. It is important to understand that research questions have both substance (about what?) and form (kind of question being asked) and that the kind of question being asked provides a clue as to what strategy the researcher should make use of. For some questions there will be more than one strategy which will be regarded as being appropriate, and so it is up to the researcher to carefully decide which strategy will be most beneficial to the investigation process.

Using a case study as a method in acquiring empirical data is common, though it is important to realise that this strategy, as any, comes with a variety of critiques. Many argue that the strategy is far less desirable than perhaps experiments or surveys (Yin, 1994). This is due to the fact that a lack of rigour is associated with case study research, resulting in findings that are skewed and do not necessarily reflect the truth. Findings may often reflect the investigators personal impressions and biases, and thus results in there being no guarantee of reliability or objectivity. There is also the risk of the investigator effect and even the mere presence of the investigator being present can be destructive (Sarantakos, 2005: 217).

Sarantakos (2005:217) states that "there is no method that is free of problems" - however case studies "are a most useful and popular method, as legitimate as any other method of social research". Strong points of the case study method have been acknowledged, these include in-depth research, production of first-hand information, it allows for the use of a variety of interrelated methods where the focus is on direct and verifiable real-life experiences. Case studies also produce information that covers the whole unit and not only small aspects of it (Sarantakos, 2005:216).

3.3 THE USE OF SEMI-STRUCTURED INTERVIEWS

Another method that has been made use of in this research report is semi-structured interviews. According to Creswell, (2009:173) "qualitative inquiry employs different

philosophical assumptions; strategies of inquiry; and methods of data collection, analysis and interpretation". The qualitative strategy draws on text and image data and may use a range of inquiry strategies which in turn have a profound impact on the procedures. Researchers once had to try and convince others of the legitimacy that qualitative research can bring to an investigation. In more recent times, consensus has been reached on what is meant by, and what makes up, qualitative inquiry.

In the qualitative strategy, the researcher is a key instrument, whereby data is collected and the examination of documents and interviewing of participants (questions which are formulated by the researcher) are tasks carried out by the researcher. In this way, multiple sources of data are made use of. These may include documents, interviews and observation which are typical for researchers making use of the qualitative approach, and do not typically rely on a single source of data. The data is then made sense of by the researcher and often categorised into themes or sections that have been informed by all the various data sources used.

It is important to note that the qualitative strategy is one that is also interpretive. In other words, the investigator makes interpretations of what they discover. These interpretations are influenced by the background, previous understandings, history with the topic and context that the researcher has. The same can be said for the interpretations made by the interviewees, as well as the readers of the research, and so demonstrates the complexity of issues being investigated, and the range of views that each participant may have on them. Having said this, the researcher is often sustained and has intensive experience with participants (Locke et al, 2007 as cited in Creswell, 2009:177). This in turn produces a range of strategic, ethical and personal issues into the qualitative research process, which will be looked at later on in this chapter.

In this research report, face-to-face interviews were conducted in which participants provided specific and informative knowledge on the topic at hand. This information is considered indirect as it has been passed on to the researcher, already filtered through the interviewee's views and biases. The face-to-face interviews were

conducted at an agreed upon location and not necessarily in the natural field setting. As mentioned before, the presence of the investigator may have resulted in bias responses, and an important note should be taken that each participant is different and no two respondents will be equally articulate in their responses. The participants who were to be interviewed were selected based on the appropriate knowledge that they would have to share. Looking at the research question *"How is urban agriculture manifesting in the City of Johannesburg, with a focus on the Turffontein Node (Corridors of Freedom)?"* it would be those who have knowledge on urban farming and where or how projects take place, and others would be those who know more about the Corridors of Freedom plans and the Turffontein node. All questions asked were the same. However, depending on who was being interviewed, questions would be probed differently to suit the position of the participant. Keeping the meaning of the questions the same is critical, so as to ensure that the answers are not skewed. Smith describes the qualitative approach as "a set of tools developed to pursue the epistemological mandate of the philosophies of meaning" (1994:491 as cited in Philip, 1998:266). Respondents included people involved in the Corridors of Freedom, specifically with the Turffontein Node, advocators of urban agriculture and members of a Corridors of Freedom/ Rosettenville study group. The questions asked can be found in the annexure.

In addition to the face-to-face interviews that were conducted, some respondents answered the prepared questions in written format via email due to the respondents' busy schedules. There was also a face-to-face interview with a focus group of two people. Individuals were "invited to participate in a focus group because they are viewed as possessing important knowledge about particular experiences, needs, or perspectives that we hope to learn more about as a result of the needs assessment" (OMNI, nd:7). In this focus group, the researcher acted as a listener and observer and not a participant in the conversation. The questions asked in all forms of interviews conducted were exactly the same, although probed differently, depending on which group the respondents fell into. All questions were open-ended and designed to guide and structure discussions.

3.4 A PHOTOGRAPHIC INVENTORY

Finally, the use of a photographic inventory was used in the research report. From the 19th century, many of the strengths and weaknesses of image-based investigation were apparent. There are many critiques of photography as a method of data capturing as it has been argued that researchers using this method lacked procedural rigidity and so used photographs as modest illustrations, or as quasi support for philosophical declarations. Statz (1979 as cited in Prosser and Loxley, 2008:6) for example, characterised the use of photography as damaging to the scientific reliability of visual sociology.

However, in more recent times, we have seen a shift "from traditional modes of observational studies to a more 'seeing' and ultimately a 'perceiving' form of visual sociology" (Prosser and Loxley, 2008:6).

"Photography became the principal mode of recording and focus of analysis, notions of what constitutes realism (whether or not the images produced were an accurate and unbiased representation) was a ubiquitous and knotty issue within visual studies of the time." (Prosser and Loxley, 2008:6). Researcher's observations are transformed into drawings, illustrations, signs, codes and figures. It has been maintained, that the birth "of methodical empirical studies was the beginning of visual research" (Prosser and Loxley, 2008:9). A key activity that social scientists have carried out is that of fieldwork documentation and grappling with the relationship between how images are understood and used. In this way, spaces in the Turffontein Node will be photographed and a photographic inventory created.

Photographs, or a photographic inventory, is a research method visually showing information, and is an effective way of studying information in a particular context. According to Weber, "images can be used to capture the ineffable, the hard-to-put-into words...images can make us pay attention to things in new ways...images can be used to communicate more holistically, incorporating multiple layers, and evoking stories or questions" (Weber, 2008:44-45).

It is important to note the role images can play in a research process and how useful they can be, for example (Adapted from Prosser and Loxley, 2008:5):

> - Images can be produced by participants as data.
> - Found or existing images can be used as data or springboards for theorizing.
> - Images and objects are useful to elicit or provoke other data.
> - Images can be used for feedback and documentation of the research process
> - Images are useful as a mode of interpretation and/or representation.
>
> (Weber, 2008, p 47)

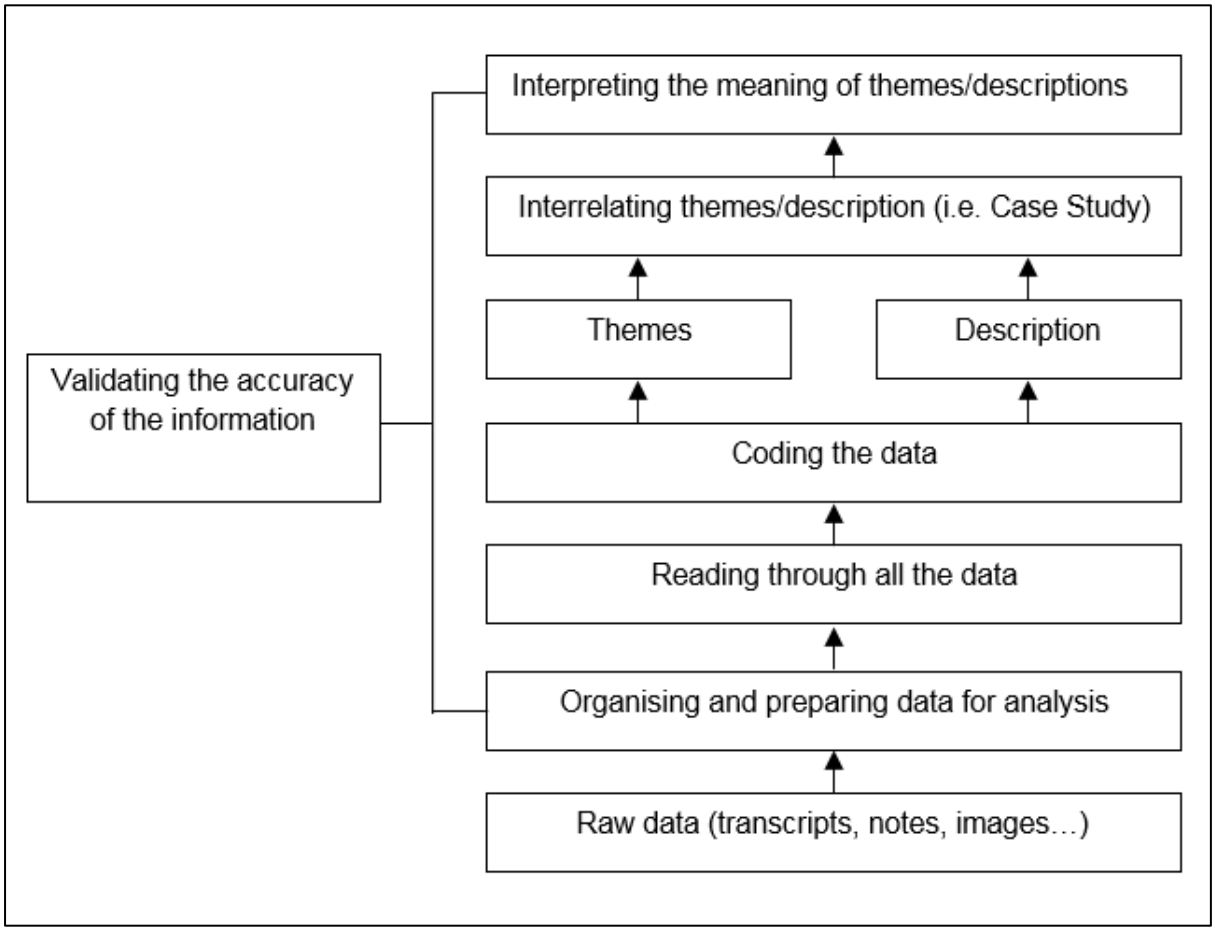
(Weber, 2008:47, adapted from Prosser and Loxley, 2008:5).

"'Mapping' exercises, are an aspect of researcher created data and are used to organise ideas" (Prosser, 2007 as cited in Prosser and Loxley, 2008:14). A variety of space typologies will be mapped, and all the photographs that have been taken for the photographic inventory will be used as a 'point of reference' as to where these pictures were taken.

3.5 DATA ANALYSIS AND INTERPRETATION

Analysing the data that has been collected often comprises of several components, and involves making sense of all text and images that have been gathered using the various methods discussed above. This process is not quick and easy, it involves going back and forth, always reflecting on the data gathered and the questions being asked in the study. Creswell says that, "qualitative data analysis is conducted concurrently with gathering data, making interpretations, and writing reports. While interviews are going on, for example, the researcher may be analysing an interview collected earlier, writing memos that may ultimately be included in the final report, and organising the structure of the final report."(Creswell, 2009:184). The analysis of the data has been to collect all the open-ended data and developing an analysis from the information acquired by the participants and the photographic inventory (including the mapping). Below is a diagram that has been adapted from Creswell's *Research Design: Qualitative, Quantitative and Mixed Methods Approach* (2009:185), which looks to explain the process of analysing the data:

In the diagram, the various stages are interrelated and are not always used in the order shown in the diagram.



Adapted from Creswell's *Research Design: Qualitative, Quantitative and Mixed Methods Approach* (2009:185),

3.6 ETHICAL CONSIDERATIONS

Booth, Colomb and Williams (1995) speak about the ethical choices that we face when carrying out research of any kind. He goes on to list various points that researchers should approach with care. These are: "Ethical researchers do not steal by plagiarising or claiming the results of others. They do not lie by misreporting sources or by inventing results. They do not destroy sources and data for those who follow." (Booth, Colomb and Williams, 1995: 255).

It is important to ensure that participants who had agreed to be interviewed understood what the research is being carried out for, and not to mislead them into thinking anything will come of the research. Permission was also granted before any interviews were recorded, later on being transcribed. Record of the agreement on the participants' behalf has been documented in the written form of a consent form in which all information regarding the participation in the study is made clear, as well as asking permission to audio record the interview where possible, and that information shared will be kept confidential if the participant wishes.

Protecting identity (if interviewee wishes to remain anonymous) and respecting the participant's rights at all times. Accuracy, objectivity and integrity should be conscious by the interviewer at all times. The necessary ethics forms and letters had been formulated by the researcher and had been sent through to the participants before any interview was set up. Participants had the opportunity to go through all documents and before any interviews were carried out, the necessary forms were signed and completed.

3.7 CONCLUSION

This chapter has looked at the various research methods and approaches taken in collecting data. This helps understand the nature of the research being conducted and also ensures that careful consideration as to which approaches were used enabled the maximum value of information to be captured. The subsequent chapters are therefore informed by the methods deliberated here in that results and findings will be analysed and recommendations made.


















Chapter 4:

Results Analysis

4.1 INTRODUCTION

Bambanani means ‘Unite’, Siyakhana means ‘to build one another’, and Qiniselani is ‘to be strong and endure’ (Google translate, Accessed 15/10/2014); all the names of these Johannesburg urban food gardens can be directly linked to the spheres of the design process taken in integrating urban agriculture into the urban environment, as seen in Philips’ (2013) work as discussed in the literature covered in this research. The chapter antecedent to this had discussed the various research strategies that have been engaged within the collection of data. In this chapter, results gathered from these strategies have been analysed, looking at the experiences of existing urban agricultural projects in the City of Johannesburg, and reflecting on the key principles that transpired from the literature covered earlier. More importantly, it has looked at the viability of integrating urban agriculture into the proposed Corridors of Freedom plans, and what these spatial requirements would be - looking specifically at the Turffontein node.

4.2 EXPERIENCES OF PAST/EXISTING URBAN AGRICULTURAL PROJECTS

Three urban agricultural initiatives were looked at in this study. All fall under the City of Johannesburg Metropolitan Municipality, and are considered to be on the city’s edge. Two of these are urban farms, located east of the city centre and the other south of the city centre, in the study area of the Turffontein node. The business ‘*The Urban Basket’* was also considered, and although food is not grown by the company itself, the majority of produce which is sourced comes from urban farms in close proximity to the city. Figure 1 is a map situating the Bambanani food and herb garden and the Siyakhana initiatives, as well as the Urban Basket based in the Maboneng precinct in Jeppestown.

Map demonstrating the location of : 1.) The Urban Basket
2.) The Bambanani Herb and Food Garden
3.) The Siyakhana Initiative



http://grindcities.com/wp-content/uploads/2014/03/Screen-Shot-2014-03-06-at-12.44.57-PM-300x170.png, Accessed: 17 Sept 2014.

https://fbcdn-sphotos-c-a.akamaihd.net, Accessed: 17 Sept 2014.

http://www.givengain.com/content_cause/images/logos/5119-UYJMCN.jpg , Food Garden Roots, Accessed: 17 Sept 2014.

1.) The Urban Basket



http://grindcities.com/wp-content/uploads/2014/06/Picture-2.png., The GRIND Grange: Urban Basket expands to new heights, Accessed: 17 Sept 2014.



https://scontent-a-ihr.xx.fbcdn.net/hphotos-xpa1/t31.0-8/1957771_1493754064185211_858933005_o.jpg, At GRIND, Accessed: 17 Sept 2014.



https://scontent-a-ihr.xx.fbcdn.net/hphotos-xpa1/t31.0-8/1077210_1509139419313342_1634945941_o.jpg
https://scontent-b-ihr.xx.fbcdn.net/hphotos-xpf1/t31.0-8/905410_1497763703784247_1646671503_o.jpg, Both Accessed: 17 Sept 2014.

2.) Bambanani Herb and Food Garden



https://fbcdn-sphotos-g-a.akamaihd.net/hphotos-ak-xpa1/, Bertrams Inner City Farm - A Bambanani Food and Herb Cooperative Project, Accessed: 17 Sept 2014.



https://fbcdn-sphotos-a-a.akamaihd.net/hphotos-ak-xfp1/v, Bertrams Inner City Farm - A Bambanani Food and Herb Cooperative Project, Accessed: 17 Sept 2014.



https://scontent-b-ihr.xx.fbcdn.net/hphotos-xpa1/v/t1., Bertrams Inner City Farm - A Bambanani Food and Herb Cooperative Project, Accessed: 17 Sept 2014.

3.) The Siyakhana Initiative



http://www.siyakhana.org/Portals/0/UltraPhotoGallery/451/1/[1].Siykhana%20047.jpg., SuperUser Account,Cabbage in the garden, Accessed: 17 Sept 2014.



http://www.siyakhana.org/Portals/0/UltraPhotoGallery/451/1/[1].IMGP3770.JPG., SuperUser Account, Sarah sharing with kids, Accessed: 17 Sept 2014.



http://www.siyakhana.org/Portals/0/UltraPhotoGallery/451/1/[1].DSC00095.JPG., SuperUser Account, Enterance to Siyakhana Food Garden, Accessed: 17 Sept 2014.

4.2.1 ISSUES OF SAFETY AND SECURITY

Gathered from the interviews held with members of the various initiatives (refer to questions asked found in the annexure), security has been a main area of focus for those ensuring the success of food gardens, and reflects the key principles that transpired and were discussed in the literature on safety and security in open spaces in chapter 2. Reflecting on this literature deliberated earlier in the report, the management of open space is a challenge that has been identified in literature and confirmed in findings of the data acquired. There has been recognition of the importance of having a fence around the perimeter of the gardens to avoid theft and vandalism. Lindo Sithole, who manages the Qiniselani Communal Garden in Rotunda Park in Turffontein said, “I had asked the city for a sturdy fence to be put up around the garden two months ago and am still waiting for something to come from my request.” Working with the Department of Agriculture, Lindo sometimes receives aid in the form of new hosepipes and seedlings, but has acknowledged that the garden is unable to rely on this form of aid to keep it progressing.

Management of this space is internally conducted and although the membership base of the initiative began at 14 members, it is seldom that any attend, work or assist in the management of the garden. Further donations which assist in the running and management of the garden include seeds from a nearby supermarket and manure from the horse racecourse which is also in close proximity to the garden. This concept of close proximity means that donations are easier to come by and those making the donations need not worry about the transport costs of, for example, manure and seeds. If the distance is far greater, then the process would not be as beneficial. It is interesting to note here is that even the close-by supermarket has recognised the importance, and its support, of the community garden and this is suggested through the donating of seeds to be grown.

Management of the garden seems to be conducted and implemented by Sithole himself, as well as with the occasional visit by the other members of the garden. The challenge, and what can be linked back to the literature regarding the management

of open space, is that stakeholders need to be interested and also take ownership of the space. Success cannot be expected unless various stakeholders involved in the management of an area communicate with one another and move towards a common goal, such as a successful and progressing urban agriculture garden.

Lindo went on to state that, “each morning when I arrive at the garden, I do not know what to expect, as the surrounding community is poor and sometimes come to the garden and help themselves to whatever they want or need during the evenings when nobody is around to see.” This touches on issues around security and theft as discussed by Carmona, Magalhaes and Hammond (2008). It is important to create a sense of ownership among the users of urban agriculture gardens. When a community feel responsible for an area and it’s well-being (mainly due to its benefits experiences by the community), they are able to create a certain level of security through surveillance, and suggests that the selection of space needs to be in a location where residents care and feel responsible for the garden, are able to watch over it from their homes, places of work and public spaces which they may use, making this one of the spatial principles regarding what the spatial requirements are for creating successful urban agriculture spaces. Aside from this issue of produce being stolen, there is a form of what may be considered ‘informal’ bee-keeping which is in fact a feral beehive - this will be discussed in greater detail later in the chapter, as well as show how it links with the importance of training and education as seen in Philip’s ‘outreach sphere’ (2013), with the recognition of skills and training being included as a component of Joburg’s food resilience policy.

Barker (2014) suggests that a major challenge being faced by entities attempting to implement successful urban food gardens, are the unique challenges being faced by urban areas themselves. “People using the gardens need a sense of ownership over them. In doing so, we ensure security and therefore self-pride, self-monitoring and self-management.” Understanding the importance of ownership and respect for food gardens is a concept that needs to be introduced within a community. This in itself is a challenge due to the number of the urban population facing food insecurity. The implications of having a starving population is that it will be an enormous challenge in securing a food garden in such a way that food will not be stolen - and is something

that the design of food gardens needs to grapple with. This will be discussed in chapter 5.

4.3 THE IMPORTANCE OF EDUCATION AND TRAINING

Referring to the 'informal' bee-keeping, mentioned above, is an example of the possible implications that a lack of education and training can result in. Although bee-keeping is a promising sign in terms of assisting plants to germinate more easily, bee hives pose threats in terms of a health safety standpoint, and ought to be controlled with great care, while being fenced off from the public. It is worrisome to consider a possible scenario in which children or people that go help themselves to the produce in the garden, should happen to stumble on the beehive accidentally, possibly leading to serious health and safety implications. Lindo stated that the bees had begun the beehive on their own accord and was not a result of any efforts in attracting them. Even with the lack of training or education that could be provided by the Department of Agriculture or other stakeholders involved in the initiative , Sithole has tried his best to educate himself about bees (through the internet), and how best to handle them. This approach towards the bees is due to Sithole being unable to remove them without putting himself in danger, (The services of a professional bee keeper to remove the bees may not be an option for Qiniselani due to funding issues that may be argued to have a connection with the lack of management of the garden.), while at the same time considering the great improvement that Sithole has observed in the germination of his plants, thanks to the bees. Also, removing the bees does indeed come with its pros and cons. This, as previously mentioned, ties in with the literature on design process spheres (Philips, 2013) and includes other aspects that need to be considered such as maintenance, training and financing of initiatives.



The image above shows the flimsy fence supported by branches. This is not sufficient. (Photo: De Sa Santos, 2014).



The image above shows the beehive made up of what looks like building rubble and blue plastic sheets- I was not aware that this was a beehive and was quite thankful I didn't go poking around on my own accord. (Photo: De Sa Santos, 2014)

Other security challenges being faced were not of robbery of produce by fellow humans, but rather by pests. Rodents have been challenges for the urban agriculture initiatives looked at in this study. Wherever there was a build-up of refuse or filth in close proximity to the gardens, the area attracted rodents, essentially leading to a breeding ground for such pests, only intensifying the issue. This is dangerous in that much of the produce becomes inedible once bitten by the pests, not to mention the spreading of diseases to the community. It is, therefore, important to have what Prof. Michael Rudolph of Siyakhana describes as an on-going process of learning and maintaining, including keeping the surrounding areas clean. This is the way initiatives such as this should be managed, there is always something to learn, improve from, and gain knowledge to share. The spatial design of these spaces and the manner in which they are placed in spaces requires the sharing of knowledge and skills, and also important is the manner in which the space is managed.

4.4 WHO OWNS THE LAND / ACCESSIBILITY?

The Qiniselani Communal Garden has in the past faced multiple issues derived from the lack of clarity as to who owns the land on which it is located. Although Qiniselani's experiences regarding this challenge will be discussed in greater detail later in this chapter, issues of ownership, or even a sense of ownership, has proven

to be a common challenge faced by urban food gardens. Whether it is the legality of ownership rights, or even creating a sense of pride and ownership from community members being served by food gardens, these are challenges commonly faced and is an important component in ensuring the success of urban farming initiatives. Discussions on whether urban food garden initiatives should be run by the city, or other organisations, were conducted during the various interviews carried out for the purposes of this research. Some suggested that such initiatives should be run and managed by organisations, where others argued that although organisations may be involved or even manage such initiatives, the city should also come to the party.

AmonMaluleke from the Bambanani Herb and Food Garden suggested that urban farming initiatives should be run and managed by city and government parastatals.He argues this notion, saying "*it can be run by the people whom the city is supporting, because if the city runs the project, it will mean that the city will not failregarding the jobs which they are mandated to do - which means it can be a support structure."* (Maluleke, 2014). Amon believes that having this balance between the city and other organisations running and managing initiatives, a partnership between the community and the city is forged. It is important that a sense of ownership is existent amongst the individuals working at the food gardens and amongst the city which the food garden serves so that the garden is not vulnerable to abandonment and failure. A fine-tuning of the level of management required in the creation of quality public spaces has been discussed in chapter 2. Under-management, or over-management, is likely to be harmful to the success of urban food gardens. Strategies which can be employed to ensure the success of urban food gardens will be discussed next.

4.5 HOW DO WE KEEP PEOPLE INTERESTED WORKING IN FOOD GARDENS? MANAGEMENT

Theko Moteane (2014) from the Urban Basket, is of the opinion that food gardens should be treated as businesses. Members who are working many hours a day in a food garden should be rewarded for doing so by way of a salary. This in turn keeps

the members encouraged and excited about the project and all the possibilities that it entails, and at the same time such members need not be concerned about their families or themselves, and how they will make ends meet. This reflects the argument of skills being valued and paid for as suggested by Philips (2013), in the training and education conducted by stakeholders of initiatives. However, this is not to say that volunteer workers would not be welcome to assist in the initiatives, and makes a point that volunteers should still be encouraged and welcomed into urban farming initiatives so as to spread any knowledge about food gardens.

AmonMaluleke from the Bambanani Food and Herb Garden, believes that if the city runs and manages urban food garden initiatives, that the likelihood of initiatives being left as 'white elephants' would be far greater than if the community was to be involved from the very beginning. If the community is involved, they are likely to feel as though they were part of the process and take ownership of the initiative. Maluleke gives the example of the Bambanani garden's beginnings, *"the city had engaged with the community and asked them 'how can you sustain yourselves?'. Which is when the response of a food garden was selected. It is something which can sustain the community, in it we have realised that there is sustainability, there is entrepreneurship, there is education and so there is also taking ownership of it."* (Maluleke, 2014). All these aspects are reiterating the principles found in the literature covered.

Although management of the space is necessary if a well-functioning garden is to be achieved, the challenge is to ensure all stakeholders communicate effectively so as to achieve an optimum level of operation through efficient integration between various stakeholders involved in the initiative and management process.

4.6 RE-PURPOSING NEGLECTED SPACES: TYPOLOGIES

The Bambanani Garden in Bertrams, is situated on what was once abandoned bowling grounds. The Siyakhana initiative is located on a piece of land within Bezuidenhout Valley Park, previously used as a dumping area for things such as grass offcuts and tree branches, as well as illegal dumping of non-perishable items

such as plastics and tins. Today the gardens are productive and healthy. Other typologies that may be suitable for urban food gardens include roof-tops, sides of buildings, balconies, park space, vacant plots, backyards and front yards, amongst others. Examples of these typologies of spaces found in the study area have been documented in the form of a photographic inventory. Spaces that may be appropriate for urban agriculture may be found within both the private and public spheres and is not restricted to public space. The photographic inventory will be discussed later in this chapter.

4.6.1 THE BAMBANANI FOOD AND HERB GARDEN

The Bambanani Food and Herb Garden is based in the suburb of Bertrams, east of the city, in which the food garden has re-claimed previously abandoned and run-down bowling greens of the old Bertrams Bowling Club. The project began in 2006 as part of what has been named 'Hope Village', and is part of a municipal programme aiming to rejuvenate the areas of Bertrams and Hillbrow. A grant of R21 000 from the city allowed the project to begin with a few tools and seeds, as well as the dedication of 10 volunteers (Alexander, 2014). Since then, sponsors from Talborne Organics and Jojo Tanks, along with the volunteers to the garden, have helped the project to grow and become a success. Some of the produce that is being grown in the food garden is sold to street vendors in the area, and also the Spar supermarket in Bertrams. Maseko, who works in the garden, explains how the garden crops have been grown by hand and describes it as "a crucial part of the creation of a diverse ecosystem and an important bonding tool for the local community." The method of planting crops used here is called the companion planting method and so their harvests are Participatory Guarantee Systems and are thus certified as organic, allowing produce from the garden to be sold at local organic markets. The herb and food garden produces a variety of produce ranging from potatoes, sweet potatoes, cabbage, chillies, spinach, kale, onions and butternut (Alexander, 2014).









Left and below: 'Nelson Mandela' (18 July 2014) day at Bambanani Herb and Food Garden.

Seedlings were given to volunteers to plant and new seeds were sewn in seedling trays. The crops were ready to be harvested in early October.

Volunteers are encouraged to spend time tending to the garden.





Many of the people, who find themselves unable to find employment in the city, have come from a background where they have experience and skill in living off the land. Often in rural areas, communities will have small subsistence 'farms' or gardens which they take care of and which sustain them when money is not plentiful. If the unemployed are unable to buy food due to lack of income, and are going to bed with an empty stomach simply because they do not have the opportunity in the city to sustain themselves from the land, as they would do back in the rural areas, it is a lost opportunity. Maluleke, who came to Johannesburg from rural Limpopo and began working at Bambanani in 2007 after he was retrenched, is of the opinion that, "People come to the city and want to work in a job where they wear a tie but they don't have the skills," he says. "Like me, they know how to work the land, they can feed themselves, and they can feed their neighbours if they were given the space and the opportunity." (Alexander, 2014).

4.6.2 THE SIYAKHANA INITIATIVE

The second urban agriculture project occurring in Johannesburg that had caught my attention was the Siyakhana Initiative for Ecological Health and Food Security. This initiative strives to improve issues surrounding food security, to grow nutritious food in a sustainable manner as well as to raise awareness around the impact of ecological health promotion. It is a goal of the initiative to break free from the social and environmental barriers that many may face when it comes to accessing food and, essentially, a healthier way of living. The Siyakhana initiative operates on one of Joburg city's most important urban permaculture demonstration sites, and also undertakes research, policy advocacy, training and community-based programming (Siyakhana, 2014). The initiative began in 2005, on an infertile portion of the park that was rocky and clay-filled. The 2 hectare piece of land was donated by Johannesburg City Parks.

Prof. Michael Rudolph, who qualified as a dentist from The University of the Witwatersrand in 1970, became very interested in prevention of decline in health and diet after practicing dentistry. He completed a master's in public health at Harvard

University, which later resulted in him becoming the head of the Department of Public Health Dentistry in South Africa. In conjunction with this, Prof. Michael Rudolph also became involved in the School of Public Health. Here health promotion became a focus of his.

His working with early childhood development centres, abandoned youth within the inner city, with shelters and NGO's providing home based care for those suffering from HIV/AIDS, led to the realisation that food (and the lack thereof) was a major problem. This was a significant trigger in his approach to public health, understanding that nutritious food is an essential component of good health, and is not so easily available to poorer communities. After research on issues was conducted, urban food gardens became a possible solution/option that should be explored. Having established a positive relationship with the City of Johannesburg, based on previous work, various departments in the city were approached, proposing a food garden which could produce healthy, quality food to the community. After mapping all available spaces around the city that could accommodate a food garden, the portion of land in Bezuidenhout Valley Park was offered to Prof. Michael Rudolph in which to begin his initiative. In close proximity to the low income areas of Hillbrow and Yeoville, its location (a spatial concept) and ease of access in terms of distance was not altogether ideal, but was the closest open space that was available to these areas for the establishment of a food garden.

The area was, as previously mentioned, a dump site, and not realising the real condition of the land, the offer from the city was taken and the process of rehabilitating the land for the use of growing food began. "Over the years various permaculture and soil conditioning techniques have transformed the land into a productive mini-farm that is home to an orchard of fruit and nut trees, an abundance of vegetables and a large herb garden" (den Hartigh, 2009), and is one of the city's longest surviving food gardens - "considered a hallmark of agro-ecology in the wider Johannesburg area and is one of the most prominent sites for an integrated approach for urban food production."(Siyakhana, 2014). Using these principles of permaculture gardening, it produces food and herbs to address the needs of many

less-fortunate people living in and around the inner city. The space that the food garden now exists on was described as being “a patch of ugly inner-city ground that has been brilliantly transformed with permaculture gardening techniques” (Siyakhana, 2014).The initiative hopes to see “the establishment of a healthy inner city environmental and recreational site which is based on the designs and methods that may be replicated in other inner-city communities.”(Siyakhana, 2014).

With the urbanisation rate in South Africa increasing, there has been a greater demand on necessities such as land, water, housing, transport and employment, amongst many others. These pressures have placed a great deal of stress on the environment and, unfortunately, has ultimately lead to the deterioration of the environmental state (Siyakhana, 2014). In order to move away from this trend, and towards a more sustainable and healthy city, sustainable urban design is necessary for integration into urban planning practices to be reached. “Siyakhana offers consultation on urban agriculture design projects, master plan development, urban regeneration projects, and other ecological urban planning and urban design projects. Siyakhana offers expertise in an array of topics” (Siyakhana, 2014).

4.6.3 QINISELANI COMMUNAL GARDEN

The beginnings of the Qiniselani (roughly translated means to endure and strengthen) Communal Garden began in 2006 when Lindo Sithole, and a few more members, were involved in a dress-making programme whereby dress-making skills were taught to locals in efforts to stimulate entrepreneurial activity in the community. The programme was conducted in one of the buildings on Rotunda Park, alongside which were programmes aimed at the children of the community (Sithole, 2014).

The progress of the programmes meant that a bigger location was needed and an application to City Parks was prepared to move to a nearby existing building on Rotunda Park. This application was later declined and subsequently followed by a second application being put forward and facilitated by the area manager of City Parks, ultimately leading to the application being accepted. The dressmaking programme seems to have been replaced by the food garden, which has made new

use of what was once a traffic educational park for children, and keeps within the boundaries of the pre-existing ‘traffic edu-park’. I cannot be sure whether the ‘traffic edu-park’ was poorly used by the children in the area, or why exactly this particular area of the park was selected for the food garden, but we can indeed say that this space is beneficial to the surrounding community.

Since the garden has been established, there have been conflicts with SAPS in which the Qiniselani Garden was asked to vacate the premises. Lindo is of the opinion that the SAPS arrived as a result of miscommunication and were, therefore, under the impression that the Qiniselani Communal Garden members had occupied the land without any legal consent to do so. This touches, once again, on issues of miscommunication and management challenges being faced in the highly complicated urban environment. In response, the Qiniselani initiative presented the documents which reflected the accepted application to make use of the space, as well as a letter written by the Joburg Property Company, who manages and develops the city’s property portfolio (City of Johannesburg Property Company, 2014), stating in writing that Rotunda Park is, in fact, privately owned and is not council owned land. This was later confirmed by a strategic planner at the City of Johannesburg during an interview conducted for the purposes of this research. The confusion and lack of clarity as to who owns the land is a reflection of the miscommunication, or lack thereof, between various departments of authority and other stakeholders. This is not to say that anyone is at fault, but rather demonstrates the level of complexity and challenges needed to be dealt with at the managerial level.

Sithole, and the rest of the members of Qiniselani Communal Garden, tracked the rightful owner of the property down, requesting the owner to sell the land to the initiative (although funding was non-existent). Interested, the owner asked what the initiative was looking to implement in the park and was pleasantly surprised to hear about the vision of a food garden. A verbal agreement between the owner and members of Qiniselaniwas made that the garden could be established on the land, based on the condition that the bills incurred by the garden would not be taken up by the owner. Since then, in early 2014, Lindo was informed that the Park had been included in the Corridors of Freedom plans, of which the Qiniselani Communal

Garden has not been incorporated. When apprehensions were raised about the property ownership, Lindo stated that the city officials had said that talks were held with the owner regarding the future spatial vision of the Corridors of Freedom plans for the area, and that it was a matter that was being dealt with correctly. This yet again demonstrates, in reality, the spatial concepts of management and ownership which are also spoken about in literature on the topic. These spatial concepts are necessary if a well-planned and successful garden, that possesses a positive future, is to be achieved.

Sithole and the other members are currently awaiting any information regarding the city's plans for Qiniselani's future. Krishni Gouden who is the project manager for the Turffontein Node at the City of Johannesburg has explained the participation that will take place saying, "A normal precinct planning process will take place. There will be participation, and it will depend on the area that we are working with as well as who the precinct plan is for. So there may be focus groups or broader public meetings, maybe one-on-one interaction depending- but there will be extensive participation." The participation will aid the designing of the precinct plans (of which Rotunda Park is one), and will be advertised in the community through notices in the newspaper and through ward councillors.

Perhaps having the community involved at the ground level regarding what plans will be decided on for that specific space will encourage the sense of ownership and responsibility over the space that Newman (1975) suggests. This requires deep and thorough communication with the public (users of the space) and dedication from all stakeholders involved in this design process.

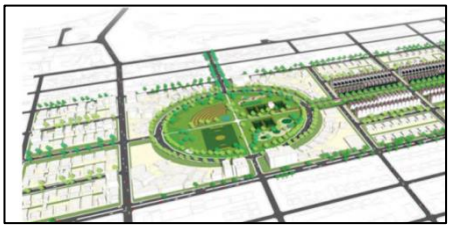


Left: Lindo Sithole working in the Qiniselani Communal Garden (De Sa Santos, 2014).

From my personal observations and experiences in this food garden, it is the passion and determination to help the community have access to affordable, nutritious food that has made it work. Even during the interview conducted on site, Lindo was interrupted no less than 5 times in the space of little over an hour, with people from the community popping in to buy produce grown in the garden (A bag of green veggies for a very affordable R2), and children in the park, tattle telling on their friends to Lindo, and looking to him for support. Personally, just reinforcing the idea that the garden has already become an integral component of the community, and it is rather sad to think that the Corridors of Freedom plans have not incorporated Qiniselani Communal Garden into the future plans for the area.

4.7 VIABILITY FOR URBAN AGRICULTURE BEING INTEGRATED INTO THE CORRIDORS OF FREEDOM (IN THE TURFFONTEIN NODE)

The draft Corridors of Freedom plan for the Turffontein node, published for public comment in October 2013, saw no spaces being dedicated for urban farming- including the space currently being used for urban farming by Lindo Sithole in Rotunda Park. Instead the, space is being “transformed into a focal point and a linear park anchor” (Turffontein Draft SAF Report for public comment, 2013:107). Below are various images adapted from the draft report (2013:109; 111-113).









Above: Aerial photograph of Rotunda Park, Turffontein (Google maps, 2014).

From the images above, it is plain to see that the food garden that exists on the site has not been integrated into the plans for the Rotunda Park. The sporting facilities that have been illustrated can be compared with the existing dilapidated tennis courts seen on the aerial photograph of the park. I feel that the already established food garden being left out of these plans (and apparently will be removed from the site altogether), is a lost opportunity. Fully recognising that open space, where communities can gather and bond, is important, urban food gardens, I believe (and especially making the most of integrating existing food gardens such as this one into future plans for an area), is a concept that should be embraced and explored.

However, having said this, a strategic planner from the City of Johannesburg, involved in the Corridors of Freedom, has stated that although urban agriculture is not one of the priorities in the Corridors of Freedom spatial vision for the city, “it is something that we as the city would encourage. Within the corridor plans, we have development frameworks or design guidelines for the residential zones that we are looking to develop, where a certain portion of your property has to be conserved for

communal uses, so we also see that as an opportunity where people are able to practice urban agriculture. However, we are not explicit in saying that it's the only thing that should be done there. It would be up to the property owners and the residents of the area on whether they would take up the opportunity or not. In this way there is a platform for urban agriculture, however it is not up to the city to implement them."

Aside from this, is the possibility to integrate urban agriculture in the spaces made available after transit oriented development is designed and laid out in place. Due to the two main focus areas of the Corridors of Freedom being sustainable human settlements and Transit oriented development, urban agriculture may be a concept that places more emphasis on these two focus areas, although spaces have not been intentionally reserved or focused for urban agriculture. The spatial implications of urban agriculture possibly popping up in spaces left over after TOD design means that people who frequently use the space may take responsibility and a sense of ownership over the urban agriculture gardens. Continuous usage of the areas would ensure the safety of the gardens through surveillance and management may be conducted through a partnership between the city and other organisations and community members.

4.8 FINDINGS OF THE PHOTOGRAPHIC INVENTORY

The area that has been looked at for the photographic inventory is the same focus area first illustrated in chapter 1. It is important to note here that not every space was photographed in the area, and although a variety of typologies of spaces have been captured in which urban agriculture may occur, the main idea behind this photographic inventory is to understand and to be able to identify the typologies of spaces needed for urban agriculture. Spaces identified here were found in both the public and private domains. It was interesting to see that a great deal of the houses in the area (some which have been captured in photographs displayed in the inventory) gave clues suggesting that the residents have some knowledge on

growing their own food. Whether it was through spinach patches in their front yards or grape vines growing over car-port awnings, clues could be spotted all over.

Typologies of spaces may include rooftop food gardens, balconies, vertical farming, underutilised spaces in parks and vacant plots. However, if a space conforms to an appropriate typology for urban food gardens, there may be challenges faced regarding the suitability of the spaces. For example, a building's rooftop may not withstand the weight brought on by soil containers, and the stress on the structure may prevent the establishment of a garden due to these safety issues. Other issues that may be accompanied by rooftop gardens are "intricate waste management systems, limited accessibility of certain types of tools and soil management" (Philips, 2013: 162)

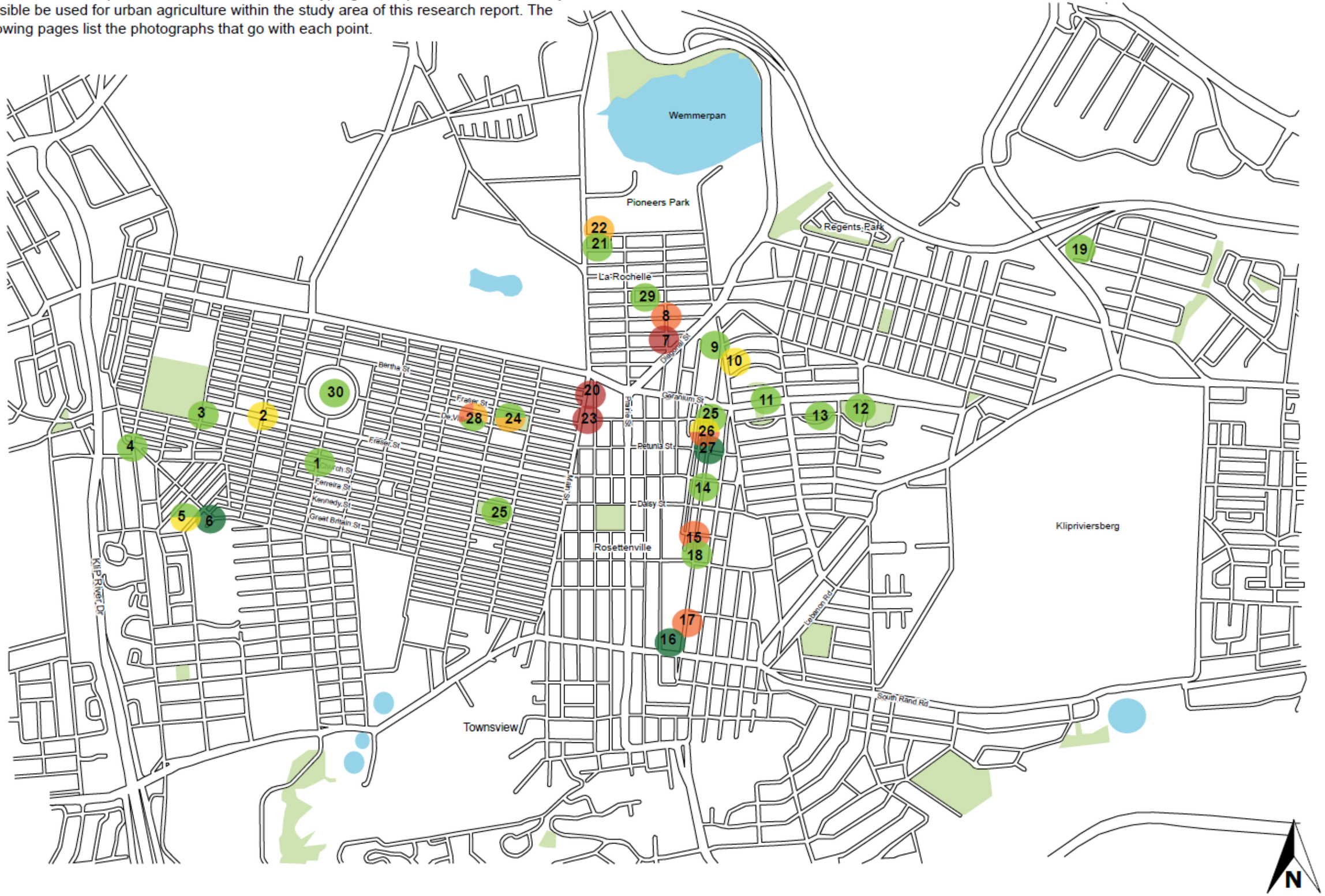
A Photographic Inventory

The following attempts to document a variety of typologies of spaces that may be appropriate for urban agriculture in the study area. As previously stated, despite best efforts to capture as many photographs as possible, the idea here is to be able to assist those looking to establish food gardens to be able to identify appropriate spaces in which to do so.

The spaces illustrated below are highlighted in red indicating the exact spaces which have been identified as being appropriate. There are some that are not highlighted and instead show spaes that are currently being used as food gardens.

Locating the various typologies of the study area:

Indicated on the map below are the locations of 30 typoligies of space identified that may possible be used for urban agriculture within the study area of this research report. The following pages list the photographs that go with each point.



Categories of typologies of space

The spaces that have been marked on the map above have been grouped into various categories. Two main categories are public space and private space, below is a table illustrating the typologies that go under each category and the colour that goes with each typology. This makes the map above easier to read.

Public space

Positive open space

This typology refers to the open public spaces which are maintained and reasonably well cared for. These spaces may include sidewalks and park space. "Positive public space can be seen as a container of public life"(Carmona *et al,* 2008:38).such spaces are used by the surrounding community and were designed to serve a function.

Negative open space

This typology of space refers to the open public spaces that are visibly neglected and of which ownership is not clear. These spaces may be avoided by the public due to safety issues being associated with the space and emphasised through it's appearance. These spaces ay include vacant lots and negelected veld space. These spaces have little to no connection with surrounding spaces and so will be left unused (Carmona *et al*, 2008). Examples of these spaces are often found around movement spaces such as major roads and highways, SLOAP (space left over after planning) which has been designed

Private space

Private spaces as a typology has restricted access depending on who wns or is permitted into an area. Generally the management of private space is the responsibility of the owner. Private spaces are also considered to be safer places due to the restricted access. Carmona *et al* (2008:62), has identifies various urban space types, one of which is private open space in which urban agricultural remnants may exist.

Rooftops

If a building has a rooftop that is accessible, it would generally be accessible only to the residents or users of the building. Buildings that have suitable rooftops may have various uses such as residential, retail, commercial and even industrial.

Back yards
Front yards

These garden spaces are commonly found in single standing homes and are for the private use of the residents of the dwelling. The garden space available for an apartment block for example, may be available for communal use and all residents of the building are permitted to use the space. Outsiders (non-residents) may not have access to such spaces

Balchony

This typology of space is usually only accessible to the resident of a particular flat/apartment/office space. Often restricted in terms of the area available for urban farming, this typology is ideal for container and vertical farming.


1: Church St, Wide Sidewalk


5:Alexander Rd, Park and Roof top


9: Aberfeldy Rd, Park


3: President St, Sporting Football Club


5:Alexander Rd, Park and Roof top


9: Aberfeldy Rd, Park


3: President St, Sporting Football Club


5:Alexander Rd, Park


11: Geranium St, park


4: Bellavista Rd, Vacant piece of land


9: Aberfeldy Rd, Park


11: Geranium St, park

Public space

This section of the photographic invetory deals with public spaces. Public spaces have been broken down into two sub-categories. These are positive open space and negative open space.

Positive Open Space

The first is positive public space and describes spaces such as sidewalks and parks. Maintenance and ownership of these spaces is established and the spaces are relatively safe (particularly during daylight hours) due to the usage of these spaces as well as the surveilance created by the residents living around the spaces.

Image References:

1) De Sa Santos, 2014

3) De Sa Santos, 2014

4) De Sa Santos, 2014

5) De Sa Santos, 2014

9) De Sa Santos, 2014


11: Geranium St, park


12: 5th Ave, Park


13: Edgecombe Rd, Park

Sidewalk spaces such as shown in images 13 and 18 to the left are examples of smaller spaces in which urban agriculture may occur in. The sidewalk is located in from of a property and the property owner may take responsibility and ownership of that space due to the relationship and impact this space may have with their property.


12: 5th Ave, Park


13: Edgecombe Rd, Park


14: Hector St and Lily St, Park


12: 5th Ave, Park


13: Edgecombe Rd, Park


18: High St, wide sidewalk


12: 5th Ave, Park


13: Edgecombe Rd, Park


19: Erdmann Rd and Inyoni St, big park

Image References:

11) De Sa Santos, 2014
12) De Sa Santos, 2014
13) De Sa Santos, 2014
14) De Sa Santos, 2014
18) De Sa Santos, 2014
19) De Sa Santos, 2014


19: Erdmann Rd and Inyoni St, big park


24: De Villiers St, Cornelia Park


25: Ferreira St: Park


19: Erdmann Rd and Inyoni St, big park



24: De Villiers St, Cornelia Park


25: Ferreira St: Park


21: 11th St, park


25: Ferreira St: Park


25: Ferreira St: Park


24: De Villiers St, Cornelia Park


25: Ferreira St: Park


28: 133 De Villiers, sidewalk

Image References:

19) De Sa Santos, 2014

21) De Sa Santos, 2013

24) De Sa Santos, 2014

25) De Sa Santos, 2014

28) De Sa Santos, 2014


28: 133 De Villiers, sidewalk


30: Qiniselani Communal Garden


30: Qiniselani Communal Garden

Qiniselani is an example of what urban agriculture would look like in a positive public space. The garden has been spoken about in more detail in the report.


29: 7th St, Da Gama Park


30: Qiniselani Communal Garden


30: Qiniselani Communal Garden

As seen in the images to the left, the ground has been used for farming produce and od tyres have also been used as containers for growing produce.


29: 7th St, Da Gama Park


30: Qiniselani Communal Garden


30: Qiniselani Communal Garden


30: Qiniselani Communal Garden


30: Qiniselani Communal Garden


30: Qiniselani Communal Garden

Image References:

28) De Sa Santos, 2014

29) Google Earth Street View, accessed 17 Sept 2014

30) De Sa Santos, 2014


6: End of Forest St, big veld


27: Petunia St: un-utilised park space


6: End of Forest St, big veld


16: Lawn St, Neglected Park


27: Petunia St: un-utilised park space

Negative Open Space

Negative space is shown to the left as unmaintained and neglacted space. Spaces such as these may have a stigma of being unsafe attached to them. Poorly maintained and polluted these spaces offer the opportunity to be reworked and formed into attractive and functional open spaces.

Image References:

6) De Sa Santos, 2014

16) De Sa Santos, 2014

27) De Sa Santos, 2014



2: Eloff St, Roof top



7: Pan Rd, Balchony



5:Alexander Rd, Roof top



20: Donnelly St, Flat balchonies



10: 1st Ave, Roof top



23: Main St, Flat balchonies



26: Rose St, Rooftop and grape vines

Private space

This section of the photographic invetory deals with private spaces.

Roof tops

Roof tops that are usable and accessible may be found on residential , commercial, retail and industrial buildings. These buildings shown to the left and highlighted in yellow demonstrate roof tops of residential buildings and are onlu accessible to the residents or users of the building due to it being private space.

Balchonies

As with roof tops, balchonies may be found in a variety of building uses (residential, commercial, retail, industrial and others), and are usually accessible to those using the building. The balchony may be more restricted than a roof top in that, for example and as shown to the left, each balchony is only accessible to the residents of that specific unit/dwelling as opposed to a roof top (one space accessible to all residents of the building).

Image References:

2) De Sa Santos, 2014

5) De Sa Santos, 2014

10) De Sa Santos, 2014

26) De Sa Santos, 2014

7) De Sa Santos, 2014

20) Kluth, 2013

23) Kluth, 2013


22: 11th St, Community Centre Garden


24: De Villiers St, Bowling club


28: 133 De Villiers, Back yard

Back Yards

Back yards are private spaces and have restricted access. These spaces are behind the main enterance of a property and offer a level of privacy to the users. Backyard spaces may vary in size.

Front Yards

Front yards are fond at the main enterance of a property, within the erf boundary.


22: 11th St, Community Centre Garden


24: De Villiers St, Bowling club


28: 133 De Villiers, Back yard (borehole)


24: De Villiers St, Bowling club


28: 133 De Villiers, Back yard


8: 5th St, Front yard


24: De Villiers St, Bowling club


28: 133 De Villiers, Back yard


15: Lawn St, Front yard

Image References:

22) De Sa Santos, 2014

24) De Sa Santos, 2014

28) De Sa Santos, 2014

8) De Sa Santos, 2014

15) De Sa Santos, 2014

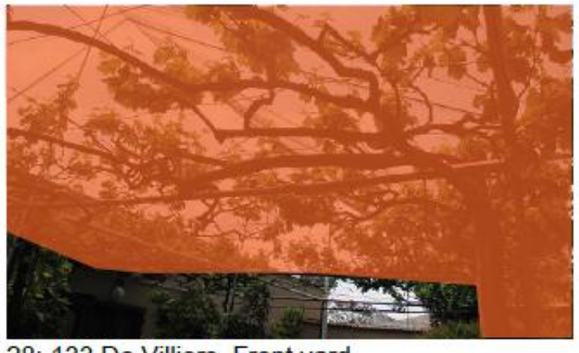

17: High St,Front yard


28: 133 De Villiers, Front yard


26: Rose St, Front yard


28: 133 De Villiers, Front yard


26: Rose St, Front yard


28: 133 De Villiers, Front yard


28: 133 De Villiers, Front yard

A common trend in the photographs to the left is the growing of grape vines. This is a characteristic and a clue of the once predominantly Portuguese area as many Portuguese residents would grow and harvest their own grapes and produce wine.

Image ReFerences:

17) De Sa Santos, 2014

26) De Sa Santos, 2014

28) De Sa Santos, 2014

4.9 CONCLUSION

The data collected and analysed in this chapter has reflected the study outline and literature, as well as key spatial principles discussed in chapters 1 and 2, while chapter 3 discussed the approaches used in collecting the data. The Corridors of Freedom plans (including the plans for the Turffontein Node) do not incorporate or place special focus on urban agriculture being a component to be implemented through the plans. However, it has been recognised as something which the community, or other organisations, can create themselves. The Corridors of Freedom emphasis on transit oriented development (TOD) may provide a platform whereby urban agriculture can occur in spaces available once the design and implementation of the TOD has materialised on the ground.

This chapter sought to assist people wishing to create their own food gardens to identify appropriate spaces within, or surrounding, the built form, as well as outline what challenges they may face on the road to implementing urban food gardens, placing specific focus on the study area of the Turffontein Node. Aspects found in the literature such as the management of space, sense of ownership and responsibility over space, physical safety, security and accessibility, as well as training and education of how to best use space designated for urban agriculture, are some of the attributing spatial concepts that have been illustrated in the findings of the research.


















Chapter 5:

Implications, Potential and Recommendations

5.1 INTRODUCTION

The implications, potential and possible recommendations of the study are discussed in this chapter. Implications for the communities for which urban food gardens are serving, as well as the aspect of communities' actually accessing initiatives, are discussed. The findings from a previous chapter have informed the lessons that can to be learnt regarding implementing urban food gardens, as well as recommendations on what the spatial requirements are for realising such initiatives on the ground. Finally, this chapter will look at the potential behind the study, and what it means for future urban agricultural projects and initiatives.

5.2 IMPLICATIONS

5.2.1 FOR THE COMMUNITY

From the three food gardens visited in this study (Bambanani Herb and Food Garden, Siyakhana and Qiniselani Communal Garden), it has been evident that the gardens have become an integral component of the community. Although the gardens are contained and have fences (some more sturdy and effective than others) set up around them, the community, who are often looking for food at more affordable prices, have identified these gardens as a place of opportunity that meets their needs, and more importantly, is accessible to them.

The implications of having a food garden established in an area can be argued to be dependent on the nature and context of the community to which it would be catering. For example, in a low income community, the implications of a food garden might mean moving towards or, at least, striving to eradicate food insecurity and provide access to affordable and healthy, nutritious food that in turn assists with the improvement of the health status of community members. The food gardens may offer employment opportunities in the way of people who would run and manage the garden, work in the garden, maintain the garden and the selling of produce. Employment opportunities mean that those who were previously unemployed would

earn an income, and in this way create a sense of ownership and respect for what the food garden can bring into their lives. An objective, or goal, that could possibly result from such an initiative gaining the respect from users is to achieve a certain level of security of the garden. Members employed, or anyone benefitting from the garden, will feel the need to protect it and thus costly security systems would not be necessary.

5.2.2 ACCESSIBILITY: SAFETY AND SECURITY

As identified in chapter 4 (findings), the existing food gardens in the city have, at some level, experienced issues surrounding safety and security whilst running the initiatives. An obvious issue is the factor of needing a boundary of some form in order to prevent the produce being grown, from being stolen. Lindo Sithole, from Qiniselani Communal Garden, has made clear his concern regarding these issues, and even went as far as asking for governments' assistance in providing a sturdy fence to be established around the garden. Currently, Sithole experiences matters regarding theft of produce from the garden, and on his arrival each morning carries out an inspection of the garden due to the possibility of theft having occurred overnight. Sithole has spent many hours removing plants that were growing close to the perimeter boundary, of which he had erected himself, and moving them further in the garden. This means that in a situation where space is an opportunity to grow and succeed, spaces, or areas, around the fence are being underutilised and, in a sense, wasted.

The requirement and, sometimes necessity, of a boundary being erected around the garden, conflicts with the above discussed notion of ownership whereby the community has established a bond or pride with regard to the food garden. Implications of a boundary around the food garden may cause more harm than good, and may hinder such a connection from being established with the surrounding community. Community members walking past the garden may read the boundary set up (this may include materials such as barbed wire and other sharp and harmful objects designed to keep unwanted intruders out of the garden) as a sign that they

are not welcome there, and so will look to other more familiar shops and supermarkets to purchase their produce, as opposed to supporting their community food garden. This dilemma has been dealt with in the recommendations section of the chapter and looks to provide some options in creating food gardens that are safe from theft, while not sending out signs of exclusion and hostility.

5.2.3 OWNERSHIP

The implications behind ownership of land being unclear, or of the community not viewing a food garden as part of their space, is problematic as the garden is then at risk of being left 'ownerless', with no-one being compelled to take responsibility in the maintenance, or running, of the food garden.

This aspect of 'who owns what land' has posed various challenges, as seen in the case of the Qiniselani Communal Garden. From having to face the SAPS ordering the members to vacate the premises, and enduring the processes of finding out who actually owns the land, only to discover that the city does not own the park and that it is, in fact, privately owned land, all demonstrates the lack of co-ordination and confusion between the various departments. This is just the tip of the iceberg (and an entire study on its own!).

5.3 LESSONS TO BE LEARNT

Experiences of existing food gardens in the City of Johannesburg have taught us lessons from which future and existing food gardens can learn from. There were three food gardens that assisted me in understanding the various challenges and potentials that each garden had, and what key aspects of each has helped the gardens expand and succeed. The theme coming through from all these gardens is that there was a need for healthy food, available at a low cost due to the income status of the surrounding community. Managerial challenges being faced were (in most cases) of a financial nature, and the initiatives are all dependent on voluntary work and donations needed to sustain the gardens as well as ensure growth.

Although voluntary work of any kind is well received in all gardens, there are staff members employed who take care of the grounds and produce.

Below are the recommendations developed as a result of having read literature on the topic, as well as having gathered and analysed data. Although recommendations have been informed by literature and findings of analysis, more research can be carried out on the topic in future in order to build on this foundation so as to enhance and improve work.

5.4 STRIVING FOR SUCCESS: RECOMMENDATIONS

5.4.1 THE RUNNING OF URBAN AGRICULTURAL GARDENS

The management, or ownership, of who owns public spaces that food gardens may be established in, was a challenge identified. In order to avoid any conflicts after the establishment of a food garden, the correct processes in uncovering the landowner, as well as what the land may, or may not (legally), be used for, can be discovered through consulting with relevant agencies and documents, for example, the Johannesburg Property Company, Town Planning Schemes, Geographic Information Systems and so on. This means that the various departments and agencies involved need to communicate well and have a high level of integration regarding plans and other information.

The treatment of food gardens as a business was a theme coming through as conveyed by some of the respondents interviewed. The concept of looking at the skills possessed by those who work in the garden, and paying for that skill, resonates with the literature recognising that skills (these may include financial management skills, marketing skills as well as practical skills of farming and gardening), which are of use in the running of a food garden, are valuable and necessary if people are to remain interested and really see the benefits that may arise with urban food gardens. From the literature explored in chapter 2, key principles emerged, one of which was the necessity of training and skills development (Philips, 2013 and Joburg's Food Resilience Policy, 2014). These

should be run and set up by those in management and provide a basis in which knowledge sharing will enable the progress and success of urban agriculture as a concept. These same notions of skill development and training was uncovered in the findings of the Research and should be a carefully considered recommendation. Training programmes should be offered to members of a community and may be taught at urban agriculture gardens, these skills may then implemented at the same garden, or are shared and valued (paid for) when new initiatives are established.

The manner in which these gardens are run and managed is that all produce grown in the garden is to be sold in order to gain a profit, and does not go to the table of those working in the garden. Their reward for growing produce is not the produce itself, but rather the income which the produce is able to generate for them.

A view that differs slightly from the above approach to the management of food gardens, and which has been discussed in the literature review, is a component of the proposed Klipriviersberg Agritropolis: the urban farming programme. As previously discussed, the programme makes use of the bakers dozen principle - of which 3 units produced goes to the family or individual which has grown the produce. However, as with the above suggestion, a majority is dedicated to the commercial sector while some (which is not necessarily happening in the above suggestion) goes back to the earth.

If a recommendation is to be made considering these two approaches, each of which sounds viable in its own right, a common ground should be reached. The necessity for having individuals who are determined and value employment in the running and management of the garden is an important aspect. If one is not motivated to work hard and strive for success, flaws will begin to form in the plan and things may go wrong. Having said this, I can recommend that people should be employed to work in food garden initiatives, and although volunteers are able to come through and assist (in any way that they are able to), in order for the initiative to be a success it will require a team of stakeholders who are constantly working and looking to progress the initiative. What is done with regard to the food grown in the garden may depend on what the garden was aiming to achieve at the time of establishment. If the

food garden had the objective to allow people of a community to grow their own food then it is, evidently, a non-profit initiative. However, if the food garden aims to provide healthy and nutritious food to communities who may not be able to afford food at supermarket prices, food is grown by members of the initiative (who should be paid for their time and skills employed) and sold to the public, and in doing so, run the food garden as a business.

5.4.2 THE DESIGN OF URBAN AGRICULTURAL GARDENS

Having noted issues of safety and security of food gardens, and the approach taken in identifying the spaces that are appropriate and suitable (understanding real suitability of a space is a limitation of this study and will be discussed at a later stage), recommendations of the design of urban agriculture gardens are important.

Urban agriculture has sometimes been portrayed as a utopian or idealistic concept, shown as beautifully maintained, healthy and abundant pockets of green in the city such as illustrated in the images below:



Plantingmilkwood.files.org



www.cityfarmer.info



www.inspiredfarmers.org



3.bp.blogspot.com/-

The reality being faced in our cities means that food gardens such as shown in the images above, will only be possible if they are well designed.

Reflecting on the challenges faced by food gardens regarding safety and security leads to the suggestion of food gardens being located in spaces that can be locked up when employees go home, and has a certain level of surveillance as a security strategy provided by the nearby residents and users of space. As members who work and gain a livelihood from the garden, there will be respect for the garden and, in turn, it will be protected (as one would protect their livelihood). This means that the precinct selected for the food garden is an important component. Importance of this component is due to the context to which the garden would be serving and the unique challenges being faced in that particular context. The designers of the garden would need to establish a relationship with the community members in order to gain a better understanding regarding the site itself. This requires time and an open mind, being careful and sensitive to the specific needs of the community, and actually getting the community involved in the design and layout of the garden. Pilot projects of gardens designed collaboratively with community members, and other involved stakeholders, may be used as a ‘test-run’ to see what physical and spatial concepts work for the context, and what might need to be adjusted and how.

This process may take time, and needs the commitment of both professionals and stakeholders with special knowledge and skills required, as well as the commitment of the community wanting the positive, and sometimes much needed change, that an urban agriculture garden can bring.

5.5 POTENTIAL FOR URBAN AGRICULTURE: TYPOLOGIES AND THEIR SUITABILITY

In the previous findings and analysis chapter, a photographic inventory was formulated based on the spaces that were seen as possibly being suitable for urban food gardens. Although some pieces of land, or roof-tops, need to be evaluated by a professional before an urban food garden can be established, and in doing so, one can be reassured peace-of-mind that the garden is in a safe place. Spaces need to

be identified and sometimes people may need help to visualise that the little space they have available to them, may make a great spot for their very own vegetable garden.

As the categories of space identified in the photographic inventory suggest, there are spaces that may be suitable for urban agriculture in both the public and private spheres. The public sphere is where communal gardens are often located, and would consider spaces such as parks and sidewalks which are maintained and in which a level of security through surveillance is achieved. These spaces are referred to as positive open space in this study, and are well used and accessible to surrounding communities. Negative open space also falls under the public sphere and is characterised as neglected spaces that may have insecurity stigmas attached to it. Poorly managed and little surveillance, these 'negative' spaces offer the opportunity to be transformed into functional 'positive open space', which may be well run and managed and which the surrounding community may find a new sense of ownership and responsibility over the space. Regarding the public spaces that may become available after the implementation of the planned TOD's in the Turffontein Node, positive spaces, such as sidewalks surrounding transport stations and the sides of buildings, may be converted to container gardens and vertical farms. It is important to note that urban agriculture may not be a component that the city will look to, to integrate as part of the Corridors of Freedom spatial policy, however, city officials have acknowledged the platform that the policy may provide for urban agriculture and have suggested that is it a concept which the city should show interest and participate in, advocating along with other organisations and agencies (both governmental and non-governmental).

In the private sphere, one may find spaces that are currently being used for small-scale subsistence farming, and this has been illustrated in the photographic inventory. These spaces would typically be managed by a landlord or owner, and the users of the area have a sense of responsibility over it and take care of it. The security aspect of the space is usually regulated with the use of security systems, burglar bars and so access is restricted. Private spaces may include front and back yards, balconies and rooftops. Depending on the size of these private spaces,

gardens may function solely for the purpose of subsistence or leisure farming, more than creating employment opportunities, training and skill development and community building.

Various issues may come attached to certain spaces. Perhaps a building-top is not strong enough to handle the stress on rooftops and a professional, such as a structural engineer, is required to evaluate the structure and space, or a piece of ground, that was previously treated as a dumping ground for toxic and non-perishable pollutants, will result in harmful and poisonous produce and would need to be tested by a geologist before the land can be declared safe for farming.

Issues surrounding the concept of ownership and who legally owns land has been looked at and deliberated in previous chapters. If a food garden is going to be vandalised and taken advantage of, or poorly managed, these are some of the non-physical challenges to potentially be faced by those wanting to create urban food gardens. Although there are many challenges attached to the concept, there are also many benefits that come along with urban food gardens, and the notion of communities, organisations, agencies or the city, aiming to introduce food gardens as a possible solution (fully recognising that there are a great deal of possible solutions) to challenges of unemployment, poverty and food insecurity amongst others. Urban agriculture is a phenomenon that is fast spreading throughout the world (Philips, 2013; Lenhart, 2013; Kamenetz, 2012; Mitchell, 2013).

5.6 CONCLUSION

The implications of what an urban agricultural garden would be for a community has been discussed above and looks at aspects of accessibility of these spaces identified in terms of safety and security, management and ownership. These are challenges for aspects of open space and have been discussed earlier as being a component of the management strategies taken. Spaces available for urban agriculture in the private sphere have been identified and considered, and recommendations made using the spatial principles coming through the literature and findings of the research. The key spatial principles that have been carried throughout the report, and have informed the recommendations for what the spatial requirements would be in creating urban agriculture in the Corridors of Freedom, looking specifically at the Turffontein Node, despite urban agriculture not being a focus area or component of the policy itself. The lessons that the 3 food garden initiatives had to offer were discussed and have been learnt from in this chapter, with possible recommendations which have attempted to enhance any positive qualities and solve any challenges.

The potential of urban agriculture has also been a topic of focus in this chapter and has referred to the use of the photographic inventory which is a tool assisting in the identification of spaces that may be used for urban agricultural projects. The challenge associated with this is the question surrounding suitability and will be discussed in the next chapter.


















Chapter 6:

Conclusions and Overall Assessment

6.1 INTRODUCTION

This chapter looks at the limitations experienced and difficulties encountered, in the research report, what future research on the topic may entail and the overall assessment of this particular study. The preceding chapters have essentially narrated the journey taken from understanding the background and surrounding challenges of urban agriculture possibly being integrated in the Corridors of Freedom and placed particular focus to the study area of the Turffontein Node. Literature on the key components of open spaces, transit corridors and urban agriculture, as well as attributing spatial principles of management, ownership, training, safety and security, were discussed and deliberated, ultimately leading to the consideration of various research strategies employed to gather findings on the topic. These findings then informed the potential of research conducted on urban agriculture, recognised by so many and informed the recommendations made.

6.2 CHALLENGES EXPERIENCED DURING THE COURSE OF THE STUDY

Challenges that were faced during the course of this study began with the research question. The reason for making this statement is due to the spatial nature of the research question, and the spatial literature that was associated with it. As the interviews were conducted and discussions held, as well as the photographs for the inventory taken and spaces observed, I did notice spatial issues that needed to be taken up and researched further, such as management, ownership, training, access and safety and security. The key principles influence the main concepts of the study and, ultimately, have huge impacts on the physical space itself. These principles are interesting and have framed the way in which space has been considered in this research report.

A further challenge of the study was found in the setting up of interviews, particularly with city officials, and so a direct link to the Corridors of Freedom plans gave this report an insight regarding the possibility of urban agriculture being integrated into the TOD plans set out for the Turffontein Node, and the platform this policy may

create for urban agriculture. Although respondents that were involved either in the study area, or on urban agriculture, were reasonably easy to get into contact with and set up appointments (and were all too happy and accommodating towards my research to which I am very thankful), the officials involved in the Corridor of Freedom plans were understandably extremely busy and pressed for time. Having said that, time was set aside for an interview which was greatly appreciated, and had to be relooked at in relation to the existing material. Needless to say, time constraints tested my ability to work as accurately and efficiently within such time constraints of the research report.

Lastly, a challenge I had faced in completing this research report was the assistance I needed in completing the photographic inventory. I overcame this challenge thanks to family who once lived in the area, and who are very familiar with the area, as this made the task of navigating the area in search of any open space or other spatial typology that could possibly be suitable for urban agriculture easier. The process was lengthy and there was a need to return to the study area on multiple occasions in order to complete the inventory, subject to the availability of those familiar with the area.

6.3 LIMITATIONS OF THE STUDY

Another limitation of this study is that I am not a resident of the 'Turffontein node' and, as a result, do not understand the true nature and context of the area. Spaces which have been identified as possibly being appropriate and suitable for urban agriculture may be spaces that are being well used by the community, and so a full-scale participatory exercise is necessary in order to engage with the community at an appropriate level. The participatory processes that may be employed might include focus groups or public meetings on several occasions at different times, venues and days so as to include as much of the community as possible, and so a more holistic approach to participation, despite being a highly time consuming process, is a process of utmost importance. The assumption that an urban food garden would be more beneficial to the community than, for example, a safe park in

which the youth of the community can play in, may have detrimental consequences to the quality of public park space and overall sense of community in the area.

6.4 FUTURE RESEARCH ON THE TOPIC

Spaces and places that may be used for urban food garden locations may not always be an obvious choice or common knowledge. In this research report there have been discussions of backyard gardens, using roof tops and balconies, and even park space and abandoned/neglected plots. However, the list of spaces does not end there, the use of abandoned factories as spaces where vertical gardens and hydroponic systems are being introduced, this is another aspect of urban farming that should be researched in the future. Regarding future research on the topic, special focus should be placed on the physical design of urban gardens being carried out and better understood, so as to enhance the positive attributes associated with the concept of urban agriculture, whilst done in such a way that cleverly reduces the issues (such as safety and security, accessibility, ownership and management) that have been identified and discussed in this research report. The complexities being dealt with in urban environments differ from context to context, and so it is important to understand that although the broad challenges being faced might be similar from context to context, the manner in which they are approached required careful and considerate deliberation so as to ensure the best possible product.

Use of the photographic inventory as a research tool meant that spaces that already existed were identified and considered. This way of identifying spaces, or approach towards implementing urban food gardens, does not depend on the concept being a pre-planned design that is only able to be materialised within new development plans or spatial visions. And while that may be an option, and one that should perhaps be encouraged, this is working with what we have and making it functional for a community or locality. Future research on the topic may make use of the photographic inventory as a research tool and take it a step further, in which professionals (such as environmentalists, engineers, health scientists and so on)

who are able to distinguish whether or not a space may be safe or suitable for urban agriculture, are consulted with and perhaps taken along on site visits - perhaps even conducting tests and documenting these processes in order to gain a better understanding of all that is required in fully understanding the suitability of spaces and the viability of food gardens.

6.5 URBAN AGRICULTURE: INFILTRATING SPACES AND GIVING HOPE

The need for urban agriculture to be recognised as a spatial concept which encompasses a wide range of social aspects has been understood in this paper. Food is, or at least should be, an everyday component of people's lives.

"It turns a dead, sterile space into something that's alive and interesting."

(Reynolds, 2008)

An understanding of urban agriculture and the planning, design, management, issues and potential associated with the phenomenon, has been explored in this research report. Highlighted in this report is the extent to which urban agriculture has been recognised as a possible solution to many of the challenges which are currently being faced by developing and developed countries the world over. The concept of open space, transit corridors and urban agriculture, have been explored in the literature covered, as well as attributing key spatial principles spoken of throughout the report such as management, ownership, training/skills development and accessibility. The ability to identify spaces available for the use of food gardens has also been a component of the research and has been explored through the use of a photographic inventory tool. The tool was used within a predetermined focus area (Turffontein Node) and differentiated between public spaces and private spaces, the suitability of these spaces to be determined.

Inviting food back into the city as suggested in Howards Garden City model, in the form of urban agriculture, entails understanding what the spatial requirements would be for creating these spaces and how urban agriculture manifests in the City of

Johannesburg. What is important to understand is that urban agriculture can be beneficial to a range of people groups and, if done well, and reflecting how urban agriculture manifests in the Corridors of Freedom with a focus on the Turffontein Node of the Corridors of Freedom, it has the ability to provide food, employment, beauty, sense of community, filters the air within the city and reconnects people with nature. The urban planner has a set of skills unique to any other profession. Often described as a profession which is a 'jack of all trades', it is imperative to use these skills and to assist in the physical spatial design, and implementation of such projects, and to work in conjunction with other occupations and stakeholders in order to create successful urban food gardens.

"Every community is a local food economy waiting to come to life. The answer to climate change, the health crisis, and the recession economy is right outside your door. I'll meet you at the garden fence."

(Kumar, 2012)


















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Annexure

CREATING URBAN AGRICULTURE IN THE CORRIDORS OF FREEDOM- THE CASE OF THE TURFFONTEIN NODE

Participant Number: _

UNIVERSITY OF THE WITWATERSRAND
JOHANNESBURG

Conducted by:

Natasha De Sa Santos

Cell: 078 239 5151

E-mail: natashadssantos@gmail.com

Participant Information Sheet

Honours Research Report

How is urban agriculture manifesting in the City of Johannesburg, with a focus on the Turffontein Node (Corridors of Freedom)?

Dear (Participants name)

My name is Natasha De Sa Santos, and I am an Honours student at the University of Witwatersrand. I would like to invite you to take part in my research. Please take time to read the following information carefully as it will elaborate on why the research is being done and how it would involve for you. Please feel free to ask any questions of clarification if anything you read is unclear or you would like more information. Read through the information sheet to decide if you would be able to take part in my research or not.

My research is focused in urban agriculture and how it could be integrated into the Corridors of Freedom. I am specifically interested in uncovering how urban agriculture manifests in the Corridors of Freedom with a focus on the Turffontein Node of the Corridors of Freedom. I am also interested in looking at urban corridors and the policies that the city has on them and how urban agriculture could be integrated into the policies, as well as the different, as well as the different typologies of open space in which this could occur.

Your participation is voluntary. You do not have to answer any questions you do not feel comfortable in answering. If at any time you would not want to continue with the interview, you may decline. Your time and involvement is profoundly appreciated. The entire interview will take approximately one to one and a half hours.

To maintain the essence of your words for the research, I would greatly appreciate if I would be able to record the interview. At any given time you may request to see or hear the information I have collected. The interview will be tape-recorded (upon approval by participant) and the interviewer will also take notes. This will be done for data collection analysis purposes. The recording will be transcribed by the interviewer and kept confidential in a password protected computer. All the individual identification will be removed from the hard copy of the transcript and the participant given a number for personal reference only.

Parts of the interview may be included in the final research report or other later publications. However, under no circumstances will your name or identifying characteristics appear in these writings if you do not wish them to be.

This research is being conducted in part to fulfil the requirements for my Honours in Urban and Regional Planning degree at the University of Witwatersrand, Johannesburg (2014).

The study has been approved by the School of Architecture and Planning. My supervisors are senior lecturer, Garth Klein as well as SolamMkhabela. Below are their contact details (should you have any further questions, clarifications or concerns about the research being conducted):

Garth Klein:

Phone: 27(011) 717 7616

Email: garth.klein@wits.ac.za

Organisational Unit:School of Architecture and Planning

SolamMkhabela:

Phone: 27(011)717 7714

Email: solam.mkhabela@wits.ac.za

Organisational Unit:School of Architecture and Planning

Sincerely,

Natasha De Sa Santos

University of Witwatersrand

UNIVERSITY OF THE WITWATERSRAND
JOHANNESBURG

Conducted by:
Natasha De Sa Santos
Cell: 078 239 5151
E-mail: natashadssantos@gmail.com

Participant Consent Sheet

Honours Research Report

How is urban agriculture manifesting in the City of Johannesburg, with a focus on the Turffontein Node (Corridors of Freedom)?

I,_____(participant's name), understand that I am being asked to participate in an interview that forms part of *Natasha De Sa Santos* required coursework in the above-noted honours research report. I have been given some general information about this research report, been given an opportunity to ask questions and have been given the type of questions I can expect to answer. I understand that the interview will be conducted at a place and time that is convenient to me, and that it will take approximately *60 - 90min* of my time.

I understand that my participation in this research report is completely voluntary and that I am free to decline to participate, without consequences, at any time prior to or at any point during the interview. I understand that with my permission, this interview:

- ☐ May be audio recorded
- ☐ May not be audio recorded

Any information I provide during the interview will be kept confidential, used only for the purposes of completing this Honours Research Report and will not be used in any way that can identify me. All interview notes, tapes, or electronic records will be kept in a secure environment. I will also be provided with a copy of the student assignment at my request.

I understand that the results from this interview will be used exclusively in the honours research report and none of the information I provide will be published, in any form, in any journals or

conference proceedings without consent. I also understand that there are no risks involved in participating in this activity, beyond those risks experienced in everyday life.

I have read the information above. By signing below and returning this form, I am consenting to participate in this research report via telephone/face-to-face interview/email exchange as designed by the University of Witwatersrand Honours student, Natasha De Sa Santos.

_____

Participant name

_____

Signature

_____

Date

CREATING URBAN AGRICULTURE IN THE CORRIDORS OF FREEDOM- THE CASE OF THE TURFFONTEIN NODE

UNIVERSITY OF THE WITWATERSRAND
JOHANNESBURG

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Interview Schedule

Honours Research Report

How is urban agriculture manifesting in the City of Johannesburg, with a focus on the Turffontein Node (Corridors of Freedom)?

Questions for those involved in the Corridors of Freedom

- What are the policy (which is currently being used in the City of Johannesburg) and principles (broader principles of corridors) that will be looked at on implementing the concept of urban corridors (Corridors of Freedom)?
- When did you first hear about the Corridors of Freedom plans?
- Would the urban agriculture projects be run and/or managed by the city or by other organisations?
- If organisations, which organisations and if so what are the particular spatial and implementation skills that they have?
- What is the link between urban corridors and urban agriculture in the case of the Corridors of Freedom?
- What is your take on having urban agriculture as being part of the Corridors of Freedom?
- Which previous projects from the city will act as precedence for these new projects?
- Where do you believe urban farming may take place within this concept of corridors?

- What are the typologies of spaces that will be considered? (Rooftops, sides of buildings, vacant or abandoned plots and so on.)
- What are some of the principles or characteristics of transit-oriented development that will be implemented in the Turffontein Node- and how will they benefit urban agriculture or not?
- What kind of spaces is urban agriculture currently taking place in at the moment (specific to South Africa)?
- What would the orientation (N, S, E& W) need to be for spaces such as balconies, sides or buildings and rooftops be for growing food gardens?
- How are areas going to be selected for urban agriculture?
- Do you think the Corridors of Freedom could create a platform for urban agriculture in the Turffontein area? And for other areas?
- How do we ensure that, as far as possible, urban agriculture projects will be sustainable for the community which it serves?
- Who would have access to these areas of urban agriculture?
- In Turffontein there are signs of urban agriculture taking place on De Villiers Street. Do you think that urban agriculture projects would be of use to the community of Turffontein?
- What would the benefits be of having urban agriculture being incorporated into the Corridors of Freedom?
- Who/ which people groups would these benefits actually be targeted towards?

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CREATING URBAN AGRICULTURE IN THE CORRIDORS OF FREEDOM- THE CASE OF THE TURFFONTEIN NODE

UNIVERSITY OF THE WITWATERSRAND
JOHANNESBURG

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Interview Schedule

Honours Research Report

How is urban agriculture manifesting in the City of Johannesburg, with a focus on the Turffontein Node (Corridors of Freedom)?

Questions for Urban Agriculture advocators

- What are the policy (which is currently being used in the City of Johannesburg) and principles (broader principles of corridors) that will be looked at on implementing the concept of urban corridors (Corridors of Freedom)?
- Have you heard about the Corridors of Freedom plans?
- Where do you see urban farming be taking place with regard to corridors?
- Would you have the urban agriculture projects being run and managed by the city or by other organisations?
- If organisations, which organisations and if so what are the particular spatial and implementation skills that they have?
- What do you see as the link between urban corridors and urban agriculture in the case of the Corridors of Freedom?
- What is your take on having urban agriculture being part of the Corridors of Freedom?
- Who should have access to these areas of urban agriculture?
- Which previous projects from the city do you know of that can act as precedence for these new projects?
- How should areas be selected for urban agriculture?

- What kinds/ typologies of spaces should be considered for urban agriculture? (Rooftops, sides of buildings, vacant or abandoned plots and so on.)
- What are some of the principles or characteristics of transit-oriented development should be implemented in the Turffontein Node- and how would they benefit urban agriculture or not?
- Do you think the Corridors of Freedom could create a platform for urban agriculture in the Turffontein area?
- In Turffontein there are signs of urban agriculture taking place on De Villiers Street. Do you think that urban agriculture projects would be of use to the community of Turffontein?
- What would the benefits be of having urban agriculture being incorporated into the Corridors of Freedom?
- Who/ which people groups would these benefits actually be targeted at?
- What spaces is urban agriculture taking place in at the moment (specific to South Africa)?
- How do we ensure that as far as possible, urban agriculture projects will be sustainable for the community which it serves?
- What would the orientation (N, S, E& W) need to be for spaces such as balconies, sides or buildings and rooftops be for growing food gardens?

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How is urban agriculture manifesting in the City of Johannesburg, with a focus on the Turffontein Node (Corridors of Freedom)?

Questions for those involved in Rosettenville studio

- What are the policy and principles that will be looked at on urban corridors (Corridors of Freedom)?
- When did you first hear about the Corridors of Freedom plans?
- Where would urban farming be taking place with regard to the corridors of freedom?
- Do you think that urban agriculture projects should be run and managed by the city or by other organisations?
- If organisations, which organisations and if so what are the particular spatial and implementation skills that they have?
- Do you see a link between urban corridors and urban agriculture in the case of the Corridors of Freedom?
- What is your take on having urban agriculture being part of the Corridors of Freedom- looking specifically at the Turffontein Node?
- Who should have access to these areas of urban agriculture?
- Do you know of any previous projects from the city that could act as precedence for these new urban agriculture projects?
- How should areas be selected for urban agriculture?

- What are the typologies of spaces that you feel should be considered for urban agriculture? (Rooftops, sides of buildings, vacant or abandoned plots and so on.)
- Do you think the Corridors of Freedom could create a platform for urban agriculture in the Turffontein area?
- In Turffontein there are signs of urban agriculture taking place on De Villiers Street. Do you think that urban agriculture projects would be of use to the community of Turffontein?
- What would the benefits be of having urban agriculture being incorporated into the Corridors of Freedom?
- Who/ which people groups should these benefits actually be targeted towards?
- What spaces do you know of that urban agriculture is taking place in at the moment (specific to South Africa)?
- How should we ensure that as far as possible, urban agriculture projects will be sustainable for the community which it serves?