



A Seed is Planted

Examining urban agricultural hobbyist in Johannesburg during COVID-19.

By Georgia Kellow

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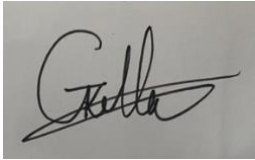
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Research report presented for the Degree of Masters of Arts at
the University of Witwatersrand

Declaration

I declare that this thesis is my own, unaided work. It is submitted for the degree of Masters in Anthropology at the University of the Witwatersrand, Johannesburg. It has not been submitted before for any degree or examination at any University.

A handwritten signature in black ink, appearing to read 'G Kellow', is shown within a rectangular frame.

Georgia Kellow

30.07.2021

Date

Acknowledgement

I would like to thank all my very enthusiastic participants; they made my project possible. They all went out of their way to respond in detail, despite of COVID-19 lingering in the foreground. I feel honoured to have been allowed to work with every single urban agricultural hobbyist that partook in my research, even if it was virtual majority of the time.

I would also like to thank my mother for allowing me to extend the vegetable garden, for always pushing me and helping me process all the produce, for selling and personal consumption.

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Abstract

The purpose of this paper is to understand how urban agriculture unfolds among suburban hobbyists in Johannesburg, South Africa. The paper focuses on identity development through gardening, knowledge production and the use of space.

The paper is designed to have autoethnography, theory and online interview data interwoven throughout the paper, which was inspired through the pandemic and the lockdown regulations in South Africa. The research allowed for identifying a group of gardeners who I call 'Urban Agricultural Hobbyist' (UAH) specifically located in suburban Johannesburg. They carry substantial knowledge of urban agriculture and gardening and allowed for the research to move away from viewing urban agriculture as only a food security solution and instead as a knowledge producing space.

Key findings for the research are identifying the UAH group as a category of gardeners. By doing that I was able to identify three knowledge categories; generational, social/ community and formal education. This led me to look at how space is used within the garden. I observed how the gardening changes space and its meaning, this however takes place mainly within the confines of the garden walls and only faint traces reach out into the suburb itself.

Note on terminology

Urban agriculture: For this study, I need to clarify and distinguish what is meant by ‘urban agriculture’. The term is not a singular one, holding multiple meanings to various groups. For this study, I will use the term ‘urban agriculture’ to focus on independent small-scale growers unless otherwise explained, specifically the growing and producing of fruit and vegetables. Urban agriculture is spread across both inner city and the periphery of the city. Dependent on the scale of vegetable production, I will differentiate when using the term ‘urban agriculture’ by specifying the size of the agricultural site. When the term ‘urban farming’ is used, it works interchangeably with the definition of ‘urban agriculture’, provided here.

In this paper, urban agriculture is interacting with themes on identity, environmentalism, and use of space, which leads me to agree with Mougeot (2000) on the fact that the term urban agriculture is meant to remain broad as to allow it to evolve with the ‘real world’ phenomenon. This is to ensure that the term remains relevant and useful for us to use as researchers and as urban agriculturalists.

Urban Agricultural Hobbyist (UAH): The term UAH encompasses not only a broad gardening style, but also highlights that the participants are hobbyist who are growing out of enjoyment and are not reliant on their gardens for financial support or food. UAH for this research report speaks of participants who live in suburban Johannesburg, who garden in their spare time for enjoyment, and all have some type of vegetable garden from which they harvest.

COVID-19: For the purpose of this study, I use COVID-19 to refer to the time frame between March 2020 to December 2020.

INTRODUCTION

Vignette

In the morning I had already neatly lined the inner of the car's boot with plastic. I was looking forward to picking up home cultivated compost from Liezel, who is an expert in everything green, organic and permaculture. I had never been to her house. I could just imagine that her garden was going to teach me new agricultural ways and new plant varieties. I drove in. The gate closed behind me, leaving the view of the street behind. All along the driveway, there were repurposed paint buckets. Each bucket filled with fertile soil and healthy-looking plants. I asked her what she was cultivating, she answered; asparagus. I had never seen an asparagus plant. I had read up on it in my garden book but never followed through. She explained to me how to grow them, what they like, what to look out for – now I had no excuse not to try. She walked me through her garden, passing a small fruit orchid, a large vegetable patch and a mini nursery for seedlings ... I was admiring.

...As I drove out, I imagined my garden space, I re-arranged it, I re-imagined it, and I was full of enthusiasm.

Rationale

To set the scene for my research paper, it is required to map out the landscape of Johannesburg. The city is embedded between many ridges on the Highveld with an elevation between 1600 and over 1800m. This vast city stretches over 200 square miles, divided into 500 suburbs and townships. In the far south the former townships, originally planned and constructed during Apartheid (1948-1994) for the Black workforce. Closer to the city, housing the poorer Whites and northwards the wealthier middle class, with their treelined streets, avenues and lush gardens to the grand mansions (Campbell n.d.). Quite a few things have changed since then, and the colour line is not as clear cut anymore, but a lot of this structure remains. The participants of my research are scattered across the northern and central suburbs, where they continue to live a more or less privileged life, marked by owning or renting free standing houses, surrounded by substantial gardens, which are marked off and secured through walls or fences. It is here where they engage in enthusiastic efforts of planting and harvesting their own fruit and vegetables, a hobby which falls under what is generally called urban agriculture.

Urban agriculture is particularly popular to look at when wanting to address food security, economic contributions and the increase of biodiversity within a city. The research interest in urban agriculture is global, continental and regional. The concept and agricultural methodology of growing within an urban

space is often associated, in Africa, as a method to alleviate urban poverty, and is seen as an opportunity to increase monthly income, subsidize food and as a form of job creation. Instead of perpetuating the idea that urban agriculture should and can be the poster child for hunger alleviation. I am instead looking at urban agriculturalists in Johannesburg who garden and grow produce for personal enjoyment, health and environmental reasons. I ask, if it is not about producing produce to fight hunger, what is it these suburban agriculturalists do. Is it just meaningless or is there maybe something else which emerges out of their (and mine) enthusiastic efforts?

As the vignette already gives us a sense, suburban urban agriculturalist gets to know and interact with each other; they form a community, through their shared practice. They also share knowledge which they apply in their own gardens, and which in turn produces new knowledge. Finally, through the exchange of not only knowledge but also seedlings and soil, they transform their gardens, and their gardens transform. I thus focus in this research paper on identity formation, knowledge and the use of space. I do so in the context of humans' changing relationship with the environment. This is important as it helps us to understand urban agriculture from a social perspective. My research's significance lies with having recognised this gap in research, particular in the African context. This gap is due to the lack of documentation within this additional group of urban agriculturalists. I identify them as Urban Agricultural Hobbyist (UAH) of Johannesburg. This is a specific niche group of people in Johannesburg that contributes to knowledge production in the urban agricultural sector. Their knowledge is radically local and unique to the Highveld of South Africa. The rich knowledge held by this small group of people should not be underestimated concerning agriculture and the environment and is easily overlooked due to the gardens being on private property behind boundary lines and not immediately aimed at questions of poverty and food security. Therefore, my research question is: How urban agriculture unfolds among the suburban hobbyist?

Literature Review

The work that has been done on urban farming is scattered globally. I draw on a variety of concepts that can apply to urban farming for example; social benefits (Olivier and Heinecken 2017; Othman et al. 2018; Kingsley et al. 2020, Hake 2014), identity (Manning and Kiesling 2010; Jamison 2003), increased biodiversity (Chappell and LaValle 2009; Keeling and Lehman 2018; Ford 2016; Goddard, Dougill and Benton 2009), knowledge production (Møller 2005; Günel 2016; Wenger, McDermott and Snyder 2002), the use of space (Foucault 1986; Alexander 2002; O'Neil and Rae 2005; Augé 1986; Aucoin 2017; Landman and Schönteich 2002).

The phenomena of urban agriculture can be traced back to the beginning of city dwellers and has developed in time, for example, 'der Kleingarten'. These types of gardens were established in Germany in the 18th century and were often provided by the government to the working classes to subsidise food and to improve health, due to the bad working and housing conditions. The land was provided by churches and local authorities. Urban agriculture in central European countries became a permanent feature, they were essential during food shortages due to military conflicts (Hake 2014). A more common term used in research is that of 'allotments'. The term originated in the United Kingdom (UK) and the term was first mentioned in the 1500s under Elizabeth I (Allotment-Garden Organisation 2021). Hake (2014) further explains how the 'Kleingarten' and 'allotments' contributed to the provision of food during and after both World Wars for their respective communities. In Europe, within the middle-class, since the 1950's up until today, the purpose for these gardens has become less for survival and more for being in nature, recreational and for social purposes.

Recently there has been a global increase in interest in urban agriculture and green spaces among city dwellers and research intuitions. It is becoming increasingly popular to look at urban agriculture on rooftops and using hydroponics as a modern and more efficient means of producing vegetables, this being promoted at both a commercial and private level. The motivation behind the establishment of such rooftop gardens is often threefold: food security; environmentalism (reducing pollution and optimizing the use of space); and/or social benefits. The global literature focused on Africa and southern Africa's urban agriculture is especially on food security and poverty-related solutions/recommendations/critique (Frayne, McCordic and Shilomboleni 2014; Ruysenaar 2012; Korth et al. 2013; Malan 2015; Zezza and Tasciotti 2010; Crush, Hovorka and Tevera 2011; Tevera 1999).

The literature review reads itself parallel to my research paper and gives the reader a deeper understanding of urban agriculture concerning identity, knowledge and space. Identity is followed by a subheading; environmentalism. This is because I look at the participants' environmental awareness through gardening and gardening practises concerning concepts of 'organic' and 'permaculture'.

Identity

Jamison (2003) discusses green knowledge and how it participates in activism. "Green knowledge is not so much about the environmental conditions in which we live, so much as about how we can take those conditions into account in pursuing more sustainable paths of socio-economic development" (ibid: 703). He categorises activism into four categories, community, professional, militant and personal environmentalism. For this research paper, I looked at personal activism concerning identity creation. Jamison (2003) explains that for him personal environmentalism has over time become increasingly diversified. Green values and attitudes have distributed into a variety of lifeworld's. It began in the 1960s -1970s. Very few people have remained unaffected by ecological ideas, even though the variety of what can be considered as ecological makes it hard to follow in relations to the broader patterns of cultural transformation. In this space, of personal environmentalism is where environmental activism has had its most meaningful impact, however, this is very hard to evaluate. Green consumerism is full of vagueness, for some who are already participating in environmental politics it creates meaning to connect the lifestyle to politics. When looking at food consumption, it can be an important contributor to your identity and serve as a way to internalise ecology. Gardening can "provide meaning to a contemporary, fragmented lifestyle" (ibid: 714). And it has become increasingly important to be able to identify and be conscious of the ecological footprint that you are producing and are also leaving behind. The biggest challenge in personal environmentalism is to be able to identify what is ecological, and due to the many different eco-labelling, criteria and schooling, the meaning of ecological consumption and understanding tends to be dissolved (ibid.).

This leads me to discuss the reading by Manning and Kiesling (2010) who discuss the different identities and how they build onto one another. The home gardening method and the personal ideology "can affect the environmental quality of land in ways similar to open space management regimens and policies. Specifically, gardening practices alter existing local vegetation patterns and habitat, affect air and water quality, increase disturbance, and change plant and animal species composition" (ibid: 316). Increasing ecological gardening methods benefit conservation and sustainability. Manning and Kiesling (2010) discuss how feeling of being responsible at the individual level towards the environment and nature at large

can therefore increase the interest in ecological gardening and encourage a gardening identity. The factors that determine an individual's sustainability choices vary between external and situational, for example having access to infrastructure, economic incentives or social/cultural norms. The internal factors are unique to the individual and can be seen as psychological factors. Manning and Kiesling (2010) explain that identity is personal and also social, it is constantly changing and developing and even if aspects of identity change over time, the actual identity is fairly stable. Identity helps the individual compartmentalise life experiences. People come together who share more similarities than differences and the garden is used to express both social and personal identity, positive affiliations and activities, for example, digging in the garden and rearranging the garden. Through this process, one can develop a piece of self with nature and an environmental identity means to accept nature as it is, that it has its rights and it is an important part of the individual core self. The environmental gardening identity develops when the two gardening and environmental identities are occurring within the gardener. To discuss environmental gardening, Manning and Kiesling (2010) have looked at the psychological identity theory which is relevant to discuss environmental gardening as one kind of identification with nature. The first construct is the ability to identify oneself with a large group that addresses nature or/and gardening. The second construct is being able to agree and understand the group's ideology. The third concept relates to how strong the identity is for the individual, for example, ecological gardeners often are not too concerned about the visual but about the functionality of the garden. And through the interaction of nature, it is incorporated in their understanding of self. The last concept is, experiencing affiliation towards a larger group or entity also belonging to gardening (ibid).

A study done in Santa Clara County, California by Diekmann, Gray and Baker (2018) looked at different types of gardening groups – home growers, community garden and community food security programmes (CFS). The study highlighted that gardening is associated with social values and cultural elements and that gardening should not only be rated through economic success. It was reported that their food production was estimated at 50% of their household's consumption in summer and 25% in the fall. Highlighting that urban agriculture can produce quantities and nutritional quality, however what also shifted in the spotlight is how cultural acceptability was particularly important to the food growers. Indicating that even food insecure gardeners valued the garden produce as much or even more for its social value than purely for the family's existence. This indicates that when addressing urban agricultural spaces, it should not only be about nutritional needs but also cultural elements, related to preference, quality and methods of production and identity (Diekmann, Gray and Baker 2018).

Environmentalism through urban farming

The 'Anthropocene' is a geological epoch, emphasising the human impact on our environment and climate. Geologists still struggle to agree on when the Anthropocene began. There is a split between Paul Crutzen and his team who are suggesting the beginning occurred during the industrial era 1800-1850, and Earth System Scientists believing that the Anthropocene started in the mid-20th century (Davison 2019). Regardless of the time stamp, both agree on the accelerated negative impact humans have had on the earth's environment. The United Nations Economic and Social Affairs department published a report in 2018 estimating that between 2018-2050 the global urban population is estimated to grow by 2.5 billion urban dwellers, of this 90% is concentrated in Asia and Africa. Comparable to human history, within the past 50 years, humans have extensively altered the world's ecosystem, with high rates of species loss (Steffen, Crutzen and McNeill 2007). The continual altering of the world's ecosystem, leads me to the reading by Goddard, Dougill and Benton (2009) emphasise the growing importance of biodiversity in the ever-growing urban space, and that the private garden is increasingly becoming an important contributor to biodiversity, green spaces in the city and the creation of personal relationships with the natural environment. Even though, geographically, the used urban space is relatively low (4% of the total global terrestrial surface), the urban ecological footprint is reaching far beyond the 4% occupational space in urban and city borders. The authors speak of 'ecology-of-cities', which is viewing urban landscape socioecological systems which have the human and their social institutions integrated with the environment. This implies that the ecosystem relies on special arrangements dedicated for establishments of habitats which are determined through patch size and the connectivity between the patches. This concludes that the garden size does not necessarily correlate with species richness and biodiversity and that other factors such as vegetation structures among others are important. The implication, then, is that the design and management of individual gardens is vital for the conservation of native biodiversity and that private gardens are undervalued resources when trying to improve urban biodiversity and the growing human disconnect from the natural world (Goddard, Dougill and Benton 2009). I use this paper in the literature review to highlight the individuals' ability to contribute to breaking down a disconnect between nature and human.

The term Anthropocene pinpoints the immediate challenges that humanity faces. It is said that 60% of the ecosystem's resources have been tarnished and will continue to decline if no changes in societal values and management take place (Steffen, Crutzen and McNeill 2007). Manderson et al (2016) speak of the need to confront the changing environment as global warming is becoming an increasing danger to human settlement, health and wellbeing. Through the increase of global temperature, there will be an increased severity of heat waves affecting countries like South Africa. This

will affect weather patterns, water quantity and quality for households, impacting agriculture production as well as food security.

Human-centred thinking and action, known as the humanism perspective was inceptioned during the Renaissance and its humanist assumptions have been infused throughout Western philosophy. Moving from humanism in which the human is separated and placed above nature to 'Posthumanism', which is challenging humanists' worldviews. This perspective makes the human accountable. Realising the dependants on nature and ecosystem (Keeling and Lehman 2018). The 'post' signals, the rethinking of the human position in the ecosystem.

This leads me to look at 'permaculture' in my research because of its emphasis on sustainability and its post-humanist approach by decentralising human agency. Permaculture considers the space as a whole and incorporates anything from the natural ecosystem like rocks and logs to get utilised or replicated (Forde 2016). Reichardt and Frayne (n.d) explain how Mollison developed and coined the term permaculture in the 1970s, which constitutes three main ethical principles: Earthcare, based on organic and sustainable principles, Peoplecare, to be able to provide for one's own basic needs and Fairshare, distribution of surplus, the goal is to achieve the aims of earth and people care. Reichardt and Frayne (n.d) further explain that permaculture is a system to create sustainable human settlements, it is about the relationship between all elements – soil, plants, animals, people. It is through observation of the natural systems and the elements with traditional farming methods combined with modern scientific and technological knowledge (ibid.). This method of farming is considered environmental and creates a sustainable future, whilst encouraging biodiversity. Although this method of farming is used widely and works on all scales of landscapes, permaculture seems to have found its niche amongst small-scale farmers, horticulturalists and environmentalists (Forde 2016).

Permaculture encourages individuals to reuse, reduce and recycle. It encourages 'waste' (with exceptions) to be transformed into something valuable and functional (Forde 2016). Smit and Nasr (1992) explain how waste shouldn't be seen as a problem but as a resource to improve sustainable development as it can convert 'open-loop systems' (one-way flow of resources) to 'closed-loop systems' where waste and resources are being reused, up until utility can no longer be derived. This leads to small-scale farming playing an important role in recycling and sustainability (Smit and Nasr 1992).

Permaculture does not have a particular single set of rules, but principles are dependent on context, practices will differ and it is only possible to achieve sustainability and understand sustainability challenges if they are grounded in knowledge of local ecological, political-economic and socio-cultural systems interwoven with global and scientific awareness (Veteto and Lockyer 2008). Another angle from which I analysed my material was, questioning the kind of knowledge needed and produced during urban farming.

Knowledge

Different generations are engaged in learning together or from one another as Hake (2014) explains. There is also potential that the different generations process resources differently from one another, this leading to sharing different information and concerns. “In this respect, intergenerational learning can make an important contribution to lifelong learning throughout individual life courses, where the generations work together in communicating and acquiring knowledge, skills, and sensitivities” (2014: 155). Hake (2014) highlights how urban learning spaces which are real physical places are all influenced by social, political and economic forces within the household and the local level. By this, he can identify that there is a lot of learning that takes place within the garden space. It can be played out through sharing, accumulating knowledge, skills, and of how the individual and collective involvement is in growing food and consumption. The teaching and gathering of knowledge do not end at how to prepare soil and cultivate but also about having an active role as a citizen, who can participate in producing one’s food and being less reliant on the global supply chain (ibid.).

This can be linked to the reading by Pereira et al. (2019) who speaks of indigenous knowledge and traditional food through innovation in the kitchen and finding solutions to make the food system more sustainable and making culturally appropriate food accessible for all. By addressing traditional ecological knowledge (TEK) in the food system, the demand for traditionally grown produce can protect cultural landscapes and simultaneously also agrobiodiversity, creating synergies with the environment. TEK is often seen as old fashioned, inefficient and an “obsolete body of knowledge” (2019: 3). This overlooks the evolving nature and its dynamics. This knowledge of traditional practises for agriculture is often replaced by modernized agricultural practises and is threatened to being lost. It is also essential to be power-aware and have correct ethical approaches to indigenous knowledge and traditional food preparations and farming. South Africa has a very vast landscape, which leads to many underutilised indigenous foods that have the potential to contribute to agrobiodiversity, dietary diversity and cultural connectivity (ibid). In Grahamstown East (Makhanda), South Africa, MØller (2005) also found that traditional ecological knowledge or generational knowledge as it is called in this paper had a lapse in sharing with the youth, thus often leaving the gardening to the elderly. MØller (2005) suggested that the youth had little interest and motivation in learning how to cultivate and that gardening had an image problem, it was not fun and there was an “intergenerational disincentive” (ibid: 76). It was associated with “an old-fashioned lifestyle, with backbreaking, boring, menial, and dirty work” (ibid: 77). These disincentives represent a broad reflection of the social problem in South Africa. Growing your food is heavily associated with poverty, whereas buying food represents a status symbol. The middle generation of parents regards gardening as a subject

taught in township schools, this creating a disassociation towards it. MØller (2005) emphasises "only if people from all generations and all walks of life take up gardening to improve their material and personal quality of life will efforts to reintroduce a gardening culture to South Africa be successful" (2005: 79). The image of gardening needs to change, or gardening will remain seen as traditional and a skill set belonging to the margins of society, as explained by MØller (2005). MØller's (2005) emphasises the challenges of history, transfer of knowledge or a break of it and how an image of something even if it brings with it many positive societal contributors (aesthetics, morality, health and wellness, as the study showed) cannot become successful if the image of urban agriculture/gardening is not improved, through addressing a new perspective that gardening was not only taught at township schools to keep the masses as gardeners for the privileged but it is a rather important knowledge as above mentioned.

Wenger, McDermott and Snyder (2002) look at the cultivation of community of practice. What is meant by community of practice, is that people come together to actively engage in a subject. This subject knowledge is managed within a community. For the research, I consider a community of practice such as the enthusiastic UAHs. They meet regularly and have a social media platform to exchange knowledge and advice. Thus, for my research purposes I am specifically focusing on how and if knowledge is gathered from this group. Community of practice is voluntary and what is important is to generate enough relevance, excitement and value to continue the engagements of members and also possibly to attract more. Many natural communities don't achieve growth beyond a friend network as they fail to attract new participants. These intentional communities often fall apart soon after as there is not enough energy to sustain the community. Liveness is paramount for communities of practice, Wenger, McDermott and Snyder (2002) explain how communities of practice are organic, and introducing new members are allowing for a new interest, new exchange of knowledge and can even shift the group into a different direction. The development of the group and its knowledge growth lies in the dialogue between insider perspectives and outsider's perspective to help members develop their knowledge and see new possibilities. To nurture knowledge, communities have public community member events (face-to-face or through electronic means) to discuss and exchange tips, problems and new ideas. These open community events are open to all members but often closed off to outside the community. The events are considered ritualistic and the key to community is that there is a web of relationships among community members that are created. The communities thrive if the value for the individual is created. However, often the most valuable community activities are small everyday interaction that is not immediately realised (ibid.).

The Russian psychologist Vygotsky discussed by Polly et al. (2017), produced his ideas between 1924-1934 and developed the modern social learning theory. Polly et al. (2017) explains that Vygotsky highlights how these learning processes are constantly overlapping and depend on our surrounding. The

development of learning occurs while we learn a variety of concepts and principles. It is learning by doing and not only when the learner has developed the capabilities to understand the concept. Vygotsky is best known for identifying the role of social interactions and culture play in the construction of knowledge in children but his ideas and practical application are relevant for learners of all ages. Three dominant themes are identified in his ideas around sociocultural learning.

The first one being "human development as well as learning originating from social, historical and cultural interactions" (Polly et al. 2017: 2). Social interactions are important for the development of thinking skills and without understanding the social and historical context it is not possible to holistically understand the cognitive development of individuals. "It is through working with others on a variety of tasks that a learner adopts socially shared experiences and associated effects and acquires useful strategies and knowledge." (2017: 2). The process is often through guided participation, where the learner actively receives new culturally valuable skills, through collaboration activities with a more experienced other. It is key to notice how the process of learning is embedded in sociocultural activities instead of being self-contained (ibid).

The second being the use of language, which emerged within a culture that plays two important roles, one being able to communicate with others and the second having the capacity to create meaning. Social structures not only determine people's working conditions but also cognition, beliefs, attitudes and perceptions of realities. Language and the system of counting are important tools among others to facilitate the way of learning (ibid). I use Vygotsky's learning processes in my research, to understand how the participants access and produce knowledge.

The third theme that Vygotsky discusses is the Zone of Proximal Development (ZPD), which can be understood as the bridging of the gap between actual developmental levels and potential developmental levels, the emphasis of guided workgroups, peers, technology and higher education allowing for the reduction of the gap between actual and potential development levels (ibid). Vygotsky believed that learning needs to be aligned with the individual's development level to understand the connection between learning and development and in turn, this is important to distinguish between the actual level of development and the potential. Vygotsky's theory does not look at the individual as an isolated entity but instead looks at the fluid boundaries of self and others (ibid).

Moving away from the individual learning possibility to the social is the 'technical adjustment' strategy as the Arabian Gulf and the Abu Dhabi government are attempting to develop new strategies of resource management. Günel (2016) calls this 'technical adjustments', in the hopes of generating a new 'type' of future without oil. Their approach is to invest in hubs that implement technical adjustments into the future, building knowledge centres and think tanks – creating a 'knowledge-based economy' that will mitigate and modify climate change approaches, the goal is to create a high-tech industry similar to Silicon

Valley or Boston Route 128. Encouraging innovation and developing solutions for our future emphasises that there is no eradication of climate change, but possible prevention and mitigation towards our future impact on the environment, social and economic future (ibid). For my research, I link the ‘knowledge-based economy’ discussed by Günel (2016) to the radically local knowledge that the UAH participants produce, access and grow. How they are contributing to knowledge production in urban agriculture in Johannesburg.

Haluza-DeLay and Berzon (2013) encourage the reader to become aware of the importance of place-knowledge and specifically the grower's surroundings – their back yard. They look specifically at permaculturalists and how they create and use that collected intimate knowledge in the town of Edmonton, the most northern city in North America. The Town has a very good microclimate and allows for the successful growing of vegetables. The growers can achieve this through understanding their individual's backyard micro-climate to know the possibilities and limitations of cultivating in a limited space. Haluza-DeLay and Berzon (2013) also highlight the close community network between the growers and explains the function of the networks to achieve the sharing of knowledge. Another angle through which I analysed my material was the question of how space is used and produced during urban farming.

The use of space

Etymologically speaking, the garden and the house are attached. ‘Gardin’, a noun that was first recorded around 1300 via Old Norman French, first existed to describe an enclosed space or piece of ground dedicated to the cultivation and harvesting of vegetables, fruit and flowers among others. It is important to note the fact that the definition mentions the word *enclosed* as means to emphasize that a garden is a space that exists within a restricted/fenced parameter. Deeper digging into the etymological roots of the garden, we find a close relationship with the word ‘yard’ which is essentially described as a comparatively uncultivated small area belonging to a house. A continued analysis into the origin of the word shows that even in non-English speaking countries such as the Slavic countries or Russia where the word ‘Ogorod’ is similarly defined as a vegetable garden, but when directly translated means: “fenced-in enclosure”, which irrevocably shows the close association between the garden and it is a controlled and fenced off space as well as the relationship the garden has to the house (van Erp-Houtepen 1986).

Fenced in vegetables within fenced-in properties, within fenced-in gated communities. Landman and Schönteich (2010) discuss how gated and walled communities can trace their origin to as far back as human urban development. Over time, the increase in military and police strength of different countries as

well the development of borders and sovereignty resulted in less of a need for walled cities to defend against foreign intruders and so forth. However, the new trend of gated communities is more around restricting access due to high crime rates and wanting to separate from those who do not reside in the actual gated community (ibid.). Landman (2012) continues to explain how the gated communities in South Africa are considered by many as a necessity. These communities can be divided into two groups; enclosed neighbourhoods and new security developments. For this research paper, I am speaking of a gated community as an enclosed neighbourhood, which is defined as pre-existing neighbourhoods that are now fenced or walled in (ibid.).

Gated communities are places that have a safe environment in context to the high crime rates beyond the walls. Landman (2012) further explains, as much as it makes some feel safe it can also hinder or slow down the social planning and developmental goals for integration and accessibility. The gated community transforms spaces – it moved from a public space to an enclosed space. “Where access is restricted and entrance is controlled”, this is further facilitated by the high walls and the pointy fences with controlled access gates, (ibid: 1). These procedures are linked by various socio-political processes. The “gated community represent a re-ordering of micro-society and space, as well as a reorganisation of rules, norms and customs that affect the allocation of shared goods and services.” (ibid:1).

For the paper, I specifically focus on the use of space. Aucoin (2017) helps to develop a better understanding of space and place. It is important to indicate the difference between space and place and how they work with one another and are not fixed entities. Aucoin (20017) explains, that over time, anthropological studies have shown the influence on landscape, space and the body and over cultural meaning, public discourse as well as political memory. Although the two, place and space, may intertwine and overlap in some instances, it is important to note that ‘space’ represents more of a culture’s meaning about the immediate world it exists within. While ‘place’ is a deeper dimension that exists within a space that has a deeper attachment associated with it due to the sentiments created within this place and subsequent identities that emerge out of the lived experiences. The difference between space and place can be found in the fact that according to Aucoin (2017), space is considered to be a central element of social life, one that is universal and yet variously perceived. Whereas a place is multilocal and multivocal. It has a different meaning associated with it by different users of the place as well as multivocal to the extent that a multitude of voices can be encompassed within an individual place.

Space being an element of social life, Alexander (2002) studies the house and the garden’s specific relationship to one another. When houses are studied, they are usually looked at from a cultural specificity; the garden is often studied concerning the economic substance instead of enjoyment. She specifically

focuses on the English garden of urban and suburban middle-class to get a better understanding of how space is used between house and garden. She explains how the history of different designed gardens contributes to today's private garden layout, from the English gardens of the 18th century to the Islamic parks. She walks us through the history of gardens, for example, the Islamic pleasure garden, a playground for the kings and conquerors. It was closed away from the aridity of the desert, away from the wilderness. The environment within the walls could be watered, controlled and cared for. This was carried back and repeated in Europe and thus space became a symbolic meditation and actualisation of Christianity. It was the space of spiritual journeys. Through the construction of the garden, the subjugation of land was added by the gaze of the Renaissance. Here, the beginning of boxed flower beds and sweeping lawns of the 15th to the 17th century took place, which is now the celebrated English landscape gardens that we know. This shift in landscape design is directly linked to the Tory government and the Whig landowners.

The emphasis is however on the notion of boundaries within the landscaped garden. The boundaries of the modern suburban garden are created by layered history. "Walls, fences and hedges block other people's gaze and maintain the privacy of the domestic, privet being *the* indicator and demarcated of suburbia rampant. It is within these bounds that the view has free rein across the gardens" (ibid: 471). The boundaries of the property give the owner property rights and even within the garden there are specific demarcated space allocations, areas with particular functions and within the domestic space, there is coexistence within these boundaries. The relationship the garden has to the house is an aspect that gives validity to the matrimony and makes the garden what it is.

It is of importance to note that the garden takes on order/arrangement from the house, as well as reorder and disorder. The order that is referred to is spatial and represents a repetition of the front to the back of the house. Just as a house may have the more formal public areas weaving from the kitchen to the back, representing connections between the house and body, as Palladio eloquently puts: "rooms for baser uses should be hidden away as the baser organs of the body are discreetly placed" (ibid: 478), so, too, the garden takes an identical (from you to us to me) structure within its layout, with a paved area separating the garden from the rest of the house and is frequently used as a place to view the patch of grass, the lawn and the middle area and thus also representing the most controlled area where the battle between growing and pruning is attained through continuous exertion. Beyond this space lies the third area where the basic functions of the space are often placed such as vegetables, shed and compost.

Reordering often occurs through a transformative element of purifying the unclean and thus regenerating and transforming, which is an act of restoring order to the built domestic space. The compost heap is a relevant example in this instance as it points to the different ordering of metaphors of the house and body. Waste comes in the form of potato-, carrot- and orange peels, kitchen waste in general and is transformed via the compost heap into a more useable and valuable substance, which when dug back into

the soil will result in flowers or fruit that re-enter the house as decorative or edible produce. Thus, reorder is a stamp of confirmation that order exists, and a restoration of the clean, the healthy and disposal of the stale (ibid.).

It is important to note that from the 18th century going forward, the garden influenced and reordered the perspective at which houses are viewed. Instilling an image more aligned towards safety and construction, of inside and outside, of beginning and endings. The disorder should be seen through Foucault's (1986) lens, who describes gardens as heterotopia – other places beyond the practice of everyday life. The garden is to an extent an embodiment of festive cheerfulness which encourages unrestrained action. The garden holds and encourages sand pits, the climbing of frames and paddling pools, whereas, in comparison, the average suburban house cannot contain such due to the excessive mess and disorder that comes with using such spaces. Playing in such spaces within a house are actions deemed out of order, however when done outdoors in a garden, one gets a sense of excitement and exuberance, thus showing the multifunctionality that comes with different spaces (Alexander 2002).

History has shown that the concept of space has had relevance in conjunction with human development and has had its evolution as there has been a continuous hierarchy in the ensemble of places such as urban and rural places, sacred places, profane places and open places among others (Foucault 1986). Spaces exist in the form of utopias and heterotopias where the former represents a non-real place, but instead attempts to reveal a society in its most perfected form or upside down, while the latter represents real places formed in the initial founding of a society with the intentions of being an effectively enacted utopia where all the other real sites within a culture can be found, contested and inverted existing beyond the practice of everyday life. For research purposes, I will particularly focus on heterotopias and the third principle. I concentrate on the fact that heterotopia is capable of mixing and comparing in a single location several spaces & sites that are themselves incompatible or foreign to one another. Foucault (1986) says that the garden is perhaps the oldest example of these contradictory sites – a real space that gives space to several spaces and sites juxtaposing one another. For the gardener, it creates the ability to access a worldly availability of plants, for my research vegetables and fruit (ibid.).

Everything that exists in the physical existed first in the mental, explained by O'Neil and Rae (2005). Reality is our imagination bringing forth all that is physical. This is also true for gardens. A garden initially exists in people's minds in the form of mental images and then exists in reality. It must be noted that there are factors that hinder the perfect manifestation of the garden from a mental image to becoming a physical reality, such as the resources available to the gardener and the physical conditions of the space itself. The shape of a garden depends on the space it occupies as well as its horticultural possibilities including climate, wind and soil conditions. Resources as time, money, skills available to create and maintenance of the garden influence the realization of a garden, the same as ambition and general interest,

also, one could count in the 'green thumb'. Knowledge and environmental history about the garden as well as social and cultural factors such as class and ethnicity are variables that can also influence the envisioned garden into a physical manifestation. The continued physical and emotional investment, as well as effort and care exerted upon a garden, makes it more than just a space detached from material form and cultural interpretation, but instead a space of use and exchange value that encompasses things such as memories and identity (ibid.).

Methodology

My primary data collection is through the urban agricultural hobbyist (UAH) group and autoethnography.

The participants from the 'Joburg Food Growers' group were part of a cohort of independent small-scale farmers later on called UAH whom I had met at various points. I only used the WhatsApp group to source participants for the online interviews and not to conduct research in the group nor use WhatsApp as a way to conduct research. I interviewed nine 'Joburg Food Growers' participants.

The participants who were asked to keep a diary and share their experiences were referred to me through various farming contacts. Here I had five participants, including myself.

I also chose to interview consumers because they are an important part of urban agriculture, as they are responsible for buying vegetables and fruit. By interviewing consumers, I aimed at getting an understanding of how consumers perceived urban agriculture and their understanding of individual's consumption and environmentalism. I had four participants for the consumer interview.

While the paper was developing, I got involved in a curb garden project in my neighbourhood run by Nellie, whom I later included in the interview process via email.

The participants I interviewed ranged between 23 to 80 years old. I accessed my participants for my research via email and WhatsApp, however, WhatsApp was not used to source data. It was only used to contact the individuals. All the participants were able to access the internet or data.

Due to COVID-19, I was, for the majority of the time, unable to visit participants gardens. I was not able to observe the spaces where these interactions took place. However, through the online interviews, I was able to collect what people had to say about urban agriculture and through my involvement in growing vegetables, I was able to reflect on the physical experience in agriculture. The disadvantage of choosing multiple research methods is that it can quickly become overwhelming.

1) Online Ethnography:

The online ethnography was approached through a combination of individual emails and diary-writing. This was due to COVID-19, the majority of people were practising social distancing and the traditional interview model that I had planned had to be replaced.

I used email to send all my participants the interview questions. Email is an asynchronous interview method, meaning it does not occur at the same time. Having chosen email as an online interview method allowed flexibility to my participants, especially at the beginning of COVID-19 where

there was a lot of uncertainty for everyone. Using email allowed the interviewees to spend time thinking about their potential answers. I saw this as a positive because it allowed for both participants and researcher to reflect on the interview data. This worked well for my research as I was not required to receive ‘snappy’ answers. Some of the advantages of email can also be a disadvantage, and it is important to be aware of this. For example, emailing a reply can also remove a certain level of spontaneity and this can affect the richness of the data compared to data gathered through face-to-face interviews (O’Connor and Madge 2017). A major critique by O’Connor and Madge (2017) linked to text-based virtual communication was the lack of verbal and visual interaction, in that you are unable to observe the environment in which the individuals are conducting themselves.

Sanjek (2016:13) highlights how; “Computers, digital archives, the Internet and mobile devices are changing both our lives and [research] in significant ways. The consequences for fieldwork are emerging daily, and they already affect interactions with informants, definitions of data, and ethnography’s disciplinary future.”. It shows how we have become increasingly technically mediated. Researchers need to embrace new tools such as the mobile phone as part of the research process. As I did in my research, I had contacted the participants majority of the time through WhatsApp, and then the continued conversation and interview was conducted through email.

2) Diary-Writing:

I included a diary-writing element in my research in which five female peer-group participants (including myself) were encouraged to write a weekly synopsis on themes around suburban farming, waste, food sustainability and environmentalism. I considered these diary participants to being independent domestic growers and consumers. Diaries are considered by Adamson (2015, 600) as “pure ethnography” and are used to source information in instances such as climate research among others, as many are not intended for publication, the information is therefore often assumed to be ‘honest’, in comparison to interviewing (Adamson 2015). Although participants were guided by prompts, I do believe that encouraging the participants to write a weekly diary allowed greater freedom of expression and encouraged a ‘diary’ like, ‘honest’ account. Of course, when analysing the data, I had to take social and environmental factors into account, much like any other regular data analysis of ethnography.

To ensure continual engagement, I sent a weekly email with three to four questions to my participants that I would normally have asked in an online interview. This was to encourage the participants to think about my topic and to also keep the focus on my research and not having it drift off to a form of diary writing that is not relevant to my research question. I suggested diary writing to encourage a more creative, open and free space to express themselves on these topics.

3) Autoethnography

Autoethnography is an approach that allows me to reflect on my own experiences and place them in the context of my research. It was an important contribution to my research as I, myself, became a UAH and entrepreneur growing with an intention to sell. It helped me bring more depth to my research as I became a participant and not only an observer, this was particularly important, since COVID-19 had caused an inability to conduct my planned fieldwork. Therefore, this approach helped me understand the field of urban agriculture much better.

Adams, Jones and Ellis (2015) explain autoethnographic stories as creative and overly analytical, and that it gives us the ability to come to know, name and interpret our personal and cultural experience. Adams, Jones and Ellis (2015) further highlight how autoethnography allows the researcher to use personal experience to observe, critique and describe cultural experiences. It also allows deep self-reflection – referred to as “reflexivity” – to better understand the intersection between oneself and society, personal and the political. It also creates a balance between methodological rigour, emotion and creativity (ibid: 2).

Boylorn (2017) speaks of the impact that autoethnography can have on the reader. It can capture lived experiences and cultural phenomenon. But it also comes with responsibility. Throughout one must be self-aware about ethical ramifications of the work and that the ethics run through relationships between researchers and research but also has implications to the larger community. Based on Boylorn's (2017) assertion, I am required to reflect on the ethical implications of my work. I am a believer in urban agriculture and this was amplified through my research. While collecting data, I felt that I needed to be a representative for my interview participants and was constantly trying to balance being a member of the community because of my garden and being the objective researcher who needs to ask the relevant questions. Throughout this process, time was passing as I was covering more readings, which allowed me to become more critical towards urban agriculture. Thus, I was no longer idealising it but was now engaged in fact-finding and fact-checking, linking theory to the material to participants' interviews, and challenging my findings. Equally, my participants pushed me to become even more critical of urban agriculture by, for example, questioning the meaning of ‘organic’ (discussed in chapter one) in this context.

Placing my autoethnographic writing and participants in a South African context

It is the reading by Boylorn (2017) and reflecting on my research process that I find the need to place myself and my research participants in context to South Africa. I am a first-generation white South African woman and my mother tongue is German. The participants for this research were primarily white women – I am unsure about their mother tongue, individuals age or employment status. This was because I sourced

the majority from the Joburg Food Growers WhatsApp group, which has a majority of its participants belonging to the white ethnicity. The fact that the majority of my participants are the same race was not intentional but was neither coincidental. Considering the nexus between race, class and space as it plays itself out in Johannesburg (shaped by its apartheid history), and considering that all of them live in the suburbs and have big enough gardens to carry out gardening, makes it highly likely that they are white. Further, restrictions imposed by COVID-19 stood in the way of diversifying my participant pool.

It is important to be conscious of the implication of this particular bias even though race and class were not a central focus of my research.

My research did not look at the participant's economic capacity, however, concerning the South African landscape, I would categorise the participants as majority white suburban broad middle class to possibly affluent. This decision is drawn by looking at the Unisa Household Net Wealth Index report (2017), which indicated that the top 20% household income group is between R20 000 – R45 000 per month, and the African Development Bank (2010) statistics looks at the daily spending consumption instead of net income. Concluding that the middle-class ranges between 2\$-20\$ (estimate R29 – R285) per day per individual in the household. This shows how broad the middle class is, by this assessment 43.2% of South Africans are considered middle class.

By identifying the category, it is to indicate that I have thought about my position, and my participants context to the South African economic landscape.

From independent domestic food growers to urban agricultural hobbyist (UAH):

At the beginning of the research, I called the participants who gardened 'independent domestic food growers', through the interviews, the label 'urban agricultural hobbyist' (UAH) developed because of observing recurring themes of networks, knowledge production and the use of space between the group.

I have been a member of a WhatsApp group named 'Joburg Food Growers', which consists of independent domestic food growers who grow in their own domestic space. This is an existing WhatsApp group, established in 2018, it consists of 26 participants all of whom have a deep knowledge and share a wide variety of ideas on gardening, seedlings, growing and general wellbeing of the garden. I was invited into the group because of sharing similar interests in gardening and growing food. This group is not a friend's or place for colloquial interaction as the ages vary between 18-80 years. The group's objective is to meet once a month to share tricks and knowledge around the garden to improve and/or encourage 'food growers' to continue to grow. However, due to COVID-19 and the lockdown, the chats have remained on WhatsApp.

I used the group to source the UAH participants for my study. I attached the information sheet which was sent as a message to the group, asking if anyone would be interested in participating and if they could contact me privately. I sourced nine participants. Using the 'Joburg Food Growers' to source participants was a good method to provide me with rich data due to the variety of people in the group - mothers, students, employed, pensioners. For my research, I did not collect data from the WhatsApp group and strictly only used it to approach potential participants.

Even though I was new to online ethnography, I could see the benefits of it. It allowed me to acquire diverse opinions, in a relaxed and intimate manner, which brought a form of connectedness in times where we have to self-isolate and where many people felt lonely and uncertain. Most importantly, internet platforms such as WhatsApp and email can bridge that gap of 'location' and accessibility (Abrams and Gaiser 2017).

Ethical considerations

Conducting online interviews can result in difficulty in assessing a participant's reactions to the research and research questions as the visual cues that might signify discomfort are removed. Thus, it is important to identify how to deal with these possible issues before commencing research. In my research, I provided participants with continued assurance that they were free to leave the study if they felt that the study no longer suited them by providing a participant information sheet stipulating that participation was voluntary and that they had the option to leave the study at any time without any negative consequence.

I abided by the following three principles;

- to do no harm;
- obtain formal and informal consent;
- show due consideration for the privacy of all participants.

The participants in my research project were not subjected to physical, social, legal or psychological harm as my participants do not fall within categories of vulnerability and no minors are involved, and my topic is not of a sensitive nature.

I provided a detailed Participation Information Sheet to all participants which explained the full scope of my study, what confidentiality entails, and that participation was voluntary (i.e., no participants were coerced into participating). I ensured that all my participants were aware that they could stop the interview at any time and continue at a later stage, skip questions or cease their participation at any time without any consequences.

Eynon, Fry and Schroeder (2017) emphasise how researchers carry the responsibility to ensure the confidentiality of privacy and participation at all different stages of the research. I informed the participants of my intention to maintain their anonymity by assigning pseudonyms and removing any identifiable markers. However, I also made them aware that I cannot absolutely guarantee anonymity.

I managed to ensure the safekeeping of all data by using a password-protected laptop and cell phone in which I keep the data and any communication with the participants. I am the only person who has access to these devices.

Chapter Outline

Chapter One establishes who the UAH are in Johannesburg, why they garden and how they create an identity through gardening. This leads to discussing the tension between how urban agriculture is promoted, that it seems to have become increasingly popular with producing food for home use and its actual reality where it often cannot uphold these expectations. I ask what do UAH produce if it is not mountains of food?

Chapter Two's main theme is knowledge production by UAH and space-knowledge. Here I ask how the participants learn to garden. Through their responses, I can divide how people access agricultural knowledge into three categories: *generational knowledge* through parents, grandparents, elders; *social/community knowledge* via community groups, social media such as Instagram and Facebook, and newsletters; *formal education* in the form of books, research, universities or courses.

Chapter Three determines the use of space between house and garden. Here I look at the UAH and their ability to use the space in their garden. I then look at a curb garden as well as my garden, and how I used the space, how I approached selling the fresh produce within the space, and how social divides are negotiated or kept in place. I also address how gardens become spaces of dreams and fantasies, by specifically looking at Foucault (1986) and O'Neill and Rae (2005).

Chapter One: Growing Identity

The carrying theme in chapter one is identity. Perspective on the topic is gained through various participant responses and by firstly asking: “who are the urban agriculturalists?”. This leads to asking the participants if they feel that they are being contributors to sustainability and environmentalism. Their responses to the questions made me conscious of the stigma around ‘organic’ in relation to my participant's position within their gardening identity. Throughout these answers, one can identify how people find themselves through gardening. I interpret my findings with the help of Jamison (2003), Forde (2017), Manning and Kiesling (2010) and Atwood (2015).

I then look at whether participants felt that urban agriculture has increased in Johannesburg. In contrast, tension is established, I discuss the reality of urban agriculture in South Africa and the contradiction between UAH reasons for gardening and the expectations by the public for urban agriculture concerning food security.

Who is the Urban Agricultural Hobbyist?

"It makes me feel as if I am a food activist" David said, this was due to his ability to garden and to grow his vegetables consciously and sustainably, "I am of the view that a person that grows even just a herb on the windowsill at home is taking active steps towards food sustainability. You don't have to have a farm to become a contributor. I cultivated more than 150 spekboom [*portulucaria afra*] of which about 45 are in my garden and that alone has an impact on the environment." David shows his enthusiasm for gardening by sharing that he believes it starts with the individual and one pot plant to actively make a difference. This is what in a nutshell can be called a green identity: the conviction that one's activities have a positive environmentalist impact.

Through the interviews and research, I was able to narrow down the label from ‘Small-Scale Independent Urban Agriculturalists’ to ‘Urban Agricultural Hobbyist’ (UAH). This was after reading the interview responses and seeing a pattern of why people garden. All were doing it as a hobby. For this research paper, UAH are a variety of different people who share a similar interest in gardening and agriculture and located in Johannesburg. The UAH that I interviewed all have their gardens where they plant a variety of things including vegetables. Some only have a couple of herbs or a vegetable box, others entire flower beds transformed into fruit orchards and extended high beds for vegetables and others have taken over the garden from their partners. The key here is, they do it for enjoyment, for health benefits and for environmental

reasons. The sizes all vary, but none are spaces where mounds of food are grown and produced and yet they all do it with a bigger idea in mind. It is here where green identity is created.

The conviction for why they participate in urban agriculture is similar. I have added the responses below to ‘why they started to garden?’ and I have added some pictures of vegetable gardens that were shared with me during the interview process.

“I love growing things. I started gardening in a typical suburban ornamental garden and had small veggies patch in the back yard in a corner. I attended a few courses at Lifestyle college and started learning about permaculture. After that my veggies expanded to all over the property.” This was Liezel’s response to, why she started to garden. She is an incredibly knowledgeable gardener, collects seeds and grows 100s of seedlings for a variety of different people. Her response, shows the process of developing an identity. She first started with a “typical suburban ornamental garden”; she then took courses at Lifestyle college to develop an understanding, which resulted in her transforming her garden. This creates an identity that strengthened her understanding of nature and its relation to herself.

Other reasons, why people started food gardening were the following: Pauline does not grow vegetables that are relatively cheap to buy and take a lot of water. She instead grows beans, spinach, kale, spring onions, and more. When asked why she gardens, she said; “When we moved into our home there was a small herb garden which inspired me. But soon I added vegetables as I love the idea of fresh vegetables and it is great to go out and pick what is needed for a meal. This started mainly with spinach but grew to include many more vegetables.”

Jill has two small wooden boxes with a variety of herbs and vegetables. When asked what motivated her to start food gardening she said; “I wanted to begin a new hobby last year after finishing my second year at university (I knew I would have a bit more time this year and would be able to pay more attention to a garden and its responsibilities). I wanted to slowly begin reducing the amount of money spent on buying food (although I have realised now that this will take a bit more time than I anticipated and a bit of a larger garden – I am currently using small wooden crates to grow vegetables from seeds and to grow herbs from seedlings).”

Nellie started a curb garden by placing 6 wooden boxes outside her property during the lockdown, which I helped to set up. She has a big garden and has dedicated two vegetable boxes inside her property for her private use. When I asked her why she started growing vegetables, her response was: “Increasing hunger amongst many people, gratitude for my plentiful life, unemployment and creative gardening to provide free food for the family, planting avocado trees on the pavement for future generations.”

Mia is strongly against all forms of chemicals. “Both my kids have A.D.D. A good diet is extra important to keep them off medication. I want to be able to eat anything out my garden at any time.” When

I asked her why she gardens; “I Wanted chemical free, fresher, better quality food. Wanted to know where the food was coming from. It is a hobby of some sorts that fits in with our lifestyle of more healthy living.

David has a very big garden and is very passionate about growing a variety of plants and vegetables. When I asked him, he said; “My wife, Annemarié literally asked me on the 1st January 2013 to “take over the vegetable garden.” Which I did and she, very bravely and graciously, gave me ‘access’ to her garden and later on her kitchen of close to 40 years. And so, I concentrated only on tending to veggies to the exclusion of her flowers and other plants. And one day made this huge discovery: flowers and other plants are actually PLANTS. Since then, I cultivate hundreds of plants every year.”

Gelanda is always trying to support local, small-scale and food sustainability programmes. When I asked her why she gardens, she explained; “I learnt from my parents, and when I became a homeowner, it became a hobby. I was a member of the South African Herb Society, and I did a course on herbs and permaculture; I became a Slow Food Member... So, it was an organic process”

Vera is new to gardening therefore maintaining and growing is still new to her and her family. “Having moved from a flat to a house with a garden seemed like the responsible next step in being self-sufficient. We are exploring all the ways we can lower our carbon footprint and green our home by having a cycle of less waste, while encouraging reuse, repurpose, recycle which requires a food garden as a necessary part of the cycle.”

Krista tries to buy everything as close to the source as possible and supports localised produce. When I asked, why she started to garden, she said; “Independence from food retail corporates. Eating food grown naturally and locally while creating biodiversity and developing local ecosystems, while avoiding plastic used in fresh produce. Learning a skill that I find fascinating and crucial. Nourishing myself and my family naturally while connecting with nature and experiencing the magic daily!”

Reading the responses, there is a practical reason of how and why people get into gardening, these are particularly visible with; Pauline, Jill, Mia and Vera’s responses. But some of the responses already highlight that people garden for a bigger idea in mind and are wanting to contribute to a lofty movement. For example, liking the idea to go out and pick your own, wanting to be less reliant on shops and food chains, accessing organic vegetables, knowing where the vegetables come from, are just some of the reasons that have been counted up above, and it shows how there is a deeper reason and meaning to why the participant’s garden. Their responses show consciousness of the environment and want to be part of the process of producing food.



Section of vegetable garden belonging to Christine – who was a diary participant. She started to grow vegetables in order to be less reliant on the system and to have access to healthier food for less money. She extended her vegetable garden during the lockdown to be able to produce more and to go less to the shops. During the lockdown I assisted her with her garden by, planting, selling seedlings to her and helping her with techniques for soil improvements.



Section of my own garden during Winter 2020 is shown above. I harvested my very first onion that year. I normally don't grow onions, ginger or garlic – varieties that take long to get ready and have a very low monetary value for selling purposes. The top left picture, is a good example of companion planting, which is important when growing organically.



Both pictures belong to Mary's vegetable garden –showing seasonal preparation. Mary started to garden due to COVID-19. “The Lockdown was the push I needed to do the garden I'd been dreaming of, it was partly created ‘in case’ of a shortage of food at supermarkets and retailers, plus circumstances were right, e.g. a tree fell down which made space for the actual garden and lockdown allowed me time I never had before.” This shows, how COVID-19 had given people a push to start gardening as it brought the environmental crisis home. It made people feel that they had to do something. Here both practical and identarian ideas are coming through.

I am consciously participating through gardening

The majority of the participants feel that through their gardening, that they are contributing towards environmentalism, sustainability and uplifting biodiversity through their gardens and urban agricultural spaces. Manning and Kiesling (2010) discuss ‘personal identities’ which are formed through the cultivation of one's property, which results in making meaning and forming attachments to a place but furthermore creating a public display through the garden.

The participants have created personal identities associated with their garden. This public display encourages the creation of ‘social identities’, which are groups/places individuals feel they belong to, due to their perceived similar beliefs, values and traits. This can take the shape of joining a gardening group, virtually or figuratively. For example, the majority of the UAH participants are members of the ‘Joburg Food Growers’ WhatsApp group, others are on social media or are sharing their gardening experience with friends and family.

Continued participation within groups, an individual socially identifies with such as gardening groups will over time surpass the ‘social identity’ and create ‘ecological identities’ or ‘environmental identities’. This goes beyond the individual and requires more adherence towards social in-group principles such as not using pesticides, encouraging organic vegetation and permaculture among others. Continued interaction with nature and active effort regarding understanding oneself in relation to others is what will

create the ‘gardening identity’, which will only further the agenda of continuous accessibility and a relationship with nature that satisfies emotional, physical and cognitive needs (Manning and Kiesling 2010).

All the UAH participants indicated that their growing methods are organic. The majority of them are also attempting to, or, already are, participating in permaculture related agricultural practices - Earthcare, Peoplecare and Fairshare (Forde 2016). Here the ecological identity is being nurtured by the participants. Liezel explained that she gardens very much on the principles of permaculture and “more than just the garden. I strongly relate to the ethical principles.” Gelanda went on a permaculture course and with the guidance of a teacher, she was able to incorporate some principles in her garden. She combines this knowledge with companion planting increasing her gardens biodiversity.

Liezel answered with ‘Yes’ to being a contributor to sustainability and environmentalism as she is an active member of the PSG (Participatory Guarantee System - which promotes organic growing and food production). She volunteers at a community garden and said that: “in my garden, I believe my actions are seen by others and in some small way I might be influencing others to be better to the environment”. Pauline responded by saying, “Yes in a very small way- in that, if I can do it and network with others and we form communities which share similar ideas, values and traits on what we are doing, it could spread, resulting in more and more people becoming inspired to grow some vegetables etc.”. Krista said, “Yes. I believe that I contribute to the greater environment by caring for my local environment. I also find that our lifestyle has sparked interest from friends and family who are now exposed to a concept they may not have considered before. I share my experiences and learnings via dedicated social media platforms with the greater community too. I believe that seeing someone you know with little expertise committing to and living a sustainable life and growing their food is quite inspirational to uncertain friends, encouraging them to try it too”. These conscious interactions with nature, understanding oneself in relation to others and interacting with others is creating the ‘gardening identity’ that Manning and Kiesling (2010) explain.

Gelanda, on the other hand only considers her actions being sustainable and environmental through purchasing consciously, “Only in terms of my beliefs and whenever I can buy free-range food or support veggie boxes. I support local as much as possible. I also endeavour to eliminate packaging. I buy food on markdowns or sales whenever possible.”

The few that did not garden or did not have a garden, also believed that they were being conscious of food sustainability and the environment through avoiding excessive food packaging, buying locally and supporting small-scale holdings among others. Kirsten explained how she was tempted to grow her vegetables during the lockdown but ended up not doing it due to a lack of expertise, patience and time,

however, she is conscious of where her food comes from "...somewhat yes, I don't think it is acceptable to fly unnecessary veg items or other foodstuffs around the globe to have an unlimited choice of ingredients etc. in terms of environmental consequences and climate change; I try not to buy fresh items that have been flown into the country, although sometimes rushed and don't check or not obviously marked where from."

Jill, who plants only a couple of spinach, salads and herbs in vegetable boxes, explained how she considers buying sustainable food to be an environmental conscious response, "absolutely, this is because a huge proportion of the earth is reserved exclusively for agriculture – if this land is looked after, it will sustain us indefinitely. If it is not looked after, our future generations will be put at risk of food shortages and difficulties."

In the literature review, I linked humanism and post-humanism to urban agriculture and environmentalism. Manning and Kiesling (2010) also highlight how connecting with nature through sustainable gardening methods can be explained through a postmodern shift in people's way of thinking about biodiversity and nature – from a controlling and controlled environment when in nature to an ecological approach that sees the human as part of the earth, rooted in nature, instead of existing outside the system. It is these ideas and topics which are also mentioned by the UHA in relation to their gardening practices.

In the research, all the participants indicated an awareness of environmentalism or being open to supporting environmentally friendly choices through the use of their purchasing power. The UAH who practices organic growing think they are contributing to Johannesburg's increased biodiverse green spaces. Goddard, Dougill and Benton (2009) speak of the 'ecology of cities', which is when the human and their social institutions are integrated with the environment. This idea is also what the UHA express. Further they subscribe to that what is important is the design and gardening techniques of the individual gardens, which determine the success of biodiversity for example organic growing and permaculture. It is also emphasised how urban nature conservation in private gardens is undervalued, it must not be looked at as separate but instead managed collectively when city planning occurs (Goddard, Dougill and Benton 2009).

The interviews highlighted the reasons for gardening being for enjoyment, health and environmental aspirations. In a question about food sustainability David wrote, "I am deeply thankful and aware that I can play a role in my garden and it makes me feel as if I am a food activist." The participants' reasons for gardening and that they feel they can contribute to sustainability and environmentalism through either gardening or purchasing choices leads me to; 'Personal environmentalism' which is explained by Jamison (2003) as a category of ecological resistance. It is a very broad category and increasingly diversified over time. It is concerning individuals gardening and growing vegetables as a personal act to protect the environment and the ecosystem in their garden. Through creating a space, it is bringing meaning to a

contemporary fragmented lifestyle and being aware of one's so-called ecological footprint we produce throughout our lifespan and beyond (Jamison 2003).

I identify that gardening for myself and the UHA creates a safe space to withdraw, to energise and to get back to nature, to produce fresh, chemically free produce and having a say in how the vegetables are produced, cared for and consumed. I interpret the participants' response that through the process of gardening they feel that they are taking back control over the vegetables they consume and the environment they are in. Krista points out, that she can be less reliant on the supply chain. My interpretation is to also be less dominant and rather to be part of the garden. It is through these modes that identity is formed.

Megan for example shared, that she has 4 beehives and a pecan tree and tries to let her garden live in harmony and she installed a natural fishpond about 15 years ago in her front garden to encourage wildlife, birds, frogs, dragonflies and fish.

It can be considered everyday activism by the UAH to participate in gardening for whatever reason they choose. Growing to protect the environment and your health, growing to have fewer chemicals in your food is finding alternative ways to access food. These alternative identities to the garden are one of many possible relationships to gardening, from the position of gardening through choice and one required due to circumstance.

The vegetable gardens infrastructure, as well as the location it is situated in, such as rural, urban and suburb, are indicators of what agency the gardener has, and also provide the reasons as to why the vegetable garden is being worked on. These alternative agencies to access vegetables highlight the structural inequality and the reality that not all who cultivate vegetables at a small scale are doing it by choice or for the same conviction. This can be seen when comparing those who grow within a rural setting and those who grow within an urban setting, where the former grows at a small scale more for survival and income substitution purposes while the latter grows mainly out of pursuing an interest, furthering a hobby or establishing identities. Not to say one is weighted higher than the other, but to highlight the different agencies and realities they are formed within. (Forde 2017).

Food production involves a supply chain that users have not a lot of control over. UHA would argue, that by growing their vegetables, the garden gains agency and the grower can exert influence by reducing their consumption. Through supplying your own home, shortens the supply chain and is a way to reject commercial farming industries (Forde 2017). These are the ideas and reasons that the participants also highlighted for wanting to garden. Through this, meaning is given to the process of gardening in the case of the hobbyist, it is engaging in identity and how they feel about themselves. It does not matter if it is true or not – if their gardening effects make a difference or not, it's about how it makes them feel and the identity created in the process.

This brings me to the notion that the hobbyist thinks they play a role in the sustainability of alternative, small-scale agriculture and knowledge production. It is an important point to note, the majority of the research participants have access to a garden and can grow, however by no means is this the case universally and due to the very different growing environments in and around Johannesburg it is required of the vegetable grower to know their environment, spatial planning and time to prepare.

The majority of the participants used their produce or when producing surplus vegetables, they chose to give it away to friends and family members. This highlights the relationship between human and the environment and their ability to produce from home is not so alternative as we think but can be considered an advantage that most of the world's population does not have. Still, even when the yield is not enough to live on or to sell locally, people draw a lot of meaning from it. It becomes part of who they are, it creates a personal, social, ecological and gardening identity, depending on how involved the individual is with their garden.

'Organic' is Loaded and Identities can Vary – Green identity under criticism

I asked the participants about their understanding of terms and concepts such as organic, sustainable, vegan and homegrown. I was trying to understand how they identify with these terms, what their responses were and their interpretations on that. The answers for organic stood out the most. The image of 'organic' was often associated with being expensive, representing a specific lifestyle and even 'being out of touch with the struggles of the poor' as said by Pauline, an interview participant. This analysis of 'organic' is removed from the alternative green identities to which they subscribe, as discussed below. They distance themselves from it as it questions the purity of their endeavour. By positioning themselves vis-à-vis 'organic' through alternative labels such as sustainability, they try to protect their efforts at global environmentalism against the accusation of exclusivity. As the participants who grow organically however don't agree with what it represents outside of their garden production.

Vera, said that "the word 'organic' is loaded and has a terrible connection to privilege and is an exclusive concept which seems okay to damn people in poverty to hunger." leading to Mia's comments that until she sees 'sustainable', 'organic' 'vegan' and 'home-grown' achieved by the lower-income groups successfully 'I see them as concepts belonging to the wealthy, hip and cool', she further said, "Frankly, I question how much is real and how much is a fad". What I found interesting was that she then removed 'sustainable' out of the equation of the "wealthy, hip and cool" and said; "except for 'sustainable' – that concept can make a real change. If agricultural practices can move from profit-driven monoculture it will impact all income groups for the better – but probably only in the future whereas the people need food now.

It is a conundrum – how do you feed everyone and change the modern methods of farming?” By her removing ‘sustainable’ she is protecting her green identity which is closely connected to her enjoyment. Mia, also mentioned how she tries to buy as organic as possible, however, that the price is the overriding decision-maker. This aligned with two other participants, Jill and Christine who said that organic and vegan “seem out of reach for the average-income household”, the term organic seems “overused and not understood”, “and that it can be expensive or/and very hard to find.”. This phenomenon is not only found by my participants but Alkon et al. (2013) also associate, specifically in lower-income households the key barrier to obtaining healthy food not being the lack of knowledge or proximity to it but the lack of income, followed by quality and convenience. A data collection based on a large national sample of young American adults also found that the fruit and vegetable intake was significantly associated with pricing (Powell, Zhao and Wang 2009). A case study in which 18 countries with different income levels were looked at concerning fruit and vegetable consumption, found that countries with low gross national income often consumed fewer fruit and vegetables and are spending a bigger proportion of their income to purchase food. Unsurprisingly, the higher the costs of fruit and vegetables to household income resulted in reduced consumption thereof (Miller et al. 2016).

Leoni a diary participant, who recently moved into an apartment with her partner is not a UAH, however buys vegetables from me weekly. While she was answering one of the weekly diary entries, she shared with me what her boyfriend’s first words were when she read him the words to the interview question (Sustainable, Organic, Vegan, Self-Grown) he said “Expensive and short shelf-life” she then raised her concern about the short shelf-life and its flexibility with cooking, “I feel like I would have to cook according to what is going to go off next”.

My third diary participant Mary stood out to me because she viewed it from a contrasting angle, that organic, vegan and sustainability “all the above are counter to consumerist lifestyle which places convenience/fashion/immediate human needs over planet/environment/long term needs”. This brings us to a closing loop with the remaining participants who gave very broad understandings and definitions of the terms ‘organic’, ‘sustainable’, ‘vegan’ and ‘homegrown’ and less critical to the above-mentioned concerns. The stigma behind the term ‘Organic’ has fascinated and surprised me because I viewed it from a more biological approach than from the social. This is a stark reminder, that even though participants practise personal environmentalism in their garden, it doesn’t mean that they live in parallel worlds to the reality of people not being able to get access to organic produce. That these alternative identities created through gardening and garden community create a better understanding and appreciation of nature. But it does not remove them from social reality. An interesting factor brought forward by the research was that the UAH participants are not the ones who are creating the stigma of organic growing. They are conscious of how

the concept of growing organically has been made a stigma. However, they are distancing themselves from this negative association, and by that, they are protecting what they do and how meaningful it is for them.

COVID-19 – An increasing popularity in urban agriculture in Johannesburg

UAH produces identity. Through COVID-19 the world crisis was brought home, there was a need for people to counter against this, to do something about it. Many moved to urban gardening as an approach to do something during COVID-19, even if it was only to buy some seeds or seedlings from the supermarket. It made them feel better, even if Greenwashing was used to generate the sale. The point is that it made them feel better. Through taking up urban gardening, as small as their approach might have been, they embraced a green identity.

Atwood (2015) explains three pictures of how the world could look when we run out of oil, these different scenarios would change how we would shape our identity. What she is saying is that we create identities for ourselves and how we see ourselves in the system we live and rely on. “I am what I make” is something said in a culture of consumption because we cannot imagine where or how money is made if it isn’t through consumption. But in the culture of renewables “money will not be the only measure of wealth. Well-being will factor as an economic positive, too” (Atwood 2015: 5). She speaks of renewable energy and I interpret it for urban agriculture to generate an identity that is fostered in knowledge and community discussed closer in chapter two and also plays out through sharing produce, trading, bartering and selling also discussed in chapter three.

Atwood (2015: 2) highlights how perception changes over time, stating “we’re conservative: we don’t change our ways unless necessity forces us”. COVID-19 has changed us. From an economic position, by what to fill our fridge with, to a social one, living in isolation. The participants, all experienced these differently. Mia and Mary shared that they were economically affected by COVID-19, resulting in what they were filling their fridges with, changing purchasing patterns, buying bulk, shopping around for better deals, changing where they bought and starting their vegetable garden and or increasing their vegetable garden. Nadia is planning to grow this season sesame seeds and cardamon (spice) which both are imported and she is already growing garlic and will add ginger to the garden. Jill, has become more aware of where the products come from and is trying to buy more local, “we have made a greater attempt to buy local fruit and vegetables that are nutritious in order to make sure that we keep ourselves healthy during the pandemic.” And Vera shared that what is put in the fridge since COVID-19 has changed due to, “budget, time and nutrition is the holy trinity in my kitchen so I am batch cooking (and freezing) now, which wastes less produce and frees up time and because it’s planned and the recipes are carefully sourced has the

nutrition aspect covered. My two kids are omnivores so their plates are different to me and my partner's but we overlap items to also expose them to the veg-full option which is inevitably coming to them once it's safe to move them across to a fully veg diet."

Through COVID-19, necessity has forced the hand to change ways, so that their identities are still protected, but adapted. This linked me to ask if the participants found that people have had an increased interest in urban farming, as I observed that there was an increased interest while being locked in during the strict lockdown regulations - level 5 and 4. Through noticing that people around me became experts in baking bread, which reminds me of the first scenario that Atwood (2015) speaks of, going back to self-reliance, living off the land, manual labour, front lawn vegetable patches and the fear of a collapsing system. I drew similarities to my observation that people were baking bread with growing vegetables in the sense that it is going back to the basics – not to say one is easier than the other, on the contrary, they both require tedious labour and are a high art if done correctly. But it is doing things yourself instead of relying on the system.

I asked the participants if they felt that urban farming had increased in Johannesburg? Some of the participants, for example, Mia shared that she had not felt that there was an increase in interest in her circles. In comparison to Megan, Jill and Krista, who said that they felt there was an increase, Jill, for example, shared that, "a lot more people my age are taking interest in buying produce from a local farm (especially in the Cape, where it seems to have become trendy). So, I do believe that awareness and support for suburban farming has grown as people's interest in environmental preservation grows." Vera said, "I feel there is but not sure I can base it on anything tangible." and Liezel, "Yes – I do like to spread the word myself and encourage others to support it." Mary, a diary participant, started with her vegetable garden during the lockdown, Kirsten considered starting to grow and Christine expanded her vegetable garden. Johannesburg's household agriculture statistically belongs to the smallest in South Africa (Statistics South Africa 2019).

In interviews, observations and communication between participants and myself, I found there was an increase in interest in urban agriculture and growing in a private capacity and it felt as if it was continuously growing through supporting local, buying delivered vegetable boxes directly from the source and being encouraged to grow your own. The trend in urban agriculture has spurred globally. A study by Edmondson et al. (2019) highlights an increase in allotments applications in the UK and that this is followed in other cities in Europe and in the USA (Edmondson et al. 2019).

It would be interesting to see the statistics of agricultural activities in the household in 2020 due to COVID-19. As the participants and my impression is that COVID-19 has increased the agricultural activities. Below

I documented my observations and why I have the perception that home growing seemed to have increased in middle-class South Africa during COVID-19;

One day before the level 5 lockdown I went to the garden nursery because they had sales on all their seedlings. I had noticed that majority of the vegetable seedlings had been bought up, when I asked the cashier, she told me that people have been buying seedlings in bulk to grow their food during the lockdown. To be more self-reliant? Less dependent? I added my email to their mailing list and I promptly received updates, sales and promotions, but more importantly, I also received a variety of free weekly online courses offered by the garden centre about different sections of gardening, this included a vegetable garden talk.

This led me to notice an increase in advertising on social media for prepacked vegetable high rise beds. This is where one buys a wooden box, that gets delivered often already with soil and a variety of basic seeds. As a starter pack, this follows with some basic instructions on how to take care of one's new commitment.

Around the same time, Checkers had re-enrolled the vegetable pods called 'Little Gardens 2' due to popular demand, for every R200 spent by an Xtra Savings member, customers in turn, received a little vegetable pod containing compressed soil and seeds with a simple instruction on how to take care of it. The campaign ran as long as stock lasted. The Little Garden 2 Seedlings Kit was locally made this time around, which resulted in the employment of 150 people consisting mostly of women. The Little Garden campaign in 2018, pledged to plant food gardens in every community that it serves, today they have reached 100 community gardens and 494 home gardens – I am unsure how fruitful these projects have been ("Little Garden 2 Website Faqs" 2020). This could of course also be a Greenwashing campaign, however, that doesn't matter. The important factor is how it made the shopper feel, allowing them to be part of an identity, to be part of something bigger – being green, creating identity, protecting our future in a time of COVID-19 which has challenged and questioned this future.

The observation and example are there to emphasise that it appears that vegetable gardening is either encouraged or is being requested by the consumer.

During this period of the Little Garden campaign and also after the pods had run out, I noticed seed stands established in the middle of the vegetable section and I could not understand why - I thought to myself: "Is Checkers trying to educate people by showing that vegetables come from seeds?" With the mask on, gloves and shopping bag under my arm, I approached a shop assistant in the vegetable aisle, to ask.

He told me, that people are buying seeds because they are scared of the food price increases. I was fascinated by this statement, especially knowing how much work, time, knowledge and initial costs are

involved in growing vegetables. I was struck by the idea that normal grocery shoppers might buy these plants and seedlings, even though they might have no prior experience of planting nor did the supermarket offer much additional information for maintenance. It appeared that COVID-19 had really opened up this imagination that we might have to look after ourselves in terms of food provision. Even though the shelves were perfectly filled.

In July the SAFSC (South African Food Sovereignty Campaign) had begun offering through Zoom workshops 'vegetable growing classes'. These were 4 workshops spread out till October offering their viewers the opportunity to learn how to grow vegetables, the principles of permaculture and what to plant when.

I am counting up these different examples because it is a variety of vegetable growing initiatives during COVID-19 encouraging people to remain healthy, environmentally aware and to possibly become more conscious of where food originates from. Is this encouraging an increased environmental identity that will encourage a gardening identity and possibly encourage more UAH communities, knowledge sharing and possible new knowledge production? My research is underlying that there is a demand for this.

Having said that Frayne, McCordic and Shilomboleni (2014) pinpoint three key analyses that are vital for urban agriculture in the city. One, urban agriculture is linked to the urban context (i.e., political, historical, economic) and demographic factors which determine the rates of household engagements. Two, urban agriculture is not an effective food security strategy for households housing the urban poor. And Three; the earning levels per household, the access to land (landholding) determines the urban agricultural impact on food security for the household, for example, it is found that the wealthier households produce higher yields in comparison to poor households. Bringing this in relation to the COVID-19 pandemic, it is found in the history of urban agriculture in Southern African cities that there is an increase in urban agriculture during acute hardship and tends to decline when the economic situation improves (ibid.). COVID-19 had increased gardening, as it was directly and partly but also in an imaginative way affecting people. COVID-19 brought the concern of safety and health right home, into the garden. It made urban gardening more urgent and appealing. In other words the financial or environmental crisis doesn't have to be directly felt. What others experienced and what the pandemic changed resulted in a threat being felt where urban gardening became an emotional response, instead of an existential one.

I interpret the participant's data and my observation and the history of urban agriculture in South Africa as explained by Frayne, McCordic and Shilomboleni (2014) to that there is an increase in vegetable growing due to economic instability, however, that it will decline again once economic stability/ trust is restored. The above section of this chapter specifically focused on identity creation through gardening and environmentalism.

The following section of this chapter is to conceptualise the reality of urban agriculture. Identifying its popular use with regards to it being the poster child for hope and poverty alleviating methods whereas the reality is that majority of the time the urban poor have very little use for urban agriculture because of socio-economic circumstances.

Urban Agriculture a poster child for Food Security – Perpetuating the Myth

Above I have highlighted how there is an increase in urban gardening in Johannesburg. In this section I will look at the contrast between reality and myth, as tension is established. I here discuss the reality of urban agriculture in South Africa. I show this by highlighting the marginal economic gains and that urban agriculture should instead be looked at from the social and bonding potential.

Urban agriculture is often used as the saviour for food security, food subsidies as well as a source of nutritional food for poverty-stricken and poor people within urban settings. During the 80s and 90s and at the end of Apartheid, there was an increase in urban agriculture in Southern and Eastern Africa (Crush, Hovorka and Tevera 2011).

There is, however relatively low urban food production in poor urban communities and that very few are deriving an income from the sale of home produce (Crush, Hovorka and Tevera 2011). Tevera (1999) argues that there is very little proof that suggests the true benefits of urban agriculture for the very poor and new arrivals into the city. This is often caused by a lack of land and the constant shift in residency. Suggesting that urban agriculture benefiting the poor is often exaggerated.

However, governments and external funding organs are continuing with promoting urban agriculture as an economic upliftment tool instead of promoting social benefits.

It is perpetuating the idea that urban agriculture can resolve food security at the individual level. It is shifting the responsibility from the state to provide access to food, to the individual who needs to first grow to sell, to then survive.

I would like to look at three examples of home garden initiatives through governmental support in South Africa, taking place at different periods. There is very little information on them, specifically on the success of the projects, however, I think the examples show that food gardens and home gardens are in the peripheral view when wanting to address food security and poverty at a governmental level. In 2010 the department of Agriculture, Environmental Affairs and Rural Development took the concept 'One Home, One Garden' to Isandlwana in Nquthu (KZN). The department provided seeds to the community and then they were responsible for growing the vegetable gardens (Department of Agriculture, Environmental Affairs and Rural Development, KwaZulu-Natal Provincial Government 2010).

Ten years later, in 2020 due to Covid-19, they tried again in KZN, the agricultural and rural development department launched a multimillion-rand garden project. Trying to connect people, gardens and food through this project. The aim is to help people who have been hardest hit due to COVID-19. Each family received, fertiliser, seeds, gardening tools and JoJo tanks, the project is set to roll out to 16 000 households (Bhengu 2020).

The Western Cape Government also launched the One Home, One Garden Campaign during the COVID-19 pandemic. In the first two months of COVID-19, they had planted a total of 1371 food gardens. They started growing gardens in the Metro, with 123 being in Gugulethu, other areas are Riversdale, Groot Brak, Thembaletu, Bella Vista and DuNoon. Democratic Alliance (DA) specifically emphasising that the aim is to shift from food relief to food security (Western Cape Department of Agriculture 2020).

With all three initiatives, the aim is not only to generate enough for the individuals' households but to also encourage selling or trading within the community. This is believed to help subsidise people's expenses. However, when you look at the statistics, only 1% of home growers end up selling their produce and that the majority of home growers grow as an extra source of food. Also; there has been a decline in households' involvement in agricultural activities throughout all provinces of South Africa - In 2011 about 2,9 million households, in 2017 it was estimated at 2,5 million households involved in household agriculture (Statistics South Africa 2019).

When speaking of urban agriculture, one must look beyond the economic and physical benefits and instead focus on the social impacts thereof. A paper by Olivier and Heineken (2017) who looked at cultivators in the Cape Flats in Cape Town, mentions how they used the term 'Bonding Capital' and how growing food for family and friends might not have high economic value, however other social benefits such as; work-ethic, productivity, physical, psychological and bond creation. The problem is; the funders or organisers such as local government often frame urban agriculture in context or in relation to economic growth, whereas the cultivator is associating growth and value on much broader terms (ibid.). These gardening elements, working in the dirt, caring for plants, watching them grow, collecting knowledge are important elements to creating a relationship to the environment and to find affiliation to nature, which in turn are the different forces at work to shape an environmental identity as discussed by Kiesling and Manning (2010) and it should not be downplayed only because it is not viewed from an economic standpoint.

During the lockdown, an initiative took place to emphasize how underutilised land can be converted into a food source while simultaneously becoming an agent of independence for the urban poor. The initiative resulted in 12 emergency shelters being established by the eThekweni Municipality around the city in response to COVID-19. On three sites (Jewish Shelter, behind the Elangeni Hotel on Durban's

beachfront, Block AK situated in Greyville and Lahee Park Shelter in Pinetown) residents started food gardens to sell as well as for their consumption. All of the sudden in a time of uncertainty and fear of the unknown, growing food turned into an activity where people took back control over their lives and changed their circumstances (Ngcongo 2020). This example draws similarities to my observations of the different organisations encouraging urban gardening (that I had counted up in the previous section) to create an identity, in a time of uncertainty. I interpret that this initiative was to give the urban poor something to do, something to hold onto, to identify with.

There have been numerous studies done on urban agriculture and its social capital (Olivier and Heineken 2017; Othman et al. 2018; Kingsley, Foenander and Bailey 2020). A critique by researchers who look at the social benefits of urban agriculture is that projects are far too often looked at from an economical perspective and not at a social impact perspective. Thus, leaving urban agriculture projects with little room to be supported even though they can benefit society and be a gateway of socialization, community upliftment, increased self-worth and identity.

Conclusion

The chapter started by looking at who the UAH are, why they garden and if they felt they were contributing to environmental sustainability. This was to show how they create a green identity through their hobby and how there seems to be an increasing interest in urban agriculture in Johannesburg.

The content within this chapter was able to highlight the underlying tension in the Johannesburg urban agricultural environment created by the continued promotion of urban agriculture as a food security solution although reality has proven it differently. One should not only expect food security and monetary gain. Olivier and Heineken (2017) draw our attention to possibly moving away from rating the success of urban agriculture through economic or physical to more social benefits. This would allow for a holistic understanding of urban agriculture. The example of the 12 shelters established during COVID-19 in which individuals started to transform unused land into a space of food production is an example of where urban agriculture worked, however, I also provided examples of government initiatives which are unclear how successful the project will be, especially in the relations to the statistic of urban agricultural use/activity in South Africa. I highlight in the chapter that access to land is the biggest hinder for the urban poor. By doing this, I interpret that the success of urban agriculture becomes relative to all political, economic, social circumstance of the individual and their space.

This leads me to say that labelling urban agriculture as a failure or a success would be a poor analysis. Instead, it needs to be placed in its context. The research participants for this research are

contributing to improved biodiversity, they are achieving their individual goal of accessing healthier food, being closer to nature and supporting the ecosystem.

The research participants place their environmental, enjoyment and health concern in the centre when cultivating and maintaining their gardens. Manning and Kiesling (2010) say, that if we find ways to develop people's interest in gardening, we not only increase the knowledge of ecology but also an environmental identity. This leads me to ask, what is urban farming by suburban middle-class to possibly affluent white people producing? The answer to this question is presented in the following two chapters; the production of knowledge, the creation of social networks and new contacts within otherwise gated off suburbia which is to some extent cutting across social divides.

Chapter Two:

Growing Knowledge

Knowledge production is a central theme when addressing urban agriculture. My focal point is specifically on Urban Agricultural Hobbyists (UAH) and this chapter highlights how UAH accesses knowledge, how they produce more knowledge between fellow gardeners and how it unfolds and benefits them. In the vignette, I paint a picture of my knowledge gathering over the years. It starts with generational knowledge through my aunt and father, it moves to formal education which is, in my case, through purchasing books and then social and community knowledge by joining the ‘Joburg Food Growers’ community, and other social media platforms. In the body of the chapter, I then use comments by UAHs and interactions with them. Through this I deepen these insights into various ways of learning and growing knowledge about urban gardening.

To understand my data better, I used the theory by Vygotsky who developed the modern social learning theory, Günel (2016) who discusses the knowledge-based economy and Haluza-DeLay and Berzon (2013) who discusses place-knowledge. This chapter aims to show how knowledge is produced, shared and unfolds between the UAH community.

Vignette

My first encounter with vegetable gardens was when I was about 6 years old, while my parents and I lived in Germany and I would occasionally visit my aunt in her *Kleingarten* in Schwalbach close to Frankfurt.

She was a very strict teacher. She did not like to see mistakes being made in her vegetable garden. I followed her as if I was her shadow and watched carefully, trying to copy every single move. I learned all the basics from her, how to trim, how to grow seedlings, how to stilt different types of beans, tomatoes, composting, and how to keep the birds out of the vegetable garden. This, as I now know, was my very first permaculture interaction without being aware of it. I wonder if my aunt even knows that she uses permaculture methods in her garden or if it is for her simply natural not to waste, to be organic and re-purpose products that would have been thrown away. I remember one hot summer, she showed me how to make a very smelly soup. It was made out of Brennessel (Nettles) and kept in the dark for weeks for it to ferment. It smelt horrible. It had to be handled with a long stick for stirring and gloves when pouring it into sprayers but my aunt swore by it.

I also had my dad, who was a far gentler teacher. He would take me to the nursery and allowed me to choose some flowers every spring to plant with him in the garden after the cold winters. Our house had

a hidden away 3m x 2m greenhouse on our property and my parents allowed me to use it. I must admit, I somehow never managed to get anything to grow there which resulted in me downscaling to a mini greenhouse that could be kept on my bedroom windowsill and it spurred my success in seedling germination. I then negotiated with my parents for a piece of flower bed in our garden, I had to look after it, plant in it and water it. I was proud as ever. Through these first experiences, I was able to learn and appreciate gardening and the environment.

When I was 22, I took up gardening again. This time without the help of my aunt or father. I had to teach myself. I bought myself the 'A-Z of Vegetables' a guide to basic gardening by Jane Griffiths. She introduces basic composting, companion planting and seasonal vegetables and most importantly to remain organic. My book collection quickly expanded after that.

Soon, I also joined the 'Joburg Food Growers' WhatsApp group to advance my new found hobby. When I needed more detail or a better example I would refer to YouTube and social media platforms, where I followed organic agricultural sites. However, this way of accessing information came a lot later, only after I had started to plant and was already in the process of moving into the second round of vegetable growing. The social media platforms I accessed were also useful with regards to visual improvement ideas, creative ways of building trellis or design within the vegetable garden. What my experience shows is that there are very different ways to learn about gardening. I can divide these up into three categories, namely: Generational, communal or social, and formal education.

These learning experiences all improved my gardening skills. For example, I was able to increase the yield from 2019 supplementing my mom and my vegetable intake by 50-70%. The surplus yield I sold to neighbours, friends and acquaintances. By 2020 summer the yield increased to 80-95% of our weekly vegetable intake and I approached a restaurant and a market to sell my surplus to them. I intentionally started to grow more than we could consume to have a surplus for selling and turning my hobby into something profitable. I learned how experience and knowledge growth are vital in the success of vegetable gardening. It includes soil quality, water use, plant growth, food production and many more categories.

I asked my participants during the interview process how they had obtained their agricultural knowledge. I received a variety of different answers. These, however, reflected my own experience and can therefore also be categorised into three knowledge forms: to explain how knowledge can be produced; One; generational knowledge – through parents, elders and spouses, Second; communal or social – gardening groups, social media (Facebook, YouTube, WhatsApp), subscriptions to newsletters. And third; formal education in the form of courses, tertiary education, own research, purchasing of books and the internet.

What appears is that most of these learning experiences which have taken place under the three categories are experiential. It is through, Vygotsky, Hake (2014), Günel (2016) and Haluza-DeLay and Berzon (2013) that I come to see that knowledge is not only passed on but grows. It is a continuous process.

Below I will first explain with theory what is understood by each heading and then I provide examples of what participants answered when I asked how they obtained their agricultural knowledge.

Generational Knowledge - parents, elders and spouses

Generational and family knowledge takes place often at the beginning or even before someone's garden experience, it is the knowledge that is traded down from 'old' to 'young'. It is also often the seed that spurs the individual who received generational knowledge to become a gardener. Newman and Hatton-Yeo (2008) explain intergenerational knowledge and learning exist as an informal vehicle within families. The goal is to systematically transform knowledge, skills, norms and values between generations. Normally it is the elders or grandparents of the family that share their collective knowledge. The elders intend to keep the new generation grounded in their history and to establish a link to the past and their culture (ibid.). Hake (2014, 162) explains that especially successful family gardening "depends upon passing on knowledge, skills and sensitivities from generation to generation. This can involve informal intergenerational learning through watching, doing, talking and telling stories." Urban gardeners can also learn from one another like the younger ones can learn from the older and vice versa and become jointed. Younger gardeners might have new cultivation methods and are more accommodating to 'fashionable' vegetables. This can spur new interests whereby older generations hold the knowledge of 'forgotten' vegetables and have a broader collection of seed and vegetable knowledge.

This intergenerational learning is seen among the UAH in Johannesburg. This takes place, for example, every time I go to a seed swap, which is where you swap self-cultivated heirloom seeds between one another. The older generations (between 50-80 years old) have often a far broader collection of different seed types, often labelled carefully by popular name and scientific name. In comparison, I initially arrived with a combination of some bought seeds and poorly demarcated labelled seeds. Regardless, after managing to trade them for some more interesting seeds, I learned to do better. Now, I too collect seeds from a variety of plants, labelling them correctly and importantly to mark the harvesting period (for example, spring, summer, autumn, winter) and the year.

Hake (2014) further explains that we should consider gardens as a learning environment, which are physical spaces where knowledge is transferred. However, that each garden space is influenced through social, political and economic forces at the local level. For example, certain agendas can be promoted in

these spaces - “urban gardens can be intergenerational learning spaces which work to transform passive ‘consumer’ identities into active ‘producer’ identities.” (Hake 2014, 162). These knowledge spaces shape how you garden and sometimes even determine why you garden. The UAH community I belong to has very strong beliefs (as discussed in chapter one) in ecological, sustainable, organic growing. This identity of gardening is continuously promoted when they interact.

The seed swapping example between UAHs shows how generational knowledge sharing does not need to occur through the direct family but can also develop through the community. Still, as Megan describes, it is often actual family’s relations that plant the seed of gardening in a young person’s life. Megan, shared “I was fortunate enough to learn from my mother while growing up how to enjoy gardening and especially vegetable and fruit. My Dad used to joke that my mother grew gold-plated vegetables, considering the amount of compost and fertilizers that she bought.”. She however also shared that her mother did not practise organically. “[She] sprayed the fruit with pesticides, even though she did follow the safety guidelines.” Over the last 15 years, Megan has become an organic grower. She is now anti-GMO’s, pesticides, herbicides, fast food fertilizers which make vegetables grow but are not nutritious. She believes to be more sustainable is to grow as much of your own family’s requirements. She also practises permaculture. These methods she did not learn through her mother. Instead, they were obtained through knowledge gathered in books – for example, Jane Griffith’s book on organic gardening. This author is a popular go-to garden book. It is there to quickly look something up. What is more important, she is South African based and knows the climate. And the growth charts are aligned to the nine South African provinces, making it convenient to use. Megan further obtains her knowledge by chatting to knowledgeable people, and trial and error. Her interview highlighted to me that knowledge is continuously growing, that her love for gardening was developed through her mother but her further education occurred throughout her life, accessing different mediums of knowledge. This shows that there is rarely just one source of learning, especially when new methods are being introduced.

David, in contrast, became a gardener after his wife asked him to take over the garden from her in January 2013. He initially tried to be self-sufficient but since he was still working, he was unable to commit as much time as he would have needed to. He has been in the process of compost making for 45 years, and his slogan is “Don’t feed your dustbin, feed your soil!”. When I asked him how he obtained his farming knowledge he said that he had learned firstly from “my wife Annemarié, then literature and then YouTube and, of course, ‘Joburg Food Growers’ are a very strong influence in my life as well. There are the most wonderful people attending our meetings and participate in the WhatsApp group.” I liked how he listed how and where he obtained his knowledge: Like a step ladder. Yet, while each step is important, they take place at different times. And similar to mine and Megan’s experience, it was with the transfer of familial knowledge where it all started.

Social and Community Knowledge

Through learning by discovery, inquiry, problem-solving, working together with peers and experts, there is an encouragement of lifelong learning habits. The majority of the UAH participants in my study share the common denominator that they belong to the 'Joburg Food Growers' WhatsApp group. The participants are of different ages, language and cultural background, all interacting and exchanging knowledge. The knowledge that emerges within these groups is very experiential. The knowledge growth takes place in small pieces, a little bit like patchwork. The social and community knowledge category is unique, as the knowledge is specifically generated and grows out of the social and its horizontal and crisscrossing networks. The interaction and exchange of peoples' knowledge, ideas and concerns are not connected through family ties but instead, come together and plant and grow knowledge because they share an interest, a hobby, an identity.

My participants indicated in the interview that the 'Joburg Food Growers' WhatsApp was a space where they gathered knowledge from. For my research, I did not use the WhatsApp group for data collection. Yet, I was made aware of its importance through my participants' interview responses. The 'Joburg Food Growers' is an already established community that hosts public community events. Drawing on Wenger, McDermott and Snyder (2002), one can argue that in turn, it has become ritualistic and has a substantive purpose of creating a community as well as being a space for knowledge production, distribution of information, problem-solving platform as well as a place to discuss new ideas.

Wenger, McDermott and Snyder (2002) discuss in their paper, how to encourage a community of practice and in that process to guide and cultivate knowledge. They highlight that the most valuable information is often shared through small and everyday interaction, through informal discussions (for example through the groups WhatsApp chat) and that the real value of these conversations is often not immediately evident until the recipient reports how the idea was applied. I would like to share my own experience during the lockdown, where I drove to a fellow UAH – Liezel. I met her through the 'Joburg Food Growers' WhatsApp group and she is also a participant in my research. It was sometime in September 2020 when I picked up 10-12 bags of compost for my next round of vegetables. Here, I saw the first Olla – which is an ancient old irrigation system. It is a clay pot only fired once, so it is porous, it is placed into the soil up to the neck, then filled with water. The porous clay releases moisture into the ground. The roots generally grow in the direction from where the moisture comes. This irrigation system is waterwise, less water evaporates and also diseases are less frequent. A few months later, I found an Olla manufacturer and immediately purchased some to replace a section of drip irrigation in my vegetable garden. This example shows how a simple observation and a casual conversation a couple of months back became incredibly

valuable to me when I saw the Olla manufacturer. Here I would like to emphasise how a simple observation in someone's garden enabled through a social network centred around a social media platform leads straight to knowledge transfer.

Mary, who was a diary participant shared with me in a conversation that, like developed in the previous section, she mostly learns from her mother-in-law regarding how to garden. But she also buys books and researches using the internet. Most importantly, she started her own social media page on Instagram where she shares with the growing community her garden experience. She shows her friends who follow her how to transplant and how to companion plant. She further engages followers by asking them questions on how to grow specific plants, or if someone can identify a vegetable for her. She told me that connecting with other people via social media platforms or other communities is to connect with like-minded people, to learn and to expand her knowledge and know-how, what and when to grow vegetables in her garden. She claims, that this has resulted in her producing more for her family and being less reliant on the supply chain, as her garden is substituting vegetables that she would have normally bought at a supermarket. At the time of the diary writing process Mary's garden substituted; "cabbage, spinach, beets, tatsoi, baby spinach, lettuce, herbs" Since then, she has joined the 'Joburg Food Growers' WhatsApp group, another platform for her to trade knowledge. Mary's experience shows that social media is central in accessing knowledge. More so, through active exchange and engagement like setting up one's site, knowledge gets distributed and shared within what is experienced as like-minded communities of urban gardeners. Mary started her social media platform and her vegetable garden at the beginning of COVID-19. The social media platform allowed her to remain virtually in touch with like-minded people during a time where new contacts are avoided.

A diary participant Leoni, who was not a gardener but regularly bought organic vegetables from me said that one of the reasons she gets vegetables from my garden is so that she can learn what is in season and to eat according to the seasons of the year. This was for her to be more conscious of the environment, her consumption of food as well as general interests. She shared with me that she does not have agricultural knowledge of what is available at which time of the season and thus her purchases from me allow her to learn. Through our weekly interactions, of me preparing her vegetable boxes, there is a monetary value exchange but also knowledge is being shared and grown through socialising, experiencing and communicating.

Formal Education

For the last knowledge category – formal education I have placed books, schooling through university, courses and workshops together. This is not to say that formal education appears by only reading a book however it is something that one often does for oneself. It is to establish a foundation of knowledge. It is sometimes a method used when generational knowledge is missing and when the social knowledge cannot provide a systematic foundation that formal education can. An example of this is when I started the vegetable garden. I self-taught myself by systematically reading books. I needed to access knowledge relatively fast, as we were building the vegetable garden simultaneously. In the beginning, I did not know about all the different social media groups and I had not yet joined the ‘Joburg Food Growers’ WhatsApp group. Buying books allowed me to systematically read through the book. Reading gave me the confidence to then enter the social and community platforms. I then joined the ‘Joburg Food Growers’ and I was able to phrase specific questions and understand more when something was explained to me by having arrived with a foundation of knowledge through my books.

This category is more focused on the individual's decision to further their education and is not reliant on social knowledge production. However, the social is often (not always) reliant on formal education, to share new gardening methods or plant varieties. Understanding these subtle differences emphasises how learning is not a linear process and that the process of knowledge gathering and growing is constantly overlapping. This draws on to Vygotsky modern social learning theory, specifically theme three, ZPD. Which is discussed more closely in the following subheading ‘*Overlapping learning and sharing*’. Below, I discuss two participants, who received formal education to establish a foundation for gardening knowledge.

Krista was referred to me through another interview participant. Her household is vegan. She strongly believes that the traditional way of monoculture farming is destroying our environment. She has a strong green identity as discussed in the previous chapter. She is very conscious of how plastic packaging contribute to global CO2 levels. She believes that acting sustainable is no longer enough. “We need to go beyond sustainability and act regeneratively.”, “connecting with nature and experiencing the magic daily!”.

As she told me, she practises the principles of permaculture and considers learning how to cultivate your food as an essential and fascinating skill. “I oppose any unnatural substances in general. Mother Nature knows best, is my rule of thumb. I see my garden as part of the local and greater ecosystem and won’t add anything that could impact that detrimentally.”. When I asked her how she accesses knowledge she shared that “My husband and I completed an introduction to permaculture course which gave us a

wonderful foundation. On an ongoing basis, I do online research and follow several food-growing Facebook groups for tips and advice when I need it." She had also organised a 'produce swap' which I interpret that knowledge is also shared and created by exchanging produce, possibly seeds and communicating about the garden-grown produce.

Liesel has transformed her entire garden into different areas of growing spaces, from vegetables to fruit orchards to beehives. She thinks that merely producing food is not enough, that one needs to work with the whole environment to make it possible to keep producing. This responsibility is not only for yourself but for the wildlife, insects and micro-organism. Food sustainability is important to her and she believes that a community-based barter system is part of a sustainable system. She gardens organically, she says "treat the soil and the environment well by not loading it with chemicals and it will treat you better by providing healthy food and a better place to live." She too practises permaculture principles in her garden, and she can grow her garden and work in a community garden because she accesses knowledge predominantly through having done a couple of academic courses at Lifestyle nursery, she watches lots of YouTube programmes on gardening as well, while she sifts her compost or plant seedlings. She also communicates a lot with other fellow gardeners and she says "I also learn by trial and error".

I would like to pick up on the idea of 'wonderful foundation' as mentioned by Krista. This idea highlights that not everyone who starts gardening has prior knowledge on gardening and so to get into urban gardening experiential knowledge as offered on social media or social networks is not enough to be planting successfully. This leads them to get a more systematic foundational introduction through courses to learn. Once they have established a type of foundation, they continue the learning process through exchanging experience and learning by doing, which they then share through and with their online and offline community.

Overlapping Learning and sharing

All categories are contributors to knowledge production. The three categories that were discussed, cannot be viewed as independent but overlapping. When reading the participants answers, you notice how none gave a single category to access knowledge. All of the participants, including myself, access knowledge in various ways, dependent on what knowledge is needed. Vygotsky the Russian psychologist who developed the modern social learning theory highlights how learning processes are constantly overlapping and are dependent on the surroundings. He highlights three themes of knowledge production one: learning through social, historical and cultural interactions; two: use of language that encourages communication and to create meaning; three: 'Zone of Proximal Development' (ZPD) which can be understood as the bridging of the gap between actual developmental levels and potential developmental levels, the emphasis of guided

workgroups, peers, technology and higher education allowing for the reduction of the gap between actual and potential development levels (Polly et al. 2017)

I highlighted in the example with David, how I see the gathering of knowledge as a step ladder. An example to show how the categories are continuously overlapping is from my ethnographic examples. I might read in one of my books how to layer compost (which would be category three), but it is through conversation with other UAHs (category two) that I am made aware of the benefits of coffee ground. I then realise that our households produce 4 daily cups of coffee will not bring ground breaking differences to my +/- 100sqm vegetable garden. This resulted in me driving to a coffee shop and offering them to be more environmentally conscious and to collect in 20 litter buckets that I provide coffee grounds, which they happily agreed to. I was helping them reduce their waste and they were enriching my soil.

This example shows how knowledge production and the constant growing of knowledge does not take place in a vacuum or in separate categories but together and by combining these knowledge sources one is then able to use them successfully and efficiently.

Below I have added additional participants answers, these are far broader in the way they answered. This is to show that obtaining agricultural knowledge is an overlapping process.

Nadia, as she told me, grows on the principles of ‘garden to plate’, which means to minimise the food miles and to access healthier food for herself. She shared with me that she accesses knowledge through: “Literature, advice by community elders, I belong to an amazing group of folks called ‘Johannesburg food growers’. The group members are always prepared to share their valuable knowledge and sound advice”. Nadia accesses all three of the categories. Her foundation lies with the community elders, and she builds on that through literature and social groups. Through the literature and her own garden experiences she can participate on the social platform – the ‘Joburg Food Growers’.

Vera on the other hand builds her agricultural knowledge through subscribing to newsletters “from an indigenous nursery (Random Harvest) and an heirloom seed supplier (Livingseeds) and their respective online profiles.”. she is also a member of the ‘Joburg Food Growers, “which is sociable, knowledgeable, supportive (and generous)”. Vera used to live in a flat and moved into a house, she started gardening because it “felt like the responsible next step in being self-sufficient.” Vera’s, accesses knowledge through two streams, through newsletters that are genuinely relatively short but dense in information and through the ‘Joburg Food Growers’ WhatsApp platform.

Gelanda, attended meetings on gardening, seminars, reading journals, Youtube, talking with friends, Food Growers Club, Slow Food, she also learned from her parents. “When I owned my own home it became a hobby. I was a member of the South African Herb Society, I did a course on herbs and permaculture; I became a Slow Food Member”

Gelanda's response highlights how her process of becoming involved in growing vegetables was an organic process. She accesses different mediums and importantly it occurred over her life span, the development of knowledge producing and growing. The ability to foster and share knowledge is continuously important as it allows for the maintenance of cultural and societal wealth (BCFN n.d.). Through the interviews, it highlighted how the participants have gathered knowledge in gardening, that their experience through generational, community/social and formal education are combined and through this, they have the potential to share knowledge within their community but also carry the potential to influence outsiders who possibly want to become a UAH or want to benefit from the UAH knowledge production.

That leads me to, the knowledge-based economy in relation to UAH. The research group has a deep understanding of the environment and agriculture and it could contribute to a knowledge-based economy. Günel (2016) speaks of the establishment of the knowledge-based economy in some countries in the United Arab Emirates (UAE) and how governments in the region have begun to promote institutions of higher education to establish local expertise. The goal is to diversify the economy, shifting it from an oil economy to a global centre of innovation in science and technology. This model of economic development marks a transition and the research centres aim to function as testing spaces where new exportable ideas and products are generated. The goal is that knowledge functions as a resource, "with the underlying assumption that innovative intellectual products and services may be exported for a high-value return, eventually triggering the expansion of a high-tech industry similar to Silicon Valley or Boston 128." (Günel 2016, 306). The knowledge-based economy will take time to create and be fully enforced in both social and technological context.

A local example for possible knowledge production is the iZindaba Zokudla engagement project which has implemented the Farmer's Lab. This projects aims are to create opportunities in urban agriculture within a sustainable food system. It is Johannesburg based and tries to move the South African food system to become a more sustainable, economical productive system (Malan 2020). However, Malan (2015:68) also points out how "training for urban agriculture cannot be seen as a knowledge and technology transfer approach". The first reason, is that the relevant knowledge is not always available. And secondly that the knowledge needs to be context specific. This indicates that accessing knowledge for urban agriculturists is challenging. Specifically, because the knowledge needs to be radically local and in context. I give this example because the research participants of the UAH are keepers and producers of radically local knowledge and have deep understanding of the local ecological environment.

The UAH community in Johannesburg serves as a space where the existing way of living and farming is interrogated, encouraging alternative living and farming methods for the future. The UAH community, especially the members of the 'Joburg Food Growers' hold radically indigenous knowledge, which is geographically very specific and unique to Johannesburg.

Through having a UAH community, it generates a space for collective action, which triggers more informed methods to engage with environmentalism, food security, supply chains and sustainability. This also creates a closer relationship to the landscape which is under threat and a sense of belonging to space. Below I provide an example, to show how there is a demand for this type of knowledge not just by the people practising gardening but others who see the point but don't know how to do it or lack the interest in it.

Gabbie was not a vegetable grower, her response was quite different to the other participants. She didn't show much interest in any environmental, organic or farming topics and also indicated that she did not pay attention to where her food came from or how far it had to travel, "Only sometimes when ('Woolies' says where it originated from on the front of the packaging)." But she would consider buying at an urban farm if it was in her area. This indicates that people are prepared to learn, they are interested and are willing to change or try something new, this might be for different reasons, maybe not for environmental ones but health, convenience, price or a combination thereof. Gabbie continued by saying that she would want a vegetable garden as it is probably healthier but that someone else would need to grow and look after it. How I interpret her interview is that she is not interested in the knowledge exchange between herself and the UAH community or other small-scale urban agriculturalists who would be responsible to grow these vegetables but instead would rather outsource the knowledge for a monetary value.

Kirsten, who is also not a UAH shared with me, that she considered growing during COVID-19 but that she was missing the knowledge and the time. Instead, she would be happy to pay for someone to plant, grow and maintain the vegetables. In other words, both Gabbie and Kirsten would outsource the knowledge, skill and labour for a monetary value to access fresh, organic produce.

Place- Knowledge

Until now I have been discussing how the participants obtain their farming knowledge. The following section focuses on how farming knowledge is transformed and translated into the individual UAH garden spaces. Following Vygotsky, according to whom learning takes place in its application and is a process that appears through socio-cultural activities instead of being autonomous.

Space-knowledge is in my interpretation where formal knowledge, social and/or generational taught knowledge is re-adjusted to the specific UAH own garden space. Each garden is different and learning where what grows well can only be achieved by working in the space. By doing this, the UAH becomes part of the garden through feeling, working and building up a space-knowledge. Through this process, everyday-knowledge is used to garden. Gardiner (2006) explains 'everyday-knowledge' as "all human

society build up a repertoire of shared and embodied norms, techniques and interpretive framework.” (ibid. 205). It is to be able to understand mundane social interactions and the shaping of personal identities, that gardening and place-knowledge is connected to. Bhatti et al. (2009, 64) explains how “the garden exists as a material place with a specific past, and gardens live on into the future”. This can lead us to say that a garden has a ‘memory’ that shape their existence, for example, a hot and dry summer, a cold winter or a very wet summer will affect how the garden in the next season responds to growth. It is, however, the individual human that remembers what happened in the garden. It shows how the garden experiences different modes of ‘time’. This includes the rhythms of the seasons, growing cycles, sunrise and sunset. Here the ecological time is in communication with the social time which is exposed to the rhythm of everyday life, the mundane things – sleeping, eating, going to work, hanging washing (ibid.).

It is because of the everyday activities and ability to observe the garden that every day-knowledge then transforms into place-knowledge which is very specific to the location. This highlights that one can get ideas and discuss the individual garden with other UAH however it is the individual who needs to learn by doing to gather place-knowledge. It is place-knowledge that possibly brings the knowledge of social and community to its limits.

Haluza-DeLay and Berzon (2013) speak of how there are synergies created between the house and landscape for example collecting rainwater from the rooftops and then disporting it through drip irrigation, sprayer or a soaker hose. In a similar vein, Megan, a participant who I once visited at her house to look at her garden and to learn how she gardens, showed me how she practises a principle of permaculture, by rain harvesting with a JOJO tank. The water is then connected to the garden through a hose and allows her to water without using municipality water. She also walked me through her garden and showed me how she designed her entire back yard to collect rainwater by re-directing the rainwater to not just stream out of her property but to remain on the property without flooding the garden. It was done by creating streams and digging natural water catching areas. This showed me how she used the location of her house and the landscape of her garden to collect and to re-direct rainwater.

As this example shows, the role of 'place knowledge' is important insofar as to develop understanding and care for the place, what is important to note is the intimate knowledge of UAH's yards and the garden community they belong to. Home growers must know their gardens microclimate of sunny or wet spots, wind or shelter from the wind or other harsh conditions (Haluza-DeLay and Berzon 2013). A further example of this is when I was at a 'Joburg Food Growers' meeting, David who was hosting, told us about how they planted pumpkins in their backyard. The pumpkins took over the entire backyard and they directed them into corners that they didn't need but had a good microclimate for the pumpkin. This is only possible if you know every wind breeze and sun stream of your property. As the pumpkins had a high yield

and were not affected by their attempts to re-directing them. Another example is of my garden, I have learned through observation and trial and error that the microclimate in my vegetable garden varies considerably depending on where you stand in it. Therefore, I am unable to grow spinach close to the wall as it gets too hot and has poor air circulation, encouraging mildew, resulting in not being able to supply customers on time and it affects the costs. The individual must know their soil and the water flow around the property, this is created through observation, experience, garden practises such as permaculture or organic practises and through books and community knowledge exchange.

This is not learning by instructions but through doing and experience. The knowledge generated is radically local and therefore particular. It cannot be generalised, it shows that the knowledge collected from generational, social and formal will need to be re-aligned all over again to fit the specific garden context.

Conclusion

Social networking is vital for the diffusion of innovation and it represents key ways in how humans interact. It is considered that networks are strong patterns of relationships and the network can create friendships, economic exchange, information or production and use of the social capital (Haluza-DeLay and Berzon 2013). In the interviews, the participants often reverted to the 'Joburg Food Growers' as one of their important sources for information and social support.

The networks that are generated through the gardening community consist of nodes and ties. Hluza-DeLay and Berzon (2013) explain that nodes are members and ties are the connections between them, ties are identified by their strength and type and the nodes are assessed based on these measures as centrality.

The network theory assumes that the individuals are less significant than how they are embedded in the network. The network is important on how information and knowledge are distributed, for example, the garden community specifically the 'Joburg Food Growers' could be a stimulus for broader socio-ecological transformation (Ibid). The chapter highlighted how the knowledge forms and unfolds inside the gardening community networks. Gardening can be divided into three types of learning and a large portion is learning by doing, the actual planting/growing experience as the subheading 'place-knowledge' indicates. Generational knowledge is passed on by the older generation. This aspect is not to be underestimated because gardening is a long-term activity. A year has only one or maximum 2 harvest seasons. For instance, a planting mistake can only be corrected the following season or year. It is beneficial if the older generation passes gathered knowledge on. Social knowledge is accumulated through gardening groups, social media (Facebook, YouTube, WhatsApp), subscriptions to newsletters. Immediate knowledge can be shared this way, for instance if a gardener experiences a certain problem like an aphid infestation – this problem can be immediately addressed and solved by another gardener. The formal

learning through books, coursework, formal education can function as a base for the knowledge production. As it creates a foundation of learning that can be furthered, incorporated and exchanged with social and generational. However, if one does not have generational knowledge, it can function as a replacement. All these disciplines feed into each other. Gardening is a lifelong learning process, with each process overlapping each other or building on to one another.

The question is, to what extent can UAH assist the city of Johannesburg? The use of the UAH's cultural knowledge can be used as a direct agent to encourage heirloom seed use. It would diversify the vegetable variety in the economy, encourage cultural appropriate food and protecting generational knowledge and ancient vegetable varieties. Having said that, the UAH carries radically indigenous knowledge, it is incredibly specific as they know the ins and outs of the Highveld, they know the climate, pests and small-scale growing methods.

The technical knowledge that is also produced by the UAH can contribute to improved growing methods i.e., organic and permaculture. The knowledge-based economy as discussed in this chapter can prompt innovation domestically and encourage a permanent workforce with different types of expertise. The knowledge-based economy for urban agriculture allows for new ideas and a better understanding of food production, origin and biodiversity and urban agriculture diversifies the accessibility of urban agricultural knowledge.

Chapter Three: Growing Spaces

The urban garden is a changing space in its meaning as well in its social relations. In this chapter, I will discuss through a vignette, how my garden space was transformed into a vegetable garden and how within the vegetable garden the re-ordering and (re)imagining of the vegetable garden took place. I draw on, Augé (1995), Alexandra (2002) and Foucault (1986) to establish what it means to use a space, to re-order it, to plant within it and to imagine it. I also look at bartering, giving away and selling. Here, I draw on Mauss (1950) and his theory of the gift.

Vignette

Through a changing composition of our family structure, my mom and I decided to re-order our garden. Every time one entered the property one would look onto a large Jacaranda that had made it impossible to grow anything under, turning it into a dust pit. In 2017, we decided enough is enough and that we would turn it into usable space – from a dust pit to an ecological food-producing space. My mom and I researched the internet and pored over books for ideas to design the vegetable garden. The layout was key. We wanted two features: one, it had to look attractive to the eye, so that we would remain interested in the garden; and two, we didn't want a 'common vegetable garden' that you see when visiting a typical suburban home in Johannesburg. By 'common' I refer to the usual 3 x 4m square plot with a small fence, stepping stones, dried-up soil, and some evidence that the neighbour's cat or the house dog sits in it regularly, and the plot is located in the back where the servant's quarters are, in between garden shed and washing line, nicely tucked away from the visitor's eye. Instead, our vegetable garden is the first thing that we wanted to see stepping out of the house, leaving and returning home. The same applied to our guests or any visitor entering the property.

We wanted to celebrate the vegetable garden's unique splendour, instead of common flowers, we wanted to look onto organically grown salad heads and a variety of vegetables that also blossom but have the purpose to produce and if flowers then only edible ones like Nasturtium. That is also why we chose to start vegetable gardening and why it mattered to us, we wanted to use the space productively to create something that brings us healthy vegetables and joy to look at.

The design was inspired by the traditional Umuzi/Kraal enclosure being a circle. We drew inspiration from the Umuzi/Kraal enclosure to create spatial order within the circle. We were unable to make a circle so instead compromised with half a circle. The paths are laid with the same stone that wraps itself around the house, while the vegetable garden is adequately located, facing the North-East. The ideal

position is North facing in our Southern hemisphere. We were required to cut down an invasive tree (Jacaranda) to bring sunlight and space, leaving us with a massive crate. Instead of filling it up with soil, we turned it into a water feature that looks like a well. This provided water for the birds in the dry months and a water connection for a variety of sprinkler systems. The area in which the vegetable garden is, is about 100sqm big.

Right at the back of the garden, I built a compost heap. The compost heap is for the kitchen waste (all the vegetable cutting, egg cartons and coffee grounds) and the garden waste. When I initially started this project, we built one heap and now the heap has turned into three constantly turning heaps. One for new kitchen waste, one that has been turned and one with always ready to use compost. This makes it more convenient instead of turning only one heap every 6 weeks. For example, shrub cuttings, thicker sticks and leaves go on one side as they take longer to break down into compost, however, it is also possible to use it as mulch. We pulled a 1-meter-high wooden fence up, to keep the dogs out and to allow the birds to enjoy the garden in peace. Foucault (1986) explains that a garden can be a heterotopia, (principle three). By having the ability to grow a variety of different vegetables it provides me with a dreamlike possibility of accessing the world through the garden. I can plant vegetables, herbs and fruit that I would have normally not been able to buy – for example, lovage, long beans, giant German radishes or tree tomatoes.

Gardens are not fixed and they allow us room to adjust our needs. Alexander (2002) discussed the use of space and how it can be ordered and re-ordered due to a changing need in a household. Why the vegetable garden transforms and is re-ordered, it is because a vegetable garden space should naturally transform every few months due to seasonal changes and harvesting of produce. Popova (n.d.:1) notes that the time in a garden is not chronological but circular because of the life cycle of plants. She quotes Ross Gay in his observation, “Gardening is an exercise in supreme attentiveness.”.

In my garden I experience the same, harvest changes due to the dynamic of the space and the constant re-ordering of new plantings. The garden is constantly expanding and I experiment with different water systems, growing methods and vegetable varieties. Below I have added pictures of the different re-ordering phases of the vegetable garden. Through the constant re-ordering, the vegetable garden moved from being a ‘we’ project to an ‘I’ project. This was a natural transition. As the garden grew, I started to plant a lot more variety and quantity and I was experimenting with different growing and propagating methods. My mom quickly noticed that I had the green finger in the family and that it was becoming too serious for her. She decided to retreat, and only to look at it, walking through the garden and telling me what vegetables she would like to eat. I was given the golden key of fertile land and in return, I delivered daily fresh organic vegetables to my mom’s door (free of charge, of course).



Left picture; first few days of the vegetable garden being completed. Realising how big the space is and how much there is to plant. Right picture; dug up a addition frame around the vegetable garden, including removing the grass at the back, I gained +/- 30sqm.



Summer in full swing. Companion planting, a mix of everything. In-front of the well is a horned cucumber plant, my very first indigenous vegetable variety. Against the wall, on the left a Tomato-Tree and on the right a grape-vine. I was producing a lot, however there is little structure and major yield improvements were necessary.



Picture taken in 2020, Summer. The garden has developed naturally, there is structure in plant variety and careful planning to use the companion planting method to insure maximum yield. Most importantly, I built a grow tent at the back, protecting plants from birds in winter, as I lost cabbage, spinach, cauliflower due to them. It took me 4 weekends to build. In this picture, I was harvesting weekly 40-50 spring onions, 15 bundles each of; Lemon-Balm, Mint, Oregano, Thyme, Rosemary and a variety of different vegetables.

Garden Boundaries and the use of space

After having shown in the Vignette, how and why I transformed and re-ordered space for and in the vegetable garden, it is necessary to discuss how Augé (1995), Alexandra (2002) and Foucault (1986) interpret the space in which a garden exists. Augé (1995) speaks of space, he refers to the way in which the environment is organized (layout of village, differentiation between wild nature and cultivated nature, lakes etc) and in many senses more focused on the descriptive side of things and not the meaning associated to space/environment (ibid). Alexandra (2002) studies the house and the garden's relationship to one another. She as Augé (1995) speaks specifically about the layout of a space. Alexander (2002) speaks of the garden and how it stands with the house and the occupants.

Her paper specifically focuses on the English garden of urban and suburban middle-class. The notion of boundaries is essential for landscaped gardens as the boundaries determine ownership and privacy. The outside boundary affects the layout of the garden within, for example how flowerbeds are built, where the house stands in relation to the garden. Alexander (2002) used the example of the Islamic pleasure garden, as it is closed off against the wilderness – away from the desert - the internal environment was carefully cared for, watered and controlled. This symbolises the turning away from the outside world, being removed from the public and choosing what to see and what to allow in. The enthusiasm of fencing

and demarcation by the urban homeowner to differentiate landownership is carried through these historical patterns of bringing structure, order and re-order into small spaces. When we were setting up the vegetable garden, the re-ordering took place, replacing space that was no longer used, transforming it into a new space of use. We put up a fence for the vegetable area based on the design of the Umuzi/Kraal which is traditionally used for enclosing a traditional village or to enclose livestock. We used the inspiration for design purposes and to keep our vegetables safe from the dogs. The Umuzi/Kraal's purpose is also to bring order, by dividing the half circle into slices (as seen in the pictures above) it provides clear structure. It also gives 'choice' as this divides the garden into pieces, allowing for different growing methods in different sections of the vegetable garden. An example for this would be, choosing rotational planting in single vegetable beds or companion planting or a mix of both. Rocks that surfaced after felling the Jacaranda tree were reused to build the well and a sitting area. We installed a drip-irrigation system and the ancient old irrigation system 'Olla' (clay pots in soil).

Alexander (2002) says that the garden is divided into different sections, often demarcated through pathways, fencing, flower beds, which inform about their specific functions. These categories and boundaries between spaces are all associated with domestic and the co-existence within the boundaries. Every suburban house is in a relationship with the garden and, no matter the weather, there is the need to keep it in order, to keep nature at bay and instil a form of control. Here I draw attention between nature, garden and demarcation, as nature cannot be fixed or held still, but nature finds itself in the confinement of the garden, a human construction which needs to be limited and controlled as the garden is open to all the natural elements.

Alexander (2002) speaks of how the garden takes an order from the house but also represents reorder and disorder. The order that is referred to is spatial. The front garden is usually open to the public and is often unused, it acts as a liminal device separating the house from the public space. The structure is similar to the layout of the house – the front open to the public and the back is private, similar to the garden. Alexander (2002) explains that the spaces that are designed for looking onto are always the most manicured areas, which is often the middle of the garden. This space in the garden has the highest tension between growth and restraint due to the constant working on it. The third area is where normally all the functioning things are located, the basics, for example, the vegetable garden, shed and the compost. This is not for the sight of the visitor.

Liesel's set up is in line with the observation above – vegetable garden in the back, ornamental in the front. However, over the years, and the more experienced and enthusiastic she became, the garden was reordered. When I visited her, she walked me through her garden, showing each type of container that had plants

growing in it, she transformed paint buckets into vegetable growing pots (she was growing asparagus, beans and chilli in them) and one section of the outside wall of the house which had seedling trays in the hundreds all propagating a variety of vegetables, fruit trees and plants. As we continued walking, I noticed the garden was neatly divided into categories: fruit trees in one area; high-beds where vegetables were being grown in another; and compost mounds against the wall. This is a strong contrast from where she started, having an ornamental garden and a vegetable garden in the back to reorganising the garden into new and different categories. Through re-ordering her garden over the years, she has been able to aim at a more ecologically friendly gardening method, she is also able to grow more vegetables and to practise permaculture methods. These are important principles for her as she strongly relates to permaculture “more than just the garden. I strongly relate to the ethical principles.”, This quote and Liezels re-ordering of the garden has changed the boundary lines within her garden but it has also affected her way of living within her house and garden.

Mary’s vegetable garden space developed due to a tree falling making space and the lockdown allowing her more time. She has always wanted to grow vegetables for her family and the above reasons made it possible. This created space now free to be reordered. Her vegetable garden is at the front of the house, open to the public (visitors) and it is neatly presented, majority of the time repurposing items from around the house or garden to establish pathways or support systems (for vegetables that climb) out of bendable branches from her garden. The garden is slightly lifted by the rock wall that separates the driveway from the garden. The wall is oval-shaped and she planted lavender as a shield between cars and the vegetable garden, she doesn’t have a fence for her vegetable garden and the garden slides in-between a house wall and the properties boundary.

Christine who was a diary participant, extended her vegetable garden during COVID-19, in the hopes of being less reliant on the food chain. She uprooted three big bushes, she cut holes into her grass to allow zucchini and cucumbers to climb up the house wall without turning the entire grass area into a vegetable garden. She reordered her garden space and at the same time kept order by only cutting dedicated growing holes into the grass for the cucumbers and zucchini, after the summer season, she reclosed those grass holes and regrew grass over them, re-joining the grass space again. Why she did this was to maximise her garden space but only for a controlled amount of time, till the season was over. She doesn’t want to turn her entire garden only into a vegetable growing space. Her garden is relatively small, her re-ordering it permanently would change the layout of her garden.

We must not see every element in the garden as fixed. The spacing of the garden can change over time and is dependent on the need of the individual and family. Aucoin (2017) explains how space is considered to be a central element of social life, one that is universal and yet variously perceived and experienced by different people and communities. This can be seen by how the participants (Liezels, Mary,

Christine and myself) changed their garden to suit them and their family. Alexander (2002) explains how the garden has a series of life cycles from annual plants to trees, which highlights the temporality of order from the home in that “the garden regenerates and transforms, and thereby restores order to the built domestic space” (ibid: 479). The quote resonates with the above three participants as Liezel practises permaculture which affects the seasonal transformation of the garden. Mary had a new space because of the fallen tree to start gardening, Christine only uses sections of the garden depending on the season this affects the yield for the domestic space. My domestic space regenerates through the varieties I plant, every season allowing for a new dream.

Dreaming of the garden space

As previously mentioned, Foucault (1986) describes the garden in ‘principle three of the heterotopia’ that the garden is a space that is beyond the practice of everyday life. It acts as a space that allows one to access the whole world through growing a variety of plants. I am using Foucault’s (1986) concept of the garden space to look at how the garden can also become a space of dreams and fantasy. This was also evidenced in chapter two in which I discussed how identity is created in these spaces. I further explore, here, how space is used to create the identity that is associated with goals and dreams. An improved ecological gardening approach is achieved through re-ordering the garden space ideally with the size, plant variety and time schedule of a magazine spread (Alexander 2002). That is a dream created through television, gardening magazines and community. Encouraging people to create a different world, for example having access to the whole world in your garden is on its own a dream. As Foucault (1986, 25) explains “We must not forget that in the Orient the garden, an astonishing creation that is now a thousand years old, had very deep and seemingly superimposed meanings”. The goal is to re-create this dream in your property line, or directly outside your property line on the curb, as given example in this chapter. This re-creating both dream world or the actual geographical landscape both are miniaturized and shifted in scale to suit the space you have and through it, a sense of nostalgia is accompanied (Alexander 2002). An example is Megan planting the guavadilla.

I link this to COVID-19 how some participants (Mary, Christine, Liezel, Nellie and myself) extended our gardens, increased production or even started to garden from scratch. We all proved, how the garden can become a space where new realities due to too external circumstances can be played out – for example becoming more sustainable, becoming less reliant on the supply chains, becoming self-sufficient and create at least the idea of being independent and reinvent oneself. These are goals that are created through having the ability to garden and to re-order space.

The dream itself, whether it be to be more sustainable, reduce one's ecological footprint, or become self-reliant, is not necessarily achieved by any of the participants. However, achieving these dreams are then re-addressed and miniaturised to fit the reality of the garden space and their circumstance. In other words, they do not achieve 100% sustainability or become fully self-sufficient, but it gets adjusted to their reality.

O'Neill and Rae (2005) explain that garden space and the ability to achieve these dreams are affected by a variety of factors, namely, the physical reality of the garden and people's interpretation of how a garden should look. The idea of how a garden should look develops independently and affects the realisation of the physical garden. However, the realisation of the garden is affected by multiple factors: the resources of the gardener, the layout of the space (hilly, flat, sandy, rock etc) and the horticultural possibilities (micro-climate, access to water etc). For my garden an example would be, drawing inspiration from the Umuzi/Kraal design, not having the correct spatial layout and compromised with having half a circle. Also choosing the Kraal design is in itself a particular local imaginary which I bring out by wanting to re-use earth provided material to establish the garden i.e., using the natural rock for the well, wooden fence and trying to avoid purchased external, unnatural material. O'Neill and Rae (2005) continue explaining how the garden shape is reliant on the space it is in – "its social location in a community and relationship to the home" (ibid: 1). These factors must then also respond to the gardener's availability of time and money, whilst knowledge of gardening and perseverance are important for the success of achieving the garden ideal. For example, having experience makes it easier to transform the idea to reality or also know how to adjust to fit the geographical, microclimate and personal requirements (ibid.).

Additionally, the composition of the family plays a role in converting ideas or dreams into reality. These can change and, so too, the ideas of what a garden is, and what the garden is meant to be there for. A garden is not a fixed space it changes due to seasons, with owners and the work that is put into it. These ideas or dreams of how a garden should look are associated with experience in the garden and can influence the garden and how it becomes reality as the garden is a physical space and carries both a physical and emotional level. The meaning associated with the garden also varies between individuals, this determines the layout and the plant variety of the garden, similarly, ideas of what nature is, comes from personal feelings, beliefs and it varies between people (ibid.).

Accessing the world through your garden, and making your dream for your garden a reality, lie in the hands of social, political and economic circumstances of the individual and these are, again, affected by external circumstances such as COVID-19.

A garden is a heterotopic habitat to many worlds

In looking at urban growing, and space and community that is created through gardens, I draw on Foucault's (1986) third principle of the heterotopia which is the capability of mixing plants that usually would not grow next to one another – for instance roses and spring onions, eggplant and flame vine (*Pyrostegio Venusta*). The ornamental plants – rose and flame vine – remained in the vegetable garden as we did not want to uproot them.

Foucault claims that “the garden is the smallest parcel of the world and then it is the totality of the world” (1986: 26). I have experienced this in my garden and my participants have a similar experience. Christine has a Eureka Lemon tree (Californian origin) in the middle of her vegetable patch. Mary frames a section of her vegetable garden with lavender (Mediterranean, Middle East and Indian origin). Foucault (1986) claims that multiple foreign spaces come together in a single place within one garden. The garden is a heterotopia in that although it is a single dedicated space, it can represent and showcase many places, through the variety of produce growing within its confines. Gardens act as a microcosm of different environments which are made up of a variety of plants from around the world. The plants are all foreign to one another and the garden allows the coming together in one space. “The garden is a rug into which the whole world comes to enact its symbolic perfection” (ibid. 26). Through planting a variety of vegetables one can access the food and edible plants of the world through a garden. This does not only encourage variety but also highlights how space can generate community. The vegetable garden becomes a conversation piece with your guests, the produce you grow can be bartering items, have a monetary value or allow for the ability to gift – in other words, give away for free.

During the interview process, I had Megan come past to collect cuttings from a guavadilla plant which is a type of granadilla, but larger and yellow. It grows in very hot and more tropical climates and often doesn't excel in Johannesburg. However, she shared that when she was living in the sugar belt region of Swaziland, she used to grow them, she loves them and would like to try and grow them in her garden. The guavadilla, which reminds her of her home country and cultivating it, turns her garden into a whole series of places as Foucault (1986) explained. For example, she also has a pecan tree and 4 beehives all creating a garden space that accompanies her way of gardening as she is an organic grower.

I grow a variety of vegetables as offered in supermarkets. Salads are not indigenous to South Africa, as cucumbers are not, but nevertheless, I tried once the African horned cucumber, which was a great success but it was not convenient due to the thorns. The asparagus bean (legume) for Asian dishes is well producing and convenient to harvest. This shows the microcosmos every gardener can create within the own garden.

Bartering

Through the interview processes, I asked if the participants bartered their goods/produce during COVID-19. Some of the participants wrote that they saw it took place a little bit over WhatsApp Groups, for example, Pauline gave a bottle of wine in exchange for a bike service or Mary who wrote, “There is no bartering in my street but people have been offering things for free eg placing fresh herbs/lemons on their driveway for neighbours to help themselves. I made a mask for wine as payment barter with a friend during the hard lockdown, as I sewed masks to sell over the school holidays.” And David considers the ‘Joburg Food Growers’ as a space to barter, “members of the JFG are bartering plants and ideas constantly.” However, the physical bartering of the Joburg Food Growers fell away due to COVID-19. Krista did not barter during the lockdown, however shows interest in bartering, she explains “I’m very keen on creating sharing economies within local communities. I arranged my first produce swap event in January which was fairly well attended and received. I’m looking forward to continuing once lockdown allows it.”

Liesel is an experienced gardener and has transformed her garden space into a food production oasis. She has also transformed grocery stands and bookkeeping metal shelving into seedling shelves all along the sunny side of her house wall. She shared that she did not barter with anyone during the lockdown, but that she has grown hundreds of trays for an organic urban farm in Midrand, Johannesburg. In exchange, she gets fresh organic vegetables. She also grows seedlings for a community garden at a clinic which gets used a lot, she tries to visit this space weekly and plants the seedlings for them to grow and to be harvested.

Similarly, Christine has an earthworm farm; I have experience and knowledge of growing a variety of vegetables. Through targeting our individual skills, we seized the opportunity to exchange and barter goods (in this case Christine’s earthworms’ juice) for knowledge and skills (on my part). I advise her on companion planting, disease and improved soil health and she, in return, fills empty wine or milk crates with the earthworm juice, which I use to improve the soil health of my garden. It started with her contacting me and asking if she could pay me to walk her through her garden and explain the best way to increase food production. We agreed on a bottle of wine and earthworm liquid as barter in exchange for my knowledge, this was during the lockdown. I arrived early in the morning, with my gardening tools and sun hat. Checked the *ph*-levels, dug around counting earthworms, sketched her garden to develop future growing schedules. She had bought a couple of seedlings and I arranged them for her. Later in the afternoon, she decided to continue bartering with me instead of approaching a nursery, to grow the seedlings for her that she needed. We have since moved from combining bartering with a monetary exchange. However, the exchange is erratic. And receiving money is more of a token of appreciation.

During lockdown level three, we had a handyman working on and around our house, fixing things before the summer rains came. He told me that he grows some things too at the cottage that he is renting,

after seeing my garden. I suggested a barter, which he accepted. The next day I received a Checkers plastic bag filled with peppers, chillies and eggplant. In exchange, I gave him, spinach, spring onions, herbs and cabbage.



Bartering during Lockdown.

I would like to draw on Mauss's (2002) theory of gift giving, in this section. I used the term 'bartering', to explain the exchange of different produce between the participants. In this context, bartering is a gift for a gift. Mauss (2002) explains how gifts are never free. The gift engages the honour of both the giver and the receiver. Through the gift a direct tie is established between the giver and the receiver. There is a social bond and obligation established and by not responding (receiver of the gift) by not giving a gift back results in a loss of honour or status (ibid.). The bartering between the participants and myself, showed that there was an expectation of giving something back equally. For example, Pauline, who offered a bottle of wine for a bike service, Mary, a mask for wine, Christine and myself earthworm juice for seedlings. The values of the goods are similar. It does not only create ties; however, it also establishes social relationships. The gift connects people but by gifting seedlings or worm juice it is a transfer from one garden to another garden. The earth worm juice fertilising my garden and in return Christine has seedlings from me that bear fruit in her garden. It establishes a connection between people and space.

The majority of the participants, however, answered with 'no' in regards to bartering. This leads me to the next subheading, if the participants were selling or giving their produce away.

Selling and Giving Away

During the interview process, I noticed that the majority of participants would answer 'no' to selling, but would justify why they don't, by explaining that they prefer to give the vegetables away to friends or those less fortunate. This is not to say that the eventual selling of fresh produce is out of the realm of possibility.

I have three participants, myself included, who are either considering selling in the future or are currently selling on a small scale.

Mary wrote; “No, I have not sold any, I’ve given away quite a bit though. It’s something I’d consider though, possibly to people in my street. Our family of 4 eats a lot of what we grow!” this indicates that the volume generated from the garden is not enough. Liezel is planning to sell, she says, “Not yet – my plan is to do this soon. My first crop should be ready in two months. I just started selling my asparagus plants in the last two weeks and will continue to do so. The older the plant the higher the cost.”

What spurred me to sell my vegetables was an early Friday morning which is the day when Pickit-Up (South African recycling and rubbish collector) comes through our area. I was working in the vegetable garden. I suddenly heard a man shout from the truck that he liked my garden and wondered if I sell any produce... Shouting back that I do, they stopped their work, got out the truck. The men ordered spring onions and spinach, paid me immediately and continued their duties of picking up the recycling bags on our street. When their work was done, they returned to my home and collected the vegetables they had purchased earlier. This made me realise that people enjoy the garden, everyone who sees it comments and I needed to open the space for people to buy and this allowed me to cover my costs. The research did not include why some of the participants wanted to sell.

The other participants who were against selling said that they would share with friends instead. Krista wrote; “No. I’d rather promote and support produce-swap communities. I do give a considerable amount of my crops to friends, family and our domestic staff. Anyone who will have it really!” David similarly used his produce for home use, sharing with the gardener and also gifted to friends. During the lockdown “I was fortunate to share Malawi-pumpkins with MES-Aksie who looks after the downtrodden in Joburg.”. When I asked Mia she too responded with a “No, but I do give away”. The majority of the participants were producing for home use or giving away. This leads me to compare how much their vegetable garden subsidised their own menus and noticed that it was relatively low.

Liezel, who is preparing and selling, explained that “[i]n winter I do not grow much as I don’t like going out in the cold. So maybe 2%. My produce amount varies e.g. I will never need to buy another chilli as long as I live as we have so many leftovers from last year. I also had an abundance of pumpkins which we had at least once every two weeks. I do find that annual vegetables are very time consuming and even with a large crop we only replace about 10% of what we buy. My plan is to expand into fruit trees as we eat more fresh fruit than veggies and they take much less care once established.” I looked at other participants and their garden’s subsidy for example Nadia who estimated “around 20%”, Megan who explained that it depends on the season, but “I’d guess average 50% of fruit and vegetables. I don’t have chickens or other livestock but we do have 4 beehives and a pecan tree.” Krista also highlighted that it is dependent on the

season “during summer months it’s considerable, as our household is vegan and have little need for non-plant-based food. During winter it’s much harder and more limited. I’m still learning and haven’t mastered keeping constant supply going.” Pauline on the other hand wrote that they don’t grow certain vegetables because they are cheap to buy and use a lot of water, “but our own beans, spinach, kale, spring onions, chilis, radishes, and lettuce definitely supplement buying”.

Mia and Vera wrote that their garden did not supplement much. Vera then explains “I maybe have skipped items three times over the course of a year (we’ve been in the home just over 1 year so the growing and maintenance is still very new to us). We luckily have a lemon tree with abundant lemons, so have not purchased lemons since moving in, and share with my neighbours and everyone who works on my property, so the tree has helped four families with their lemon supply.” David initially tried to be self-sufficient but quickly realised that it is almost a full-time endeavour which is out of the question for me as I am still practising as a lawyer. The number of veggies that I grow keep me busy because it is not only growing it, but the preparation takes time. I love preparing it for the pot and for the freezer.”

Their responses show an interesting dynamic between them and their garden. They sometimes produce surpluses which is time sensitive as the vegetables can go bad if not used up, which results in giving away. Other times the gardener fails to produce. And it is in extension to bartering and giving away that the idea of selling emerges. None of the participants are running a business. They (the ones that are considering it) consider it an option or even a fantasy to take their gardening to the next level. Yet selling offered an interesting possibility for rather unusual interactions, as I will discuss in the next section.

Attempts on crossing social divides in suburban Johannesburg

During levels three and four of lockdown whilst all the parks were closed, I rediscovered suburbia on foot daily with my dog, Ludo. I noticed the gradual development of curb gardens while walking through various North-Western and Northern suburbs in Johannesburg.

Through this, I participated in developing a curb garden in my own neighbourhood. My introduction to curb gardens was through my encounter with eight massive wooden boxes in front of someone’s property within my neighbourhood while on my regular dog walk.

I decided to ring the bell. The door flew open and a lady, Nellie (who later on became a participant) stood in the doorway in a fluffy bathrobe, warm socks as well as a scarf. Loudly with a smile, she asked what the hell I was doing out in the cold and laughed. I had a feeling she watched me via her security cameras and how I spoke to Ludo to build up my courage to ring at her gate. I asked about her wooden boxes and she told me they were for growing vegetables outside of her property for the community. I told

her about my research and she wanted me to join her with regards to setting it all up. I took her number and a few days later I was invited for tea and then wine to chat about the future of these vegetable boxes. I was introduced to two other women, one from a different suburb and the other from our area. When discussing who should have access, I noticed that there was an uncertainty on that, they wanted the vegetable boxes for the entire community but I could tell they didn't want to open it up for the public (this area is boomed off with security). More specifically, I gathered that 'walkthroughs' were not that welcome because of security reasons but everyone else like neighbours, staff and friends.

These vegetable boxes had me thinking about an example of curb gardens in the UK because Nellie is using community land along the boundary of her property on the street. In 2008 a group of volunteers in a small town called Todmorden founded the 'Incredible Edible Todmorden', in which they, without formal permission, reuse unused or underutilised spaces of empty land for growing free food. They have approximately 70 sites around the town from flower beds, train station terminals to outside the police station. They work with around 300 volunteers twice a month and the idea has spread to +/- 500 community food growing groups across the world (Larsson 2018).

Another week later, my dog Ludo and I joined Nellie to plant over 200 vegetables into the boxes outside her property on communal land. It took us about four hours plus the extra weeks it took for everything to germinate and produce some form of harvestable yield. This was an interesting experience about 4-6 weeks later the first vegetables were required to be harvested, I was asked to write a mini-manual over WhatsApp to explain how to harvest specific vegetables, which Nellie put onto the community WhatsApp group inviting people to come and harvest.

I went past a couple of times and picked some salad leaves that I did not have in my garden. I asked Nellie how people had responded and she told me some had dropped off some seeds in her letterbox for her to grow as a contribution to the vegetable boxes, which I perceived to be a symbol of exchange/bartering and a sign of support. In her interview, I asked her what encouraged her to start growing vegetables. She replied by explaining that there is "[increasing hunger amongst many people, gratitude for my plentiful life, unemployment and creative gardening to provide free food for the family, planting avocado trees on the pavement for future generations]". This response sat strangely with me as this enclosed area does not have an influx of people in need of food and the ones that are in need are not really tolerated. In suburban Johannesburg, where the walls are high and long, state of the art security systems ranges from big brother watching you to electric fencing and 4x4 armed response vehicles, all wrapped up in 3 roads long boomed off and enclosed areas. Here for a non-resident, there is only one way in and out and not without passing security men and cameras, I say welcome.

In the meantime, my garden started producing a considerable number of vegetables. So, I could start advertising to sell my produce. I erected a cardboard sign outside my gate, saying 'Organic Vegetables

Available, Pull String to Ring'. The vegetable garden is near the gate, allowing me to watch the street while I work in the garden and allowing the passer-by a glimpse into the abundance of fresh produce, which helps to sell. This is a contrast to where vegetable gardens are located usually, as explained by Alexander (2002), them being away from public sight. I have had housekeepers, homeowners and security guards ring to buy from me. In November, December and January the garden is in top production. Just in over a period of 1.5 weeks the vegetables had accumulated drastically and I needed to sell fast, I had; +/- 10kg of zucchini, 30 salads, beans, spring onions, multiple herbs and beetroots. In addition to the poster outside my gate, I did send out WhatsApp messages to friends on a weekly basis with a weekly vegetable availability price list. Some people drive past, some slow down to read the poster, reverse get out of their car to 'pull the string to ring'. These are always house owners from our area, they are confident, introducing themselves and sometimes requesting to see the garden. They are often also interested in knowledge transfer and want the garden explained to them. Housekeepers and security guards are the most curious about the garden when they ring the bell. They would often ask what I have available and the price. Sometimes they would say that they will come back later after their shopping at the grocery store; other times they would purchase fresh produce immediately.

Whilst I have success with the people who buy from me via the street, this is not enough income. I additionally need buyers from outside the enclosure to make the selling viable. I know the property boundary from our house with its layers of security measures deters people on foot to buy more regularly. Also, one cannot leave the gate open, creating a gap in the boundary line. The reality of crime makes this impossible. As much as I have created a crack in dis-mantling the high walls and security, I am unable to maintain it and/or further it without permanently changing the layout of the property boundary. Landman and Schönteich (2010) argue that the gated community can lead to spatial fragmentation, increase polarisation and decreased solidarity within society. It can cause social exclusion by interrupting the construction of social networks that affect social and economic activities. The majority of the people who live in enclosed areas no longer use the streets, the public spaces are then also no longer used or shared by all urban residents. It also causes spatial separation from the environment. Through this, zones are created or pockets where restricted access rules the urban fabric. Gated communities result in social and economic segregation and exclusion. "Enclosed neighbourhoods exclude other urban residents, casual passers-by and people from surrounding neighbourhoods." (ibid. 81). This creates a barrier of interaction between different classes, cultures and races, depriving the establishment of social networks which are the primary of social and economic activities (ibis.). And thus, leading into the fifth principle as explained by Foucault that (1986) the heterotopic site is not a public space. "Heterotopias always presuppose a system of opening and closing that both isolates them and makes them penetrable." (ibid. 26). The permission is not freely granted. We might think that we enter, but the fact is that we enter being excluded. Interpreting Foucault (1986)

means that even if I open my gate, the boom remains closed and access is not permitted. This affecting the flow of customers and the use of space.

Alexander (2002) speaks of the front garden as a barrier between the public and private and often the front of the property which is neatly maintained for show. Property owners are responsible for the maintenance of the pedestrian area in front of the property line. By creating a curb garden, this boundary of separation between the public and the private is challenged. Tension within the use of space is created because it cuts across private and public space. While there is an opening, there remains control on access, which turns the opening into an illusion because the enclosure with booms is still in place. At the discussion on what the plans were for the curb garden that I was invited to, the opening up of the space was limited, it remained semi-closed. This was not because of the space not being used, instead, the boundaries were created by being already in a bounded space (enclosed area), this was perpetuated by the homeowner not wanting to open the space completely, by not promoting the box, as she didn't want people from the 'outside' street to come in. By establishing a curb garden, the public space is encouraged to be used and people may linger when stopping to pick something. However, this also changes the dynamic of a closed-off area that the curb garden is in.

Alexander (2002) describes the unused land between house and street as something that creates distance and is a liminal division. For the suburban context of the curb garden, I am interpreting the enclosed and boomed off suburb as already having created a far broader distinct divide, it equates to having a fence within a fence - this concept of the divide created through the gated community has been closely discussed by; Landman and Schönteich 2010; Landman 2012; Landman 2004; Dirsuweit and Wafer 2006. Clear to anyone who does not own property behind the fence that their visit is temporal and unless they are invited, their extended presence will not be tolerated. I suggest that this interpretation is one of the answers to why people are not using the curb garden to its maximum capacity and instead buy from me. The attempts of selling, is created by people who approached me from outside the property line – strangers - communicating with me across a barrier (the fence). They feel comfortable to ask, if they can buy as buying is an accepted social interaction. It is through the selling process that new connections are being established, with people who are in the neighbourhood in transit. It is unlike bartering or gifting, less reciprocal and builds less of a lasting and social relationship. Yet the interactions are unusual within a gated community. Buying from me, requires less gaging of a space. The curb garden is an award breach, as the vegetables offer themselves as a free gift and as discussed by Mauss (1950) there is no such thing as a free gift. It inhabits them to take, it might even feel as theft. This leads me to suggest that the curb garden is not so much about providing food to the public but only to the people that have been given access to the enclosure.

Conclusion - community through the use of space

My research emphasizes the changes in space, for the majority of the time, within the property line. The chapter shows how through bartering/ gifting, selling and giving away a different world within the walls is dreamed up. But it goes beyond, it also creates real connections with other gardeners.

These relations beyond the garden might be minimal but as they progress become more socially significant. I put forward the curb garden in the community, as well as my own vegetable garden space, indicating how cracks are created in the social divides, in the form of different people with different standing in the community, which might not have ordinarily happened. Additionally, the communities that do exist within the UAH community, for example, the 'Joburg Food Growers' is a community that has a web of relationships among its members. The community has public events at which the community members are able to gather, this is a space in which to exchange ideas, solve problems, as well as establish and discuss new techniques or tools. However, events are 'public' to all members but closed to people who are not in the community (Wenger, McDermott and Snyder 2002).

Conclusion

What is really growing in the gardens of UAH, is not mounds of food, but rather an abundance of knowledge, social networks and the ability to make use of space.

In chapter one, I asked three questions: *Who are the UAH of Johannesburg? Why do they garden? How is identity established through gardening?* The chapter underlies tension in the urban agriculture movement which pushes the continued promotion of food security alleviation. Though the reality is, it often fails to successfully address this in Africa. Whilst it is important to not wrongly label urban agriculture as a failure or a success as the context determines this. I argue that we must reconsider our expectations of what success in this space looks like: success does not rest on urban agriculture being the posterchild of food security solutions, but rather that a multiplicity of other successes arises such as social benefits, identity, knowledge growth and environmental benefits and awareness.

The main argument in chapter two was to establish how and where the participants plant, grow and harvest their agricultural knowledge. I divided these findings into three knowledge categories; generational, social and formal knowledge and used Vygotsky, Günel (2016) and Haluza-DeLay and Berzon (2013) to explain the knowledge production and process. I introduced the term ‘knowledge-based economy’ here, suggesting a possible future for the UAH’s of Johannesburg. This chapter highlights how learning about urban agriculture is a layered process and also depends on learning by doing.

The paper drew attention to the use of space and how the garden stands to the house, by looking at Alexander (2002), Foucault (1986) and O’Neill and Rae (2005) in chapter three. The attention was specifically on small spaces and how small gestures changed small spaces through re-ordering the garden within the boundary line. Through looking at bartering, selling and giving away between the participants and the two autoethnographic examples of the curb garden and my sales. The bartered produce is now connected with someone else’s garden. The seeds planted in someone else’s soil. There is also interaction with strangers, even if they have some real and symbolic limits (curb garden/vegetable box). However, the research shows when there is an exchange it is through already established communities for example neighbourhood WhatsApp groups, Joburg Food Growers or between friends. Spatially speaking it is remaining within its boundaries and is not creating community or crossing social lines.

I chose Crush, Hovorka and Tevera (2011) to support my concluding thoughts, as they were able to pinpoint and sum up important themes that are vital for the future of Johannesburg’s urban agriculture. Crush, Hovorka and Tevera (2011) divide urban agriculture into three categories: (1) the lowest socio-economic urban stratum in which food is grown in proportion to their requirements, due to absolute need; (2) cultivators who choose to cultivate to secure or maintain their standard of living during an economic crisis

and to reduce their vulnerability to the possibility of a formal food chain collapse; and (3) small-scale entrepreneurs who are involved in urban food production. This is specifically for sale and not necessarily for their consumption.

In the research process, I looked at how urban agriculture unfolds among UAH. Through my research, I suggest the UAH as the fourth group of urban agriculturalists. They grow for a variety of reasons that are associated often with eating healthier, creating social networks, as a hobby form, reconfiguring of identity, and environmental reasons. By acknowledging them as a fourth group to explain urban agriculture in Johannesburg, it would recognise the importance of local knowledge in agriculture and identity creation. It would also move urban agriculture away from only being associated with economic (in)ability and instead encourage attention to the social contributors for the South African city landscape.

This adds to society as a knowledge contributor and is a knowledge gap for research purposes. This allows urban agriculture and green spaces to not only unfold for social benefits and environmentalism but also for gathering expertise on growing methods, plant variety for urban spaces specifically for the highveld region of Johannesburg and possibly expanding a knowledge-based economy for urban agriculture. This knowledge-based economy is triggered by the increasing concern of climate change. And can harvest knowledge from the UAH community, techniques that are sustainable to the environment and based on the foundation of generational, social and educational knowledge and this knowledge can be adopted by research institutions. The spaces where UAH knowledge is harvested can be expected to operate as a network platform, planting a seed outside the garden community and possibly attracting a broader group of people. Their expertise spills over to their employees (gardeners), the community around them and the people who consume their produce. Due to COVID-19, there was already increased interest in urban agriculture within the private boundaries. *The propagation continues.*

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