

**URBAN AGRICULTURE IN KWAMSANE, KWAZULU-NATAL:  
COMMUNITY AND HOME GARDENS AS AN OPTION FOR FOOD  
SECURITY AND POVERTY REDUCTION**

By

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## KWAMSANE GARDENS



## **DECLARATION**

This dissertation represents the original work by the author and has not been submitted in any other form to another university. All sources of literature have been duly acknowledged. It is being submitted for the degree of Masters of Development Studies in the Faculty of Humanities, Development and Social Sciences, University of KwaZulu-Natal, Durban, South Africa.

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## ABSTRACT

Urban agriculture is gaining more attention because of the current global trends such as urbanization and global economic and food crisis. The numbers of people who practice urban agriculture are estimated to 800 million. Based on this scale and other claims made about urban agriculture, it is argued that urban agriculture must be integrated to urban policy and planning. The premise of this dissertation was to understand motivations and determinants of urban agriculture, and how these can inform policy. The intention of the dissertation was to understand which urban residents in KwaMsane Township of uMkhanyakude district at KwaZulu-Natal province cultivated gardens and why. This was critical considering that generally urban areas are better than rural areas in terms of employment opportunities, infrastructure, and provision of basic services. In pursuit of this objective, the dissertation assessed KwaMsane Township households cultivating gardens in terms of assets, resources, and livelihood strategies with an aim of identifying motivations and determinant factors. The central idea of the dissertation from the onset was to validate the claim that since there is diversity in terms of household composition among those cultivating gardens there are different reasons for engaging with the activity.

Using qualitative with borrowed participatory action tools, and quantitative (STATA 11) methods guided by the sustainable livelihood approach, the findings showed that only 9.7% of KwaMsane Township residents cultivated gardens. Of the households 92% were cultivating gardens and consuming their produce because of food demand due to large household size and children, their awareness about nutritional content of fresh vegetables from the soil, their agricultural background of cultivating gardens for subsistence purposes, high food prices from the market, and their lack of necessary skills to create and sell in the local market. The binary logistic regression showed that the determinants for households to cultivate gardens at KwaMsane Township were the presence of children, agricultural assets, governmental grants, and pensioners in a household. The two common factors between the above mentioned determinants were income and time availability which incentivized the practice.

The dissertation also showed that the majority of gardeners from KwaMsane Township were in their productive ages (in this case between 29 and 61 years of age), females were more predominant in the activity with few males, and most of the gardeners were educated, and employed. However, gender, education, and employment had little relationship with cultivation of gardens. On average gardeners were older than non-gardeners. It was also shown that gardeners consisted of different income groups but mostly middle income group. The dissertation indicated that the use of urban agriculture by KwaMsane Township gardeners was informed by their motivations which contributed to food security, food sovereignty, and poverty alleviation.

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## DEDICATION

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## List of Acronyms

ACDIS	Africa Centre Demographic Information System
ALNAP	Active Learning Network for Accountability and Performance
CD	Care Dependency
CSG	Child Support Grant
DG	Disability Grant
DOA	Department of Agriculture
DSA	Demographic Surveillance Area
FCG	Foster Care Grant
HDI	Human Development Index
IDP	Integrated Development Plan
IFSS	Integrated Food Security Strategy
LED	Local Economic Development
OAP	Old Age Pension
PAR	Participatory Action Research
SLA	Sustainable Livelihoods Approach
TUAN	The Urban Agriculture Network
UA	Urban Agriculture
UNFPA	United Nations Population Fund

# CHAPTER ONE

## INTRODUCTION

*“A major feature of urban agriculture is the diversity of the socio-economic profiles of the actors involved, and their varying income and livelihoods strategies, a reflection of the diversity of the labour and capital basis in urban areas” (De Bon et al. 2010, 23).*

### 1.1. Background

The current epoch is experiencing a rapid increase in the numbers of people who are involved in Urban Agriculture (UA). The literature suggests that there are many individuals and households involved in this activity and that this number may be increasing following the food and financial crises from 2008 to 2010. Urban agriculture has increased to a level where there are substantial numbers of people who depend on it. Two-thirds of urban and peri-urban households in developing countries are reported to be involved in urban agriculture (FAO 2001) and in 2001; the Urban Agriculture Network (TUAN) reported that about 800 million people are involved in urban agriculture (Baumgartner and Belevi 2001). Further, there are about 500 million smallholder farms in urban and rural areas of the world contributing to the livelihoods of 2 billion people (IFAD 2010). These findings reaffirm that agriculture continues to contribute significantly to the livelihoods of many people in the world, developing countries in particular. They further illustrate the relevance of agriculture across time which can be attributed to its ability to ‘fit’ in different contexts such as rural, peri-urban and urban areas.

Urban agriculture is associated with several global trends including the increase of urbanisation, the size of the urban population, and urban poverty. The UNFPA (2007) reports that more than half of the human population will be living in urban areas in 2008 and the United Nations (2006) further specify that *“In 2030, more than 50% of the African population is expected to live in cities”* (De Bon et al. 2010, 22). The association between current urbanisation and urban poverty is based on the fact that it is the poor who urbanise frequently rather than the non-poor (Ravallion 2002). This means that the locus of poverty is continuously shifted to urban areas (Smit et al. 1996). These occurrences contribute to urban

poverty since urban jobs in general are scarce in relation to the urban population and require skills that most poor people have not acquired.

Urban poverty is a conglomerate of many factors. Limited access to income and employment are two of the factors maintaining the status quo of urban poverty (Baker 2008). It manifests in different forms and levels depending on the compositions of households. Food insecurity is one of the visible symptoms of poverty. Saad (1999, 1) concurs with this view and states that “...poverty is considered the root cause of chronic food insecurity”. Food insecurity is the face of poverty, and “...it is one component of a broader poverty situation” (Webster and Njobe-Mdluli 1997, 28). It is argued that poverty deprives households of resources and skills which limit their capacity to produce or access food thus becoming food insecure (FAO 2003). This deprivation phenomenon occurs where poverty is the “absence of certain basic capabilities to function” (Shaffer 2008, 197) and signify a lack of opportunities (Manona 2005) which could capacitate households to pursue desired livelihood strategies.

In response to these challenges urban dwellers have adopted different strategies such as urban agriculture, home-based garment work, street vending, and waste collecting (WIEGO 2010). It has been argued that urban agriculture reduces urban poverty and food insecurity by generating income, enhancing diet quality (Smit et al. 1996), and increasing food availability and affordability while creating jobs (Wiggins 2004). Other authors mention that urban agriculture has a buffer effect within imperfect food markets dominated by large retailers which impose higher food prices due to lack of competition (Nugent undated). In simple terms, urban agriculture allows households to produce their own food when their purchasing power is low.

The relevance of urban agriculture to food security is based on the fact that it has a direct effect on all three pillars of food security in developing countries. It increases the availability of food at affordable prices to the poor, creates employment and incomes that increase purchasing power to access food, and produces food of quality (Wiggins 2004). In essence, urban agriculture enables a livelihood to be sustainable by allowing it to “...cope with and

*recover from stresses and shocks, maintain or enhance its capabilities and assets, while not undermining the natural resource base” (Scoones 1997, 5).*

The assertion that urban agriculture contributes to sustainable livelihoods is particularly pertinent in the current global market crisis. The food and financial economic crises of 2008 to 2010 have caused major changes in global markets. The rise of food prices is one example of the crisis. Ramalingam et al. (2008, 1) reports a “...*significant rise in commodity prices with food prices increases averaging 52 percent between 2007 and 2008*”. This wave of increase in the global markets has been termed the ‘silent tsunami’ of hunger given its effects on livelihoods (Vermeulen et al. 2009). At a global scale, “*since June 2010, an additional 44 million people fell below the \$1.25 poverty line as a result of higher food prices*” (World Bank 2011, 1). In addition, the study done in South Africa in 2008 in three cities, namely Cape Town, Msunduzi, and Johannesburg, showed that 70% of poor urban households experienced severe food insecurity (Frayne et al. 2009, 5). In light of this information, it is clear that the global changes have significant implications for the livelihoods of urban residents who exist in a ‘purchasing environment’ and who are vulnerable to market dynamics (Cohen and Garret 2009). While some studies, mostly qualitative, have been done on urban agriculture in the country there is still a need for national representative data. There is still a national and global scarcity of quantitative data which can demonstrate the relationships and trends in urban agriculture. However, the recent study conducted in 15 developing or transition countries by Zezza and Tasciotti (2010, 271) concludes that “*agriculture is indeed not a negligible reality of urban economy, involving anywhere between about 10-70% of urban households*”. It is thus important to understand the role of urban agriculture in containing the effects of food prices on urban residential livelihoods. The objective of this dissertation is therefore to understand the motivational factors and characteristics of people who cultivate gardens.

## **1.2. Rationale and relevance of the study**

The relevance of the study is justified by the existence of urban agriculture practices in South Africa, based on the labour force survey of year 2007, which indicated that 14.1 percent of the South African population are involved in urban agriculture, the majority being Africans.

It is thus critical to understand why people choose this strategy and for what reasons. The general view is that urban areas are better than rural areas in terms of providing employment opportunities, infrastructure, and provision of basic services leading to a sustainable livelihood. As a result, urban agriculture becomes an area of interest to explore. The rationale of the study is based on the assumption that the urban population is not a homogenous group suggesting that there are different individuals and households involved in urban agriculture for different reasons. At a policy level, the study is important considering the context of South Africa where a 'One home one garden' campaign is promoted by the government of KwaZulu-Natal in particular. Findings of this research are relevant as they will inform policy-makers about the reasons of urban dwellers for their involvement in urban agriculture and hence provide a basis for the development of urban agriculture for sustainable livelihoods in local area context. More importantly, this study will show the role of urban agriculture in the small town of Mtubatuba which is a non-metropolitan setting.

### **1.3. Objectives**

1. To profile KwaMsane Township households involved in community and home gardens in terms of assets, resources, and livelihood strategies with the aim of identifying dominant factors which may determine who gets involved in community and home gardens.
2. To understand which urban residents in the KwaMsane Township of uMkhanyakude district of KwaZulu-Natal province are involved in community and home gardening and why.

#### **1.3.1. Key questions of the study**

1. What proportion of households in KwaMsane Township is involved in urban agriculture, and what are the characteristics of those who are involved?
2. What livelihood strategies are adopted by urban agriculture and non-urban agriculture households and why?

3. Why have home and community gardens been chosen among other strategies, and by whom?
4. What are the perceived functions, use, costs and benefits of home and community garden? (This will include responses from residents who are not involved in home or community gardens).
5. Does the socio-economic status of a household play a role in shaping the interests of those involved in home and or community gardens?
6. Do gender, age and economic status of individuals play a role in shaping the interests of those involved in home and or community gardens?

#### **1.4. Theoretical framework**

The study will use a Sustainable Livelihood Approach (SLA). The SLA ‘a way of thinking’ about food security suggests that households “...*construct their livelihoods both on the basis of the assets which are available to them and within a broader socio-economic and physical context*” (Rakodi and Llyod-Jones 2002, 8). In essence, capabilities, assets, and activities constitute a livelihood. This approach considers livelihood resources which are the determining factors of sustainable livelihood as consisting of natural, economic, human and social resources (Scoones 1997). Assets form the livelihood resources which determine the options of strategies that a household can utilise to achieve a sustainable livelihood. The approach also considers the role of institutions which act as “*the social cement which links stakeholders to access capital of different kinds to the means of exercising power and so define the gateways through which they pass on the route to positive or negative [livelihood] adaptation*” (Scoones 1997, 12). Rakodi and Lloyd-Jones (2002) emphasise that institutions can act as barriers to accessing or accumulating assets, either intentionally or unintentionally.

The nature of the SLA is, therefore holistic, realistic and integrated. By definition, sustainability is “...*a function of how assets and capabilities are utilized, maintained and enhanced so as to preserve livelihoods*” (Chambers and Conway 1991 , 8). The SLA serves as a tool to analyse livelihoods, and a guide for development planning and intervention. In this study, the SLA will primarily be people-centred which means that human respect and



choice will be prioritized. The view is that the choice of people as *“the underlying motivation of supporting livelihoods should determine the shape and purpose of action”* (Carney 2001, 14). Secondly, the SLA will be used to assess the KwaMsane context (the socio-economic and physical context) with the intention of identifying the dominant factors which affect households which cultivate gardens. This will be focusing on the assets (natural, social, physical, human and economic) as the means of achieving desired household preferred livelihoods. This approach will also be used to determine the extent to which gardening contributes to the three pillars of food security (namely availability, accessibility, and utilisation of food) for KwaMsane residents since the outcomes of gardening may act as incentives for engagement. Finally, it will be used as a guide for policy recommendations as far as the direction of the interventions is concerned.

## **1.5. Methodology**

The research study focused on households in KwaMsane Township that were cultivating the gardens. Purposive sampling was used to identify respondents for in-depth interviews and focus group interviews. Purposive sampling was used since respondents were specifically selected because of characteristics which are of interest to the nature of the research (Yin 2003). In this study, the characteristics of the respondents for the qualitative enquiry had to be similar as that generated by the quantitative findings. The snowball method was used here as *“the snowball technique is completely compatible with purposive sampling”* (Denscombe 1998, 16), selected respondents recommended other participants who could provide valuable information. During the data collection process, a focus group, which produced a shared view of the subject, was used to verify the findings from the individual interviews. As a result, it was possible to assess the interest of each individual or group in relation to their socio-economic status. Quantitative data from the Africa Centre for Health and Population Studies was used to profile the gardeners of KwaMsane Township. Secondly, the role of the quantitative method was to quantify for generalisations about the garden group and KwaMsane Township as a whole, hence descriptive and inferential statistics were generated from the data.

## **1.6. Limitations of the study**

The limitations of this study were as a result of the problems encountered with the quantitative data obtained from the Africa Centre. These limitations should be understood in the context of the focus of the Africa Centre on health and population studies<sup>1</sup> which means that the centre does not focus on urban agriculture. The Africa Centre Demographic Information System (ACDIS)<sup>2</sup> was only able to collect information about gardening in KwaMsane in 2001. As a result, there was no tracing of the progress of this activity for the previous nine years. Secondly, the population of KwaMsane Township had changed a lot because of both in- and out-migration to the extent that less than half (317) of the households (both gardener and non-gardener units) which existed in 2001 could be found in 2010. This meant that this study could not, quantitatively, assess the prevalence of gardening in KwaMsane Township in 2010 nor detail the activity, except qualitatively. The implication is that the study was also not able to quantitatively assess how gardening activity had evolved over time. The other limitation concerned household income or savings. The information provided by ACDIS in 2001 had codes that could not be understood. The reason for this was that the data was captured differently in 2001 compared to subsequent rounds collected from 2002 to 2010. As a consequence, household income or savings were not used.

## **1.7. Structure of dissertation**

Chapter two will focus on the background of urban poverty and urban food insecurity. It will further discuss the definitions and evolution of these concepts. The interrelationships between concepts such as urbanisation, poverty, urban agriculture and food sovereignty will be explored under the framework of food security. The state of food security and poverty in South Africa as a whole will be incorporated to give an understanding of the extent and gravity of the situation regarding the livelihoods of many South Africans, urban dwellers in particular. Important arguments related to the topic will be drawn from literature. Chapter

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<sup>1</sup> the website for the Africa Centre for health and population studies: [www.africacentre.ac.za](http://www.africacentre.ac.za)

<sup>2</sup> The Africa Centre Demographic Information System (ACDIS) is the main project of the Africa Centre which runs an information system, as a core resource to the centre, which collects and stores information about the health of people living in households in the UMkhanyakude district, as well as patterns of births, deaths, and population movements. ACDIS provides information about how these patterns change over time, and how they influence the health of rural African populations. ACDIS has information about the different social, economic, and environmental conditions under which residents live. In essence it provides longitudinal data (Africa Centre 2008, 3).

three will involve a description of the research context (study site) and research methodology. Data analysis and presentation of the findings will be provided in Chapter four. Finally, Chapter five will briefly conclude, and give recommendations based on the findings of the study.

## CHAPTER TWO

### LITERATURE REVIEW

*“In Africa ‘the picture that emerges is essentially one of a family subsistence-oriented urban agricultural sector’”(Rogerson 1993, 23).*

The aim of this chapter is to draw attention to the concepts and arguments that explain urban agriculture in the context of food security and poverty reduction. This will encompass knowledge claims and research evidence for the role of urban agriculture in contributing to food security and poverty reduction. Linkages between urban agriculture and food security will be explored. Further, the state of food security and poverty in South Africa will be incorporated to provide the context within which urban agriculture is taking place. Given the primary objective of the study, which is to understand why urban residents in KwaMsane Township cultivate gardens, this chapter will attempt to explore the determinants of urban agriculture as the drivers of food security. The literature will therefore identify the factors which influence the existence and persistence of urban agriculture in general, and investigate the benefits, challenges, and criticisms of urban agriculture.

#### **2.1. Food security and urban agriculture**

At the moment the world is experiencing multi-faceted problems which have adverse effects on the livelihoods of people at individual, household, regional, national, and global levels. The 2008 food crisis has exacerbated most of these problems. The rise of food prices is one problem which has been evident in many countries. In Africa, high food prices resulted in food riots in countries such as Egypt, Tunisia, Burkina Faso, Senegal, Mozambique, Madagascar, and Zimbabwe (Berazneva and Lee 2011). These riots demonstrate the degree to which livelihoods were affected. As a consequence, worldwide, *“today, 925 million people going hungry everyday”* (IFAD 2010, 1), one billion people are undernourished (FAO 2009), and *“around 1.4 billion people live on less than US\$1.25 a day”* (IFAD 2010, 1). One way in which the food crisis translated itself into an impact on livelihoods was through the rise of food prices which contributed to an additional 24 million people living below the hunger threshold in Sub-Saharan Africa in 2007 (FAO 2008). It is important to note that there are

other factors which preceded the food crisis of 2008 that negatively impacted on livelihoods. It is reported that in Sub-Saharan Africa the number of hungry people has increased by 20 percent since 1990 (Musvaire 2009, 1). In 2002, the FAO reported that about 33 percent of people in Sub-Saharan Africa were undernourished (Mkwambisi 2007, 5). This shows an increasing pattern of food price increases since the 1990s.

In the mist of all these challenges it is important to draw attention to the activities that thrive among those mostly affected, namely urban residents. In urban areas, it is notable that in some countries affected by the rising food prices, many of the vegetables consumed in the city are produced by urban dwellers. For example, “...90 percent of vegetables consumed in some cities in Asia and Africa come from producers within urban areas” (Ruel et al. 1998, 26). This is due to the fact that there are about 800 million people involved in urban agriculture (Baumgartner and Belevi 2001) creating employment for about 200 million people in urban farming and related enterprises worldwide (Zezza and Tasciotti 2010, 265). It is also reported that about 40 percent of urban dwellers within African countries engage in some sort of agricultural activity (Zezza and Tasciotti 2010, 265). Thus in the current economic crisis urban agriculture is a strategy that is commonly practised and may be one of the possible responses of urban dwellers to offset the negative impact of food and financial crises.

In South Africa there are 14 million food insecure people and 43% of households experience food poverty (Machethe 2004), with “11.5 percent of South African population living on less than \$1 per day, while 35.8 percent of the population live on less than \$2 per day” (Bresciani and valdez 2007, 189). Food poverty refers to those households which are unable to afford the cost of the food bundle that yields adequate energy intake and consistent with the balanced diet (Ravallion and Bidani 1993). According to Leibbrandt et al.(2010, 17) about “...12.6 million South Africans were living on less than PPP\$ per day in 1995 compared to 14.4 million in 2000”. As a result, 35 percent of the South African population is vulnerable to hunger. In simple terms, this means that almost half of the South African population lacks the ability to make use of resources to meet their basic food needs. This may be the result of deprivation of economic opportunities and services as suggested by Coleman (2001) cited in Manona (2005, 13).

There are about four million people who practise smallholder agriculture in rural and urban areas of South Africa (Baiphethi and Jacobs 2009). Among those who practice farming *“more than 600 000 households engage in farming to produce the main source of food for the family. In addition, over a million household farm to supplement what they purchase”* (Watkinson and Makgetla 2002, 2). This demonstrates that subsistence farming dominates primarily for supplementary purposes. Most importantly, it is reported by the South African Labour Force Survey (2000-04) that the usage of farming as an additional source of food has increased from 54 percent to 88 percent (Baiphethi and Jacobs 2009, 21). May and Rogerson (1995, 169) indicate the extent of this farming activity in urban settings:

In urban areas of KwaZulu, which fringe metropolitan Durban; it was found that 25 percent of households on the urban fringe were cultivating a garden, of which 10 percent were selling produce. On average, the income received from such sales accounted for 10 percent of household income, although from the poorest groups, up to 20 percent of household income was derived from agriculture.

This finding shows that even in urban areas the use of farming activity (urban agriculture) is primarily for subsistence use given that about 90 percent do not sell their produce. Therefore, as much as farming activity is observed to be taking place in South Africa both in rural and urban areas, evidence suggests that only 4 percent of South African households use agriculture as a primary source of income (Hendriks and Lyne 2009, 11). One could draw the conclusion that farming is practised in South Africa to primarily supplement food rather than to generate cash income. Regardless of the limits this farming activity has in economic terms, it makes a recognisable and perhaps significant contribution to the livelihoods of many South Africans. Thus the South African government has put plans and policies in place which aim to resolve hunger, food insecurity and poverty, using strategies such as subsistence farming and urban agriculture. However, these policies must take into consideration that there exists different definitions of urban. It is thus important to consider the view, as argued by Vlahov and Galea (2002, 54), that *“a core set of characteristics, driven by (although not exclusively) population size, density, heterogeneity, and distance from other such centers, are common to urban areas and shape the conditions of living within these areas”*

## 2.2. History of urban agriculture

The existence of urban agriculture is traceable throughout history of the world. Most of the literature refers to the 19<sup>th</sup> century when industrialisation and urbanisation took place. During this time urban agriculture was mostly practised in the form of garden allotments within and around cities specifically assigned to the working class. Countries such as United Kingdom, Germany, the United States of America and the Netherlands are good examples (Zimbler 2001). In Germany, the 19<sup>th</sup> century was also characterised by industrialisation which meant that many people migrated from rural to urban areas in search of employment. As a result, in most German cities small plots of land were leased out so that workers could grow their own fruit and vegetables. One particular example is that of a state-owned railway company which leased small pieces of land adjacent to railway tracks to workers for them to supplement their incomes (Zimbler 2001). These developments were promoted by the Federal Allotment Garden Act which was adopted in 1919 a year after the World War One. In the United States of America, community gardens are traceable to the late 19<sup>th</sup> century when there was economic depression. The pages of history recognise the mayor of Detroit who created the first urban gardeners in 1894 when *“the city gave 945 families garden plots totalling 455 acres to grow their own fruit and vegetable”* (Zimbler 2001, 6). The gardens known as ‘relief’, and ‘welfare’ gardens were the central strategy of president Roosevelt during the Great Depression (Fountain 2000). The gardens were also used during World War II to the extent that out of all vegetables consumed in the United States, 42 percent of them were from the 20 million victory gardens which were originally designed to support the American soldiers (Zimbler 2001, 7). Other countries such as Netherlands followed the same trends of Germany and the United States especially during times of economic depression, war and post-war (Zimbler 2001).

In Africa, urban agriculture has existed before the period of colonisation. African cities are reported to have had urban agriculture activities in urban areas in the pre-colonial era, for example, early colonial travellers reported aqua-terra farming systems in Coastal Ghana (Smit et al. 2001). Some researchers suggest that one of the explanations why urban agriculture is evident in the current era is that some colonial governments promoted the activity (Wekwete 1993). Evidence suggests that before, during and after the period of World War II (1939 to 1945), urban agriculture has been practised by urban dwellers. The

Zimbabwe pre-independence urban agricultural policy is reported to have been inspired by the British model of garden allotments dating from the first World War which was used to minimise the shortage of food (Hubbard and Onumah 2001). During the period 1967 to 1991 in Dar es Salaam, Tanzania, the proportion of households involved in farming rose from 18% to 67% (Smit et al. 1996, 40). It is recorded that in 1983, in South Africa, an open-space system linking nine municipal parks and incorporating urban agriculture programmes for food and income was developed through a joint study between the City Engineer's department and the University of Natal (Obudho 1999). Further attempts to integrate urban agriculture into urban planning and policy were made through the Pretoria Technikon conference in 1994 which assessed the potential of urban agriculture as a major productive use of public space in post apartheid urban centres of South Africa (Obudho 1999).

A clear lesson from this view of history is firstly that urban agriculture has long been a component of urban livelihood strategies in developed and developing countries, and secondly, that over the years this farming activity has been increasing in urban areas. It is also evident that urban agriculture has been greatly influenced either positively or negatively by government policies. In Accra, Ghana, a programme called 'Operation Feed Yourself' was instituted with the aim of addressing food shortages during the mid 1970s (Nugent undated, 71). This programme was able to increase food production which translated into food availability in Ghana. In South Africa, the increase of urban agriculture seems to have been influenced by the abolition of influx control in 1986 (Reuther and Dewar 2005, 98). In African countries, subsistence agriculture was greatly discouraged by structural adjustment policies which meant that there was 'de-agrarianisation' and 'de-peasantisation' of agriculture (Bryceson 2000 cited in Baiphethi and Jacobs 2009, 8). These policies greatly affected urban populations in Africa when state control was shifted to the market because their purchasing power decreased (Maxwell 1999).

As a consequence, *"the existence of gardens has largely depended on government support at both local and national levels during times of economic necessity"* (Zimbler 2001, 6). Urban agriculture, or farming activities in general, have persisted over time in different conditions affected by policies or other forces. Their ability to persist seems to be empowered by their evolving nature. This has meant that usage by urban agriculture participants changes over



time depending on the context. The view is that “*agriculture’s role in the economic development of a country changes as the transformation proceeds*”(IFPRI 2005, 33).

### **2.3. Role of urban agriculture**

Agriculture has been defined as “*consisting of activities which foster biological process involving growth and reproduction to provide resources of value*” (Lehman et al. 1993, 127). These resources contribute to the physical and financial dimensions of livelihoods (Tanjuaquio et al. 1996). Agriculture also has a social dimension which concerns the well-being of people as a result of how the environment is managed (Offutt 2001). In light of this information, what distinguishes urban agriculture from agriculture is its proximity to the urban area, its integration and interaction with the urban economic system, and also its ability to utilise the infrastructures and services available in urban areas which in general are better than in rural areas. Different definitions which demonstrate the nature and potential of urban agriculture have been proposed. Urban agriculture has been defined as an industry which specifically promotes the reuse of natural resources and crop diversity within the confines of urban settings normally linked to informal economic activities (Ellis and Sumberg 1998; Obusa-Mensah 1999). Urban agriculture consists of different activities such as horticulture, aquaculture, floriculture, forestry, and livestock production (Reuther and Dewar 2005). Drakakis-Smith et al. (1995, 183) consider urban agriculture as a “*principal component*” of sustainable urban development.

Home or community gardening is a component of urban agriculture. Home gardens are small scale designs in a natural and multilayered system specifically for food consumption either by an individual or household (Mitchel and Hanstad 2004). Community gardens differ from home gardens in the sense that they are cooperative which means they share responsibilities and resources in processes of cultivation thus resulting in food consumption and income generation depending on the context (Ninez 1984). For example, responsibilities for water, storage and security or for weeding and maintenance activities can be shared. Urban agriculture offers direct access to food for households thus having significant impact on the households’ livelihoods rather than on the economy at large.

According to these definitions, urban agriculture plays a crucial role in the livelihoods of urban residents. Some researchers claim that garden food increases the quality and quantity of food consumed by the households. This claim is supported by research which indicates that gardens supplement diets with vitamin-rich and other energy-rich vegetables (Marsh 1998). In addition to the quality of the food, garden food also ensures quantity by increasing food availability within a household. Hendriks et al. (2003) argue that in South Africa, urban agriculture participants have better nutritional status through income replacement which allows households to have savings which they can use for a greater variety of foods and other non-food items such as school fees, health care and shelter. In contrast to this view, Makhotla and Hendriks (2004) argue that there is no guarantee that urban agriculture participants will choose crops that are nutritious or use the money they save to diversify their diets except where there are educational programmes that can inform them to choose nutrient rich vegetables.

The literature emphasises food consumption by the household as one of the important reasons why urban dwellers are involved in community and home gardens because of the capacity and potential of urban agriculture, with specific reference gardening. Kamal Uddin Khan (2002, 60) states that in Bangladesh, “*primarily, homestead gardens [are] the source of supplementary food for a family*”. May and Rogerson (1995) further suggest that in the urban areas of South Africa urban agriculture is viewed as the major means of supplementing incomes. Watkinson and Makgetla (2002, 2) report that in South Africa, “*over a million households farm to supplement what they purchase*”. In Bangladesh approximately 75% of households have homestead gardens yet most of them depend on the market for their vegetables (Kamal Uddin Khan, 59). The literature suggests that urban agriculture is mainly practiced as a supplementary strategy by households for food and income, particularly in urban areas.

There are other perspectives which attempt to explain why urban dwellers are involved in urban agriculture. Authors, such as Rogerson (1993), view urban agriculture as a strategy for resolving the immediate problems of urban poverty such as hunger and malnutrition by ensuring food availability and quality. Rogerson (1993) concludes that this strategy leads to the improvement of the socio-economic situations of the poor. Another argument suggests

that urban agriculture is a traditional activity mostly conducted by African households as a risk-sharing strategy (De Bon et al. 2010, 23) or coping mechanism (Egal et al. 2001, 2). Urban agriculture is used as a strategy that seeks to alleviate the consequences of income and food risk (Dercon 1999, 3). Hendriks and Lyne (2009, 113) reported that “*evidence suggests that production and sale of own food improved household food security*”. This suggests a link between urban agriculture and food security. The nature of this linkage is based on the contribution of urban agriculture to food availability and the reduction of food costs thus leading to food security. One of the prominent reasons for this phenomenon is that urban agriculture has short marketing chains enabling low price differentials between farm and final consumption since sellers are producers (De Bon et al.2010, 24). For example, in Havana, Cuba, urban agriculture was able to reduce the market prices of vegetables three-fold between 1994 and 1999 when an urban agriculture programme was launched (De Bon et al. 2010, 24). Thus the general view is that urban agriculture has the ability of “*increasing the availability of food at prices the poor can afford*” (Wiggins 2004, 3) and that it reduces food insecurity by improving food intake (Mouget 2000).

The role of urban agriculture also affects relations within and across households in a community. Mpanza’s (2008) view that community gardens improve social networks within a community concurs with that of Reuther and Dewar (2005, 97) who state that gardeners “... *gain social capital through shared effort*”. Urban agriculture is also reported to affect the gender relations by giving women more control over resources and decision-making. As a result, women use their savings for their children’s education (Mouget, 15).

The role of urban agriculture contributes to the concept of food sovereignty that has recently emerged in the literature. By definition, “*food sovereignty is the right of peoples to define their own food and agriculture; to protect and regulate domestic agricultural production and trade in order to achieve sustainable development objectives*” (Pimbert 2008, 3). This concept originated in Rome in 1996 during the World Food Summit (Menezes 2001). It proposes people’s self-government of the food system (Holt-Gimenez 2009) which in essence respects the productive and cultural diversity of food systems (Menezes 2001). Food sovereignty relates to the rights of the people and should thus be viewed as a transformative process protesting for self sufficiency and autonomy over local food systems (Pimbert 2008).

Nevertheless, food sovereignty is recognized as not being sufficient to guarantee food security (Menezes 2001) yet it claims that food security cannot be achieved without taking full account of those who produce food (Pimbert 2008). As a consequence this makes food sovereignty “*a much deeper concept than food security because it proposes not just guaranteed access to food, but democratic control over the food system*” (Holt-Gimenez 2009). Urban agriculture has the potential to contribute to food sovereignty in the sense that urban agriculture practitioners are the producers and govern their own production systems.

In the South African context, the tenets of food sovereignty such as self reliance, which is an outcome of self sufficiency and autonomy, are prioritised. In 2008, the Pietermaritzburg Declaration on African Food Sovereignty<sup>3</sup> stated that “*the principal focus of agricultural policies and practices should be on ensuring self-reliance, including seed independence in food production and on food security on local, national and regional level*” (Salomon 2008, 4). This is the case because the emphasis in food sovereignty is based on entitlement to local natural resources and assets by local people. As a concept, food sovereignty suggests that there is “*an important relationship between realizing the right to food and improving access to natural resources*” (Cotula 2008, 21). Thus food sovereignty seeks to frame policies that empower family-driven agriculture. The view is that access by local people to natural resources and assets will allow them to have control of the food value chain resulting in control of the local economy which will ensure self reliance (Zapian 2008). Given that urban agriculture is part of the urban food system, it therefore has a potential to contribute to the realisation of food sovereignty when access to natural resources and assets, such as securing land rights, is ensured.

#### **2.4. Factors promoting urban agriculture**

One of the factors promoting the practice of urban agriculture is high food prices. The economic crisis of 2008 serves as a good example. Some households adopt strategies such as urban agriculture to prevent the over-reliance on purchased foods so that they can achieve food security (Alusala 2009, 126). A South African study conducted on Orange Farm in

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<sup>3</sup> This declaration was made in year 2008 hosted by the Participatory, Ecological Land Use Management (PELUM) Association in Pietermaritzburg. There were 70 participants during the making of Pietermaritzburg Declaration on African Food Sovereignty on 20 and 21 June 2008. The participants represented farmers and different organizations coming from different South African provinces namely KwaZulu-Natal, Western Cape, Eastern Cape, Gauteng and Limpopo.

2009, showed that 60% of the whole sample practised urban agriculture because food was expensive (Onyango 2010, 142). This reason is supported by evidence stating that during the period of “...April 2007 and October 2008, the poorest households in South Africa would have had to raise their incomes by a minimum of 22 percent to maintain the same food basket”(Fryne et al. 2009, 17). It is further suggested that adverse economic trends both at global and local levels cause an urban income squeeze making it difficult for urban residents to meet basic needs thus venturing into new livelihood strategies to contain the effects of change (Ellis and Biggs 2001). This fragile urban ‘purchasing environment’ has meant that the purchasing power of urban residents is drastically decreased resulting in an increase of urban agriculture as a supplementary strategy (Obosu-Mensah 1999).

Another factor which contributes to the practice of urban agriculture is that of people with a childhood associated with agricultural activities. For example, Karaan and Mohammed (1998, 73) state that an urban gardener from a township in the Cape metropolitan area mentioned that “*I grew up where farming was widely practiced*”. Unemployment is also reported to be an important contributing factor motivating urban residents to engage in urban agriculture (Obosu-Mensah 1999). This kind of urban farmers practises gardening with the intention of averting hunger (Bryld 2003).

This section shows that households engage with urban agriculture because of their low purchasing power and high food prices in the urban environment. The literature presents urban agriculture as a response strategy to preserve household food security, acquire more control over food systems, and to uphold urban agriculture as an activity with cultural value.

## **2.5. Characteristics of the urban agriculture participants**

The literature describes many characteristics of those practicing urban agriculture. De Bon et al. (2010, 23) argue that the major feature of urban agriculture is diversity in terms of socio-economic profiles of the actors involved, and also in terms of their income and livelihood strategies. This supports the view that the people who practise urban agriculture are not homogenous but are a group which consists of a variety of people with different reasons of

engaging in urban agriculture. The implication of this is that there are reasons for urban agriculture other than that of food and income.

Most urban farmers or gardeners, globally, are in the low-income category (Mouget, 14). May and Rogerson (1995, 173) found that the largest group of urban cultivators are those from remittance-dependent or welfare-dependent households. Their findings state that “47 percent of the remittance-dependent household in peri-urban areas are participating in agricultural activities” (May and Rogerson 1995, 21). These households utilised the income obtained through social welfare grants to produce their own food for consumption so that their households remain food secure (Maxwell et al. 2000). The wealthy income group has also been found to be participants of urban agriculture (Obosu-Mensah 1999). For example, the September 2000 Labour Force Survey (SSA 2000) reports that, for both rural and urban areas, the lowest income category has the highest percentage of those involved in farming for cash or food, 39 percent of ultra-poor households, 22 percent of the poor, and 3 percent of the wealthiest income group (Watkinson and Makgetla 2002, 3). These findings reveal the dominant group of urban agriculture participants while at the same time portraying the extent of diversity which exists among those practising urban agriculture.

It is noticeable that there is a relationship between different income category groups and classifications of urban agriculture. Gura (1996) proposed a typology according to which other researchers such as Moustier and Danso (2006) have classified urban agriculture. The first category is called a home subsistence farmer which refers to those households who cultivate gardens primarily for consumption. The second category is multi-cropping, peri-urban farmers which refers to those farmers who have predominant subsistence strategies yet have an ability of mixing different crops on their large plots. The objective of this category extends from household consumption to income for subsistence. The third category is family-type commercial farmers. This category represents commercial urban and peri-urban farmers whose objective is to earn money. The difference between this category and the fourth category called entrepreneurs is that entrepreneurs have greater income diversity thus have the capacity to engage in large-scale production for domestic market and trade. This fourth category is based on the objective of earning money but they also view urban agriculture as a source of leisure (De Bon et al. 2010). In general, the first and second category is associated

with the low income category group, the third category is more linked to the middle income group, and the fourth category of 'entrepreneurs' consists of the wealthy income group (De Bon et al. 2010). This typology suggests that initial household income level does influence the reasons for which urban agriculture is practised, and it also makes a claim that the use of urban agriculture evolves as income levels change. Overall, this information confirms the existence of diversity in terms of economic profiles of people practising urban agriculture.

As already mentioned, there is an assertion that many urban farmers are former rural dwellers. According to this perspective, urban farmers maintain strong rural family links regardless of the time of residency in urban areas (Ellis 1998). The argument is that these urban farmers transfer rural subsistence agriculture to urban areas (Obosu-Mensah 1999). In an African context, Onde-Brause (1976, 26) quoted in (Obosu-Mensah 1999, 20) states that:

The African man, and still more the woman, is firmly attached to the soil, and the whole fabric of social organization is based upon the right to cultivate. It thus seems probable that the native will always aim at having his own home among his own crops, whether in a distant village or as a 'squatter' on an estate.

This view, suggests that urban agriculture is a traditional practice similar to subsistence farming undertaken in rural areas except that the context is urban. It further views the association of the African population with farming activity as part of their cultural way of life. One of the explanations why African culture values farming activity is that self-provisioning translates into self-reliance (Mouget 2000). It is therefore envisioned that African households can utilise their resources, skills, and knowledge to sustain and advance their livelihoods.

Another important aspect is the claim that the level of education of urban agriculture participants is low. According to a study conducted in 2009 on Orange Farm, South Johannesburg, more than 80% of urban agriculture farmers sampled were reported to have primary levels of education or less. In terms of employment status, less than half (42%) of the whole sample population was formally employed (Onyango 2010, 123). These characteristics correspond with those of the low income group category.

Alternatively, there is a view which suggests that urban agriculture is not for the poor of the poorest (Obosu-Mensah 1999). According to this perspective, it is a misconception to view community gardens as 'keeping the poor alive' (Van Vuuren 1988, 41). One of the arguments proposed by this perspective is that poor people have no access to credit and land which automatically excludes them from participating in urban agriculture (Obosu-Mensah 1999). Secondly, it is argued that they have few resources to invest in equipment and other costs related to community gardening such as seeds (Reuther and Dewar 2005).

## **2.6. Costs, benefits, and challenges**

One of the benefits of practising urban agriculture is its potential to enhance food quality and quantity, and reduce hunger which aids in achieving better health and nutrition in households (Smit et al. 1996). Secondly, urban gardeners are able to save the money they would have used to buy food since they consume garden produce and use the savings on other non-food item needs. This view is confirmed by the findings of a study done on Orange Farm stating that *"households practicing urban agriculture on average spend 350 rand per month on food. Households not practicing urban agriculture spend on average 640 rand per month on food"* (Onyango 2010, 133). another report suggest that a net income of R100 is normally made per month from 100 square metre land by households that cultivate gardens (de Klerk et al. 2004). These findings verify that urban agriculture participants are to some degree able to save money for other household needs.

There are constraints and challenges which confront urban gardeners in their daily practices of urban agriculture. Some of these problems are universal resource constraints namely land and water. Karaan and Mohammed (1998, 76) *"clearly established that insufficient land is the major constraint on the further development of food gardens"*. This suggests that limited land confines the potential impact of community and home gardens on the livelihoods of urban gardeners. With regards to water scarcity, urban agriculture is fundamentally constrained by this problem. What has intensified this problem are water regulation policies adopted by governments which have a negative impact on urban agriculture, for example, Tanzania's national urban water agency disallows the use of water for urban farming and imposes a fine when there is noncompliance (Ruel et al. 1998).



It is also reported that “*the main constraints of cultivation were found to be the start-up costs, droughts, access to produce for the market, inadequate land for production, and lack of fencing*” (Baiphethi and Jacobs 2009, 22). Start-up costs refer to transportation, seeds, water for irrigation and other activities necessary for establishing and maintaining the activity. For example, it was found that the initial cost of setting up a medium-scale garden in Khayelitsha was as high as R36 000 in 1997 - for installing the basic infrastructure such as fencing, irrigation, and tools (Reuther and Dewar 2005, 104). It is also evident that constraints such as limits of their produce to markets and land determine the scale and form (i.e. from subsistence to commercialisation) at which urban agriculture can impact livelihoods. These constraints further dictate who can be sustained within the practice depending on household composition and whether it affords resilience to droughts. The lack of fencing is also a challenge in that it allows livestock or thieves to take the harvest. The implication is that poor households may be severely affected by these effects, and being resource-less, become discouraged to engage or continue with urban agriculture.

There is an ongoing concern about urban agriculture not being able to “*...provide all the food requirements that a household needs*” (Onyango 2010, 162). The view is that gardening makes a significant contribution to the livelihoods of many urban residents but is not a permanent solution as far as stunting of children and household food poverty is concerned (Brescian and Valdes 2007). The inadequacy of urban agriculture is perhaps most visible in economic terms, for example in South Africa, “*Erbehand (1989) declared that home gardening is economically insignificant, less than 1 percent of the monthly budget of a household living at household subsistence level*” (Sombalo 2003, 70). This poses a serious challenge considering that “*the single most important determinant of food security in South Africa is cash in hand*” (Bresciani and Valdez 2007, 210). Since money is the medium of exchange through which households can acquire and exchange resources, this means that gardening does not offer enough when it comes to sustaining and accumulating more resources. The lack of profitability in urban agriculture thus leads to a difficulty when it comes to sustainability of the activity. Given this situation, urban gardeners begin to develop a culture of dependency either on government support or other supporting structures in order to keep their gardens functioning. This culture of dependency “*... leads to the collapse of*

*urban agriculture when public sector support is scaled down or withdrawn*” (de Klerk 2004, 60). A solution proposed for urban agriculture is to attain a level where there is profitability; agricultural production needs to go beyond subsistence level (Bresciani and Valdes 2007).

## **2.7. Arguments against urban agriculture**

It is evident that urban agriculture plays a crucial role in the livelihoods of some households yet many choose not to be involved. One of the reasons which is normally provided as a justification is that they are ‘too busy’ to engage in the practice of urban agriculture since it is time consuming (Onyango 2010, 143). Other reasons include concerns over health issues. The urban environment is well known of its ability to pollute soils, water, and air thus concerns are raised with regard to the safety of the garden produce (De Bon et al. 2010). These concerns are based on the fact that, as reported by a survey of various cities in Eastern Europe, soils in cities are more polluted than in rural areas because of heavy metal content from heavy industry. Secondly, air is polluted in urban areas due to transportation and industry (De Bon et al. 2010).

Some of the reasons are ideological in nature. For example, *“the modernist theory views urban agriculture as a backward subsistence and rural habit practiced by migrants who are new to urban areas”* (Onyango 2010, 42). As a consequence, it has been reported, by government planners in particular, in literature that urban agriculture is associated with the poor, low status, and is a low-income trap imprisoning the unskilled, particularly women (Bryld 2003). The argument of analysts and agencies is that urban agriculture takes spare time away from women thus depriving them of the opportunity to acquire high-paying occupations in the formal sector. The assumption of this argument is that there are available jobs for women in the formal sector; this may not be the case for many women practising urban agriculture. The literature suggests that men do not engage in urban agriculture because they do not see it as a business but as a marginal activity (Bryld 2003).

In South Africa it has been noted that the provinces with highest number of urban agriculture practitioners are associated with a low Human Development Index (HDI) in comparison to

other provinces (Burger et al. 2009). However, it seems difficult to establish whether this relationship is an association or causation. Thus at this stage it is fit to assume that there is no causal effect, but rather an association between urban agriculture and a low Human Development Index. Another important link with urban agriculture practitioners at provincial levels is the food insecurity status of the provinces. The Development Report 2011 indicates that there is only one (eThekweni Metropolitan Municipality) out of eleven districts of KwaZulu-Natal which has less than 48% food insecurity (DBSA 2011, 15). This depicts a picture where provinces with many urban agriculture practitioners are associated with high food insecurity and low HDI.

With regard to the integration of urban agriculture into urban planning, a survey was conducted in greater Cape Town in 1995 to assess manager's perceptions towards urban agriculture. The findings showed that *"urban managers perceive urban agriculture to be of a temporary nature and economically insignificant"* (Sombalo 2003, 76). These findings concur with the view of McIntosh and Vaughan who claim that agricultural growth is irrelevant as a livelihood strategy given that it has no significant contribution to the total economy even though it has contribution to many people (Manona 2005). Further research findings demonstrate that *"...self-employment in agriculture generates the smallest share to the total household income"* (May 1996 cited in Amin 2008, 40). Thus the argument is that the focus should not be on urban agriculture, given that there are other opportunities outside of the agricultural sector which offer greater benefit to livelihoods and the economy than urban agriculture. Non-farm income sources are reported to benefit livelihoods more than agricultural related activities. For example, in Africa, non-farm income sources amount to 40 to 45% of household income (Barret et al. 2001, 316). In Sub-Saharan Africa, *"a range of 30 to 50 percent reliance on non-farm income source is common; but it may attain 80 to 90 percent in Southern Africa"* (Ellis 1999, 3). In simple terms, the critics argue that urban agriculture *"claims too much by equating all food production in towns with improved food security for poor people and offers too little by failing to consider the role of rural-urban interactions in explaining the survival capabilities of the urban poor"*(Ellis and Sumberg 1998, 221).

The literature suggests that there are many strategies available to households in urban areas that have competitive advantage over urban agriculture. In South Africa it has been established, using empirical evidence, that social protection (such as the Child Support Grant and old age pensions) are primary contributors to household income and food security over urban agriculture which makes an inadequate economic contribution (Thornton 2008, 243). Statistics South Africa (2002) reported that “57 percent of all household source income primarily from wages or salaries, 19 percent from social grants, 14 percent from agriculture and 10 percent from remittances” (Hendriks and Lyne 2009, 11). According to this information, employment and government grants are prioritised by households because of the income impact of their grants on livelihoods. Another strategy employed by urban dwellers in preference over urban agriculture is that of accommodating lodgers. Burger et al (2009, 20) reports that urban dwellers find it more profitable to use their land to build a shack to accommodate lodgers than to use the land for agricultural purposes. This choice of activity takes place in the context of rapidly increasing urbanisation, which means a higher influx of people to urban areas. In essence, for urban dwellers building a shack to accommodate lodgers is the most viable land use because of the high demand for housing.

Some critics argue against urban agriculture on the basis of its organisation, not necessarily on the basis of capacity and potential. Fisser (1996) argues that “*diversity and fragmentation of urban agriculture leads to lack of support and attention from city councillors and town planners*” (Sombalo 2003, 78). Thus in this view urban agriculture has failed to acquire formal recognition and status within structures that have the ability to integrate urban agriculture in planning processes. This means that urban agriculture is not integrated into the designs and models of urban development. The implication is that no resources will be allocated for the further development of urban agriculture. This disorganisation of urban agriculture goes beyond the level of failing to acquire recognition to a level where it distorts the functionality of community gardens. Thus Egal et al (2001, 6) states that “*the organization of urban farmer associations is a prerequisite to the improvement of urban agriculture*”.

In this section, fundamental arguments which critique the claims made about the value of urban agriculture are discussed. The dominant view from the critics is that urban agriculture

makes no significant economic contribution, and as a result is viewed as a waste of time by its practitioners, mainly women, who could have used their time more appropriately to search for jobs that will have economic benefits. According to this perspective, it is proposed that the focus of household strategies should shift from urban agriculture and farm activities to non-farm activities that generate more income. Given the challenge of urban agriculture in economic terms, the practice is viewed as backward, marginal, and disorganised by these critics.

## **2.8. South African food security policy**

In South Africa, the key food security challenges include food availability to all at all times, ensuring food accessibility through making the purchasing capacity of people adequate for achieving food needs from markets, and also encouraging citizens to make optimal choices for nutritious and safe foods (South African Government 2002). In response to these challenges, the Integrated Food Security Strategy (IFSS) was introduced as a policy which seeks to “*attain universal physical, social and economic access to sufficient, safe and nutritious food by all South Africans at all times to meet their dietary and food preferences for an active and healthy life*” (South African Government 2002, 5). IFSS intends to achieve its goal by increasing household food production and trading, improving income generation and job creation opportunities, and improving nutrition and safety (South African Government 2002, 13). The ‘One home One garden’ campaign was launched on 18 July 2009 by the KwaZulu-Natal provincial government as a way of prioritising the objectives of the food security policy of South Africa (Mkhize 2009). This programme supports home and community gardens both in rural and urban areas. The objective of the ‘One home One garden’ campaign is “*aimed at sustaining food security for household food consumption*”(Mkhize 2009, 4). What remains a challenge in these policies is their neglect of differences between rural and urban areas. The City of Cape Town (2007, 2) has released its policy document on urban agriculture in 2007 stating that:

It will be utilised as a guiding tool by all role players to align and synergise efforts to maximise the positive impact of urban agriculture in the city...ultimately; this policy will give formal recognition and status to urban agriculture in the city of Cape Town.

This policy represents a significant move where urban agriculture is integrated in the urban planning process. Considering that similar urban agriculture policy documents exist in other

provincial cities, such as eThekweni, it shows that South Africa is taking a positive policy shift in terms of urban agriculture.

## **2.9. Conclusion**

The literature demonstrates the capacity and potential of urban agriculture. More importantly, it illustrates that the context, namely the urban environment within which urban agriculture exists, determines how it will be used, by whom, and to what extent its capacity can be utilised. One important conclusion that can be drawn is that diversity among those who practice urban agriculture, and differences from one area to another make it difficult to generalise about why and by whom urban agriculture is used. The information presents some of the challenges that exist for the further development of urban agriculture despite its rapid increase and progress over the years. It is also important to note that the diversity within urban agriculture participants, in terms of demographic and socio-economic factors, underpins the variety of motivational reasons. The literature further confirms the existence of relationships between urban agriculture practitioners, their socio-economic status, their gender, and childhood upbringing. In typical urban agriculture, as shown by the literature, there is a clear gap between urban agriculture activity and policy planning. In actual fact, urban agriculture is in general isolated, excluded and unrecognised as far as policy-making is concerned. Nevertheless, there are ongoing academic arguments through research which seeks to justify the recognition and integration of urban agriculture in urban policy planning. International and South African literature claims that there is an increase of urban agriculture over the years yet no empirical evidence of this was found. This may mean that while urban agriculture has gained visibility and attention from the researchers and policy-makers it has not increased in scale. Using sustainable livelihoods approach, which will prioritise the rights of the gardeners over their resources and assets for livelihoods and reorient natural capital to include both natural resources and basic services, it will be possible to validate the claims made by the literature while generating meaning that is directly linked to the context.

## CHAPTER THREE

### METHODOLOGY

*“Urban and peri-urban and home and school micro-gardens would rapidly improve the level of nutrition of the urban poor, with relatively modest levels of investment” (FAO 2004, 53).*

This chapter describes the context of the research site and its surroundings, and also describes some of the limitations which were encountered during the process of conducting research. The chapter will further describe the methods used to collect data and clearly outline how and why these methods were used in an attempt to answer the key questions of the study. Finally, the chapter will include an outline of how the analysis of the results will take place using a mixed-methods (including quantitative and qualitative methods which will incorporate some of the participatory action research tools) approach dominated by the qualitative research.

#### **3.1. Research site**

The research study was carried out at KwaMsane Township located within Mtubatuba, which is a small town in the uMkhanyakude district in the KwaZulu-Natal province. According to recent evidence, approximately 35% of the population are food insecure, and about 3.5 million people are in need of interventions to enhance their food security in KwaZulu-Natal (Mkhize 2009, 3). uMkhanyakude is one of the 10 district municipalities in KwaZulu-Natal and has an estimated population of 614 046 people (KZN Provincial Planning Commission 2011, 8) and is rural in nature. More than half (52.8%) of the population of the district are living in informal dwellings suggesting a lack of integrated planning in terms of provision of houses when considering that within a period of five years between 1996 and 2001 the number of households in the district had almost doubled (increased by 44.3%). Another key challenge of the district is its failure in the provision of infrastructure and services. For instance, the Water Service Development Plan found that more than half (53.01%) of the population of the district needed water. These challenges faced by uMkhanyakude district

directly impacts negatively on its economy which “... *depends largely on agriculture and tourism, with a few indications of manufacturing*” (DPLG and Business Trust undated).

At the current moment,

Mtubatuba has developed from a humble railway siding into a strong sub-regional commercial, service, transport and administrative centre for the entire North Eastern Zululand region. In the past few years there has been substantial commercial growth in Mtubatuba with retail and wholesale outlets opening ([www.mtubatuba.org.za](http://www.mtubatuba.org.za))

Regardless of these successes, Mtubatuba (which is one of the five municipalities in the uMkhanyakude district) communities still have no access to a hospital and have a shortage of clinics (Mtubatuba Municipality 2009, 41). Another important challenge is the impact of the water crisis which is a result of the failure of the Mtubatuba reservoir to meet the water demands of the increasing population (the population of Mtubatuba increased by 36.92% between 1996 and 2001) and the fact that the “*Mfolozi river is drying up...*” (Mtubatuba Municipality 2009, 44). In addition, it is important to note that according to the situational analysis of the Mtubatuba municipality’s Integrated Development Plan (IDP), “*the town has little formal commercial activity*”(Mtubatuba Municipality 2009, 33). It is critical to understand the scale and depth of these challenges considering that the municipality provides services to a population of approximately 400 000 ([www.mtubatuba.org.za](http://www.mtubatuba.org.za)).

The KwaMsane Township is three kilometres away from the city centre of Mtubatuba. The Africa centre datasets used for this study show that in 2001 and 2010 there were 843 households with 3393 individuals and 844 households with 3400 individuals in KwaMsane Township which was originally built next to Mtubatuba town where whites resided, and adjacent to the south-north freeway which connects Durban to the north east of the province (see figure 3.1). As a result, the area is accessible but ‘remote’ in certain respects. The area has good municipal infrastructure considering that it was one of the few areas where black people could build or buy homes (Lund and Ardington 2006). KwaMsane Township is an area in the uMkhanyakude district which is partly covered by the Africa Centre Demographic Surveillance Area.





Figure 3. 1 showing the KwaMsane Township located adjacent to N2 freeway (Google Earth 2010).

The star at the top is where *Thathigeja* garden is located and *Siyajabula* garden located at the bottom. The circles represent the distance from each garden. Each circle is a distance of 200m. These two gardens are 600 to 700m apart.

For this study it is important to define and identify the type of urban area where the KwaMsane Township area is located because there are different definitions of urban. This study will take a perspective of urban areas as the “*populated areas provided with basic services*” (MacGregor-Fors 2011, 347) and will categorise peri-urban as the “*region where the urban core (‘intra-urban’) intermingles with adjacent ‘non-urban’ systems*” (MacGregor-Fors 2011, 348). The latter is more specific for the KwaMsane Township area because of its proximity to both Mtubatuba town and the rural areas. Thus it acts as the interface between the urban and rural systems.

At KwaMsane Township area, there are about seven to eleven community garden groups. All of the community gardens occupy the land which is unused and within the vicinity where gardeners reside. Gardeners do not have legal rights over the land where their community garden is located. Their use of the land is granted by local councillor on behalf of the city council. This study only selected two community gardens at KwaMsane because of time and financial resources. *Thathigeja* and *Siyajabula* community gardens were selected. *Thathigeja* garden was formed in the 1990s and *Siyajabula* garden in 2009. These gardens were important for the study to assess how gardening has evolved over time in KwaMsane Township. *Thathigeja* garden (figure 3.5 in the appendix) was smaller in size, with membership less than 25, and majority of the members were older (above 55). *Siyajabula* garden (figure 3.4 in the appendix) was much bigger in size as it had a total number of about 66 garden members within it, and most of the members were middle-aged.

## **3.2. Research design**

### **3.2.1. Mixed methods**

This research study concurs with the view that “*methodology must be judged by how well it informs research purposes*” (Bazeley 2002, 5) since methodology is simply a tool used to attain knowledge. The purpose of the study is to understand why urban residents of KwaMsane Township are involved in community and home gardening. The research design was influenced both by the purpose of the study and theoretical framework adopted. Using the SLA, which suggest that the livelihood strategies are chosen by households on the basis of the assets and services at their disposal, it was then presumed that the characteristics of the households involved in gardening would play a critical role in determining the choices that influence livelihood strategies. Thus profiling (in terms of assets, resources, and livelihood strategies) of the households which cultivated gardens took place. This justified using mixed methods and so it became important to clarify “*what is being mixed and how it is being mixed*” (Bazeley 2002, 2).

### 3.2.2. What methods were mixed and why?

Quantitative and qualitative methods were chosen on the basis of their nature of inquiry being compatible with the nature of the research question asked. The dominant method used for the study was qualitative research which *“begins with assumptions, a worldview, the possible use of a theoretical lens, and the study of research problems inquiring into the meaning individuals or groups ascribe to a social or human problem”* (Cresswell 2007, 37). This method was embedded in the natural setting (dependent on context and time), with the researcher as key instrument of the research process, and possessed the ability to capture multiple sources of data which means it could give a holistic account. The choice of a qualitative method for the ‘why’ component of the research study was based on the paradigm which assumes that *“reality is socially constructed and is constantly changing”* (Sale et al. 2002, 45) and claims the absence of objective reality (Krauss 2005). As a result, it was vital to use qualitative research as the leading method since it allowed the researcher not to be confined to the *“cause-and-effect relationships among factors, but rather [to identify] complex interactions of factors in any situation”* (Cresswell 2007, 37). A qualitative research method was used to attain knowledge for understanding and describing the world of human experience in relation to gardening. Considering the exploratory nature of qualitative method, it was then supposed that the inquiry would produce findings befitting the research questions asking why and how gardeners in KwaMsane experience urban agriculture and in so doing uncover critical complex associations between different factors.

The research study was designed so that the quantitative method provided an overview of the context-specific factors of interest such as demographic and socio-economic information for the whole of KwaMsane and also for those involved in gardening activities. As a consequence, the sole purpose of the quantitative method was to profile the gardeners using descriptive and inferential statistics to understand associations and relationships between different factors. The use of quantitative method in this form was based on its ability to provide measurements which *“gives us a consistent yardstick for making distinctions between different factors or relationships”*(Bryman 2004, 66). These distinctions were possible because the measurements gave *“the degree of relationships between concepts”* (Bryman 2004, 66). The role of quantitative method was crucial for the research study in the sense that it quantified the empirical results and made it possible to generalise about the

KwaMsane Township, particularly the households involved in gardening activity. In this way, quantitative method provided what was ‘true’ (referring to objective reality) or factual about the sample. The view of the study was that it was necessary to use a quantitative method to set the scene by providing the objective facts about the sample and understand how human experience, uncovered by the qualitative method, unfolded the meanings and understandings of the sample of gardeners.

It is justified to mix methods in this current era when there is a realisation that the complexities of problems confronting humankind are interconnected as they coexist and co-evolve. Thus research in the world is becoming increasingly interdisciplinary which then creates a need to mix methods to facilitate communication and promote collaboration across disciplines (Johnson 2004). Mixed methods also strengthen the ability to interpret findings (Thurmond 2001). For this study, mixing methods was crucial when considering that in the quantitative method “[a] hypothesis is deduced from the theory and is tested” (Bryman 2004, 62) while in the qualitative method the intention is to generate understanding (Golafshani 2003). As a consequence, the study was able to test pre-existing claims of why households engage in gardening activity while at the same time generating information that was specific and dependent on the context and time when the research was conducted. In essence, it was anticipated that the outcome of mixing quantitative and qualitative research methods would result in both hypothesis testing and hypothesis generation. The study also proposes that validity “refers to the degree of congruence between the explanations of the phenomena and the realities of the world” (Bashir 2008, 41).

It is critical to note that the mixed method approach has been criticized by some scholars. One of the major arguments of the critics is that quantitative and qualitative methods cannot be combined for cross-validation or triangulation because the two paradigms do not study the same phenomena (Sale et al. 2002). Secondly, another argument suggests that the difference in terms of these paradigms results in different meanings of validity and what is meant by the research findings (Sale et al. 2002). For example, according to quantitative method validity means how results correspond to objective reality while in qualitative method validity refers to an interpretation of a reality, which is socially constructed, and where the judgement of its value is measured by its usefulness. In essence, this argument suggests that between

quantitative and qualitative method there exists an incompatibility in paradigm, nature of inquiry, and phenomena explained.

In response to these arguments raised by critics, it has been reported repeatedly that using mixed method results in complementary strengths and non-overlapping weaknesses (Johnson and Onwuebuozie 2004). As a consequence, mixed method uncovers different facets of knowledge or experience (Bazeley 2002) which may have been neglected by a single method (Jick 2006). This argument emphasises the complementarity between mixed methods more than triangulation. It is a fact that most of the mixed method approaches have failed to offer triangulation, for example, the comprehensive review of mixed-method evaluation studies conducted by Green and Caracelli in 1989 found that “*methodological triangulation was actually quite rare in mixed-method research, used by only 3 of 57 studies*” (Sale et al. 2002, 49). In light of this information, this study primarily uses a mixed method approach for complementarity and progmatic reasons.

### **3.2.3. How were methods mixed?**

The style and form of the mixed method is framed by the objectives of the research study. In essence, it is the justification made for mixing methods that shape how mixing occurs, and determines the appropriate stage at which mixing can be done within the research process. The literature proposes that there are five justifications for using mixed method. Triangulation, which ensures the convergence and corroboration of findings from different methods, is one of the justifications. It is also proposed that complementarity is part of the justifications used to mix methods as it intends to achieve elaboration, illustration, and clarification of the findings from the methods mixed. Another justification is that of development whereby the findings of one method informs or ‘develops’ the other method. Other researchers also use mixed method because of the initiation which enables them to identify paradoxes and contradictions or new perspectives from the findings of both methods. Lastly, the literature also proposes expansion as a justification for mixing methods. By definition, expansion extends the breadth and range of an enquiry through the use of different methods (Bryman 2004). In all these proposed justifications one thing remains clear: a mixed method approach is a tool used to attain knowledge. As a consequence, it is the role of the

researcher to understand the purpose of the research study, the nature of the methods or ‘tools for attaining knowledge’, and also to recognise the distinctions that exist between methods and their limitations. With this being considered, there is more chance for the researcher to design an approach that will ‘balance’ the weaknesses of one method with the strengths of the other wherever possible.

Given the nature of this study, the justification for mixing methods was primarily for complementarity and pragmatic reasons. According to the literature, whenever a mixed method design is employed, the findings must at some point be integrated (Johnson and Onwuegbuzie 2004). For this reason, the stages of the research process were considered to ensure that methods were mixed in a manner that served the purpose of the study. The stages constitute research question formulation, data collection, data analysis, and data interpretation (Bryman 2004). The integration of findings from qualitative and quantitative methods happened at the data interpretation stage of the research process and was displayed together not separately. Firstly, this was inspired by the view that separating methods during the research question formulation, data collection, and data analysis allowed “...*each element to be true to its own paradigmatic and design requirement*” (Bazeley 2002, 3). Secondly, the expectation was that integration at the data interpretation stage would clearly show the convergence of findings from both methods and add more depth to the new knowledge generated. Finally, it was the view of the researcher that integrating the methods during the data interpretation stage would as a unit (from both methods) adequately answer all the main research objectives since the chapter for results presentation and interpretation was organised in the order of the research questions.

### **3.3. Data collection**

In this research study observation preceded data collection. The research site of the *Thathigeja* garden and all other gardens in the same street were visited on 9 April 2010. This included a walk on site together with some of the garden members as they explained the history of their garden and how they operate within the garden as members (figure 3.2.). The information acquired from these informal conversations and observations helped to construct the research design of the study.



Figure 3. 2 The research site where the *Thathigeja* garden group was situated prior to data collection.

These photos demonstrate that the gardens are located in the streets where the gardeners reside showing that they do not walk long distances.

### 3.3.1. Collection of qualitative data

The data was directly collected by the researcher. The research field work of this study was facilitated through the guidance and financial support of Africa Centre for Population and Health Studies, a research centre, based at uMkhanyakude district in the Mtubatuba municipality at Somkhele (figure 3.3).



Figure 3. 3 The Africa Centre for Health and Population Studies at Mtubatuba.

The qualitative research was facilitated using purposive sampling and a snowball method. Purposive sampling was used to identify some of the respondents such as government officials and the community garden leaders for in-depth interviews. These respondents were specifically selected because of their characteristics which were of significance to the topic being researched (Yin 2003). The snowball technique was also used since the literature

suggests it has shown more suitability and effectiveness when mixed with the method of purposive sampling (Denscombe 1998). The integration of these methods allowed for the identification of appropriate respondents chosen not only by the researcher but also by the local people with reliable information of the matter under investigation. For example, the community board of the Africa Centre (consisting of local people from different places in the Mtubatuba Municipality) was able to provide relevant information about the new *Siyajabula* garden (shown in figure 3.4 in the appendix) which started in 2009 as compared to *Thathigeja* garden (figure 3.5 in the appendix) of the 1990s, and also provided contact details and information about potential respondents for the study. As a consequence, the study used both garden groups to show whether the gardeners' perceptions, use, and reasons for cultivating gardens have changed or have been sustained over time and if so, why. Both gardens were in the KwaMsane Township.

The collection of data from the field started on the 25 October 2010 and ended on 25 of November 2010. In total 12 in-depth interviews were conducted during the data collection. Using purposive sampling and a snowball method, six garden members (three from each garden group) were individually interviewed, as were three government officials (one from Local Economic Development, one from the Department of Agriculture, and one was a KwaMsane Township councilor). Two non-gardeners were also interviewed, and one person employed by the gardeners to garden on their behalf. It is important to note that the respondents consisted of teachers, pensioners, security guards, the unemployed, and one person employed by the gardeners. The criterion used to choose the respondents prioritised diversity regarding the respondents' employment status, socio-economic status, age, and gender where possible (see Interview list on page 99). The research instrument used for conducting the interviews was an interview schedule with open-ended questions. For each interview, consent was obtained from the respondent. Given the context of the research site, both the consent and questionnaire forms were translated in Zulu to ensure understanding before any agreement was made.

Incorporated in the qualitative method were two focus group interviews which were conducted for the purpose of producing a shared view of the respondents to verify the findings from individual interviews. There were two focus groups: one for *Thathigeja* garden



(the first garden in an area which was started in 1991) and one for the *Siyajabula* garden (a recent garden officially opened in 2009). It is important to view the differences between the two gardens not as contradictions but as an indication of how gardening has evolved over time in KwaMsane Township. Attempts were made to ensure gender representation even though females dominated the activity. The first focus group was conducted on the 3 November 2010 for the *Thathigeja* garden group and the second on the 7 November 2010 for the *Siyajabula* garden group. In both focus groups open ended questions and Participatory Action Research (PAR) tools such as resource maps, ranking of services within the community, and daily activity clocks were employed. The participants were given the chart to draw KwaMsane Township as they saw fit while mapping and ranking resources and services (such as shopping mall or clinic). The ranking was based on the contribution of a resource or service to the household livelihood. Numbers were used to rank the service or contribution to the household. Number one was for worse; two was used for bad, three for adequate, four for good, and five for better. The daily activity clocks were also used in the focus group interviews to understand the working hours of the gardeners. The focus of the daily clocks was on the working hours not the 24 hour cycle. These research tools assisted in understanding the different types of household assets, distribution and control of resources within the households, and also power dynamics in terms of gender in relation to gardening activity. Moreover, the expectation was that the tools employed by the groups would provide information about how institutions, policies, and services have influenced the livelihood strategies of households in KwaMsane Township.

### **3.3.2. Use of quantitative data**

The basis of using quantitative data for this study was to create a profile of the gardeners, and to explore different socio-economic household factors which may contribute to the cultivation of gardens. Datasets from the Africa Centre for 2001 and 2010 were used differently because households were only asked if they were part of gardening groups in 2001 and not in 2010. This meant that one could only extract information from datasets about the state of gardening activity in 2001 while being unaware of the changes which might have happened 9 years later. Thus it was decided to also profile the whole sample of KwaMsane (including non-gardeners) in terms of demographic and socio-economic factors for both 2001 and 2010 to observe general changes and their implications for the whole sample. This was

feasible given the fact that datasets from KwaMsane contained information from the whole KwaMsane household population thus did not require weighting. It is critical to note that the changes which occurred over a period of 9 years were descriptive in nature and could not be taken as trends given that less than half of the household surveyed in 2001 (for both gardeners and non-gardeners) (317/858) were re-surveyed in 2010. This was caused by the high levels of migration in the township. The Africa Centre defined migration as “*an event that occurs when an individual or household moves from one bounded structure to another*”(Africa Centre 2008, 44). The basis of this definition is linked to residency which they define as “*the period of time during which an individual or household lives in a single bounded structure*” (Africa Centre 2001, 41). The ACDIS considers an event a migration when it has a duration of 6 months (Muhwava 2010). It is reported that within the Africa Centre DSA “*the main reasons for migration were accommodation, employment, and education*” (Muhwava 2010). This fact explains the changes in the dataset of different households and individuals moving in and out of KwaMsane Township. Lund and Ardington (2006, 15) confirmed this view in their study when they report that “*KwaMsane is an area of high migration and nearly 15% of the 600 selected individuals had migrated since the last demographic visit*”.

Households were used as a unit of analysis. The Africa Centre definition which states that a household “*refers to the social groups to which people belong and consists, in most cases, of the family group and any other people who live closely with the family,*” was adopted (Africa Centre 2008, 8). What makes the ACDIS unique is the use of ‘bounded structures’ as an organisational device for sampling and tracking. This is viewed by the Africa Centre as “*various building or groups of buildings, on land belonging to a single person or organisation, and used for one main purpose*” (Africa Centre 2008, 20). Bounded structures are a challenge in KwaMsane Township since it is difficult to know where one bounded structure ends and the other begins. This is mainly caused by the absence of fencing which is very common in the area, the presence of multiple family units in a single building, and the use of semi-detached building methods whereby buildings may share walls. In an effort to attend to this problem, the Africa Centre fieldwork manual provides guidelines to fieldworkers and asks the informant and other people living next to the bounded structures “*which area belongs to the owner, and which buildings will form part of a single bounded structure*” (Africa Centre 2008, 22).

### **3.4. Data analysis**

It is important to note that preliminary data analysis was done prior to the collection of qualitative data from the research field during the beginning of October 2010. However, the quantitative data analysis was the most prolonged phase of the study since it had to incorporate other factors which surfaced from the qualitative findings. The first stage of the data analysis was data reduction which was about reducing dimensionality (Johnson and Onwuegbuzie 2004). In qualitative method, this means that coding was done and themes identified by their frequency (recurrence and repetition), and measures of association in meaning and discourse (Owen 1984) in order to collate and consolidate the meaning of the information generated by the findings of the study. This was done through thematic analysis which allowed the researcher to identify emerging themes. In the quantitative method, data reduction was achieved through descriptive statistics. The second stage of the data analysis was data display which involved the creation of tables, particularly in the quantitative method. To some degree, the research study also included the data transformation stage whereby qualitative data was converted into numeric values which were analysed and statistically presented (Johnson and Onwuegbuzie 2004). This transpired when the information acquired from the focus groups through the PAR tools such as daily activity clocks, and ranking of services were coded to numeric values (for example if a particular service was ranked as worse, number 1 was used and if the service was better, the number 5 was used). As a consequence, averages and percentages were used during data display for both garden groups (*Thathigeja* and *Siyajabula* gardens). Data display preceded the data interpretation stage of the research process which included a combination and comparison of findings from both qualitative and quantitative methods. According to the research design, the expectation was that the interpretation stage would clearly show the convergence of findings from both methods and add more depth or breadth to the new knowledge generated.

### **3.5. Conclusion**

This chapter has shown how the research design was embedded on the context while being relevant to the purpose of the study. In this chapter, a brief discussion of the research design is provided making a link from observation to data collection and ultimately to data analysis and interpretation. Further, this chapter illustrated why a mixed-methods approach had to be used for this study. The mixed-methods approach, using quantitative and qualitative methods

incorporating some of the participatory action research, was framed by the objectives of the research study which were exploratory in nature and aimed to understand associations and relationships between different factors.

## **CHAPTER FOUR**

### **DATA ANALYSIS AND DISCUSSION**

*“Resource endowment of the household will determine its capacity to produce or trade” (FAO 2003, 11).*

This chapter reports and explains the results obtained through quantitative and qualitative methods which incorporated participatory action research tools. The research questions will be used to organise the structure of this chapter. This means that the findings from different methods will be combined in each section to address a specific aspect of the research study. The first section will present both quantitative and qualitative findings which describe the characteristics of the gardeners, and discuss demographic and socio-economic status that influence participation. The second section will present qualitative findings showing reasons why gardeners cultivate gardens, and will show the motivations behind these reasons. These motivational factors will comprise factors which influence residents to practise, prefer, and persist with gardening as a livelihood strategy in KwaMsane Township. The third section shows the benefits and costs of gardening by specifically demonstrating the outcomes of gardening and its effects on gardeners, and will briefly discuss the findings with regard to the challenges confronted by the gardeners on a daily basis in KwaMsane Township. The last section will present the evidence of the study generated by inferential statistics which employs binary logistic regressions, and draw conclusions regarding the meaning and implications of the findings obtained.

#### **4.1. Profile of the gardeners**

This section will provide a profile of the sample in relation to the gardening activity in KwaMsane Township of the uMkhanyakude district in the KwaZulu-Natal area. Although the key question of this research study is to understand why urban residents in KwaMsane Township are involved in community and home gardening, it is important to first profile the gardeners to understand who they are in terms of their demographic and socio-economic characteristics. This section will also show that the respondents chosen for the in-depth interviews had similar characteristics to those profiled in the quantitative method using datasets from the Africa Centre. The qualitative findings with the themes relating to characteristics of the gardeners will also be presented in this section to add more depth.

#### 4.1.1. Demographic characteristics of gardeners

According to the quantitative findings, the total household population in 2001 of KwaMsane Township was 843 households; with only 82 households (9.7%) reporting that they cultivate gardens. This group comprises those who either cultivate home or community gardens, or both. The KwaMsane gardeners was shown (table 4.1 below) to be dominated by those only cultivating home gardening.

Table 4. 1 Different types of gardening at the KwaMsane Township (2001)

Garden status	Number of households	Percentage %
Non-gardeners	761	90.3
Only home garden	47	5.6
Only community garden	18	2.1
Both home & community gardens	17	2
<b>Total</b>	843	100

For the sake of comparing quantitative and qualitative findings, respondents with similar characteristics as those obtained from the quantitative findings of 2001 were sampled. The qualitative findings (collected in 2010) showed that the age range of the gardeners was broad. One respondent from the *Siyajabula* garden mentioned that in terms of age “*the majority of gardeners are at their 40s, in my own view there are those who are in their 30s and 20s. We also have the youth but have a problem with gardeners at their 60s*” (Respond G, 31/10/2010). Alternatively, the view also exists that “*most of the time gardeners are old people like grandparents,*” (Respond A, 25/10/2010) a government official said. The qualitative findings could not provide a generalisation about the age distribution of the gardeners in KwaMsane Township. Quantitative findings generated from the Africa Centre 2001 dataset showed that the mean age of the respondents for the whole household population was 37 years of age (SD= ±13). The mean age of the respondents of those cultivating gardens was 45 years of age (SD= ±16). For non-gardeners, the mean age was 36 years (SD= ±12). The test showed that we are able, with a P-value equal to 0.0000, to reject the null hypothesis stating that there is no statistical difference between the age means of non-gardeners and gardeners in KwaMsane Township. This means that on average gardeners are older than non-gardeners even though they have more age variation. Further, this

indicates that gardeners consist of diverse age groups. In an effort to acquire more specificity on the influence of age to gardeners, three variables (children, adults and pensioners) were created. The age range for children was between 0 and 17, for adults between 18 and 59, and for pensioners 60 years and above. According to table 4.2., the findings suggest that there was a significant level of association between the households cultivating gardens and the households with children and pensioners. The results also showed that for non-gardener households there was 1 child per household and for gardeners there were 2 children per household in 2001. There was no significant association ( $p$  value = 0.345) between households cultivating gardens and households with adults.

Females dominated the activity with very few males (see table 4.2). The quantitative findings showed that in 2001 97.6% of households cultivating gardens had at least one female. The findings suggest that the association between females and gardening has statistical significance. This dominance of females in gardening in KwaMsane Township is supported by direct observation during the focus group interviews. The *Thathigeja* garden focus group only had nine females with one male and the *Siyajabula* focus group had two males and thirteen females. On the same note, the study also assessed whether there was dependency between household size, and the households cultivating gardens. When using a continuous variable of the household size, the findings suggest that on average there are about four people per household for non-gardeners and five people per household for gardeners. When using a categorical variable whereby the value of 0 is assigned to households with less than five members and a value of 1 assigned to households with five or more members, the findings in table 4.2 demonstrate that about 61% of households cultivating gardens in KwaMsane have five or more members. The findings show an extreme level of significance between gardening and household size which confirms association.

Table 4. 2 Association between gardening and demographic factors [2001]

		Non-gardeners		Gardeners		Significance
<b>Household status of children</b>	Without children	252	33.10%	5	6.10%	Pr = 0.000
	With children	509	66.90%	77	93.90%	
<b>Household status of Pensioners</b>	Without pensioners	709	93.20%	62	75.60%	Pr = 0.000
	With pensioners	52	6.80%	20	24.40%	
<b>Household status of Adults</b>	Without adults	9	1.20%	2	2.40%	Pr = 0.345
	With adults	752	98.80%	80	97.60%	
<b>Household gender</b>	Without females	127	16.70%	2	2.40%	Pr = 0.001
	With females	634	83.30%	80	97.60%	
<b>Household size</b>	< 5	477	62.70%	32	39%	Pr = 0.000
	>=5	284	37.30%	50	61%	



## **4.1.2. Socio-economic characteristics of gardeners**

### **4.1.2.1. *Employment***

Most of the respondents were interviewed using a qualitative method. Out of 9 respondents excluding 3 government official respondents (6 being gardeners, 2 non- gardeners, and 1 being employed by the gardeners), six were employed with three of them being teachers. Two of the respondents were pensioners with one being a gardener and the other a non-gardener. The quantitative findings were able to generalise the meaning of qualitative findings in terms of employment. In spite of households cultivating gardens having employment of 80.5% against households cultivating gardens without employment (19.5%), as shown below on table 4.3., there was no level of statistical significance (P value= 0.477) found for employment between households cultivating gardens and non-gardening households. These findings suggest that gardening and employment in KwaMsane Township in 2001 are independent of each other and that gardening is not necessarily a response to unemployment, nor dependent upon access to a wage income for operation capital. However grants are associated with gardening, but this may be due to the older population involved in gardening eligible for Old-Age Pension (OAP).

Table 4. 3 Association between gardening and socio-economic factors [2001]

		<b>Non-gardeners</b>		<b>Gardeners</b>		<b>Significance</b>
<b>Household status of employment</b>	Unemployed	125	16.40%	16	19.50%	Pr = 0.477
	Employed	636	83.60%	66	80.50%	
<b>Household education status</b>	Less than Matric	154	20.20%	19	23.20%	Pr = 0.532
	Matric and above	607	79.80%	63	76.80%	
<b>Household agricultural Assets</b>	Other assets	708	93%	62	75.61%	Pr = 0.000
	Agricultural assets	53	7%	20	24.40%	
<b>Household grants status</b>	No grants	685	90%	55	67.10%	Pr = 0.001
	Grant received	76	10%	27	32.90%	

The qualitative findings clearly showed that most gardeners *“think that the greater source of income comes from the salary of employment”* (Respond K, 25/11/2010). According to these findings, the ability of employment to generate more income makes it the primary source of income for most of the households. It was noted that self-employment generated livelihoods but was unstable because there was no certainty as to whether there would be an income at the end of the month or not, and it was unpredictable whether the income would be less or more than the previous month. This was illustrated by a gardener, also a teacher, as she explained about her husband who is self-employed *“for him sometimes it’s dry even though I get a stable income”* (Respond G, 31/10/2010). The prioritisation of employment as a livelihood strategy originates from its ability to generate sufficient household income. As a result, households in KwaMsane Township prioritise employment as their livelihood strategy regardless of whether they are gardeners or non-gardeners. In support of this view, a respondent stated that *“if there is no employment there is no money”* (Respond H, 11/11/2010) suggesting that employment as a livelihood strategy is the most profitable and reliable source of income (for both gardeners and non-gardeners). These findings dispute the view that unemployment is an important contributing factor for urban residents engaging in urban agriculture (Obosu-Mensah 1999, 26) because there is no level of significance between either gardening and employment or gardening and unemployment. Instead gardening complements other sources of income as a component of overall livelihood strategy.

#### **4.1.2.2. Education**

According to the findings from table 4.3, there was no statistical level of significance found between households that cultivate gardens and education levels (less than matric qualifications and those households with matric or above when age is above 17 years). It was, however, noted that the majority of households cultivating gardens had more (78.6%) households with matric or higher education levels. Nevertheless, this characteristic of higher levels of education was independent of households cultivating gardens. The literature suggests that cultivation of gardens is associated with lower levels of education to practice gardening (Onyango 2010, 123). The findings of this study suggest otherwise in two ways. Firstly, it is shown that education is independent of cultivating gardens which disputes any form of association between gardening and education. Secondly, the findings demonstrate that if anything, the households of KwaMsane gardeners have higher levels of education. One

explanation for this is that these are older households in which children have completed more years of schooling.

#### **4.1.2.3. Type of household assets**

The findings (table 4.3.) show that the households cultivating gardens have a greater proportion (24.4%) of agricultural assets than the non-gardening households which own only 7% of agricultural assets. This difference of agricultural asset ownership between households cultivating gardens and non-gardening households had an extreme statistical significance hence there is an association between gardening and the type of assets which are of value to agricultural activities. Therefore, households cultivating gardens are more likely to own agricultural assets.

#### **4.1.2.4. Government grants**

For this study government grants consist of the Old Age Pensions (OAP), Care Dependency (CD), Disability Grants (DG), Child Support Grants (CSG), and Foster Care Grants (FCG). The findings showed that government grant support has an extreme significant influence on the difference between non-gardeners and gardeners. According to table 4.3, there are 32.9% households cultivating gardens that receive grants from government. The association between those receiving grants and gardeners was confirmed by the findings. The qualitative findings confirmed the quantitative findings when one of the respondents stated that *“I get my pension and my younger daughter also gives me some money...she is a teacher”* (Respond J, 16/11/2010). The qualitative findings went further to illustrate that some households who use government grants as a source of income still have additional incomes given in kind by those who are employed. This suggests complementary relationships between employment and government grants. These findings are in alignment with the report of Statistics South Africa (2002) which states that 19% of households in South Africa receive their primary sources of income from social grants. These findings are also supported by May and Rogerson (1995, 173) who report that the largest group of urban cultivators or gardeners are those from welfare-dependent households.

#### **4.1.2.5. Poverty and food security status**

The qualitative findings showed that gardening was not confined to the poor alone. *“It’s not necessarily for poor people only”* (Respondent B, 26/10/2010) a government official and school principal said when describing the type of people involved in gardening in KwaMsane. This was further supported by the findings showing that the household expenditure (self-reported) for all the respondents ranged between R600 and R1700 per month and on average R1100 was spent by a household per month. Using the household food expenditure and household food security questionnaire component, only one household (self-identified) out of 6 households involved in gardening was found to be food insecure. The food insecure household, with a total of 5 members, had no one who was employed thus depended on pension as a source of income and could only spend R600 on food per month. Wealthier households, as determined by the respondents, which also had food security, were associated with more employed individuals per household. As a result, these households had the ability to extend from the original four rooms to something bigger. It was also noted by the respondents that, for the assets of wealthy, *“the quality and price is higher”* (Respondent F, 05/11/2010). From these findings it is clear that employment provided income to households to acquire, sustain, and accumulate assets of better value. Households with more employed individuals had the advantage of being more food secure because of their ability to spend more on food.

Congruence exists between qualitative and quantitative findings as far as poverty and food security status is concerned. According to the quantitative findings from the Africa Centre dataset incorporating new variables which were introduced in 2010, it is shown in table 4.4 that those who are financially poor (self-reported) are the minority (7.5%) in the KwaMsane Township population. These findings are important when considering that they were self-reported. The implication is that across the sample, the majority of households view themselves as financially stable and not poor.

Table 4. 4 Distribution of financially poor households (self-reported) [2010]

<b>Household financial status</b>	<b>Number of households</b>	<b>Percentage (%)</b>
Not poor	591	92.5
Poor	48	7.5
<b>Total</b>	<b>639</b>	<b>100</b>

In terms of food security status, the findings suggest that there are only four households (0.6%) which are considered food insecure (self-reported) thus suggesting that food security is not a problem in the area (shown in table 4.5).

Table 4. 5 Food security status (self-reported) of the household population [2010]

<b>Household food security status</b>	<b>Number of households</b>	<b>Percentage (%)</b>
Food secure	638	99.4
Food insecure	4	0.6
<b>Total</b>	<b>639</b>	<b>100</b>

The findings shown in table 4.4 and 4.5 have no direct link to the households that cultivate gardens. However, this gives an insight into the fact that in the 2010 survey KwaMsane Township residents view themselves as financially stable and food secure.

#### **4.1.3. The gap between 2001 and 2010**

In an effort to understand the changes which might have happened over nine years in terms of demographic and socio-economic factors, a descriptive comparison using datasets of 2001 and 2010 from the Africa Centre was performed (see table 4.6). Given the fact that the 2010 datasets had no specific reference to gardening, the comparison of these two datasets focused on the whole sample of KwaMsane (both gardeners and non-gardeners combined as a unit).

Table 4. 6 Demographic and socio-economic factors [2001 and 2010]

<b>Variable</b>	<b>2001</b>	<b>2010</b>
<b>Mean age in years</b>		
For the whole sample	37.5 SD (13.1)	42.8 SD (15.6)
<b>Household children status</b>		
Households without children	30.5%	27.1%
Households with children	69.5%	72.9%
<b>Household adult status</b>		
Households without adults	1.3%	3.1%
Households with adults	98.7%	96.9%
<b>Household pensioner status</b>		
Households without pensioners	91.5%	82%
Households with pensioners	8.5%	18%
<b>Source of drinking water</b>		
Other sources of drinking water	0.7%	6.4%
Water drinking source inside the house	99.3%	93.6%
<b>Gender status</b>		
Households with males only	15.3%	10.2%
Households with the presence of females	84.7%	89.8%
<b>Household composition</b>		
Household size (1-5)	60.4%	62.9%
Household size above 5	39.6%	37.1%
<b>Government grant</b>		
No government grant	87.8%	64.9%
Receiving government grant	12.2%	35.1%
<b>Type of assets</b>		
Households with other assets	91.3%	75.2%
Households owning agric. assets	8.7%	24.8%
<b>Employment status</b>		
Households without employment	16.7%	41.7%
Households with employment	83.3%	58.3%
<b>Education status</b>		
Households with education less than matric	20.5%	39.6%
Households with education equivalent to matric or higher	79.5%	60.4%

Source: ACDIS data

According to the quantitative findings displayed in table 4.6 (below), notable changes have taken place between 2001 and 2010. Regardless of these changes being detectable there is no conclusive statistical evidence that could be used to validate my observations. Nevertheless, these findings, descriptively, indicate that the KwaMsane residents are still middle-aged since more than 97% of the households in KwaMsane had one or more adults present both in 2001 and 2010. The findings also indicate that the KwaMsane household population still has few households with one or more pensioners (18% in 2010) even though their proportion has doubled from that of 8.5% in 2001. With regards to the proportion of households with either one or more children, these findings maintain the view that both in 2001 and 2010 more than half of the KwaMsane household population consisted of households with children. The household gender status and household size findings suggest that not much has changed over the period of nine years.

Nevertheless, there were variables which were shown to have had drastic changes in proportions. According to these findings, there has been a three-fold increase in households receiving government grants over the period of nine years. In 2010, more than one third of the household population in KwaMsane Township are receiving government grants. A period of nine years means that many households have become eligible for grants. Similarly, the findings demonstrate that there has also been a three-fold increase in the proportion of households that own agricultural assets (such as tractors, wheel barrows, and other farming tools) over the period of nine years (proportion increased from 8.7% to 24.8%).

With regards to education and employment, the findings demonstrate that these two variables are decreasing in KwaMsane Township. The findings show that the households without any members having matric or higher education qualifications have increased by 19.1%. Thus in the current year of 2010, there is about 40% of households with either one or more members having less than matric qualifications in KwaMsane Township. Similarly, households without any member being employed have increased by 25% in KwaMsane Township over the period of nine years. Thus in the current year of 2010, about 42% of households in the KwaMsane Township have no single member who is employed.



These findings suggest that within a period of nine years there have been changes in the demographic and socio-economic profile in the KwaMsane Township. Across time, the dominance of children, adults, females, household size, and access to water have been relatively stable. A contrast is also observed for the period of nine years. While there has been an unexpected decrease of higher education and employment in the area, there has been a drastic increase in the number of recipients of government grants and ownership of agricultural assets. These changes may have serious implications for urban agriculture. The consideration of these findings showing how different variables have changed in KwaMsane Township is important because the collection of qualitative data took place in 2010. The 2010 data provides a general descriptive for understanding respondent's experiences of the phenomena.

## **4.2. Motivations for gardening**

The aim of this section is to uncover motivational factors explaining why gardeners practise and prefer gardening over other livelihood strategies in KwaMsane Township. The section will include findings from all the methods used in the study even though it will focus more on the qualitative findings.

### **4.2.1. Reasons and motivational factors of gardening**

#### **4.2.1.1. *Gardening for household consumption***

In addition to providing information about which households were involved in urban agriculture, the Africa Centre's 2001 dataset was able to answer the key question of the research study which intends to understand the reasons why KwaMsane residents cultivate gardens. Table 4.7 displays the reason why gardeners are engaged with the activity. As shown below, 92% of gardeners cultivate gardens primarily for household food consumption.

Table 4. 7 Reasons for cultivating gardens [2001]

<b>Reasons for gardening</b>	<b>Number of households</b>	<b>Percentage%</b>
Household food consumption	59	92.2
Profit	3	4.7
Both profit and food consumption	2	3.1
<b>Total</b>	64	100

The qualitative findings confirm the quantitative findings which suggest that household food consumption is the primary reason for KwaMsane Township gardeners to practise gardening. For example one gardener said “*I practise gardening so that I and my children can eat*” (Respondent B, 26/10/2010). The qualitative findings also uncovered the facts behind the reasons reported. In this way motivational factors behind the reported reasons were identified. The implication of this is that the qualitative findings of 2010 concur with the findings of 2001 (table above) which suggest that household food consumption is the primary reason residents practise gardening.

The validity of these findings with regard to the reasons why gardeners practise gardening is also confirmed by the findings of other researchers. Other studies concur that gardeners practise gardening to supplement their household food. For example, Khan’s (2002, 60) findings concluded that “*primarily, homestead gardens are the source of supplementary food for a family*”. Watkinson and Makgetla (2002, 2) reported that in South Africa “*over a million household farm to supplement what they purchase*”. And it has also been emphasised that the production for household consumption is almost three times as important as income enhancement (Nugent, 60). The research evidence further suggests that in South Africa the use of farming as an extra source of food has increased from 54% to 88% between 2001 and 2007 (Baiphethi and Jacobs 2009, 21). Collectively, research evidence confirms that the primary purpose of gardening is supplementing food and the practice is increasing in scope for the same reason.

#### **4.2.1.2. Nutrition as a motivational factor**

Through a qualitative method it was uncovered that, among other things, gardeners were constantly motivated to adopt gardening strategies for household food consumption because of the knowledge they had obtained about particular crops which contributed positively to their health status. One of the respondents provided this evidence, “*gardening is far better because it has everything that is needed for the health of a person...the garden has all the nutrition for your body...such as broccoli which we have heard that it helps stabilize blood pressure*” (Respondent D, 29/10/2010). Thus consumption of the garden produce is justified on the basis of nutritional content. “*You get fresh food, you get nutrients at their natural state*” (Respondent F, 05/11/2010) one respondent explained. According to these qualitative findings, the view of the gardeners is that locally grown food is more fresh and nutritious than food purchased from retailers. The findings also suggest that the freshness of the food is linked to a connection with nature “*the fresh food is the one I get with my own hands from the soil*” (Respondent D, 29/10/2010) said one respondent. The literature verifies the findings of this study, for example, Smit et al (1996, 160) reported that urban agriculture (including gardening) has the ability to enhance food quality through the acquisition of nutritional content for households involved in the practice. Further, the findings demonstrate how access to natural capital, in this case land for gardening, allows local residents to self-govern their practices independently of the retail markets as they command their own skills and resources according to their interests. This presents food sovereignty as the motivation for some gardeners and confirms the views of Cotula (2008) about access to natural resources and assets leading to the realisation of right to food.

#### **4.2.1.3. High food prices as a motivational factor**

Another motivational factor for the KwaMsane Township residents to practise gardening is because “*food is expensive I don't know how I can even count...you cannot know how much you spend on food...you buy and buy again*” (Respondent J, 16/11/2010) hence “*gardens help because you find that the money we would have used to buy vegetables we now can save and do other things with it*” (Respondent G, 31/10/2010) a respondent said. These findings show that gardeners use gardening as a strategy to cushion the effects of food prices from the market by allowing them to save and diversify their expenditure to non-food items.

The findings of this study are supported by the literature which proposes that cultivating gardens allows urban households which exist in the purchasing environment, to prevent over-reliance on purchased foods so that they can continue to be food secure (Alusala 2009). For example, a South African study conducted on Orange Farm showed that 60% of the sample practised urban agriculture because food was expensive (Onyango 2010, 142). The rise of food prices means that households have to adopt new strategies or advance their already existing livelihoods in order to sustain the same standards of living. During the economic crisis in 2008, it was reported that “*the poorest households in South Africa would have had to raise their incomes by a minimum of 22 percent to maintain the same food basket*”(Fryne et al. 2009, 17). This suggests that households will adopt livelihood strategies such as gardening in order to sustain the status quo of food security without having to raise their household incomes. These findings also have implications for food sovereignty since the gardeners are able to be self-reliant by producing food items in their own way independently of the retail markets.

#### **4.2.1.4. Agricultural background as a motivational factor**

The findings of this study also showed that the residents’ engagement with gardening had a lot to do with the agricultural background they experienced during childhood. For example a respondent (Respondent D, 29/10/2010) mentioned that:

At home we used to plough the larger fields using the donkeys; it was wonderful as we sowed seeds of corn and beans. We harvested beans back to our home and I loved that. Gardening is something I grew up doing. Even when I was older, at my place of residence where I worked before I was married I use to have a small garden next to the house.

Another respondent explained how she learnt about gardening, “*When I grew up my father was a farmer... my father will be ploughing and I will observe him when he adds manure and all those things and he had a tractor. So I learnt many things that I saw happening at home*” (Respondent I, 16/11/2010). The qualitative findings showed that the dominant and common characteristic of all the gardeners (respondents) was their agricultural background with experience learnt from their parents, particularly their fathers, which served as a basis for engaging in gardening.

According to these findings, the agricultural background of the gardeners instilled cultural values such as those of 'Ubuntu'. One of the respondents illustrated this view when she said *"that's why I love gardens because they don't help me alone, we must help someone around us"* (Respondent F, 05/11/2010). The findings suggest that beyond household food consumption gardens have a social imperative in society. For example a respondent expressed the view that *"we give our garden produce to neighbours because you find that sometimes your neighbour doesn't have a garden"* (Respondent I, 16/11/2010). Secondly, the background and cultural inclination gardeners have make gardening as a livelihood strategy, familiar, preferable, and consistent across time. As a result, gardeners viewed gardening as their innate way of living. This view emanated from the gardeners as one respondent mentioned *"gardening is my thing from birth...so I'm used to it; I loved gardening since then till now... it is in my blood"* (Respondent D, 29/10/2010). The findings from the focus groups also shared the same view as one respondent explained, *"as the Zulus we wish to teach our children that gardens are important and very helpful"* (Siyajabula Focus group, 07/11/2010). The expression *"as the Zulus..."* suggests that gardening and farming in general is part of the culture or way of life for the Zulus. This aspect of agricultural background was not accounted for in a quantitative enquiry thus one could not make statistic deductions about those who had a background in agriculture across the sample both in 2001 and 2010. The strength of mixed methods was clearly demonstrated with this finding given the fact that the qualitative enquiry was able to go beyond the limits of the quantitative method.

The findings of this study concur with the literature as reported by Karaan and Mohammed (1998) that it is common for gardeners to have childhood associations with agricultural activities. Furthermore, the literature affirms the view that urban or peri-urban gardeners, particularly Africans, transfer the rural subsistence of agriculture to urban areas because *"the African man, and still more the woman, is firmly attached to the soil, and the whole fabric of social organisation is based upon the right to cultivate"* (Obosu-Mensah 1999, 20). This 'attachment' and 'right to cultivate' signify an innate and fundamental expression by Africans to uphold key cultural values such as Ubuntu. This makes gardening a strategy that is embedded in the fabric of social organisation with social imperatives. As a consequence, these findings agree with those of Mpanza (2008) who suggests that community gardens improve the social networks which provides social capital.

#### **4.2.1.5. Affordability as a motivational factor**

According to the findings of this study, it is notable that some of the KwaMsane Township households practised gardening simply because they had economic means to do so. Gardening as a livelihood strategy was preferred over other strategies simply because *“it’s easy to have a garden. It’s the easiest method that you have a garden. We don’t pay for it except paying for the needs such as seeds and other related things”* (respondent G, 31/10/2010) a respondent said. Even though this view was repeatedly mentioned in the interviews, it became clear that *‘easy access’* referred to financial terms suggesting that it was easy for gardeners to afford because they did not have to pay or rent space but only had to deal with the maintenance costs such as water, seeds, and those they employ to work the garden on their behalf. The reason gardeners had to pay for water even though the majority of them (93.6%) had water piped inside their households was provided by a respondent when he said *“If my house was closer to the garden I will be irrigating with water from my house but now there is no pipe that can stretch from my house to the garden. There is this house closer to the garden; we pay them R20 every month”* (Respondent H, 11/11/2010). The respondents used *‘easy access’* to refer to affordability which incentivised their engagement with gardening as a livelihood strategy. These findings suggest that the majority of the KwaMsane Township gardeners belonged to an income group category that did not view spending an amount ranging from R300 to R500 per month on gardening as a burden. The findings of this study show that the majority of the gardeners were from the middle income group on the basis of their professions. The literature suggests that those who practice gardening for subsistence purposes are normally associated with a low income category (De Bon et al. 2010). The findings of this study present a unique case whereby the gardeners with subsistence purposes are associated with middle income earners.

#### **4.3. The benefits and challenges of gardening**

This section will highlight the benefits of gardening by specifically demonstrating the outcomes thereof gardening and its effect on gardeners. The findings will demonstrate how gardeners themselves benefit from the activity, and how gardening benefits the KwaMsane Township as a whole. The section will also present the findings from different methods with the aim of showing the nature, scope and depth of the challenges which confront the gardeners, and to understand how they respond. PAR tools were incorporated within the

qualitative methods to show a shared view of gardeners in relation to how institutions play a role in the advancement of gardening as a livelihood strategy, and how garden members prioritised gardening activities.

### **4.3.1. Benefits of gardening**

#### **4.3.1.1. *Income generation and income replacement***

The role of gardening as perceived by gardeners was that it removed hunger by feeding the households, and sometimes generated a cash income. It was also clear that the benefits of gardening were felt to be far greater when gardeners were selling the produce. A gardener, also a school principal, expressed this view as she stated that *“we fundraise somehow because if you sell to a teacher for five rands....you get the money to buy window seal”* (Respondent B, 26/10/2010). Another respondent also shared one of the important outcomes of gardening: *“I built half of this house, this sitting room and bed room, because of the garden”* (Respondent D, 29/10/2010). This gardener was able to build half of her house because she and her husband sell produce to people who pass by the garden and also sell in town. The cornerstone of their success was based on their ability to sell more of the produce than they consumed it themselves, *“In actual fact we almost had nothing to consume because we were selling a lot”* (Respondent D, 29/10/2010) she said. They started selling and saving after 1990 and extended their house in 2002, however, in the current year of 2010 the same respondent stated that she no longer sells produce because of more garden competitors with few buyers and thus she and her husband only consume what they produce. These findings strongly affirm that income generated from the selling of produce gave the households more flexibility to meet diverse needs. While selling of produce has more benefits it was uncovered that gardeners in general did not prioritise selling. This view was supported by another gardener when she explained the stance of many gardeners *“we never thought of gardening with an intention of selling”*. These qualitative findings concur with the quantitative findings from the Africa Centre datasets of 2001 (table 4.7) which show that only 4.7% of gardeners sell for profit in KwaMsane Township. Further, the report produced from the Africa Centre in 2008 supports this view when it mentions that in 2001 only 2.5% of gardeners for the whole Demographic Surveillance Area (DSA) sold for profit. The study shows how many KwaMsane Township gardeners have not used one of the strengths of gardening activity, which is the ability to sell the produce. These findings follow the same pattern of evidence

provided by the literature which indicates that since the 1990s selling of garden produce in South Africa by gardeners has not been a priority. For example, May and Rogerson (1995, 169) clearly showed that only 10% of gardeners from urban areas of KwaZulu were selling their produce.

Gardening, according to the qualitative findings, is able to generate minimum income for gardeners. *“they plant their crops and when it’s the day for payment of pensioners they go and sell their produce, so gardens play that role for poverty alleviation”* (Respondent A, 25/10/2010) and *“to those who are poor gardens help them because they sell to us and get money in return which they use to buy maize and bread”* (Respondent B, 26/10/2010) a government official explained. While this was the perception of the government officials, one gardener’s view was that *“the money that we used to buy the vegetables now we can save and do other things with it.”* (Respondent G, 31/10/2010). This suggests that the outcome of the garden was income replacement which allows gardeners to save by not buying what they produce but to use the money for a greater variety of food and other non-food items. According to these results, there is a clear distinction between what government officials think of gardeners and what gardeners think they are actually doing. The government officials have exaggerated the level at which gardeners sell their produce. These findings concur with Hendriks et al. (2003) who argue that urban agriculture participants have better nutritional status through income replacement which allows households to have savings which they can use for a greater variety of foods (Remenyi 2000) and other non-food items such as school fees, health care and shelter (Obosu-Mensah 1999).

#### **4.3.1.2. Job creation**

According to the qualitative findings, gardening activity generates jobs which can be categorised into three types: ploughing, removing weed, and preparing the garden beds. *“Ploughing is what they call me for frequently...and then it’s also removing weed because the rainfall causes moisture... the other thing is that of making beds where they will sow because you must not just sow you need to start by preparing the beds”* (Respondent L, 22/11/2010) a respondent mentioned. He explained the nature of the job;



The work is not always the same sometimes income changes because the work I do is for whatever income, firstly let me say ploughing and removing the weed is not the same thing. Except if I am going to do both, when I remove the weed its R80 or R90 because it changes it's not the same. Ploughing is R200...for bedding I normally measure the size of the garden and then add R50 or R60 on top. It does happen that in a week four people call me for garden work but you find that I cannot finish all of these gardens in one week so I finish two in one week and two in another week. (Respondent L, 22/11/2010)

The findings suggest that the income generated by gardens to those it employs depends on the nature of the work performed. This is critical considering that gardening is seasonal implying that both ploughing and bedding jobs occur during sowing seasons, and the removal of seeds takes place in seasons when there is more rainfall. Those employed by the gardeners were mostly unemployed males who had an agricultural background or upbringing, and came from areas outside KwaMsane Township which are considered to be poorer. For example, one respondent employed by the gardeners stated that *"I grew up in rural areas; I was born at Ngwavuma and grew up there where my family was ploughing fields and not buying food from stores"* (Respondent L, 22/11/2010). This group also considered gardening as a source of income and a survival strategy. A respondent employed by the gardeners mentioned that the garden allowed him to *"...survive without bothering other people...because I also have brains I can think for myself so that I can live without bothering other people"* (Respondent L, 22/11/2010). This suggests that gardening allows those employed by the gardeners to attain self-reliance which is the goal of food sovereignty, as the respondent explained *"to be honest there is nothing else for me except to assist those people from the gardens"* (Respondent L, 22/11/2010). This shows how gardening has become a survival strategy to this group because they have few options to choose from and thus depend on gardening as their livelihood and survival strategy. Economically, these findings show that gardening contributes more to the livelihoods of those employed by gardeners than to gardeners themselves. As a consequence, these findings agree with the literature claiming that urban agriculture reduces urban poverty and food insecurity by providing incomes (Smit et al. 1996), and increases food availability and affordability (Wiggins 2004) while creating jobs.

#### **4.3.1.3. Reduction of food prices**

A government official mentioned that each year around August a market day takes place in Mtubatuba town. This market day is a big event which includes three municipalities namely the Mtubatuba municipality, the Hlabisa Municipality, and the Big Five municipality. It becomes a day when gardeners and craft makers come together to sell their products. The government official mentioned that the effect of the market day made retailers such as Spar “*drop the food prices drastically and to raise them again after the market day*” (Respondent C, 02/11/2010). The respondent further specified that “*during the market day cabbages will be R4.50*” (Respondent C, 02/11/2010) from the retail stores. The implication of the findings is that during the market day, gardeners are able to inject sufficient competition to the local markets of vegetables resulting in a reduction of food prices. This competition either helps gardeners earn more income as more people buy their produce or they ensure the accessibility of purchased food. These findings validate the claim already existing in the literature which states that urban agriculture cushions the effects of market failures which happen when the free market is not efficient enough to allocate resources in a socially desirable manner (Breuckner 2001). The findings of the study produced research evidence which concur with the findings in Havana, Cuba, whereby urban agriculture was able to reduce the prices of vegetables in the market three-fold between 1994 and 1999 when a urban agriculture programme was launched (De Bon et al. 2010, 24). Thus urban agriculture, in this instance gardening in KwaMsane Township, has the ability of “*increasing the availability of food at prices the poor can afford*” (Wiggins 2004, 3).

#### **4.3.1.4. Support of gardening**

In the current year 2010, there are about seven to eleven community garden groups in KwaMsane Township. The garden groups have received support from various institutions such as World Vision and Biowatch. Most of the support was offered by the local municipality through various departments such as the Department of Social Development, the Department of Agriculture, and the Department of Local Economic Development. It was noted that over the years there has been an interchange of leading roles by different departments in support of the gardens. In the 1990s during the formation of the *Thathigeja* garden group, the Welfare Department (now the Department of Social Development) played a leading role in collaboration with World Vision, a non-governmental organisation, to fund

the entire project for garden tools, fencing, and other related costs. The Welfare Department played a facilitating role between World Vision and the gardeners and also provided continuous guidance as the project continued. During the period of 1998 to 2000, the Department of Agriculture took the leadership role in these projects through a campaign called *Xoshindlala* ‘Chase Away Hunger’ which was launched in May 1998 by the Minister of Agriculture and Environmental Affairs Mr Narend Singh (KZNDAEA 1999). The current existing gardens at KwaMsane are the product of this campaign; this is evident from the names such as *Thathigeja* ‘taking the hoe’ and *Qedindlala* ‘finish hunger’. The objectives of the *Xoshindlala* campaign greatly influenced how gardens define and structure themselves in KwaMsane Township. The intention of the *Xoshindlala* campaign was to “*assist people achieve household food security*” (KZNDAEA 1999) by promoting local food production to ensure household food availability which is one of the pillars of food security. The *Xoshindlala* campaign also intended to “*improve the diet of rural people by making a variety of fruit and vegetables available within communities*” (KZNDAEA 1999). The emphasis of the campaign was on food availability and utilization. Thus most of the gardens defined and structured themselves on the basis of food consumption which meets two pillars of food security; food availability and food utilisation. The *Xoshindlala* campaign did not focus on food accessibility from the markets hence the gardens in KwaMsane Township were not prioritising income generation for their households.

In 2010, the Local Economic Development (LED) department is playing the leadership role for the KwaMsane Township gardeners. For example LED funded the *Siyajabula* garden in 2009 when it provided land (with their personnel to facilitate the division of land amongst the gardeners), fencing, gates, and water tanks. Concurrently, the Department of Agriculture is still involved on the basis of its mandate but with an unclear role except through the national campaign of ‘One home One garden’ which promotes households to each have a home garden in the back yard. The ‘One home One garden’ campaign, according to gardeners, was responsible for the distribution of seeds during which time people had to register their identity numbers as they received their seeds in envelopes. However, the gardeners mentioned that most of the seeds distributed at that time had already expired and did not grow when they were planted.

These findings concur with the view of the literature which emphasises that governments have greatly influenced the existence and structures of urban agriculture, particularly gardening. *“The existence of gardens has largely depended on government support at both local and national levels during times of economic necessity”* (Zimbler 2001, 6). While the government has made a contribution in terms of the establishment of the gardens, there is a need to train and guide the gardeners continuously. This is possible only through the provision of extension officers.

### **4.3.2. Challenges of gardening**

#### **4.3.2.1. Land as a challenge**

In reality, accessibility to gardening as a practice in KwaMsane Township is not easy given the unavailability of land which is highly contested for other uses and among gardeners themselves. The challenge in KwaMsane is overcrowding which is why more housing projects are being rolled out. This has made housing directly compete with gardening for space. This view was also expressed by one of the government officials when he stated that *“you find that when the municipality has planned with housing department that phase 3 or phase 2 of houses will be in an area which gardeners have also targeted then there is conflict”* (Respondent A, 25/10/2010). The findings also show that most of the households had a total of 4 to 5 members which almost doubled during the June and December holidays because *“if the schools are closed the number increased in our household...maybe we reach ten”* (Respondent E, 04/11/2010) said a respondent. As a consequence, households who can afford it *“extend their houses because they are many”* (Respondent I, 16/11/2010). The implication is that housing competes with gardening for space both at the household and public space level thus affecting both home and community gardening respectively. Available land was also highlighted as a challenge particularly because it determined what one could produce and consume.

The findings also show that unavailability of land poses serious problems for both gardeners and non-gardeners. The qualitative findings were able to show that most of the non-gardeners from KwaMsane Township had an interest in gardening as one respondent mentioned *“I heard late about the gardens so by the time I heard it was already full”* (Respondent K,

25/11/2010). When the respondent was asked how she would respond if there was available space for her she said *“I was going to enter because the food from the soil is very important. It’s not the same as the one we buy from the shops which has been manipulated by fertilizers”* (Respondent K, 25/11/2010). This suggests that some non-gardeners had the same interest and views as those already cultivating gardens but were unable to practise gardening because of land unavailability. *“Those who don’t have the gardens still want them, they still want gardens”* (Respondent B, 26/10/2010) a councillor emphasised. The findings of the study align themselves with views in the already existing literature suggesting that a lack of resources such as land automatically excludes some from participating in urban agriculture (Obosu-Mensah 1999). The findings of this study are also in agreement with the report made by Karaan and Mohammed (1998, 76) which *“ clearly established that insufficient land is the major constraint on the further development of food gardens”* because inadequate land directly limits the scale of production (Baiphethi and Jacobs 2009). Further, May and Rogerson (1995) mention that there is conflict over land use in urban areas which leads to the destruction of urban agriculture in order that residential development can proceed. This is as the result of urban agriculture practitioners having no ownership rights to the land they use. Inadequate land impacts negatively on those willing to enter the practice by excluding them, trapping those already involved by disallowing them to increase the level of their production and also increasing their insecurity due to lack of ownership rights.

#### **4.3.2.2. Water as a challenge**

There are other challenges to gardening based on resource limitations. According to the quantitative findings, in 2010, 93.6% of KwaMsane Township households had water availability in their households. However, the qualitative findings uncovered that availability does not mean accessibility of water for KwaMsane Township residents. One respondent said *“I cannot lie to you my child; water is our biggest problem...because if the water does not come out we have a problem”* (Respondent I, 16/11/2010). This problem was said to *“...start at winter after June, when the rain stops we begin to have a problem of water”* (Respondent F, 05/11/2010). The respondents also indicated that this problem causes a crisis at two levels, *“this caused a problem because we end up not having water for household needs and not for gardening as well”* (Respondent F, 05/11/2010). These findings suggest that water is a major problem for all KwaMsane Township residents, to both gardeners and non-gardeners - as a

drinking water problem and to gardeners when they need water to irrigate their garden crops. This meant that gardeners have to prioritise drinking water over gardening. The respondents felt that “*if there is no intervention this will always be a problem*” (Respondent G, 31/10/2010) suggesting that the water problem was beyond the capacity of gardeners to resolve but needed an intervention from the municipality.

#### **4.3.2.3. Garden tools as a challenge**

The local municipality noted that the gardeners do not have access to tractors. The government official reported that the local municipality ordered tractors from the uMkhanyakude district but could not execute the orders because of financial constraints. Garden tools were available but not enough. One respondent (Respondent I, 16/11/2010) explained;

they gave us tools in 5 pairs...it was decided that one member will take one instrument. It means if you get the hoe you will wait for the one with the garden fork...this thing requires that you wait. Because if all of us want a hoe while there are only five hoes in a garden with many people like this, we need to wait for each other.

This challenge proved to be a delay and discouragement among the gardeners because they had to wait hours in the garden before they could get their hands on the tool they needed. Although the local municipality provided the tools, specifically to the *Siyajabula* garden, which were five hoes, five garden forks, five wheelbarrows; findings show that this was not nearly enough for a garden with 66 members.

#### **4.3.2.4. Time unavailability as a challenge**

Unavailability of time for gardening was a challenge to both gardeners and non-gardeners. For some of the non-gardeners, time unavailability was the reason they were not cultivating gardens as their livelihood strategy. For example, one of the non-gardeners mentioned that she could not practise gardening because “*...there was no time available because I worked extra hours*” (Respondent J, 16/11/2010) she said. Thus the nature of her employment did not allow her time for gardening. Unavailability of time also affected the gardeners. This was clearly illustrated by the focus group findings produced from the daily activity clocks (shown

in figure 4.1 below) which were conducted for both the *Thathigeja* and *Siyajabula* garden groups. The majority of the *Thathigeja* garden group members were unemployed and pensioners while those of the *Siyajabula* garden group were educated and employed.



Figure 4. 1 showing participatory action research tools.

PAR tools consisted of resource mapping, daily activity clocks and ranking of services which were used during the focus groups from the *Thathigeja* and *Siyajabula* garden groups as respondents identified resources, allocated time to their daily activities, and ranked the significance of services to their household livelihoods. Numbers were used to rank the service or contribution to the household. Number 1 was worst, 2 was used for bad, 3 for adequate, 4 for good, and 5 for better.

According to the findings, gardening activity featured as the dominant activity for the *Thathigeja* garden group members as they spent, on average, about 2 hours and 40 minutes per day in the garden (shown in figure 4.2). In figure 4.3 and figure 4.4, the ‘other’ refers to activities which were done under non-working hours category. The implication of the findings was that there was more time available to the *Thathigeja* garden group members which allowed them to engage more with gardening. This is supported by the fact that these

garden members also spent more time on household duties and chores (2 hours and 20 minutes on average) indicating the availability of time at their disposal.

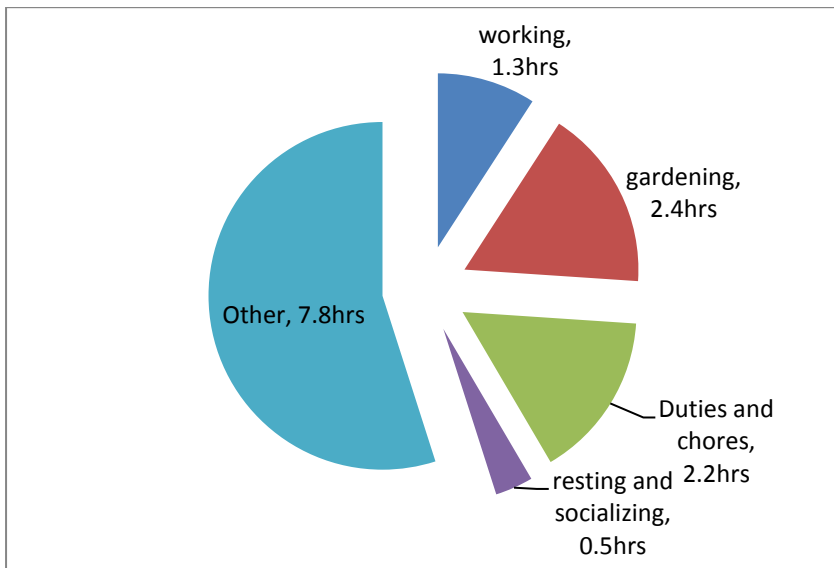


Figure 4. 2 Daily activities of the *Thathigeja* garden group (working hours not a 24 hour cycle)

The *Siyajabula* garden group members were educated and employed, and most of them were teachers. The findings showed that the *Siyajabula* garden group members spent most of their time (5 hours and 30 minutes on average) working per day. As a consequence, the findings demonstrate (see figure 4.3 below) that the members of this garden group had limited time to garden (only 30 minutes in a day on average).

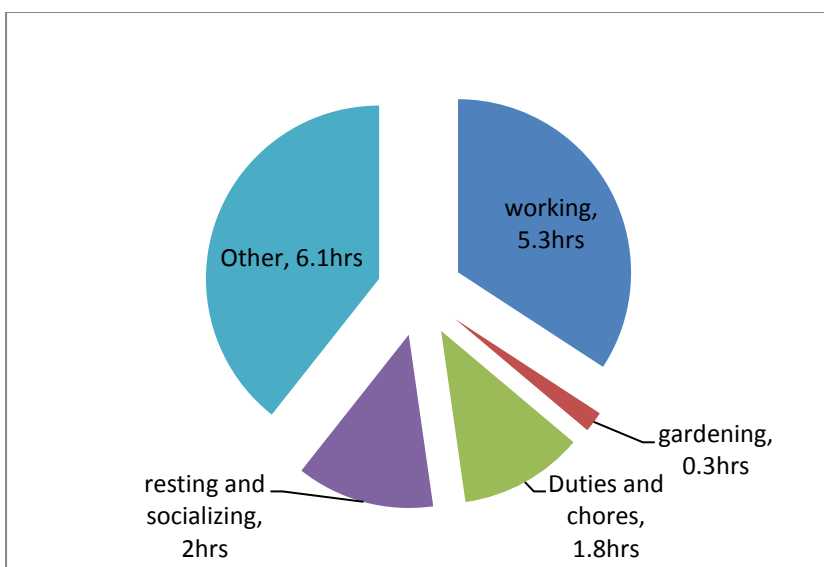


Figure 4. 3 The daily activities of the *Siyajabula* garden group (working hours not a 24 hour cycle)



This suggests a trade-off between work (formal employment) and gardening. This means that gardeners cannot allocate their time equally to these activities on a daily basis. These findings indicate that gardeners who are educated and employed prioritise employment as their primary livelihood strategy and use gardening as a supplementary strategy. However, the gardeners who are pensioners and also unemployed allocate more time to gardening.

In pursuit of their interest in gardening, the *Siyajabula* garden group members compensated for their time constraints by hiring people who could work the garden on their behalf. “*We need them to assist us so that by the time we at work they are continuing with gardening*” (Respondent G, 31/10/2010) said a member of the *Siyajabula* garden group. This view was shared by many members. One respondent said that for the *Siyajabula* garden “*maybe about 40 members still hire*” (Respondent G, 31/10/2010) people to do gardening on their behalf because of their time unavailability. The importance of this finding is based on the fact that out of 66 members of the *Siyajabula* garden 40 are hiring and as a result spend on average an amount of R500 per month on gardening (R300 for gardening maintenance costs and R200 for paying garden workers).

#### **4.3.2.5. Lack of the market and sustainability**

The major concern of the government officials was that the gardens were not sustainable, “*poverty alleviation projects are not sustainable...these projects [gardens] you hardly see them after 2 years to 3 years,*” (Respondent A, 25/10/2010) a government official reported. This statement suggests that not all gardens have been sustained as well as the *Thathigeja* garden group. There were many factors highlighted by the gardeners which contributed to the lack of sustainability or continuity for some of the gardens that faded. Among these factors, the findings suggest that lack of profitability was one of the reasons the gardens failed to sustain themselves sufficiently thus depending on external assistance even for minor things. This lack of profitability was directly linked to the fact that “*the community of KwaMsane Township has no market to get fresh vegetables,*” according to the constitution of the *Thathigeja* garden group (see appendix). This statement referred to the market as an infrastructure in a particular location where gardeners will meet their customers. Therefore,

the gardeners lacked a platform where a transaction of exchange with their customers could take place. For example, one respondent mentioned how she uses her garden produce “*we cook it and if there is someone requesting to buy we sell*” (Respondent D, 29/10/2010). This condition has meant that gardeners have to shift from selling to only consuming their garden produce since “*It’s no longer easy to sell except if you are going to have your own customers that you will always bring your spinach to them, and then you can produce more of it. But now we only garden so that we eat*” (Respondent D, 29/10/2010) said a respondent. This view suggests that some gardeners are willing to sell their produce but fail because of too few customers. Given the situation, “*...there is no growth our account has no money because we cannot sell,*” (Respondent D, 29/10/2010) a gardener explained. The meaning of these findings suggests that lack of profitability, in economic terms, translates into lack of sustainability of the gardens in KwaMsane Township.

The second factor responsible for the lack of a market and sustainability was the lack of knowledge about gardening itself. In spite of passion gardeners had, their little knowledge about the practice inhibited them. A respondent elaborated, “*If I can get knowledge about gardening I will be able to do this because it is in my blood*” (Respondent H, 11/11/2010). This limitation prevented some of the gardeners to plant certain crops because of a lack of know-how. Consequences were severe because some gardeners were discouraged and disengaged with gardening activity, as one gardener said “*it’s a problem really one ends up losing the passion when nothing grows up*” (Respondent I, 16/11/2010). Their inability to extend their knowledge about gardening confined them to the traditional ways of gardening which did not allow them to “*produce something that will be sold to Whites, Indians, Coloured, and Africans,*” (Respondent B, 26/10/2010) a respondent said. The implication of this statement is that the quality of the garden produce was not on a par with market expectations which comprises of diversity. These findings show that the gardeners were aware that they needed to perfect the quality of their produce first if they were to penetrate the market. One gardener specifically stated that “*you cannot take something like this [pointing at the onions] to Pick n Pay, people will not buy this that is why we put this in a pot and eat it because there is nothing we can do*” (Respondent H, 11/11/2010). According to these findings, the gardeners view agricultural knowledge as a prerequisite to increase the quality of what they produce in the garden. Secondly, they consume the garden produce because they cannot sell it given its low quality. These findings concur with the view that

*“there is no evidence that community garden members have moved from producing for household consumption to producing commercially”*(Mpanza 2008, 69).

#### **4.3.2.6. Livestock as a challenge**

Livestock was also reported to pose a challenge to gardeners since most of the households in KwaMsane Township were not fenced thus the seeds, seedlings, and ripening crops were eaten by livestock. This problem was the reason why some households were not cultivating home gardening *“not that they were lazy but their houses are not fenced and here at KwaMsane the livestock is all over the place...and these cattle enter the garden and you find that what you have planted has been eaten,”* (Respondent D, 29/10/2010) said a respondent. As a consequence, some *“gardens had been abandoned, unused because cattle will enter inside the garden,”* (Respondent D, 29/10/2010) a respondent said. Some respondents, who are non-gardeners, expressed that fencing was important if they were to be involved in gardening. According to these findings, lack of fencing for households presented a risk of losing the garden produce given the fact that the area has abundant livestock.

#### **4.4. The influence of socio-economic and demographic factors on gardening**

The aim of this section is to discuss the findings generated by the inferential statistics which employed Binary logistic regressions to test hypotheses about the relationship between cultivating gardens (dependant or outcome variables) and demographic and socio-economic factors which are independent or predictor variables. This will generate an understanding of the degree of influence exercised by demographic and socio-economic factors on gardening activity. According to the literature and findings collected from this study, there are claims associated with the practice of gardening. For example, these claims suggest that pensioners are likely to practise gardening for nutritional and historical background reasons. Findings further demonstrate that the majority of gardeners were employed and practised gardening, among other things, in order to supplement their food and income because of increases in food prices. The literature suggests that one of the characteristics of gardeners is their low level of education. In terms of gender, females were observed to dominate the activity. Gardeners have also been characterised as a low income and welfare dependent group. Based on these claims emanating from the findings of the study and literature, it was hypothesised

that demographic and socio-economic factors determine whether a household will practise gardening or not. Binary logistic regressions were then employed using Stata11 to determine the degree of influence for each demographic and socio-economic factor. The binary logistic regression model was used to understand the effect of demographics (children, adults, pensioners, gender, and household sizes) and socio-economic factors (employment, education, type of assets, grants) on households cultivating gardens in KwaMsane Township in 2001. The unit of analysis was taken at the household level with all variables being categorical coded 0 and 1.

The findings of the binary regressions are displayed below (Table 4.8). These findings show that when other variables are held as constant, the odds of households with one or more children cultivating gardens were 4.252 times greater than the odds of households without children. It was also shown that the odds of households owning agricultural assets cultivating gardens were 3.571 times greater than the odds of households owning other types of assets. These findings further suggest that the odds of households receiving government grants cultivating gardens were 2.269 times greater than for households not receiving government grants. The odds of households with one or more pensioners cultivating gardens are 2.080 times greater than for households without pensioners. There was no level of significance obtained for other variables such as household size, household employment, household education, household gender, and households with adults. This meant that no relationships existed between these variables and cultivation of gardens in KwaMsane Township.

Table 4. 8 Relationship between gardening and demographic/socio-economic factors [2001]

<b>Variable<sup>4</sup></b>	<b>Model [all factors] Odds ratio</b>	<b>P &gt;  z  (significance level)</b>	<b>Logistic coefficient</b>
Households with children	<b>4.252<sup>5</sup></b>	0.008	1.447
Households with pensioners	<b>2.080</b>	0.055	0.732
Households with adults	0.513	0.459	-0.668
Household size	1.187	0.532	0.171
Households gender	2.143	0.357	0.762
Households with agricultural assets	<b>3.571</b>	0.000	1.272
Households with government grants	<b>2.269</b>	0.016	0.819
Household employment	1.033	0.925	0.033
Household education	0.881	0.695	-0.127

Number of observations = 843

In essence, these findings (Table 4.8) suggest that the households in KwaMsane Township are more likely to practise gardening because of children, agricultural assets, pensioners, females, receiving government grants, households size equal to or greater than five, and employment (in order of importance).

The model of these findings (Table 4.8) is significant (Prob>chi2 = 0.0000) and fitted the data moderately. In essence, the findings show that the practice of gardening is an outcome of different demographic and socio-economic factors. The findings accept the hypothesis that demographic factors (such as presence of children and pensioners) and socio-economic factors (such as ownership of agricultural assets and government grants) influence the households at KwaMsane Township to practise gardening. Specifically, the findings indicate

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<sup>4</sup>It is critical to note that information about gardening was collected at a household level not at individual level thus one cannot identify using the data whether adults, children, or pensioners were directly involved in the practice of gardening. Nevertheless, one was able to identify whether the household as a unit was cultivating gardens or not. The manner in which the data was collected in 2001 suggests that the findings, such as households with children, do not imply that children are directly involved but imply that the household as a unit practises gardening because they have children in the household. The data does not provide specifics in terms of who is directly cultivating gardens but gives information about factors that promote the activity. This applies to all variables used in this binary logistic regression.

<sup>5</sup> The odds ratio results are written in bold when the P value for the variable concerned has statistical significance and were 95% confidence level. The R square was 0.1366.

that children are the primary influence of households cultivating gardens in the township. The secondary influence on households in the practice of gardening is ownership of agricultural assets. The third influential factor is government grants and the fourth factor the presence of pensioners in the household.

#### **4.5. Conclusion**

The findings produced by this research study illustrate the reasons and motivational factors which lead to households practicing gardening in KwaMsane Township. The findings also show the means used by these households to pursue livelihood strategies in gardening. The mixed-method employed by the study allowed for the generalisation and quantification of concepts while providing in-depth meaning and understanding experienced by the respondents. While the quantitative findings showed that the majority of households in KwaMsane Township cultivate gardens for household food consumption, the qualitative findings displayed a mosaic of factors behind the need of food consumption. Most importantly, the quantitative findings from the Africa Centre datasets of 2001 showed that the presence of children, agricultural assets, governmental grants, and pensioners in a household are likely to promote the pursuit of a gardening livelihood strategy. The two fundamental common factors between the above mentioned motivational factors were income and time availability.

## CHAPTER FIVE

### CONCLUSIONS AND POLICY IMPLICATIONS

*“South Africa needs to develop a food economy that not only sells to the poor but also works for the poor through developing local, community-level food systems that allow local markets and local beneficiation”*  
(DBSA 2011, 15).

#### 5.1. Introduction

The findings produced by this research study illustrate the reasons and motivational factors which lead to households practicing gardening in KwaMsane Township. The findings also show the means used by these households to pursue livelihood strategies in gardening. The mixed-method approach employed by the study allowed for the generalisation and quantification of concepts while providing in-depth meaning and understanding as experienced by the respondents. While the quantitative findings showed that the majority of households KwaMsane Township cultivate gardens for household food consumption, the qualitative findings displayed a mosaic of factors behind the need of food consumption. Most importantly, the quantitative findings from the Africa Centre datasets of 2001 showed that the presence of children, agricultural assets, governmental grants, and pensioners in a household led to the pursuit of a gardening livelihood strategy. The two fundamental common factors between the above mentioned motivational factors were income and time availability.

#### 5.2. Summary of findings

The findings of the study demonstrated that home gardens were more predominant than community gardens. The findings also showed that households primarily cultivate gardens for household food consumption. The findings revealed that though most households consumed their garden produce, there were different dynamic factors resulting in the same outcome. For example, the households of gardeners had more food demand because of the larger size of the households and presence of the children, gardeners had nutritional knowledge about the crops they planted and knew that crops contributed positively to their health status. They were also driven by the perception that fresh garden produce was healthier than vegetables purchased from retail stores. Gardeners also had agricultural backgrounds which created strong

attachments to gardening for subsistence purposes, they understood the capacity of gardening as a strategy for managing high food prices from vegetable markets through income replacement and reduction of food prices in the market, and affordability was a factor that made their engagement with gardening more preferable than other livelihood strategies. The lack and inaccessibility of natural resources such as land and water were the reasons why some households decided to cultivate gardens for household food consumption. The view of the gardeners was that the problems associated with land and water was beyond their capacity to manage because it was too risky to pursue interests beyond household food consumption (such as selling the garden produce). As a result, they settled for household food consumption strategies which involved minimal risks. These households were no longer prepared to invest more in gardening. The literature affirms this view and states that, *“since they [gardeners] do not possess tenure rights to land on which they farm, they were likely to lose their land at any moment and this discourages them from investing in agriculture”* (Kutiwa et al. 2010, 93). Another reason some gardeners decided on cultivating for household food consumption was because their unpreparedness for the market and lack of markets. The unpreparedness for the market was as caused by two factors namely lack of knowledge about gardening and low quality of garden produce. The gardeners felt that they needed to shift from traditional ways of gardening if they were to sell their garden produce at an acceptable market standard. The lack of markets disincentivised gardeners to sell their produce. These different factors confined the engagement of gardening households to household food consumption.

The findings of this study also showed the characteristics of the gardeners. Most of them were in their productive ages (in this case between 29 and 61 years of age), females dominated the activity with few males, and most of the gardeners were educated, employed, had ownership of agricultural assets, and were recipients of government grants. On average gardeners were older than non-gardeners. It was also shown that gardeners consisted of different income groups but were mostly from the middle income group and secondarily from low income groups, such as the unemployed.

It was further shown that not all of the above mentioned characteristics of gardeners were determinants for households to cultivate gardens in KwaMsane Township. Age was found to be a determinant factor of households to practise gardening only when there were children



present in the household (a primary motivational factor) and pensioners (the fourth motivational factor). The findings of the study showed that households with children are more likely to have larger household size (in this case households with sizes equivalent to five or more members). This increased food demand. As a response, these households appear to take advantage of their economies of scale which allows them to shift to cheap basic products such as maize, grains, milk and dairy products normally consumed by children (Bopape and Myers 2007). As a consequence, *“large households allocate a lower share of their budget to fruit and vegetable purchases”* (Ruel et al. 2005, 35). This means that large households with children cultivate gardens for household consumption as a way of compensating or supplementing vegetables which are not well accommodated in their budgets because of high prices. With regards to pensioners, a relationship with cultivating gardens for household consumption was based on agricultural background or previous exposure to gardening. This agricultural background created a strong attachment between gardeners and the practice of gardening. As Moller has argued, this attachment to gardening *“reminded them [gardeners] of their childhood when food was plentiful and their household was self-sufficient in vegetables”* (Moller 2005, 69). The findings also showed that most of the respondents had learnt basic gardening skills from their parents, fathers in particular. This suggests that the activity was once dominated by males; however, the respondents’ explanations gave the impression that males (their fathers) practised farming on larger land sizes than the size of the current home and community gardens. The presumption is that the change from large to small land size limited production which meant that the activity could no longer meet the desired level of household needs and most of the gardeners could not sell their limited produce. Another link of pensioners to households cultivating gardens was their access to government grants such as OAP which generated income sufficient for the costs of gardening.

The ownership of agricultural assets was the second primary factor for household to cultivate gardens. Agricultural assets played a crucial role in the sense that it gave the residents an incentive to engage in gardening. The presence of agricultural assets provided KwaMsane households with what Sen refers to as *“basic capabilities to function”* (Shaffer 2008, 197) in gardening activity. The findings of this study agree with the SLA which suggests that households choose their livelihoods based on the assets they own or have access to. In this way, agricultural assets became the means to an end. The findings also showed that

institutions and organisations “*shape livelihoods by influencing access to assets, livelihood strategies, vulnerability and terms of exchange*” (Meinzen-Dick et al. 2009, 241). The support of the local government and other organisations for the formation and continuation of gardening in KwaMsane Township meant that the already existing household assets (i.e. human capital) began to be ‘usable’ when these institutions began to promote the activity. According to these findings, the utilisation of household assets depended on how institutions influenced livelihoods. The manner in which institutions influence livelihoods can either minimise the risk for households to pursue a livelihood strategy or devalue the household asset base by narrowing livelihood diversity. Institutions have the capacity to transform the value and usability of household assets for a desired livelihood strategy in a local context.

Lastly, government grants were the third motivational factor for households to cultivate gardens. The quantitative findings derived from the Africa Centre dataset of 2001 were consistent with the qualitative findings which indicate that the area generally has low livelihood diversity consisting only of employment as the primary livelihood strategy, government grants as a secondary livelihood strategy, and gardening and craft making as the third livelihood strategy. The pursuit of gardening depended on households having access to government grants, not employment. This was supported by the fact that binary logistic regression showed no relationship between households cultivating gardens and employment, and that amongst the households who were recipients of government grants and also cultivating gardens, about 60% were pensioners. Another explanation for the lack of relationship between households cultivating gardens and employment was illustrated in the focus group interviews confirming that a trade-off exists between employment and gardening because of the nature of the employment which posed limitations in terms of time availability. As a consequence, some gardeners, such as teachers, compensated for their time loss by employing garden workers while they were still in the workplace. This makes time availability a crucial element when it comes to the continuity of the practice. Cultivation of gardens was preceded by income access from government grants. Thus both income and time availability incentivise gardeners to pursue gardening as a livelihood strategy.

The analysis of findings showed that gardeners are not a homogenous group because there are diverse reasons why they cultivate gardens. The findings dispute the notion that if a group of

individuals engages in a same activity the group members have the same reasons and aspirations about the activity concerned. These diverse reasons meant that gardening as a livelihood strategy was used differently by gardeners. Gardening was used as a survival strategy or source of food and money only by those who were employed to work on behalf of gardeners who were limited in terms of time because of the nature of the work they did or because they were ill. For the middle income group or those employed such as teachers, gardening was used to supplement food within the household because of high food prices. For some gardeners, gardening was an innate way of living as an African. The implication of these findings is that the motivation for gardening informs how the activity is used for the household. As a consequence, the intended benefit of gardening is specifically linked to the motivation. For those using gardening as a survival strategy the intended benefit was to ensure food security. For most of the middle income group gardeners, the intention was to maintain or preserve their household food sovereignty by supplementing purchased household food with items that they had grown themselves using methods that they preferred. Overall, the findings indicate that gardening in KwaMsane Township has more of a nutritional and social value than an economic value amongst gardeners.

According to the perspective of SLA, the profile of the gardeners in KwaMsane Township suggests that the poor level of institutional and physical capital (infrastructures such as water supplies) limit the manner in which households access their natural assets (land and water) which are essential for a livelihood strategy such as gardening. The dominant and primary asset of the KwaMsane Township residents is labour (human capital). Financial capital through government grants featured as an important asset of the residents including gardeners. Social capital also played a crucial role in the households in KwaMsane Township as it fostered shared efforts in costs and resources related to gardening. The SLA suggests that policy response must focus on improving the institutions in an area, particularly the working relations amongst the Department of Agriculture and local economic development and between these department and all garden groups in KwaMsane Township. Improvement in institutions will enhance accessibility to natural assets thus reducing risks for households and achieving food sovereignty. For the future, it is crucial to recognise the implications of what has taken place during the period of nine years (from 2001 to 2010). One of the most important things to consider is that the KwaMsane Township residents are losing access to paid labour, for example, about 42% of households do not have even a single person

employed in 2010. This level of unemployment at KwaMsane Township reflects some of the effects of the *“recent economic downturn, with South Africa losing close to 1 million jobs and KZN shedding almost 100,000 jobs between 2007-2010”* (KZN Provincial Planning Commission 2011, 79). These negative effects justify the need to further policy in gardening (Urban Agriculture), and more so because this dissertation has shown that most residents who are non-gardeners were still interested in cultivating gardens provided there was land space.

### **5.3. Policy implications**

With regards to household food security, the findings showed that gardening as a livelihood strategy does not achieve food security but does contribute towards household food security as part of an overall livelihood strategy. In this way, the study rejects the notion that gardening is only for the poorest of the poor considering that the majority of households which were cultivating gardens at KwaMsane Township were in fact food secure and middle-income earners. This dominance of middle income earners in gardening deviated from the proposed typology which confined those gardening for household food consumption to the low income category (De Bon et al. 2010). This study has showed the diversity of gardeners and how the practice evolves as it serves different purposes in different times and places. The view of the study is that gardening does have great capacity for food security if profitability materialises from the practice. The fact that gardening is mostly confined to subsistence purposes in KwaMsane Township implies that no income is generated for the gardeners by their gardens. This explains why households with a higher number of employed individuals were food secure. Nevertheless, the findings demonstrate that gardening has economic value because it created jobs paying R200 for work assigned to garden workers. This study showed that gardening had the ability to make retail stores drop their vegetable prices. However, policy needs to unlock the already existing potential of gardeners to sell their produce by developing the human capital of gardeners for commercial purposes and to create markets for the gardeners in KwaMsane Township. This will require the municipality to intensify their intervention by allocating more extension officers who will train and guide the gardeners. Unavailability of extension officers was one of the most highlighted challenges that gardeners had, and this challenge is consistent with the reports from a study conducted by the Human Science Research Council (HSRC) stating that *“86% of respondents indicated that they had never been approached by technical or extension officials”* (Goldman et al. 2010, 7). If the

KwaZulu-Natal provincial government commits to increasing extension officers to 800 by the end of the year in 2011 as the Premier of the province, Mr Zweli Mkhize, promised in his state of the province address on the 22 February 2011 (Mkhize 2011, 7), there is hope for success of the ‘One home One garden’ campaign to advance the state of urban agriculture.

Gardening was also shown to be a source of social capital amongst the network of garden members. This livelihood strategy was a social capital in the sense that it allowed for gardener-gardener empowerment whereby gardeners learn skills and knowledge from each other through experience, observation, and interaction. Secondly, gardeners were able to support each other with resources in times of shock or economic necessity. In this sense, gardening has social benefits. This dissertation showed that households are conglomerates of people with strong ties. Collectively, members of households and across households depending on the extent of their social ties, use gardening as one of their sources of food for the purpose of food security and food sovereignty. In this way, each member plays a role in contributing to the household livelihood. Policy should therefore recognise the fact that the positive impact of gardening on household livelihoods is multidimensional and cannot be quantified only in economic terms. The basis of gardening as social capital originates in the traditional attachment of gardeners to gardens as a result of their agricultural backgrounds. This attachment presents gardening as an embodiment of social values such as *Ubuntu* with social imperatives. As a consequence, it was seen as worthwhile for gardeners to have high input costs for gardening (ranging between R300 and R500) without any form of profit in economic terms.

The dissertation also showed that government policy has significant influence on how gardening takes form. One of the important lessons from the dissertation is that livelihood strategies such as gardening cannot go beyond the expectations set by government policy which defines the incentives and disincentives within the practice. Firstly, the intention of the *Xoshindlala* campaign which was to “*assist people achieve household food security*” (KZNDAEA 1999), was critical in the sense that it focused on food availability and food utilisation. The *Xoshindlala* campaign did not focus on food accessibility from the markets hence the gardens in KwaMsane Township were not prioritising income generation for their households. Secondly, the ‘One home One garden’ campaign is “*aimed at sustaining food*

*security for household food consumption*”(Mkhize 2009, 4), also focusing on food availability. The view of this dissertation is that it is critical for government policy to incorporate agricultural assets and provision of land space where necessary to promote gardening in KwaMsane Township and in the province. The following section proposes what can be done.

#### **5.4. RECOMMENDATIONS**

This dissertation concurs with the view of the World Bank which suggests that there is a need for municipal action to facilitate urban agriculture (Rogerson 1998, 172). The findings of the study indicate that there is a need for the municipality to intensify its intervention in KwaMsane Township especially in terms of institutions which offer services and knowledge for the betterment of the livelihoods of the residents. The dissertation paints a picture where the district challenges such as water crises manifest themselves at ward level. The study recommends that the municipality together with the district authorities devise ways of resolving the water crisis at uMkhanyakude district which will also solve the same problem in KwaMsane Township. The nature of the water crisis within the district should be viewed in terms of water inaccessibility because *“the rivers, dams, and freshwater resources within KwaZulu-Natal account for almost 40% of all the water within South Africa”* (KZN Provincial Planning Commission 2011, 26). As a consequence, the view of the study is that provision and supply of water will unlock the potential for diverse livelihood strategies including gardening. As reported by the HSRC, *“water is a critical resource and a key area for investment...”* in gardening thus it is advisable not to use municipal water (expensive) *“...but rather rainwater harvesting or use of grey water”* (Goldman et al. 2010, 3). This applies to KwaMsane Township since it will also reduce the input costs of gardening.

This dissertation also recognises that the municipality is already facilitating gardening in KwaMsane Township; however, it recommends that the municipality moves away from the notion of gardeners being poor, to the perspective that gardeners consists of mixed income groups dominated by the middle income group, many of whom are providing employment opportunities for poorer members of the community. This is critical considering that the motivations for cultivating gardens are different across and within income groups. The study

showed that the aspirations and interests of the gardeners were the basis for preference and persistence of gardening as a livelihood strategy. Therefore, it is recommended that these aspirations and interests inform municipal policy of gardening to ensure the relevance and ownership of gardening by gardeners themselves. The municipality should therefore provide workshops which will ensure the transfer of gardening skills, education about crops and their nutritional value, and implement strategies which will assist the further development of gardens in terms of selling to markets or having their own informal market. The trajectory of gardening into the market is crucial considering that “... *the agricultural sector in KZN, if appropriately harnessed, has the potential to create a substantially higher number of jobs in a shorter time frame*”(KZN Provincial Planning Commission 2011, 81).

The success of the above mentioned recommendations will depend on the organisation of the gardeners of KwaMsane Township. Egal et al (2001, 6) states that “*the organization of urban farmer associations is a prerequisite to the improvement of urban agriculture*”. For the seven to eleven garden groups which exist in KwaMsane Township, it is important that a garden association be formed as a body that will be the umbrella for all gardens in the area. The advantage of this association is that it will have recognition and legitimacy to receive and channel resources to all the KwaMsane Township garden groups. The association will also enhance the level of knowledge production and sharing.

This dissertation was able to answer the important questions of the KwaMsane Township study posed in Chapter One by showing that there was low livelihood diversity, and few households cultivating gardens yet diverse in terms of their characteristics. In this way, the dissertation confirmed that gardeners are not a homogenous group. Further, the dissertation demonstrated that those that cultivate gardens have different motivations and had different means available for this cultivation, some even hiring others to provide the labour for urban agriculture. It was shown that, contrary to the expectation, gender, education, and employment had little relationship with cultivation of gardens. Finally urban agriculture was reported to contribute to food security, poverty alleviation and interestingly, food sovereignty. Further research is required investigate the latter role of urban agriculture in diverse urban contexts.

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## **INTERVIEW LIST**

Respondent A, 25/10/2010, Local Development Officer, male, between 30 and 35 years old.

Respondent B, 26/10/2010, KwaMsane Township Councillor and School principal, female, 55 years old.

Respondent C, 02/11/2010, Department of Agriculture officer, male, between 30 and 35 years old.

Respondent D, 29/10/2010, Pensioner and chairperson of Thathigeja garden group, female, above 55 years old.

Respondent E, 04/11/2010, gardener at Thathigeja garden group, unemployed, female, 31 years old.

Respondent F, 05/11/2010, gardener at Thathigeja garden group, pensioner and caregiver, female, 58 years old.

Respondent G, 31/10/2010, chairperson of Siyjabula garden group and employed as a teacher, female, 45 years old.

Respondent H, 11/11/2010, gardener at Siyjabula garden group and employed as a security officer, male, 47 years old.

Respondent I, 16/11/2010, gardener at Siyajabula garden group and employed as a teacher, female, 48 years old.

Respondent J, 16/11/2010, non gardener, pensioner, female, above 55 years old.

Respondent K, 25/11/2010, non gardener and employed as a teacher, female, between 30 and 35 years old.

Respondent L, 22/11/2010, garden worker employed by other gardeners, male, between 40 and 45 years old.

Thathigeja Focus group, 03/11/2010.

Siyajabula Focus group, 07/11/2010.

## APPENDIX

### **Africa Centre for Health and Population Studies data**

The quantitative data analyzed for this study was already collected by the Africa Centre through Africa Centre Demographic Information System (ACDIS). For example, a dataset of the Household Socio-Economic (HSE1) for 2001 was carried out as part of the ACDIS household surveillance during February to September 2001. For 2010 Household Socio-Economic (HSE7) dataset, data collection was conducted as part of ACDIS during January to June 2010. The unit of analysis for the research study was at the household level. The study adopted the definition of Africa Center which suggests that a household “*refers to the social groups to which people belong and consists, in most cases, of the family group and any other people who live closely with the family*” (Africa Centre 2008, 8).





Figure 3. 4 Location and members of the *Siyajabula* garden group at KwaMsane Township.

This garden is much bigger in size as it has a total number of about 66 garden members within it. This garden occupies the land which is unused and within the vicinity where gardeners reside. This land used by the gardeners belongs to the local councillor.



Figure 3. 5 Location and members of the *Thathigeja* garden group at KwaMsane Township (Google Earth 2010).

This picture also shows other gardens next the *Thathigeja* garden demonstrating that there are already many gardens at KwaMsane Township which have been formed since 2001. This picture demonstrates that gardeners use a vacant public space which separates different sections at KwaMsane Township. Gardeners do not have legal rights over this land; however, they request it from the local councillor.

## CONSTITUTION FOR THATHIGEJA GARDEN CLUB

1. NAME: THATHIGEJA CLUB
2. AREA OF OPERATION:  
Thathigeja Club shall confine its services to the KwaMsane Township residents
3. AIMS AND OBJECTIVES:
  - (a) To promote good health to the members of the community
  - (b) To help unemployed community members
  - (c) The community of KwaMsane Township has no market to get fresh vegetables.  
This garden will be of great help
  - (d) Members will also benefit by selling vegetables to the community nearby schools and crèches at a reasonable price.
4. MEMBERSHIP  
Membership shall be open to all members of KwaMsane Township
  - (a) Every member shall pay R50 as joining fee
  - (b) Ten rand (R10) shall be paid monthly
  - (c) A member shall come to the meeting once a month
  - (d) A member who fails to come to the meeting without reporting in writing will pay R15 as a fine.
  - (e) All members will be expected to be at their plots every morning from Monday to Saturday at 8 O'clock
  - (f) Members who are working shall employ any one to come and work in their plots at their expense
  - (g) Afternoons will be used for watering
  - (h) A member who fails to take care of his/her plot will forfeit his/her membership.  
The membership will be cancelled after follow ups and advices by the chairperson
5. ADVISERS MEMBERS: An Agriculture advisor will from time to time come to the garden and meetings
6. THATHIGEJA COMMITTEE: The management of Thathigeja's affairs and property will be vested in the circle committee which shall be elected annually by means of a closed election system.
7. WORKING COMMITTEE: Chairperson (2)

Secretary (2)

Treasurer (1)

Additional Members (4)

8. FINANCE:

- (a) The Treasurer shall receive and account for moneys paid to the club and shall make all payment subject to the instruction of the committee
- (b) A bank account shall be opened in the Clubs name and signed by any three of the following: Chaiperson II, Secretary, Treasurer
- (c) The Club's financial year shall run from July to 31<sup>st</sup> June the following year
- (d) A balance sheet and annual report shall be prepared and presented to the Annual General Meeting for approval.

Any property or income of the club shall be utilized solely in the furtherance of its aims and objectives and shall be prohibited from being transferred any portion thereof directly or indirectly to any person other than by way of the payment in good faith of the reasonable remuneration to any officer or employee of the club.

9. AMMENDMENTS:

Any amendments to the constitution may be made only to a General Meeting by a two thirds majority of its members present and voting shall circulate and approved by all members of the club at the General Meeting.

## **Informed Consent Form**

My name is Menzi Mthethwa student number 204503672. I am currently studying at the University of KwaZulu-Natal doing Masters in Development Studies. I am doing my research project on community and home gardens as an option for food security and poverty reduction for my dissertation. I would fully appreciate your participation in this project. This participation entails the answering of a few questions so that I may understand why urban residents in the KwaMsane Township of the UMkhanyakude district of KwaZulu-Natal are involved in community and home gardening.

This Project is purely for academic purposes only. If you so choose, all of your responses will remain anonymous. This means that I will not reveal your identity to anyone. If you do agree to participate, your participation is voluntary and you may withdraw from participation at any stage for any reason whatsoever. If you choose to withdraw at any stage, there will be no adverse consequences to you. Likewise there will be no objective benefits to you if you choose to participate.

This research project will thus be conducted in a semi-structured interview format. Participants may provide and give out confidential information during the interview where they can remain anonymous and that all responses will be between the participant and the researcher.

Participants name & surname	Date	Signature

Researchers name & surname	Date	Signature

## QUESTIONNAIRES FOR PROPOSAL

***All the following questions will be answered by the individual on behalf of the household when conducting semi-structured interviews. For the focus groups, following sections will form part of the questions asked during the progress of participatory action research in a context of a group not on individual or household basis (the group will be representing the overall community in this context); context conditions, household resources and livelihood strategies, and community and home gardens.***

### [HOUSEHOLD CHARACTERISTICS]

1. When did this household arrive at KwaMsane?
2. How many people reside within this household?
3. For each member of the household identify the relationship to the head, gender, date of birth, age in years, highest level of educational qualification, and employment status
4. What is the nature of their jobs? (explain for each)
5. Are there children within the household? If yes, are they attending school?
6. Does this household have access to basic services (water and electricity)?

### [CONTEXT CONDITIONS]

7. What are the main sources of food and income for this household?
8. How important is each of the sources of income?
9. Can you identify the sources of income which are dominated by men, women, and both?
10. Who controls income generated from each sources mentioned above?
11. How does the income from different sources (wages, pensions, child grant, crop production, small business etc) vary through the year?
12. Can you estimate the total expenditure for this household for the previous month?

### [HOUSEHOLD FOOD SECURITY STATUS]

1. In the past four weeks, did you worry that your household would not have enough food?

2. In the past four weeks, did any adult household member have to eat a limited variety of foods due to a lack of resources?
3. In the past four weeks, did any child household member have to eat a limited variety of foods due to a lack of resources?
4. In the past four weeks, did any adult household member have to eat some foods that were not desired because of lack of resources to obtain other types of food?
5. In the past four weeks, did any child household member have to eat some foods that were not desired because of lack of resources to obtain other types of food?
6. In the past four weeks, did any adult household member have to eat smaller and fewer meals than desired? If yes why?
7. In the past four weeks, did any child household member have to eat smaller and fewer meals than desired? If yes why?

In the past four weeks, was there ever no food to eat of any kind in this household because of lack of resources to obtain food? If yes, how often did this happen?

#### [HOUSEHOLD RESOURCES AND LIVELIHOOD STRATEGIES]

8. Does this household have the ownership (legal rights under your name) of the house?
9. Does this household have ownership or access to land?
10. If yes, how does the household use the land?
11. Can you describe the land used by the household? (land size)
12. What other resources does this household own or uses? (*in this context resources refer to basic capabilities to function such as assets, availability and accessibility to opportunities and services*)
13. Can you please list the resources that the family have?
14. Are there any groups in this area which have better access to resources than others?
15. If they are, what type of resources?
16. From where (what sources, networks) do people in this area access information that they feel is valuable to their livelihoods?

17. If there are useful networks, to what extent do they build trust, facilitate cooperation and expand access to wider institutions?
18. Does this household use different livelihood strategies to generate food and income?
19. If yes, please make examples
20. What is the role of institutions in the society?
21. Do institutions assist household in utilizing the resources they have or in protecting and promoting more resources?

[HOME AND COMMUNITY GARDEN]

22. Is this household involved in home or community gardening? If yes, which one?
23. What do you grow at the home and community garden? (list all crops you remember)
24. Where do you get the seeds from?
25. Why have you (or this household) chosen home and community gardens among other strategies of meeting the same needs?
26. What is the importance of home and community gardens? How does it benefit this household?
27. Can you please compare home and community gardening and other livelihood strategies that you also use?
28. What are the products of the home and community garden used for?
29. What strategy does this household use when it is not the season of harvesting?
30. Which assets did you use to make the home and community garden function?
31. What are your previous agricultural experiences?
32. Do you have any skills or qualification related to agricultural practices?
33. Is the home and community garden sustainable, reproductive, and profitable?
34. How do you use the products (i.e. vegetables) of home and community garden?
35. What are the constraints in home and community garden?
36. Is there any support that the community garden receives from government and or non-governmental organizations? (*For example, from Department of Agriculture etc*)?



[HOUSEHOLDS NOT INVOLVED IN HOME AND COMMUNITY GARDEN]

37. Why you are not involved in home and community garden?
38. What strategies do you use to meet the household needs?
39. What assets do you use to make your strategies function?
40. Do you use your strategies to generate food or income?
41. How much of food or income is produced in a month/week?
42. Is there any support that the community receives from the government and or non-governmental organizations?