

The physical and social benefits of urban agriculture projects run by non-governmental organisations in Cape Town

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Declaration

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ABSTRACT

Urban agriculture (UA) has always been practised in African urban centres. Only since the turn of the twentieth century, however, have development researchers turned their attention to its potential as a sustainable source of food security. Notwithstanding the initial optimism in this regard, many have questioned whether UA is viable and whether it does deliver the benefits that many espouse. This is because most of the benefits are evaluated in terms of their economic viability or amount of produce grown to sustain a family, and often ignore what benefits may be found beyond this. What this dissertation argues is that there are a range of physical and social benefits that accrue from UA that cannot necessarily be measured. Research on the ground suggests that the benefits of UA are more complex than supposed, as confirmed by a number of qualitative case studies on UA in Africa.

Much attention is given to the food security and income dimensions of UA. There are, however, also ecological, empowerment and gender dimensions. Throughout Africa, UA is used primarily for food and economic security, through eating produce and trading it on the informal market. The economic benefits of UA, however, are least available to the poor and to women, due primarily to resource limitations, tenure insecurity and patriarchal cultures. While such findings suggest that the benefits of UA bypass those who need them most, it is found that these limitations may be overcome with support from non-governmental organisations (NGOs).

NGOs play a key role in promoting sustainable livelihoods. This is achieved through injections of resources and investing in human and social capital. In Cape Town, UA has been supported by NGOs for many years. More recently, local government has supported this effort with a UA policy that legitimises public support through resource donations and the provision of land. The question this dissertation sought to investigate was to what extent UA is contributing to the livelihoods of those living in Cape Town's largest low-income area, the Cape Flats. As many of the UA projects in Cape Town are run by NGOs, the focus was on a selection of these projects.

In-depth interviews and focus group discussions were held with NGOs and cultivators throughout the Cape Flats. Four different types of cultivation feature, namely home cultivators, cultivation groups, institutional cultivators and garden centres. Home cultivators operate on a small scale on the property around their dwelling, while cultivation groups and institutional

cultivators use larger tracts of land. Cultivation groups operate independently, usually on council land, while institutional cultivators cultivate on behalf of the institution whose land they use. All cultivators are supported by the NGO's garden centres, the administrative hub of their UA programme.

The findings show that some benefits of UA relate largely to the type of UA being practised. For home cultivators, UA strengthens relationships and expands networks. Institutional plots teach children to care for the environment. The economic and food security benefits of UA are evident in formal groups, and NGO-led local garden centres play a supportive role for all cultivators. Other benefits are felt by all cultivators. For example, cultivators from all types stated that UA had taught them to eat healthily and to care for the environment, and all cultivators felt an increased sense of self-worth. Furthermore, all cultivators gave produce away to those around them. A prerequisite for these benefits, however, is successful cultivation, which is only possible with the training and support offered by the NGOs.

The findings suggest that NGOs are vital both for ensuring that UA has the greatest impact in low-income areas and for avoiding the limitations of UA that are evident throughout Africa. Nevertheless, the uptake and sustainability of UA in Cape Town are limited by bureaucratic hurdles to land access, limitations of donor funding and widespread attitudes of dependency in its target areas. It is therefore likely that the expansion of UA in Cape Town will remain slow until such limitations are addressed.

OPSOMMING

Stedelike landbou (SL) is nog altyd in die stedelike sentrums van Afrika beoefen. Dis egter eers sedert die begin van die twintigste eeu dat ontwikkelingsnavorsers aandag geskenk het aan SL se potensiaal as 'n volhoubare bron van voedselsekerheid. Ondanks die aanvanklike optimisme in hierdie verband, het baie bevraagteken of SL moontlik is en of dit die voordele wat baie voorstaan, oplewer. Dit is omdat die meeste van die voordele geëvalueer is in terme van hul ekonomiese potensiaal of die opbrengs om 'n familie te onderhou en ignoreer dikwels watter ander voordele daar mag wees. Wat hierdie proefskrif betoog is dat SL 'n verskeidenheid fisiese en sosiale voordele inhou, wat nie noodwendig gemeet kan word nie. Navorsing op grondvlak dui daarop dat die voordele van SL meer kompleks is as wat veronderstel word, soos bevestig deur 'n aantal kwalitatiewe gevallestudies van SL in Afrika.

Baie aandag word aan die voedselsekerheid en inkomste dimensies van SL gegee. Daar is egter ook ekologiese, bemagtigings- en geslagsdimensies. Regdeur Afrika word SL hoofsaaklik vir voedselsekerheid en inkomste gebruik, deurdat die produkte geëet word en op die informele mark verhandel word. Arm mense en vroue put egter die minste ekonomiese voordele uit SL, hoofsaaklik as gevolg van hulpbronbeperkings, verblyfregonsekerheid en patriargale kulture. Terwyl sulke bevindinge daarop dui dat die voordele van SL diegene omseil wat hulle die meeste nodig het, is daar gevind dat hierdie beperkings deur ondersteuning van nie-regeringsorganisasies (NRO's) oorkom kan word.

NRO's speel 'n belangrike rol in die bevordering van 'n volhoubare lewensbestaan. Dit word bereik deur middel van skenkings van hulpbronne en belegging in menslike en sosiale kapitaal. In Kaapstad is SL vir baie jare al deur NRO's ondersteun. Onlangs het die plaaslike regering hierdie poging ondersteun deur 'n SL-beleid wat openbare steun deur helpbronskenkings en die voorsiening van grond legitimeer. Die vraag wat hierdie proefskrif ondersoek het, is in watter mate SL bydra tot die lewensbestaan van diegene wat in Kaapstad se grootste lae-inkomstegebied, die Kaapse Vlakte, woon. Omdat baie van die SL-projekte in Kaapstad deur NRO's bestuur word, was die fokus op 'n seleksie van hierdie projekte.

Diepte-onderhoude en fokusgroepgesprekke is met landbouers en NRO's dwarsoor die Kaapse Vlakte gehou. Vier verskillende tipes landbou kom voor, naamlik tuislandbouers,

landbougroepe, institusionele landbouers en tuinsentrums. Tuislandbouers werk op 'n klein skaal op die grond rondom om hulle woning, terwyl die landbougroepe en institusionele landbouers groter stukke grond bewerk. Landbougroepe werk onafhanklik, gewoonlik op grond wat aan die standsraad behoort, terwyl institusionele landbouers namens die instansie wat se grond hulle gebruik, verbou. Alle landbouers word deur die NRO-tuinsentrums ondersteun. Hierdie tuinsentrums dien ook as die administratiewe sentra van die NRO's se SL-program.

Die bevindinge toon dat die voordele van SL verband hou met die tipe SL wat beoefen is. Vir die tuislandbouers versterk SL verhoudings en brei dit netwerke uit. Institusionele tuine leer kinders om vir die omgewing te sorg. Die ekonomiese en voedselsekerheidsvoordele van SL was duidelik in formele groepe, en die NRO-tuinsentrums speel 'n ondersteunende rol vir al drie tipes. Die landbouers het ook ander voordele ervaar. Byvoorbeeld, alle soorte landbouers het genoem dat SL hulle geleer het om gesond te eet en vir die omgewing te sorg en ook dat hulle 'n verhoogde gevoel van eiewaarde ervaar. Verder het al die landbouers van hulle oes aan mense rondom hulle weggee. 'n Voorvereiste vir hierdie voordele was egter suksesvolle verbouing, wat net moontlik was met die opleiding en ondersteuning wat deur die NRO's aangebied is.

Die bevindinge dui daarop dat NRO's noodsaaklik is om te verseker dat SL die grootste impak in lae-inkomstegebiede kan hê, en om die beperkings van SL wat dwarsdeur Afrika duidelik is, te vermy. Nogtans word die opname en volhoubaarheid van SL in Kaapstad beperk deur burokratiese prosedures met betrekking tot toegang tot grond, beperkings van donateurs op befondsing en 'n wydverspreide staat van afhanklikheid in die teikengebiede. Dit is dus waarskynlik dat die uitbreiding van SL in Kaapstad stadig sal bly totdat sodanige beperkings aangespreek is.

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LIST OF ACRONYMS

AIDS	Acquired immune deficiency syndrome
ABCD	Asset-based approach to community development
BEE	Black economic empowerment
CSI	Corporate social investment
DAFF	Republic of South Africa Department of Agriculture, Forestry and Fisheries
FAO	Food and Agriculture Organization of the United Nations
HIV	Human immunodeficiency virus
NGO	Non-governmental organisation
SEED	Schools Environment Education and Development
UA	Urban agriculture

1. CHAPTER ONE: INTRODUCTION

1.1 Background

Urban agriculture (UA), the cultivation of crops and animals in an urban environment, contributes to the food security of many African households (Mougeot, 2005:5). Without UA, nutritious food is often inaccessible for many of Africa's urban poor. In many cases, such people are marginalised from mainstream food systems, both geographically by living in informal housing areas far from cheaper fresh produce retailers, and economically, by being unable to afford fresh food. According to many, the food they buy from mainstream channels tends to be highly processed and unhealthy (Frayne, Pendleton, Crush, Acquah, Battersby-Lennard, Bras, Chiweza, Dlamini, Fincham, Kroll, Leduka, Mosha, Mulenga, Mvula, Pomuti, Raimundo, Rudolph, Ruysenaa, Simelane, Tevera, Tsoka, Tawodzera & Zanamwe, 2010:49). The same applies to Cape Town, where the majority of residents in low-income areas are unemployed and food insecure (Battersby, 2012:37). This segment of society is highly vulnerable to rising food and energy prices (Swilling, 2006:34). Thus, due to the prominence of cash markets in Cape Town's food system, the scope and intensity of food insecurity is likely to increase (Frayne, Battersby-Lennard, Fincham & Haysom, 2009:17).

The City of Cape Town believes that UA can provide food security and incomes in its poor areas (City of Cape Town, 2007:3). This belief is reiterated by local non-governmental organisations (NGOs), as reflected in a recent news report by *eTV News*, a South African news station. This report begins by describing the work of an NGO that promotes UA in Cape Town (eTV News, 2013):

Unemployed people in townships are taking up gardening, supporting themselves and their families. They are part of a project that is helping them to grow vegetables to save money and live healthily. The rest of their communities are also benefitting from their efforts.

The above news report exhibits key examples of cultivation groups that have been started by a Cape Town-based NGO. These groups are providing a source of sustainable food security for many living in impoverished areas. For the NGO that started these groups, the prime motivation behind the promotion of UA was not only food security, but also the various social benefits that

accrue from such community-level projects. Yet, despite this optimism, available evidence suggests that the contribution UA makes to household food security in Cape Town is limited.

Similarly, opinions on the potential for UA to contribute social and physical benefits to low-income communities are mixed in the academic literature. In spite of popular and public optimism, quantitative research finds that the contribution UA makes to food security in Cape Town's low-income areas is "not significant" and that expanding UA in Cape Town is imprudent (Battersby, 2012:45). In contrast, a limited body of qualitative research and a wealth of grey literature exhibit numerous cases in which UA not only provides a consistent supply of healthy food to cultivators, their dependents and surrounding community members, but also exhibits an array of other benefits. Such different conclusions create uncertainty as to whether NGOs and government ought to continue promoting UA or not. Without clear guidance, local government cannot move decisively in support of UA, and well-meaning NGOs may encourage individuals to spend time on activities that are ultimately unproductive (Webb, 2011:206). At this stage, the important question is not "how many cultivators are practicing UA", but rather, "in which way does UA benefit the few cultivators that are succeeding" as well as "what are they doing that makes them succeed?" There is therefore a need for in-depth qualitative research to understand the benefits and success factors of UA in Cape Town. Thereafter, quantitative research using a range of indicators could be usefully conducted to serve as a benchmark.

Part of the reason behind conflicting reports on UA in Cape Town relates to its array of interpretations, as it is so broadly defined. The City of Cape Town, for example, defines UA as "the production [...] of crops and animals [...] in an urban environment using resources available in that urban area for the benefit largely of residents from that area" (City of Cape Town, 2007:1). This includes both formal and informal activities and, in terms of plant produce, includes cultivation at home, in groups and by institutions. While UA embraces a wide spectrum of activities, the scope of this study is limited to vegetable cultivation run by NGOs in the townships of Cape Town. The reason for the selection of this segment of UA is that NGOs are the primary drivers of UA in Cape Town, and focus principally on townships for their activities. Such NGOs promote UA as a food security strategy as well as an activity promoting social benefits, and use both formal groups and garden centres as support hubs for achieving this (Soil for Life, 2014; Geyer, Scholms, Du Plessis & Van Eeden, 2011:44). According to the Food and Agriculture Organization of the United Nations (FAO) (2012:31), the greatest benefits of low-

income cultivators are found in formal groups run by NGOs. Although NGOs have been promoting UA in Cape Town for decades, the benefits of UA to low-income cultivators remain a contested terrain because there are few in-depth studies that really focus on the physical and social benefits of UA in these spaces.

1.2 Scope of UA in Africa

The reason it is necessary to interrogate the benefits of UA is because, according to the United Nations Development Programme (1986, in Allen, 1999:123), “one seventh of the world’s food supply is grown in cities by 800 million urban farmers”. Many of these cultivators are found in Africa, where UA plays a particularly important role, both in terms of its contribution to urban food security as well as to local economies. This is aptly depicted in the book on UA in Africa edited by Egziabher, Lee-Smith, Maxwell, Memon, Mougeot and Sawio in 1994, that compiled case studies on UA in a number of African countries. In the introduction, Mougeot (1994a:13&14) reports that UA plays a major role in the local economy of many African cities, with some key examples being Addis Ababa (Ethiopia), Kampala (Uganda) and many small towns throughout Kenya. A number of years following Mougeot’s publication, the scale of UA and its role in Africa were shown to be even greater when the FAO published an extensive report in 2012 on the role of UA in Africa. This report found that UA in Africa is “the single most important source of locally grown, fresh produce in 10 out of 27 countries” and plays a major role in even more (FAO, 2012:19). Thus, UA is a major sector of the urban food economy in much of Africa. So what about South Africa, where its potential has been a subject of much debate?

1.3 Scope of UA in South Africa

In the light of food security challenges in South Africa’s low-income areas, attention was given to the potential for UA to mitigate food insecurity as early as 1989 (Rogerson, 1993:24). However, since this study, many have disputed the benefits. In the first empirical research on UA in South Africa, Eberhard (1989:9) reported that UA is “unlikely” to make a significant contribution to the livelihoods of the urban poor. This opinion is still held years later, for example by Webb (2011:205), who states, “urban agriculture in South Africa does not provide the benefits so often attributed to it”. While both Webb and Eberhard state that optimism about UA as a food strategy may be exaggerated, neither deny UA’s potential to contribute to community

development, provided that promoting UA is balanced with a consideration of its limitations (Webb, 2011:204; Eberhard, 1989:9).

UA in South Africa is an incredibly complex phenomenon (Webb, 1996:3). Its potential is elusive and subject to a myriad of intervening variables. Thus, while some believe that UA is a survivalist strategy adopted as a last resort by the marginalised in society (Altman, Hart & Jacobs, 2009:346), others find that the marginalised benefit the least of all cultivators (Rogerson, 2011:195; Rogerson, 1998:171). Furthermore, Crush and Frayne (2010:8&17) find that the expansion of formal retailers in low-income areas presents both opportunities and limitations to the economic viability of UA. Equally, Slater (2001:646&648) finds that UA empowers women in patriarchal cultures, but in challenging gender-based hierarchies, it also instigates gender-based violence against women. Such paradoxes reflect the complexity of UA in South Africa. This complexity makes it difficult for policy makers and other actors to support and fully engage with the potential benefits of UA in a constructive manner (Webb, 2011:206).

1.4 Scope of UA in Cape Town

An interesting site for research on UA in South Africa is Cape Town, as it is arguably the most active in terms of training and support from NGOs (Reuther & Dewar, 2005:120). Furthermore, it is the only municipality in South Africa with a UA policy (Battersby, 2012:44). This possibly explains why the number of cultivators in Cape Town has increased quite significantly, from 723 in 2002 to 1 767 in 2007 (Crush, Hovorka & Tevera, 2011:292), and more recent estimates are set at over 4 000 (Soil for Life, 2014; Geyer *et al.*, 2011:44). Nevertheless, after 30 years, some claim that UA contributes only 1% to household food security in Cape Town (Crush *et al.*, 2011:294; Karaan & Mohammed, 1998:69). The insignificant contribution UA currently makes to food security is of concern, as Cape Town's food system is becoming more and more unsustainable as the population grows. Since 1994, in-migration from rural areas has caused a rapid growth in Cape Town's population (Geyer *et al.*, 2011:41). Because Cape Town's food system is based on a cash economy, rising food insecurity is directly related to food price increases (Frayne *et al.*, 2009:17). Thus, the City of Cape Town (2007:4) hopes that UA can contribute to food security by producing for own consumption and making an income (City of Cape Town, 2007:4).

The City of Cape Town has taken note of this perilous situation and, in 2007, implemented the first UA policy in South Africa. This policy is based on the assumed benefits UA may hold for impoverished communities, namely to “enable the poorest of the poor to utilize UA as an element of their survival strategy” (City of Cape Town, 2007:3). To these ends, it seeks to promote linkages between government and the local NGOs who promote UA by legitimising public support in terms of inputs, infrastructure and land provision (City of Cape Town, 2007:13).

Most of the NGOs involved in UA operate in low-income areas on the Cape Flats, including in Khayelitsha, Nyanga, Phillipi, Crossroads and Vrygrond. These NGOs promote UA by providing support services to private individuals who cultivate the property around their homes or in groups on urban open spaces. These are supported by each NGO’s local garden centres (Soil for Life, 2014; Sozo, 2014; Reuther & Dewar, 2005:98; Newsletter 38, 2011). In spite of such support, as indicated, UA has experienced limited success to date in terms of the volumes of produce and the financial benefits that accrue from this. For example, in the areas targeted for UA by local NGOs, 96% of the population have never eaten home-grown food (Crush *et al.*, 2011:292) and this has led to the belief that it is not making a significant contribution to food security. This has led people like Eberhard (1989:9) to state that one should rather not focus on the physical, but rather on the social, benefits. The present study seeks to challenge this position. Based on limited cases in Cape Town, and supported by myriad cases from Africa, UA can provide both physical and social benefits, including food security. The key is to learn from successful cases throughout Africa, as well as to identify the social and physical benefits that currently ensue from Cape Town’s limited examples.

1.5 Benefits of UA

Since publications on UA in Africa began to emerge, many benefits of UA have been identified. The earliest and central focus of UA is food security, which it provides both directly, through subsistence cultivation, as well as in a number of indirect ways, such as savings for food staples and increasing networks of support. Further physical benefits, such as economic resilience and ecological wellbeing, as well as social benefits such as empowerment and gender issues, are also identified in the literature. These are reviewed briefly.

1.5.1 *Food security*

Food security is a central focus in publications on UA in Africa. In urban centres, where food access is largely dependent on cash transactions, UA provides a rare opportunity for those without financial capital to gain access to healthy food (Mougeot, 1994a:12). To these ends, UA not only increases the volume of healthy food accessible to poor South African households by buying food staples after selling surplus produce (Rogerson, 2003:134), but it also increases the variety of nutrients a household consumes (Maunder & Meaker, 2009:403). While the same may be achievable through feeding schemes and soup kitchens, UA is “superior to other food aid policies” in that it alone promotes self-reliance by compelling cultivators to learn, plan ahead and innovate (Ratta & Nasr, 1996:159). Some studies done on UA in Cape Town show that it reduces expenses for fresh produce, thereby freeing up some of the household budget for buying staple foods, such as bread or milk (Dunn, 2008). This also reflects the economic viability of UA.

1.5.2 *Economic viability*

The economic benefits of UA are promoted in a number of ways, from directly earning an income by selling produce to saving on food expenses. The economic benefits UA provides are particularly important for the urban poor, as it has low barriers to entry, and as such contributes notably to household income throughout Africa. For example, in a number of African cities, including Accra, Dakar and Kinshasa, almost all of the leafy greens sold in the city are produced by urban cultivators (FAO, 2012:19). Many of these cultivators are poor and UA contributes to vital financial needs, such as paying rent (FAO, 2012:18). The same is found in Cape Town, where UA augments household income (Kirkland, 2008:98).

While UA may not require a cash income to operate, it does however require access to land (Maxwell, 1995:1677). Through ingenious means, cultivators gain access to free land as well as to other vital inputs such as water and compost. By eliminating the need for financial capital, cultivators increase the economic viability of their cultivation dramatically (Schulschenk, 2010:115; Asomani-Boateng, 2002:601). Many of these methods, such as composting organic waste, have spin-off benefits for local ecologies.

1.5.3 *Ecological integrity*

While UA in much of Africa is carried out by the urban poor for food security and as an economic strategy, UA tends to have positive ecological impacts, even if these are not

intentional. In much of Africa, cultivators use freely available organic inputs that promote soil biodiversity, such as compost and manure, rather than expensive chemical inputs from the commercial mainstream (Asomani-Boateng, 2002:601). The same is found in Cape Town, where NGOs actively promote organic cultivation methods (Kirkland, 2008:108). Furthermore, cultivation groups in Cape Town are often located on marginal land that, when uninhabited, becomes a target for illegal dumping. Cultivators clean up and maintain such land, which benefits the surrounding ecology and, as such, provides healthy, orderly and lush urban open spaces (Ward, 2007:47). Such spaces facilitate positive social interactions, illustrating UA's social benefits.

1.5.4 *Empowerment*

Social research on UA shows that it can be instrumental in building social and human capital through creating intra- and inter-community networks (Jacobs, 2009:92). The facilitating role UA plays in creating social linkages is one of its most important social benefits (Rogerson, 1993:26). Evidence of this is found in African case studies, where UA encourages group networking in communities and the strengthening of group bonds. The same was found in South Africa, namely that UA contributes, with assistance from NGOs, to building social capital at all levels, and contributes to human capital through facilitating education and creating a sense of community pride (Rogerson, 2011:192). This is supported by findings from Cape Town, where NGOs provide the core support structure for UA, and as such promote linkages within communities as well as between community members and government (Jacobs, 2009:92&97). Such linkages are especially important for women.

1.5.5 *Gender issues*

Gender is central to an understanding of the social benefits of UA, as the majority of cultivators throughout Africa are women (Redwood, 2009:13). Women have a central role to play in UA, as African women are generally responsible for household food security (Van Averbeké, 2007:341). UA facilitates this role for women throughout Africa by providing a source of food even when there is insufficient financial capital to buy it (Freeman, 1993:18). Besides helping women to fulfil gender roles, cases also relate how UA helps women to challenge gender roles. For example, women in Botswana use the proceeds from UA to buy land, even though purchasing land is traditionally a masculine activity (Hovorka, 2006:221). The need to focus on the facilitating and empowering roles UA plays in the lives of woman cultivators is important, as this

cadre of cultivators, although representing the greatest portion of cultivators in Africa, nevertheless face the greatest limitations to cultivation because of patriarchy (Freeman, 1993:20).

Cape Town is no different, as 72% of cultivators in Cape Town are women (Battersby, 2011:18). Some women express appreciation for the assistance UA provides them to fulfil traditional gender roles such as the cultivation of food and household food provision (Slater, 2001:644). UA, however, is also a means by which women challenge patriarchy, as illustrated in an example in Fermont, Van Asten, Keet and Van Boom (1998:23), where women expelled men from their formal group in Khayelitsha when these men tried to assume dominance.

1.6 Key role players in UA

In many cases, the benefits and viability of UA for women in patriarchal cultures, as well as for other marginalised cultivators, is advanced with assistance from NGOs and government. These introduce resources such as infrastructure and materials into a community, or facilitate the development of existing resources, such as human and social capital. This role is important, as poor communities rarely have sufficient resources or access to existing resources to the degree needed for community development to take place (Morse, McNamara & Acholo, 2009:5; Farrington, Ramasut & Walker, 2002:30). To these ends, government plays a key role by making and implementing policies to guide and protect the development of UA (Bryld, 2003:84).

Although it appears that official support for UA in Africa is growing, much space for improvement exists (Mougeot, 1996:142). For example, in many countries, cultivators continue largely in spite of opposition from the state (Tinker, 1994:vii), and their success is further limited by the dearth of supportive NGOs. As a result, local entrepreneurial potential is curtailed, especially for women (Mougeot, 2005:21). When NGOs support UA, they provide a valuable complement to government, as NGOs are practical, innovative and decentralise power, whereas the state tends to be policy-driven, bureaucratic and centralised (Brown & Korten, 1989:32). Thus, NGOs provide practical support when complemented by a supportive policy environment (Salamon & Anheier, 1997:129). Such a supportive environment exists in Cape Town, where a municipal UA policy and a longstanding tradition of NGO support has led to a UA sector that creates entrepreneurship opportunities for low-income cultivators and focuses primarily on women. Even so, it appears as if much more support from NGOs is required if UA in Cape Town is to realise its full potential (Reuther & Dewar, 2005:118&119).

1.7 The sustainable livelihoods framework

The preliminary review of literature on UA in Africa, South Africa and Cape Town reveals that UA has much potential for contributing physical and social benefits to low-income cultivators, but the potential is mitigated by natural, social and institutional factors. Thus, while the FAO (2012:19) believes that UA provides a “sustainable livelihood strategy, especially for poor urban dwellers”, a theoretical framework is needed that can contextualise the mitigating factors. Such is provided by the sustainable livelihoods framework.

The sustainable livelihoods framework is useful for analysing the livelihoods of poor people in order to identify “*strategically important*” interventions (Krantz, 2001:11) (italics in original). As revealed in the literature above, the livelihoods of urban cultivators incorporate natural, human, physical, financial and social factors to construct agriculture-based livelihoods that have various social and physical benefits. Such factors alone are not sufficient to create resilience, however, as low-income cultivators are vulnerable to social and economic constraints, limitations from the natural environment, and the influence of institutions. The value of the sustainable livelihoods framework is that it encompasses all of these factors in the theoretical construction of a livelihoods framework.

According to the sustainable livelihoods framework, livelihoods are composed of five key “building blocks”, namely natural capital, human capital, financial capital, physical capital and social capital (Farrington, Carney, Ashley & Turton, 1999). These capitals contribute to the wellbeing of an individual or household, both economically and in terms of the construction of meaning (Morse & McNamara, 2013:30). The resilience of livelihoods is dependent on the degree of access individuals have to the five capitals, as well as on the nature of the capitals, so that greater access to higher quality capitals has a positive effect on livelihood resilience. Access and quality, however, are mediated by the vulnerability context, which refers to the ability to withstand stresses and shocks, and the institutional context, which refers to NGOs and government that mitigate limitations and mediate access (Murray, 2001:6&12). The sustainable livelihoods framework provides a very useful lens through which to examine the influences of the natural, social and institutional environment and how this influences the viability of UA. The lessons learned in this regard frame an understanding of the physical and social benefits UA accrues and indicate which issues need attention if such benefits are to be sustained and expanded in Cape Town’s low-income areas.

1.8 The rationale for the study

Although much research exists on UA in general, research on UA in South Africa, and particularly in Cape Town, is limited. According to Webb (2011:205), although there is “enough” research on UA in South Africa to prompt “local authorities and NGOs to at least adopt a cautious approach to the promotion of UA as a path out of poverty”, there is not enough research to inform these development agents on which path to take. Cape Town is an ideal case for expanding on the existing body of knowledge because UA is actively being promoted by local government, there is a long history of UA, there is active engagement by NGOs, and there is potential to expand. However, much confusion exists in terms of how UA is to be practised, and how to engage communities in these kind of activities (Tembo & Louw, 2013:224). This has hampered constructive debate, and ultimately policy development and implementation (Crush *et al.*, 2011:299; Rogerson, 2011:195; Webb, 2011:206; Altman *et al.*, 2009:346). As long as UA remains an “ad hoc” activity, outside of the urban planning agenda, “the full potential of this sector for real economic and social development will not be realised” (Frayne *et al.*, 2009:19). In order to clarify where UA stands in terms of community development in Cape Town it is crucial that studies describe “not whether a project succeeds, but how success is produced” (Ruysenaar, 2013:243). Accordingly, in light of the need for empowering food strategies as well as the lack of clarity on UA’s potential in Cape Town, the rationale for this study is to address the need for a deeper understanding of best practice for UA in Cape Town and to determine what positive outcomes such practice leads to. The hope is that this will deepen our understanding of the benefits of UA and provide principles for success, thereby shifting UA from an “ad hoc” activity to one that has good reason for receiving mainstream support.

1.9 Research question

This study addresses the rationale by answering the question, “What are the physical and social benefits that accrue from UA projects facilitated by NGOs that train and support cultivators in Cape Town?”

1.10 Research objectives

To answer the above research question, the following objectives were pursued:

- To conduct a literature review to determine what the debates on UA in Africa are, the various activities this embraces, and how this can improve food security and other benefits in impoverished urban communities.
- To develop a theoretical and conceptual framework to assess how resources are used and what limitations exist to making such projects work. This is provided by the sustainable livelihoods framework.
- To assess the status of UA projects run by NGOs in South Africa, with a particular focus on those involved in Cape Town, in order to determine the characteristics of, opportunities for and limitations to UA in this area.
- To conduct empirical research on UA projects run by NGOs in Cape Town.
- To analyse these findings in the light of the contextual and conceptual frameworks and to interpret what physical and social benefits are experienced by the cultivators.

1.11 Research design and methodology

This study used qualitative research methods. These were chosen because the study sought to understand important UA cases in Cape Town, namely those that are exemplary in terms of benefitting low-income cultivators. The strength of a qualitative method is in the generation of rich data, which is ideal for a case such as UA in Cape Town, where very little is known about the experiences and motives of the few successful cultivators. This methodology is laid out in detail in the methodology chapter, Chapter Five.

To these ends, four NGOs were identified that promote the spread of UA among low-income households in Cape Town by means of intensive training and long-term support. Within each NGO, four types of UA were identified. These were home cultivators, institutional cultivators, cultivation groups and garden centres. Cultivators from each type were selected to be interviewed to determine their experiences and perceptions of UA's benefits. Selection procedures differed for each NGO due to the vast difference in the number of members per NGO, as is described in more detail in Chapter Five.

Finally, while not the focus of the study, government and donors play a notable role in facilitating or limiting NGOs' work. Thus, the perspective of a key representative from government who is

directly involved in UA in Cape Town was sought. A representative from a major funder was also included. These perspectives added to an understanding of the context.

This study used both focus group discussions and semi-structured interviews. Focus group discussions were implemented for cultivation groups and were conducted on site. Semi-structured interviews were used for home cultivators and cultivators running garden centres, as well as for representatives of the NGOs, of government and of the key donor.

Fieldwork commenced with a pilot study at one of the NGOs in March 2014. Empirical research continued until August 2014. Fifty-nine individuals in total were interviewed, representing all four NGOs, in addition to a representative of the state and a major donor. Interviews were conducted in the participant's preferred language, namely Xhosa, Afrikaans and English. A translator was used for the Xhosa interviews. All interviews were voice-recorded and transcribed. Transcriptions were coded and clustered according to the themes in the conceptual framework.

1.12 Ethical clearance

This study presents a low level of risk in terms of the results as well as the research methods. The subject matter is not personally, politically or socially sensitive and it ought not to cause embarrassment to the participants. During all data collection procedures, the researcher remained sensitive to how participants felt about the subject matter. All data was treated as confidential. Anonymity was awarded to all participants.

While it was possible to award anonymity to the participants, it was not possible to maintain the anonymity of the NGOs being researched. Each NGO is identifiable by its characteristics, even if its name is concealed. The present study therefore will refer to the NGOs by name, with permission from the directors. This approach was already taken by Dunn (2010) when researching UA in Cape Town. Furthermore, the directors were invited to review and edit all statements pertaining to their NGO prior to the completion of the thesis. In order to protect the anonymity of the NGO representatives, the study refrains from providing any information that could make the representative identifiable. All the research participants in the present study are adults and the purpose of the research was clearly explained to them.

NGO directors are the gatekeepers of the cultivation groups. Therefore, it was necessary to obtain verbal consent from the directors before approaching the formal groups. Institutional permission forms were not required, because the NGOs in question, as well as the groups associated with them, are private entities, unrelated to public institutions. Nevertheless, as required, written forms indicating consent to participate in the research were signed by all participants prior to conducting focus groups and interviews.

As is required by Stellenbosch University's ethics review board, ethical clearance was applied for, and fieldwork was initiated upon the approval of the ethics review board. According to the procedure described above, the present study was undertaken according to the guidelines of the ethics review board of Stellenbosch University.

1.13 Chapter outline

Chapter One has introduced the study. It provides the context, the rationale for the study and a brief overview of the research methodology, which will be discussed in more detail in Chapter Five.

Chapter Two reviews the literature on UA in Africa and South Africa, highlighting characteristics, debates and role players. This forms the contextual framework for the following chapters.

Chapter Three assesses the state of UA in Cape Town by reviewing the academic literature, grey literature and social media. The characteristics, opportunities and limitations of UA in Cape Town are identified.

Chapter Four uses the sustainable livelihoods framework as a means to assess the livelihood capitals that cultivators utilise, as well as the facilitating or limiting effects of external factors.

Chapter Five describes the methodology adopted, sampling design, instrument construction, fieldwork, data recording, data capturing and data analysis as well as describing the characteristics of the sample and reflecting on the research process.

Chapter Six presents the findings from the fieldwork. The benefits, limitations and key influences are presented.

Chapter Seven interprets the findings based on the literature on the field and the sustainable livelihoods framework. The physical and social benefits of UA in Cape Town are analysed and the viability of UA in Cape Town is discussed. The chapter concludes with recommendations for future research and policymaking.

2. CHAPTER TWO: URBAN AGRICULTURE IN AFRICA

2.1 Introduction

Research on UA in Africa has historically focused on food security, while giving little attention to other possible benefits. This stems from when social science researchers ‘discovered’ UA in the 1970s, believing it to be a solution to the growing food insecurity in African urban centres (Mougeot, 1996:142; Niñez, 1985:4&5; Sanyal, 1985:20). Ever since then, UA has largely been propounded or dismissed on these terms (Tambwe, Rudolph & Greenstein, 2011:400; May & Rogerson, 1995:176; Tinker, 1994:xi; Freeman, 1991:51&121). This perspective comes through strongly in South African debates, originating in the late 1980s, when the state commissioned research on UA as a poverty-alleviation strategy (Rogerson, 1993:24). This research originated in a context of widespread urban poverty in South Africa and rapidly increasing food prices, and sought to establish the economic value of UA for low-income households (Eberhard, 1989:i). The findings were not encouraging and numerous studies indicated that UA did not contribute to food security in any significant way (Crush & Frayne, 2011:797; Frayne *et al.*, 2010:42; Webb & Kasumba, 2009:33; Eberhard, 1989:6). Some of the primary impediments identified were the lack of resources, inefficiency of production and gender-based discrimination (Rogerson, 2011:191; Rogerson, 2010:378; Shackleton, Paumgarten, Mthembu, Ernst, Pasquini & Pitchop, 2010:299&515; Altman *et al.*, 2009:358; Cloete, Lenka, Marais & Venter, 2009:37; Van Averbeke, 2007:339; Nell, Wessels, Mokoka & Machedi, 2000:183&184; Rogerson, 1993:25). Thus, one of the challenges facing those advocating UA as a means to improve the livelihoods of the urban poor was how to overcome these limitations, given the fact that many households in South Africa who practise UA for food security have limited alternatives (Van Averbeke, 2007:340; Rogerson, 1993:25). This study argues that UA’s contribution to community development is lost when UA is judged on such a narrow basis, because its strength lies in its versatility.

This chapter establishes the groundwork for the study as a whole by staking out key points and defining the parameters of urban agriculture throughout Africa and the factors that affect it. The core structure in this chapter consists of the five key areas of debate relating to the benefits of UA in Africa in general, and South Africa in particular, namely food security, economic viability, ecological integrity, empowerment and issues relating to gender. However, as UA’s potential is influenced by other role players, as well as by resource limitations, these determine the nature

and value of UA's benefits, particularly for low-income cultivators. To these ends, the key role players are identified and their influences are discussed.

As there is much confusion over the use of key terms, this chapter begins by discussing definitions of UA. The lack of a universal definition is highlighted, as well as the shortfalls of existing definitions and the ambiguity of key terms. I then will engage with the literature that attempts to describe UA according to various criteria. The shortfalls of the most popular criteria are discussed and a typology is proposed to conceptualise UA within the African context. From here, the focus shifts to the primary role players in the promotion of UA in Africa and the assets typically relied on. In closure, the debates in terms of the benefits attributed to UA are deliberated.

2.2 Definitions of UA

A number of definitions of UA are proposed in the literature. While all have the same basic elements, namely product, location and consumer, one ought to distinguish UA from its counterparts, namely farms, in the sense of mainstream production in rural areas, and gardens, the ornamental landscaping typically found in suburbia. The challenge of a UA definition is that it needs to be broad enough to encompass the diversity of UA, while not being so broad that it incorporates industries outside of this sector. Sawio (1994:26), for example, defines UA as “crop growing and livestock keeping in both intra-urban and peri-urban areas”. This definition is too broad, as “growing” could include ornamental gardens and “keeping” could include pets. This point is better illustrated in Van Veenhuizen's (2006:2) definition, namely “the growing of plants and raising of animals for food and other uses within and around cities and towns”. The weakness of both these definitions is in the key terms “growing” and “keeping” or “raising”. This limitation is further exacerbated by the phrase “and other uses”, which broadens the definition to the point that it includes the standard urban flowerbed, or animal welfare societies that raise animals. In such cases, both plants and animals have “uses”, such as beauty or companionship respectively, but neither of these examples are part of the UA sector.

To these ends, Crush *et al.* (2011:288) replace the words “growing” and “keeping” with “production” and “husbandry”, saying that UA “involves the production of plant and tree crops and animal husbandry on plot [*sic*], in open public spaces and on unused privately owned land within the city and in the peri-urban zone”. The terms “production” and “husbandry” imply a

consumer, distinguishing UA from recreational horticulture and pet keeping. However, describing what UA “involves” does not fully encompass the concept. Mougeot (2006:4) is equally noncommittal, stating that UA “*can be described as the growing, processing and distribution of food and non-food plant and tree crops and the raising of livestock, directly for the urban market, both within and on the fringe of an urban area*” (own italics). An advantage to this definition is that it introduces a third element, the consumer.

The difference between recreational gardening and cultivation is that cultivation has a consumer. For Mougeot (2006:4), the UA consumer is the “urban market”. This, however, neglects subsistence cultivators. Thus, a more comprehensive definition is provided by Mougeot (2000:10), who defines UA as:

An industry located within, or on the fringe of a town, a city or a metropolis, which grows and raises, processes and distributes a diversity of food and non-food products, (re-) using largely human and material resources, products and services found in and around that urban area, and in turn supplying human and material resources, products and services largely to that urban area.

This definition manages to capture cultivators from the commercial to the subsistence level. A simpler definition that also manages to span the spectrum of variety within UA is offered by Thornton (2008:243), who defines UA as “any agricultural activity occurring in built-up ‘intra-urban’ areas and the ‘peri-urban’ fringes [...] of cities and towns”. A limitation of this definition is that it avoids defining what is meant by an agricultural activity.

While many authors have attempted to encapsulate UA in a definition, others critique the very idea of using a definition at all. Webb (1996:4), for example, refuses to define UA because it is not a consistent phenomenon and is always adapting to specific contexts. Nevertheless, while acknowledging that UA is a diverse sector, one cannot forego framing the concept entirely. Doing so, however, requires specificity in key terms, and little consensus exists on what agriculture is and where the urban boundary lies.

2.3 Key terms relating to UA

To these ends, the foremost critiques of the term “urban agriculture” question both whether it is truly urban in its location and whether it is truly agriculture, as opposed to farming, cultivation or production. One of the critiques of the adjective “urban” is that UA is not necessarily located in urban areas. For example, it is pushed to the urban periphery by demands on urban land (Binns & Lynch, 1998:778). Thus, many authors use the term “urban and peri-urban agriculture” (Mougeot, 2006:22). The term “urban and peri-urban agriculture” provides no more clarity on the location of the practice, however, because urban peripheries are areas of transition from urban to rural, having undefined sizes and borders (Binns & Lynch, 1998:778). Thus, using the term “peri-urban” avoids rather than addresses the problem of defining “urban”.

A definition for “urban” is further complicated because criteria for defining urban areas differ between municipalities and countries. Thus, an area classified as urban in one case is likely to have been classified as rural in another (Zezza & Tasciotti, 2010:266; Webb, 1996:70). This implies that small towns may be excluded from UA programmes because larger, more obviously “urban” towns are preferred (Mougeot, 1996:138).

Urban boundaries are also unclear for urban cultivators. Many cultivators in Africa, and particularly in South Africa, have strong linkages with rural areas. Thus, Mougeot’s (1996:138) criterion that UA uses “urban human and material resources” and feeds local markets appears to exclude the majority of urban cultivators, who see themselves as rural people, who use rural inputs and send profits back to rural areas (Bryld, 2003:80&81; Lynch, Binns & Olofin, 2001:160; Binns & Lynch, 1998:778). This also raises the question of what to call those who practise UA.

Reflecting the ambiguity in key terms for UA, there is no consensus on what to call those who practise UA. The most popular terms are gardeners, farmers, producers and cultivators. In terms of the volume produced, “gardener” and “farmer” suggest two extremes, and therefore neither term can accommodate all cases. “Gardener” suggests diversity of produce and excludes those producing fields of crops (Nicolle, 2011:26). The term “cultivator” is a term wide enough to incorporate all scales of production (Webb, 2011:196; May & Rogerson, 1995:170) and for this reason is the term used in this study

The term “agriculture” is equally problematic. In the body of scholarship on UA, some choose the term “agriculture” (Rogerson, 1992:229), while others use “farming” (Van der Blik & Waters-Bayer, 1996:259) to refer to the same sector. The debate is further confused by authors who use these two terms interchangeably in the same text (Owens, 2010:250). The preference of some authors for one term over another suggests that the terms have specific meanings. Ellis and Sumberg (1998:215), for example, distinguish between the two terms by arguing that “agriculture” conveys commercial intent, while “farming” applies to subsistence or recreational cultivation. Applying this theoretical distinction is impossible, as the vast majority of cultivators do not apply such distinctions to their own cultivation, but rather act opportunistically, subsisting, storing, sharing and selling their produce as the season allows and as their experience grows (Koyenikan, 2007:1045; Karaan & Mohammed, 1998:74; Maxwell & Zziwa, 1992:42; Lado, 1990:265).

Consistency in key term usage is important because, in many cases, the usage of “urban cultivation”, “urban farming” or “urban agriculture” is intentional and has specific meaning. For example, “urban cultivation”, used by Rogerson (2011:192; 2010:378; 1993:21) and May and Rogerson (1995:166), excludes processing and distribution., but “urban farming” includes all these aspects (Rogerson, 2010:376; Altman *et al.*, 2009:357; Thornton, 2008:243; Van Averbeke, 2007:339; Rogerson, 1993:26). Thus, when texts do not use key terms intentionally, communication is impaired. For example, Thornton (2008:243,250&259) uses five different synonyms for UA. Van Averbeke (2007:39) switches between “urban farming” and “urban agriculture” on the same page, and Altman *et al.* (2009:356&357) use both these terms in the same paragraph, but none of these texts intend to convey a different meaning by using a different term. The most appropriate term appears to be “urban agriculture”, as it is sufficiently broad to include all types, while being specific enough to define the sector (Webb, 1996:ix). For this reason, it is the term adopted by this study.

The implication of these ambiguities is that debates cannot progress. Broad definitions hinder policy making, as distinctions between food and non-food crops, cultivation for subsistence or sale, urban boundaries and the degree to which UA is contributing to food security are crucial policy issues (Ellis & Sumberg, 1998:215; Mougeot, 1996:138). Furthermore, academic research is hindered by the lack of standardised definitions because cases cannot be compared (Tinker,

1994:xi). The debates surrounding key UA terms imply that the issue is too complex to make a concrete statement on what key terms should mean, neither is there an acceptable universal UA definition. This adds to the fuzziness and lack of clarity when studying and trying to come to grips with the complexities of UA in South Africa (Rogerson, 1998:178). Thus, a better understanding is achieved by describing UA according to its characteristics, as follows.

2.4 Criteria for describing UA

UA is a diverse sector using a variety of methods and inputs by a variety of income groups. Equally, the reasons for cultivation are diverse, as are the intended consumers. Thus, countless theoretical distinctions between ways of practising UA are proposed in the literature. Such distinctions, as stated by Ellis and Sumberg (1998:215) and Mougeot (1996:138), are required to be clear and relevant for policymaking. While policy-relevant distinctions exist, such as methods, produce, the motive for cultivation and the nature of the land being used, the characteristics used in defining them are rarely clear, as will be shown.

2.4.1 Cultivation methods

Cultivation methods are affected by soil preparation, inputs and the tools used for cultivation. Such methods are noteworthy because they originate from different traditions. They may be ancient traditions honed by geography, society and trade (Streiffeler, 1987) and, while being ideal for specific conditions, may appear “chaotic” to the western agronomist (Niñez, 1985:4). For example, tropical gardens, as described by Niñez (1985:3&4), utilise symbiotic plant relationships, enhance soil health and reduce labour, but such a model would not be as effective in a temperate climate, where sun exposure is limited. Thus, cultivation methods are important criteria for describing UA models, not only because of their impact on the ecology, but also because of their viability for sustainable livelihoods (FAO, 2012:3). The challenge is to know which cultivation methods best suit a specific context, because no method is universal. For example, Streiffeler (1987) refers to development projects that teach western agronomics in developing countries as performing “ecological colonization”. This suggests that a method developed for one context is not necessarily ideal when applied in a different ecology or cultural context, or at a different scale. Thus, the value of cultivation methods is in their viability in a specific context.

In South Africa, UA is informed by a number of different methods. Some methods are indigenous, originating from pre-colonial pastoral cultures, while others originate from modern Western agro-industrial production. An example of an indigenous UA method is the *muzi*, a method originating from Zulu culture, in which plants are clustered by their physical and spiritual properties. While food crops are present in the *muzi*, they are one part of a matrix that includes plants that provide raw materials, plants that provide spaces for socialising and plants that provide protection from antagonistic spirits, people and animals (Nemudzudzanyi, Siebert, Zobolo & Molebatsi, 2010:64&65).

This diversity of plant uses is also prevalent in other South African cultures, such as the Batswana in South Africa's North-West Province (Lubbe, Siebert & Cilliers, 2010:2901; Molebatsi, Siebert, Cilliers, Lubbe and Davoren, 2010:2953). For example, Lubbe *et al* (2010:2907) find that "people from poorer communities more readily cultivate ... utilitarian plants as a means of additional income or simply to improve their livelihoods" than those from more affluent households. In addition to the popularly discussed uses such as food and income, poorer households substitute infrastructure such as fencing, verandas and outdoor fire places with hedges, shade trees and shrubby windbreaks, respectively (Molebatsi *et al*, 2010:2959). Molebatsi *et al* (2010:2959) recorded the majority of households in the study cultivating plants for their perceived spiritual properties, however the properties were not specified. Thus, indigenous knowledge systems may play a notable role in South African urban agriculture, requiring that a broader focus be taken of cultivation methods than mere economic uses.

In direct contrast to indigenous methods is the agro-industrial method of mono-cropping and chemical inputs (Shackleton *et al.*, 2010:297), but in practice, modern and traditional methods are usually combined. Many cultivators in South Africa use both organic and chemical inputs, both mono-cropping and intercropping and both municipal and naturally occurring water (Onyango, 2010:160; Shackleton *et al.*, 2010:297&298; Van Averbek, 2007:339). A third method, neither indigenous nor industrial, is being promoted in South Africa through the work of development agencies. This method, agro-ecology, encourages the use of recycled organic inputs and discourages the application of chemical pesticides and fertilisers (Nicolle, 2011:20&141). In South Africa, the rationale behind agro-ecology is ecological sustainability and the low cost of inputs. This has been embraced by many NGOs involved in promoting UA in South Africa.

2.4.2 Produce

Some choose to describe UA in terms of the product being cultivated. At the most basic level, produce is divided into two categories, plants and animals (Maxwell, 1994:49; Memon & Lee-Smith, 1993:36&37). For most researchers, defining UA in terms of produce involves at least a broad description of the type of plants or animals that feature in each case (Thornton, 2008:251; Linares, 1996:105; Ratta & Nasr, 1996:155; Gumbo & Ndiripo, 1996:214; Maxwell, 1995:1672; Lee-Smith & Memon, 1994:78; Freeman, 1991:52). By using produce, researchers distinguish between crops (one type of plant over a large area), gardens (a variety of plants) and animal husbandry (Dossa, Abdulkadir, Amadou, Sangare & Schlecht, 2011:204; Thornton, Nel & Hampway, 2010:617). Such a distinction is relevant because animal husbandry has different legal implications to horticulture in many African cities (Thornton *et al.*, 2010:617; Bryld, 2003:80). Moreover, crops may have different restrictions to home gardens (Rakodi, 1988:109). Notwithstanding the policy implications of such distinctions, Tambwe *et al.* (2011:403) and Webb (1998:201) argue that academic research has failed to appreciate the deeper meaning cultivators attach to their choice of produce. For example, in terms of broad categories, produce is indicative of the socio-economic status of cultivators, as higher value produce requires a greater investment of capital (May & Rogerson, 1995:172; Sawio, 1994:45; Maxwell & Zziwa, 1992:34). At a micro-level, different species have distinct symbolic meanings for cultivators, namely symbols of homeliness, gifts or indicators of wealth (Owens, 2010:261; Thornton, 2008:255; Hovorka, 2006:217; Slater, 2001:649; Obosu-Mensah, 1999:169; Freeman, 1993:18; Sanyal, 1985:19). Besides this, there are a number of practical considerations. For example, cultivators choose which crops to grow and where to grow them based on species' liability to theft, official harassment, potential for sale or usefulness in the kitchen (Tambwe *et al.*, 2011:403; Freeman, 1993:13; Rakodi, 1988:109). For this reason, cognisance needs to be taken of the type of produce and its location. Distinguishing one type of UA from another based on produce alone is problematic, however, as UA is a diverse activity and cultivators' choice of produce changes continuously. Furthermore, such distinctions between uses for produce are rarely mutually exclusive (Tambwe *et al.*, 2011:408).

As in Africa, the literature on UA in South Africa distinguishes between animal husbandry and horticulture, at its most basic level (Maunder & Meaker, 2009:402). Typical livestock include cattle, chickens, goats, sheep and pigs (Onyango, 2010:156; Thornton, 2008:250; Thornton & Nel, 2007:16). In terms of produce, the most popular horticultural crops include spinach, maize,

pumpkin, cabbage, sweet potato, potato and tomato (Nicolle, 2011:153; Shackleton *et al.*, 2010:295; Thornton & Nel, 2007:16; Van Averbek, 2007:339; Nell *et al.*, 2000:811; Rogerson, 1993:25), as these are popularly eaten and relatively easy to grow.

In South Africa, with its diverse climate and limited access to water resources, seasons are a major determinant in terms of crop productivity. For example, in KwaZulu-Natal the subtropical climate allows many types of crops to be planted almost throughout the year (Shackleton *et al.*, 2010:298), while in Gauteng, where the climate changes more dramatically, one sees a greater emphasis on seasonal crops (Onyango, 2010:152). Spinach is one of the few crops that are planted everywhere, irrespective of season, as it is a popular staple (Webb & Kasumba, 2009:32). Besides climate, the decision to plant a specific crop is influenced by a range of other factors, such as their high market value, level of attention required, or because the cultivator either likes or is familiar with the vegetable or plant (Nicolle, 2011:66&139; Onyango, 2010:153). Thus, many factors influence which crops are chosen, and these affect the economic viability of UA, as well as its contribution to food security.

2.4.3 *Motives for cultivating*

Another way of understanding UA is to look at the cultivator's economic motive. For example, cultivators may be growing crops for commercial purposes, to increase variety in their diet or as a core strategy for food security (Maxwell, 1994:53). In terms of commercial cultivators, they typically invest capital in cultivation specifically with the intention of increasing their investment through cultivation or husbandry and selling their produce, such as Hovorka's (2006:207) example of a poultry cultivator. Self-sufficient cultivators, as in Asomani-Boateng's (2002:600) example, earn enough to survive, but choose to cultivate to increase the variety of food in their household. When food security is the motive, cultivators do not have access to sufficient food outside of what they produce (Freeman, 1991:121). Those whom Maxwell (1994:53) calls "no other means" are cultivators who, although food insecure, sell their produce because they have no other income. It is misleading, however, to create a typology based on economic motives. For example, from a policy standpoint, selling produce is a commercial activity with legal implications, regardless of whether the cultivator is classifiable as "commercial" or "no other means" (Ellis & Sumberg, 1998:215). Furthermore, hobbyists who grow vegetables for the pure pleasure of this fall within none of the proposed categories (Koyenikan, 2007:1045). Finally, it is

unrealistic to assume that each cultivator has a single, clearly defined motive (Tambwe *et al.*, 2011:408; Karaan & Mohammed, 1998:74).

A broad range of economic, food security and other motives are recorded in studies on UA in South Africa. In terms of food security, UA may provide food security, add variety to the diet of a household and generate some income to buy basic food items (Baiphethi & Jacobs, 2009:459). The extent to which UA is able to contribute to the livelihoods of the urban poor depends on the context in which the produce is cultivated. Commercial cultivation includes formal groups, which often generate sufficient income to make a living as well as surplus to take home (Nell *et al.*, 2000:812). Those who practise UA at home as individual cultivators generally produce very little and the income generated from the sale of produce is just to have some cash in the house (Onyango, 2010:143). Midway between these extremes are those who are food secure, but take advantage of opportunities to sell as and when they arise, typically because of a seasonal surplus (Onyango, 2010:163; Shackleton *et al.*, 2010:299; Van Averbeke, 2007:340).

Commercial cultivators in South Africa sell informally from their plots, on street corners or in the neighbourhood. Alternatively, they may use formal channels such as fresh produce markets and supermarkets to sell their products, which may be facilitated by a partnership with the state or other institution (Shackleton *et al.*, 2010:299; Baiphethi & Jacobs, 2009:463; Thornton, 2008:251; Nell *et al.*, 2000:812). A number of non-economic benefits are also associated with UA. Cultivators may cultivate for pleasure, for tradition, for ecological or health concerns, or for the opportunity to socialise (Onyango, 2010:142; Van Averbeke, 2007:341). Thus, because of the many non-economic benefits derived from cultivation, many cultivators do not consider labour an expense.

2.4.4 *The nature of the land being used*

The interaction between cultivators and the land affects the sustainability and productivity of UA (Hovorka, 2005:294; Flynn, 2001:683). Some scholars choose to describe UA according to the nature of the land being used. A number of characteristics are used, including the size of the land and the distance it is from the cultivator's home (Asomani-Boateng, 2002:594; Maxwell & Zziwa, 1992:30; Rakodi, 1988:108). Such categories run the risk of being arbitrarily defined, but when interpreted in the light of the legal standing of the land, such categories have policy-relevant implications (Ellis & Sumberg, 1998:215; Maxwell & Zziwa, 1992:30). Land access can

be divided into formal and informal means. Informal access can be subdivided further into legal and illegal. Land may be accessed formally through purchase or rent (Mougeot, 1996:139; Maxwell & Zziwa, 1992:36). Legal informal access includes borrowing land, or settling on an exchange between parties. Illegal access includes squatting on public or private land, or subdividing and subletting public and private land without authorisation (Maxwell, 1995:1674; Maxwell, 1994:55&56). With the expansion of African urban centres, urban property value continuously increases, thus formal land access is often limited to a minority of middle- and high-income cultivators (Foeken & Owuor, 2008:1980; Lee-Smith & Memon, 1994:77; Maxwell, 1994:55). While this seems to suggest that only higher-income cultivators enjoy security of tenure, it is possible for lower-income cultivators to have tenure security with the help of the state. For example, in Kampala, the same cultivators have informally occupied state-owned land for decades with permission from the state (Maxwell, 1994:57).

As in the literature on UA in Africa, three criteria are used to describe land in South Africa, namely area, distance from home and legal standing of the land. In terms of land size, there is no commonality throughout UA in South Africa, where urban land is cultivated ranging in size from one square meter to ten thousand square meters (Shackleton *et al.*, 2010:295; Thornton, 2008:253). As a rule, land cultivated at home tends to be relatively small, being a few dozen square meters at most in the space in front of, behind or down the sides of the house. This is often coupled with terms such as “home gardening”, “homestead gardening” or “backyard cultivation” (Rogerson, 2011:188&191; Rogerson, 2003:144). Whereas cultivation at home is not limited to the backyard, and home “gardening” excludes mono-cropping, I will use the term “home cultivation” to express the practise of UA on domestic property. Some refer to cultivation away from home as “dryland farming” or cultivation on “urban open spaces” (Nicolle, 2011:191; Van Averbeké, 2007:339). Dryland farming is a term originating from rural agriculture, and appears to exclude irrigated land. Thus the present study will adapt Nicolle’s (2011:191) term, “urban open spaces”, to create the term “urban open space cultivation” when referring to UA taking place on tracts of land away from the home. “Home cultivation” and “urban open space cultivation” are both incorporated in the general term, with “plots” referring to all cultivated areas in the present study (Nemudzudzanyi *et al.*, 2010:60).

Plots are accessed formally or informally in South Africa, as in the rest of Africa. Formally accessed plots are typically owned or rented by the cultivator (Shackleton *et al.*, 2010:295; May

& Rogerson, 1995:175). Informally accessed plots may be accessed legally if the cultivator borrows the land, for example from a church, NGO, college, school or the municipality (Onyango, 2010:149; Van Averbek, 2007:340). Land, however, may be accessed illegally if a cultivator begins cultivating vacant land awaiting development, or derelict municipal land, without the consent of the landowner (Onyango, 2010:149; Rogerson, 1993:25). Thus, while plots may be diverse, policy-relevant descriptions of such plots may be made according to plot size, location and legal standing.

2.5 Creating a typology for UA

The characteristics of UA that have been discussed, namely methods, produce, economic motive and the nature of the land, are all useful for describing UA cases. The problem is that they tend not to distinguish between types of UA because they are either not mutually exclusive, or do not encompass all manifestations of UA in the sector. Thus, to create a typology it is necessary to establish what characteristics can be clearly distinguished and encompass all the cases. This is necessary because each type is likely to require different resources and promote different benefits.

A distinction may be drawn between individual cultivation and cultivation groups, and between formal and informal cultivation. Groups exist when cultivators from more than one household share land, inputs, tools or outputs (Reuther & Dewar, 2005:98; Obosu-Mensah, 1999:166). By forming a group, such individuals are able to increase their access to resources for cultivation. Access to resources may also increase by formalising cultivation through registering with local government (Maxwell, 1994:56). Using these distinctions, UA may be practised informally by an individual or by a group, or it may be formal, practised by an individual or by a group. By drawing such a distinction, it is possible to categorise any UA case, which may then be further described according to cultivation methods, produce, motives and land.

2.5.1 Informal individual

Informal individual cultivators are not registered as cultivators with any formal institution, nor do they hold any of the assets used for cultivating in common. Although such a definition is not explicit for any of the research participants in the literature, it appears as if the majority of urban cultivators in Africa fall within this category (Rogerson, 1993:27; Maxwell & Zziwa, 1992:42). A typical example is an individual with a low income level who practises UA to provide some

form of food security, or because he or she has no other form of income (Crush *et al.*, 2011:289; Freeman, 1993:17). Formal land access is limited for such people, so informal means are used to gain access to larger plots located away from the home (Foeken & Owuor, 2008:1984; Obosu-Mensah, 1999:167; Freeman, 1993:6; Freeman, 1991:74). Due to a lack of funds, such cultivators use very basic tools, cheap or free inputs and have to rely on seasonal showers if they cannot access land near to a water source from which water can be channelled or bucketed (Foeken & Owuor, 2008:1984; Jacobi, Amend & Kiango, 2001:262; Obosu-Mensah, 1999:194; Freeman, 1993:16). Thus crops, being better suited to such conditions, are preferred to mixed gardens by many informal cultivators in Africa (Jacobi *et al.*, 2001:262; Freeman, 1993:6, Lado, 1990:264). While wealthier individuals may experience some success in terms of food security or income through informal cultivation, lower-income individuals face many challenges (Frayne, McCordic & Shilomboleni, 2014:186). Some of the challenges individual cultivators experience are that they are isolated, lack official recognition and are vulnerable to theft (Asomani-Boateng, 2002:598). Informal individual cultivators fair not better in South Africa.

According to the literature, it appears as if informal individual cultivation is the most widely practised type of UA in South Africa (Rogerson, 2011:184; Thornton & Nel, 2007:16). Informal cultivators in South Africa are typically women over the age of 50 and are unemployed, grant-dependent household heads (Shackleton *et al.*, 2010:294&295; May & Rogerson, 1995:26). While cultivation may provide some form of relief from food insecurity, the challenges inherent in informal individual cultivation act against the economic viability of the practice. For example, while home cultivation has high security of tenure, the amount of space available may be inadequate (Schulschenk, 2010:115). Public open space cultivation affords more space, but it is often carried out illegally, as informal individual cultivators are least likely to gain formal access to public open spaces. Thus, insecure tenure is an ever-present limitation to UA for such individual cultivators in South Africa (Rogerson, 1993:25). Due to such limitations, UA throughout South Africa remains “very inefficient” (Ngcamphalala, 2009, in Rogerson, 2011:184). In fact, a study in the Eastern Cape found that some cultivators recognise negative profits from UA (Webb & Kasumba, 2009:34). Some of these limitations are surmountable by forming a group.

2.5.2 *Informal group*

Informal UA groups are not registered with any formal institution or local government, but they hold at least one private asset necessary for cultivation in common, which is typically land and labour. Informal groups often emerge among low-income cultivators as a means to protect each other's interests, or to increase the efficiency of production (Obosu-Mensah, 1999:159). The need to form a group to guard one another's plots, or increase security of tenure, is often typical of low-income cultivators who do not have formal access to land (Asomani-Boateng, 2002:598). As these low-income cultivators have limited access to inputs or tools, the other advantage of belonging to a group is sharing such resources (Obosu-Mensah, 1999:159; Maxwell & Zziwa, 1992:43). In many cases, such informal groups produce crops that are not only sold to secure some form of income, but also to produce food for the household (Asomani-Boateng, 2002:598).

Some of the disadvantages associated with such informal cultivation are the lack of accountability, financial pressures and lack of training that could improve their outputs. This means that these cultivators sometimes embark on hazardous practices, such as irrigating crops with polluted water and overusing chemical fertiliser or pesticides, carrying with it certain ecological and health risks (FAO, 2012:2; Jacobi *et al.*, 2001:263; Obosu-Mensah, 1999:195).

South African informal group cultivators also find their productivity higher than when operating alone (Cloete *et al.*, 2009:48). Thus, group cultivation appears to contribute more towards the food security of cultivators' households than individual cultivation does (Shackleton *et al.*, 2010:522; Van Averbeke, 2007:340). Informal groups, ranging from fifteen to fifty strong, are typically located on public open spaces (Schulschenk, 2010:115; Shackleton *et al.*, 2010:515&517; Thornton & Nel, 2007:18), and reflect the characteristics found in the broader literature in terms of producing for subsistence and sale (Thornton & Nel, 2007:18). Whereas groups have distinct advantages over individual cultivators, particularly relating to the scale of production, they nevertheless experience some limitations. These relate primarily to a lack of training and support, resulting in the failure to replenishing the soil, planting out of season and generally producing at a sub-optimal level of economic viability (Thornton, 2008:250&253; Nell *et al.*, 2000:816). This illustrates how important it is for low-income cultivators to receive formal assistance.

2.5.3 *Formal individual*

Formal individual cultivators are registered as cultivators and are the sole owner of their product. In general, two types of formal individual cultivators exist. One is the entrepreneurial urban cultivator, who runs a registered UA business (Redwood, 2009:1; Hovorka, 2006:215; Obosu-Mensah, 1999:166; Freeman, 1993:9), and the other is a member of a local NGO (Maxwell & Zziwa, 1992:43). Both operate at a higher degree of viability than informal cultivators because a greater investment is made in production. For the independent entrepreneur, this requires access to capital, but for the NGO member, training and inputs for start-up are provided (Hovorka, 2006:215; Flynn, 2001:686; Jacobi *et al.*, 2001:262&263). NGOs therefore are important for increasing the viability of UA for economically marginalised cultivators.

Formal individual cultivation in South Africa is carried out primarily by NGOs (Rogerson, 2010:337). In such cases, cultivators are affiliated with the NGO, having been trained by the NGO, which provides such individuals with further assistance in the form of support services, implements and inputs – either free or for a small fee (Nevin, 2010:48; Onyango, 2010:174; De Satge & Williams, 2008:2). Formal individual cultivators typically use the space available at their home (De Satge & Williams, 2008:1). Such individuals are taught intensive organic horticulture cultivation methods, which they are expected to use to produce a number of crops in the space available to them (Nell *et al.*, 2000:814). These cultivators have the advantage of greater efficiency of production due to the tailored training they receive and access to resources through the NGO with whom they are affiliated. On the negative side, land space is often a factor inhibiting the capacity of such cultivators. When organised into formal groups, it is possible to access far greater areas of land and, by implication, enhance production volumes.

2.5.4 *Formal group*

Typically, formal UA groups are registered with a formal institution or with local government, and they hold land, labour and tools in common. They include cooperatives registered with local government and NGO-run groups (Drakakis-Smith, Bowyer-Bower & Tevera, 1995:191; Mougeot, 1994a:7; Rogerson, 1993:25). A major benefit of formalising a group is that it is more liable to receive external support. For example, some governments promote the formalisation of groups by providing free land, tools, inputs and infrastructure (FAO, 2012:40, 57&65). Such groups generally operate at a degree of economic viability far superior to any of the other UA types (FAO, 2012:31)

Formal groups have many advantages over the other types of UA (Rogerson, 2011:188; May & Rogerson, 1995:176; Rogerson, 1993:26). In South Africa, formal groups are typically facilitated by NGOs, but may also be supported by the local municipality (Nicolle, 2011:25; Rogerson, 2010:377; Rogerson, 2003:148). Formal groups thus enjoy the many benefits provided by such institutions, such as funds, physical infrastructure and implements, as well as training and access to extensive networks (Rogerson, 2011:139; Rogerson, 2010:377; Webb & Kasumba, 2009:35; Rogerson, 1993:25). Due to the great availability of resources, formal groups have the advantage of formal channels to land access, being located on municipal land or on private land belonging to the NGO (Rogerson, 2010:377; Rogerson, 1993:25). If informal access is used it is normally legal, such as when land is borrowed from schools or clinics (Rogerson, 2003:147). In such cases, the method of cultivation is typically intensive horticulture of a range of crops using intercropping (Nicolle, 2011:133&141; Rogerson, 1993:26). For all the benefits that formal groups enjoy, the success of formal groups depends on the ability of cultivators to work together, as income and tools are typically co-owned. Unresolved conflicts in formal groups may prove detrimental to their sustainability (Nicolle, 2011:80).

2.6 Role players in UA in Africa

While low-income cultivators have some control over production viability through forming groups or making financial investments in physical capital, these adjustments at the micro-level are overshadowed by the influence of a few key role players. The first is government, which provides the legal framework to guide the safe practise of UA, as well as to facilitate UA's spread through supportive policies. The other is NGOs, which are able to draw diverse actors together, channel resources to low-income farmers and run UA programmes. NGOs are primarily dependent on donor funding, however, and so donors form a third key role player. These are discussed in turn.

2.6.1 Government

Government provides a legal framework for UA. This is important for ensuring that UA does not “result in health hazards and overcrowding” (Bryld, 2003:84) that can produce devastating effects if left unregulated. For example, in Kinshasa, natural bodies of water became polluted by the indiscriminate use of chemical fertilisers and pesticides by cultivators (Mayeko, 2009:163). This has made some governments wary of supporting UA and, in some cases, local governments have

even gone so far as to oppose all forms of UA (Tinker, 1994:vii). Nevertheless, a growing number of governments in Africa are beginning to view UA in a positive light (Mougeot, 1996:142), but strive to reduce the contamination of produce from waste and ensure sustainable land use through policymaking (Bryld, 2003:84). In addition to policies, governments may create a supportive legal environment for UA through tax exemptions, declarations of approval and the promulgation of guidelines regulating UA (Mougeot, 1996:142&143; Tevera, 1996:86). In cases where governments support UA, they have attempted to foster an enabling physical environment by providing and maintaining infrastructure or by designating land for UA (FAO, 2012:40, 57&65; Mougeot, 1996:143; Egziabher, 1994:82&88). This increases the wellbeing of the citizens by stimulating economic growth (Smith, 1998:215; Streiffeler, 1987).

This opinion is also held by national government in South Africa, which is supportive of UA. For example, the Republic of South Africa Department of Agriculture (now the Department of Agriculture, Forestry and Fisheries, DAFF) published the White Paper on Agriculture, which states that UA has a role to play in providing food security in South Africa (Republic of South Africa, 1995). More recently, DAFF released a publication that clearly promotes UA as a food security strategy for South Africa's urban poor (Republic of South Africa, 2012:36). The support from national government is limited, however, to such declarations and, as supportive as these are, they are only brief mentions within broader policy issues. No national policy on UA exists (Rogerson, 2011:184; Rogerson, 2003:145). Local governments, on the other hand, have been far more practical in encouraging UA.

Local governments play an important role in encouraging UA in South Africa. Some of the most notable examples of support from local government are found in Cape Town, Johannesburg, Pretoria and Durban (Rogerson, 2003:142,146). In these and other cities, one of the most often recorded forms of support is through the provision of land. Municipalities in many South African towns and cities provide land for UA, either by lending it, donating it or reserving its use solely for cultivation (Nicolle, 2011:59; Rogerson, 2011:184,192&193; Webb & Kasumba, 2009:35; Thornton, 2008:252; Van Averbeke, 2007:340; Nell *et al.*, 2000:817). Other examples of support from local government include starting cultivation groups or founding fresh produce markets where such groups' products may be sold (Nicolle, 2011:60&61; Rogerson, 2003:148). In such cases, local government supports UA by providing cultivators with free access to water or other inputs, as well as with tools, training, research and funding (Rogerson, 2011:184&188; Van

Averbeke, 2007:340; Rogerson, 1993:25). Nevertheless, local government throughout South Africa lacks the capacity to provide the level of support necessary to sustain UA at a grassroots level (Rogerson, 2011:184&190). This role is better fulfilled by NGOs.

2.6.2 *NGOs*

NGOs are important for promoting UA in Africa because a supportive legal environment is rarely sufficient to mobilise community assets, as this often needs external support (Redwood, 2009:10; Nel, Binns & Motteux, 2001:5; Rogerson, 1993:26). In this regard, NGOs typically provide support in the form of training, credit and infrastructure to enhance the capacity of cultivators involved in UA efforts (Mayeko, 2009:154). To provide such support, NGOs utilise assets such as social networks, funding, physical assets, professional knowledge and influence to implement UA programmes that train and support cultivators (Martens, 2002:282; Nel *et al.*, 2001:5; Keyes, Schwartz, Vidal & Bratt, 1996:202). NGOs are better placed than individual cultivators or formal groups to gain the support of funders, the government and the local community, because NGOs fill an “intermediary position” that both “top” and “bottom” role players recognise and trust (Nel *et al.*, 2001:5).

This is particularly relevant in South Africa, where NGOs are instrumental in promoting the uptake of UA. This is achieved primarily through the wide range of assets to which NGOs have access, which they use to recruit, train and support cultivators. As such, NGOs in South Africa bridge the divide between government support on paper and UA on the ground (Rogerson, 2011:190).

In South Africa, NGOs considerably increase the economic viability of UA for cultivators affiliated with them. This is because NGOs have extensive networks through which they provide cultivators with inputs, land and expertise, such as training, technical support and advice (Nicolle, 2011:60; Rogerson, 2010:377; Webb & Kasumba, 2009:35; Nell *et al.*, 2000:814; Rogerson, 1993:26). Inputs are usually provided for starting a garden, while its maintenance usually requires that cultivators buy subsidised compost, seed and seedlings (Rogerson, 2010:377). While this sums up the support provided for individual cultivators, groups are further supported through the provision of land and funds (Rogerson, 2010:377; Webb & Kasumba, 2009:35). In South Africa, some of the most prominent examples of NGO support are found in Cape Town and Johannesburg (Rogerson, 2011:193; Rogerson, 2010:377)

A key to the success of NGOs in South Africa is the capacity they have to experiment, research and develop best practice models (Nicolle, 2011:65). The greatest limitation to achieving this is funding. In fact, non-profit organisations as a whole in South Africa are currently facing a funding crisis, primarily due to the lack of international funding, which stems in part from the global economic crisis (Coalition on Civil Society Resource Mobilisation, 2012:9). Thus, while NGOs in South Africa are key role players in promoting UA, they are dependent on the support of donors.

2.6.3 Donors

Donors provide capital both for the advancement of UA through the work of NGOs as well as for the advancement of knowledge about UA through research (Atukunda & Maxwell, 1996:271; Mougeot, 1994b:99). The assets that donors contribute to UA are typically funds, but may include physical capital and expertise (Nel *et al.*, 2001:5; Mougeot, 1994b:109). Although donors are often thought of as private individuals or companies, they are not limited to these actors and may include government and international funding organisations, for example (Atukunda & Maxwell, 1996:271). Donors are however reluctant to become involved in UA if it is not recognised by the state, and thus the community development potential of UA is advanced when all role players are working together (Atukunda & Maxwell, 1996:272).

In South African case studies, local and international donors play a major role in supporting UA through donations of funds, implements, materials, inputs, research, social network connections and media exposure (Nicolle, 2011:62,63&74; Schulschenk, 2010:115; Thorton & Nel, 2007:18). These donors are typically companies, financial institutions and international funding organisations (Nicolle, 2011:59,62&66; Cloete *et al.*, 2009:35; Nell *et al.*, 2000:810; Rogerson, 1993:25). Donors are not limited to these, however, as the present study considers any entity that makes a voluntary contribution to the work of an NGO as a donor. Thus, South African case studies record individuals and government making donations to support NGOs as well. Other donors include universities, local businesses and even early childhood development centres (Nicolle, 2011:59-61&74; Schulschenk, 2010:115; Thorton & Nel, 2007:18; Nell *et al.*, 2000:812&813).

Donors often contribute funding towards a specific project such as a training course, or operations costs such as staff salaries. At times, however, donors may accompany donations with demands that are unrealistic in terms of the capacity of the organisation, or that deviate from the NGO's aims (Brown & Korten, 1989:12). For example, funding partners may use their position to influence the development process, which leaves cultivators feeling alienated and disillusioned with the programme as a whole and reduces the legitimacy of the programme (Nicolle, 2012:84). Thus, whereas donors are essential to the promotion of formal UA in South Africa, an over-involvement in the decision-making process of NGOs may diminish the empowerment potential of UA.

2.7 Benefits of UA

When all role players cooperate, a number of benefits for UA are achievable. Some of the most popular include its contribution to food security, its tendency to up-cycle low-value materials and resources, its ecological integrity, its potential for empowerment, and the opportunities it provides for women. These benefits often form the core of literature reviews arguing in favour of UA, such as Mougeot (2005:1-25) and Rogerson (2010:373-383). Nevertheless, as critics have pointed out, UA encounters numerous challenges and even exhibits some noteworthy risks (Webb, 2011:206). In the following section, the leading areas of debate dealing with the benefits attributed to UA in Africa are addressed.

2.7.1 Food security

Since social science research on UA in Africa began, food security has been a central theme. Proponents of UA emphasise the contribution UA makes to food security, especially for those who cannot access formal market channels (Mougeot, 1994a:12). UA provides food security directly if cultivators and their households eat what has been produced, but it may provide food security indirectly by substituting food expenses or by providing cash through the sale of produce (Tambwe *et al.*, 2011:400; May & Rogerson, 1995:176; Tinker, 1994:xi; Freeman, 1991:51&121). The link between UA and food security, however, is not guaranteed. In Southern Africa, the poorer a household is, the less UA contributes to its food security (Frayne *et al.*, 2014:178). In some cases, UA makes no meaningful contribution to low-income households at all (Webb & Kasumba, 2009:35). In such cases there is the risk that cultivators spend a disproportionate amount of time on unprofitable cultivation and miss more economically viable options such as wage labour (Bryld, 2003:81; Rogerson, 1993:26). Thus, even though UA can

enhance food security for those living in urban settings, overemphasising the potential of UA for food security detracts from other viable livelihood options.

In South Africa, national and local government promote UA primarily as a means to provide food security for low-income households (Republic of South Africa, 2012:36; Rogerson, 2011:189). Such benefits are realised when a household consumes what has been grown, or when cultivators sell produce and use the money to buy food (Rogerson, 2003:135). While UA has the potential to provide food security, in reality it rarely fulfils more than a supplementary role in the diets of South African households (Shackleton *et al.*, 2010:517; Altman *et al.*, 2009:356; Thornton, 2008:250). In fact, a number of cases in South Africa record the failure of UA to provide household food security at all (Shackleton *et al.*, 2010:515; Webb & Kasumba, 2009:65; Thornton, 2008:250; Van Averbeke, 2007:340). In South Africa as a whole, only between sixteen and twenty per cent of all households, rural and urban, practise some form of cultivation (Aliber, 2009:399). In the major cities, like Cape Town and Johannesburg, it is estimated that only five per cent and nine per cent practise UA respectively, but where this is practised, there are nevertheless some gain in terms of food security benefits (Frayne *et al.*, 2010:25&42). Mixed reports on UA's food security potential signify that the potential exists, but that it is facilitated or limited by other factors. Increasing this potential therefore is possible if those factors are identified.

The potential for UA to provide food security in South Africa is limited primarily by the conditions that accompany poverty. Due to the daily need for an income, individuals may choose short-term solutions for obtaining, cash such as temporary labour, over longer-term investments of time and money required for UA (Rogerson, 2011:191). Furthermore, because of the marked differences in seasons in most of South Africa, UA productivity fluctuates throughout the year (Schulschenk, 2010:115; Webb & Kasumba, 2009:33&65; Van Averbeke, 2007:340). Thus, at times of the year when household food security is at its lowest, such as in winter, plots may lie fallow, or production may drop off dramatically (Webb & Kasumba, 2009:33; Van Averbeke, 2007:340; Nell *et al.*, 2000:816).

While low-income informal individual cultivators are especially vulnerable to such limitations, case studies show that the contribution UA makes to food security is remarkably increased through group cultivation (Schulschenk, 2010:115; Van Averbeke, 2007:340). Cultivation on

public open spaces also appears to provide greater food security than cultivating at home (Van Averbek, 2007:340). Thus, while UA does not contribute to food security in general, it has the potential to do so if sufficient space exists to produce at higher volumes.

2.7.2 *Economic viability*

Many, in fact, dispute the economic viability of UA and believe that it can never be economically viable, primarily because of the value of urban land (Ellis & Sumberg, 1998:221). This perspective fails, however, to consider the ingenuity of cultivators for “creating, shaping and sustaining productive urban agricultural systems” (Hovorka, 2005:294). For example, the majority of cultivators in Africa make UA economically viable by using cheap or freely available inputs and land. In this regard, Maxwell (1995:1677) states that UA is a food strategy for individuals without access to income, but with access to land. Whereas formally accessed land is expensive in urban centres, cultivators may gain access to derelict land at no cost (Bryld, 2003:81). Such land is often fertilised with freely available inputs such as organic waste or manure, and cultivators practise near to free water sources, if possible (Asomani-Boateng, 2002:601). There are, however, certain risks to using free resources. For example, cultivators on informally accessed land rarely have legal protection against eviction and harassment (Maxwell, 1994:54). Moreover, land may be derelict because it is uncultivable (Bryld, 2003:82). Informally accessed inputs also carry potential risks. For example, water may be polluted, organic waste may contain heavy metals and informally accessed pesticides may be illegal and toxic (FAO, 2012:3; Redwood, 2009:16; Bryld, 2003:82; Asomani-Boateng, 2002:601; Obosu-Mensah, 1999:195). Thus, while the use of free resources may increase the viability of UA, they may present serious risks for cultivators, consumers and the ecology.

The economic viability of UA in South Africa is widely debated. At the household level, UA appears to perform poorly in terms of both turning a profit and generating savings. For example, less than 1% of households in South Africa derive an income from UA (Crush & Frayne, 2011:797). Even in terms of savings, UA appears to perform poorly in South Africa (Webb & Kasumba, 2009:34; Rogerson, 1993:25).

Low economic viability in cultivation stems from a lack of financial capital. Without money, cultivators have limited resources with which to counteract shocks from the natural environment, secure access to land, inputs and markets, or to protect crops from pests and thieves (Rogerson,

2011:191; Rogerson, 2010:378; Shackleton *et al.*, 2010:515&299; Altman *et al.*, 2009:358; Baiphedi & Jacobs, 2009:475; Cloete *et al.*, 2009:37; Van Averbeke, 2007:339; Nell *et al.*, 2000:184; Rogerson, 1993:25). Thus, rather than risk cultivation, individuals who have land may choose to house tenants on it, and those who have the physical ability to cultivate opt rather to be employed in the labour market (Rogerson, 2011:190; Nell *et al.*, 2000:818; Rogerson, 1993:27). Only where low-income cultivators who have received customised training in terms of the crops and areas where they operate, does UA seem to be economically viable. Such training is provided by NGOs, who teach cultivators to use free or low-cost resources such as discarded materials for structural purposes and recycled organic matter for fertiliser, and to negotiate access to derelict land (Nicolle, 2011:66&141; Onyango, 2010:158&159; Cloete *et al.*, 2009:21&27; Webb & Kasumba, 2009:36; Thornton, 2008:251; Van Averbeke, 2007:339; Rogerson, 2003:147; May & Rogerson, 1995:174; Rogerson, 1993:25).

Economic viability may also be advanced by value adding, for example by making seasonings and herbal remedies, or selling seedlings and freshly picked produce, or by increasing production volumes and thereby achieving economies of scale. Such methods increase viability by increasing profit margins, but they are expensive to start (Nicolle, 2011:60, 67&72; Reuther & Dewar, 2005:120; Rogerson, 2003:148; Nell *et al.*, 2000:815). Here, NGOs are often instrumental in providing the necessary credit and training. What appears evident from the literature and the experience of UA in South Africa is that the economic benefits are elusive for low-income cultivators, unless they are supported by NGOs and a supportive policy environment. It seems there is much potential in this regard if the work of NGOs can be expanded.

2.7.3 *Ecological integrity*

Notwithstanding the ecological risks associated with malpractice in informal cultivation, UA is generally considered ecologically benign. Whereas some cultivators may practise UA primarily because of its ecological benefits, for the most part these benefits are unintended. For example, the majority of cultivators in Africa actively seek the cheapest possible inputs, which tend to be organic and, as such, build up the soil (Asomani-Boateng, 2002:601). In Ethiopia, for example, cultivators use crop residues, ash and manure to fertilise the soil (Ashebir, Pasquini & Bihon, 2007:224). Using organic methods transforms derelict land by improving soil structure, removing invasive vegetation and beautifying the area (Bryld, 2003:81; Lynch *et al.*, 2001:169; Freeman, 1993:15).

In South Africa, UA is primarily based on organic cultivation principles. Formal cultivation, primarily led by NGOs or government, adheres to such principals due to ideals of their own and in order to please consumers (Nicolle, 2011:64; Rogerson, 2011:188; Rogerson, 2010:377; Rogerson, 2003:147). Even informal cultivators use cultivation methods that reflect organic principles, such as refraining from using pesticides and composting organic waste, but in such cases the use of these methods are more likely to originate in a shortage of funding, rather than from ideals (Nicolle, 2011:141; Onyango, 2010:159; Shackleton *et al.*, 2010:297; Thorton & Nel, 2007:16). Even although UA has positive implications for ecological integrity, this benefit is often limited by a lack of land tenure, as cultivators are reluctant to invest in making land arable if their access to such land will only be temporary. Thus, the greatest likelihood for ecologically beneficial cultivation is found in formal cultivation, where organic methods are promoted and tenure security is guaranteed.

2.7.4 Empowerment

Empowerment is the process whereby people increase control over their own lives and participation in their community. Empowerment takes place at the individual and community level, and the benefits of empowerment are also felt both individually and corporately. For example, empowerment of a community includes collective decision-making, sharing leadership responsibilities and using “collective action to access government and other community resources” (Perkins & Zimmerman, 1995:570). For the individual, empowerment may mean participating in organisations by leading, helping other group members or simply sharing in the group’s core beliefs (Speer, Jackson & Peterson, 2001:727). Empowerment is important in low-income communities because it facilitates local economic development (Binns & Nel, 1999:405). Unfortunately, in such places empowerment is elusive, both because of high levels of social isolation and because of the legacy of traditional development efforts that disempower communities by telling people “what they should think” and do (Botes & Van Rensburg, 2000:43). UA is found to be an effective empowerment tool, as it enhances social cohesion by encouraging people to work together (Speer *et al.*, 2001:727).

UA facilitates empowerment in many ways. Some key characteristics of UA include generating trust and reciprocity between community members. For example, in Kenya, UA increases interaction between community members as cultivators share their produce with neighbours, or

spend time together cultivating (Gallaher, Kerr, Njenga, Karanja & WinklerPrins, 2013:395). UA may also be used in a more confrontational way, by facilitating aggregation through which marginalised individuals may promote their interests. Cultivators in Accra, for example, formed farmer's associations because individual cultivators were losing their land to housing developments. These associations lobbied the national and local government to protect the interests of farmers (Asomani-Boateng, 2002:600).

The empowerment potential of UA is well recorded in South African cases. UA brings people together, both those within communities as well as stakeholders from outside the community. Within communities, UA promotes network formation as cultivators network amongst each other to discuss their activities and learn from each other (Nicolle, 2011:84). As such, cultivators become part of a close-knit group, often spending time together with no formal agenda, simply to socialise (Webb & Kasumba, 2009:37; Thorton & Nel, 2007:18; Van Averbek, 2007:341; Rogerson, 2003:144). On a broader level, UA contributes to improving conditions for those unrelated to UA, as plots contribute to beautifying an area and thereby inspires pride in the community (Nicolle, 2011:144; Rogerson, 2011:192). Networks may even extend out of communities through business relationships between cultivators and retailers, or through NGOs and the state initiating UA-centred community development projects (Thorton & Nel, 2007:18; Nell *et al.*, 2000:808). All of these examples contribute to making cultivators feel part of a group, contributing to their community and increasing their income opportunities.

UA also provides opportunities for individuals to improve their skills and abilities (Nicolle, 2011:61,63&68). For example, a previously unemployed resident of an informal settlement not only achieved the position of head cultivator in a formal group, but also won a national prize for the skill with which the garden was managed (Nell *et al.*, 2000:817). Thus, through creating a sense of belonging and increasing human capital, UA can be a major contributor to developing individual self-worth (Webb & Kasumba, 2009:38; Rogerson, 1998:179).

The potential for UA to empower communities is notable, but it is often hampered by a lack of money, transport and knowledge (Nicolle, 2011:152&158; Rogerson, 2011:193; Nell *et al.*, 2000:811). Such resource limitations contribute to social isolation and apathy towards participation, which one sees in low-income communities, particularly in South Africa (Speer *et al.*, 2001:727). Thus, outside assistance can play a great role in building capacity in such

communities, but such assistance must facilitate, not dominate the development process by offering “advice, limited support and modest incentives where appropriate” (Binns & Nel, 1999:406). A key contribution to empowerment that is noted in South African community development initiatives is the empowerment of marginalised women (Binns & Nel, 1999:405). As women make up the largest percentage of cultivators, UA has an important gender dimension that needs to be highlighted.

2.7.5 *Gender issues*

In the majority of cases, women make up the majority of urban cultivators in Africa (Redwood, 2009:1; Drescher, 1996:229; Linares, 1996:104; May & Rogerson, 1995:165; Tinker, 1994:ix). An explanation for this trend is that, in most African cultures, women bear the responsibility of providing their household with food. Thus, in situations of food shortage and economic degradation, UA can be an empowering food strategy (Freeman, 1993:18). This does not mean, however, that UA empowers women, as some studies show that women benefit less from UA than men (Sawio, 1994:30). Whereas men tend to cultivate for an income, women are mostly involved in subsistence cultivation. Women are excluded from commercial cultivation in many African societies and therefore are least likely to benefit financially from UA (Flynn, 2001:666; Sawio, 1994:25; Strieffeler, 1987). Women also are faced with more challenges to cultivation (Drescher, 1996:229) as they are more likely to be robbed (Freeman, 1991:85), have limited access to land (Hovorka, 2005:295), busier schedules involving daily household chores (May & Rogerson, 1995:165), and are less likely to have legal protection (Hovorka, 2005:294).

While it is important to recognise that UA may not necessarily be empowering for women, this view fails to recognise how women use UA to break out of some patriarchal constraints, particularly economic ones (Hovorka, 2006:216). For example, UA provides an opportunity for women to develop an entrepreneurial space to earn a living in a relatively supportive environment (Freeman, 1993:15). Nevertheless, it appears as if women throughout Africa experience what Hovorka (2006:213) describes in Botswana, namely that their access to resources “remains limited compared to men’s, and is reproduced through education and employment opportunities in the urban labour market”. Thus, role players in UA would do well to focus on women to prevent patriarchal structures from undermining the benefits of UA for them, or the viability of their production.

Such is found in South Africa, where women are in the majority among cultivators (Onyango, 2010:119; Altman *et al.*, 2009:357; Baiphedi & Jacobs, 2009:475; Thornton & Nel, 2007:18; Van Averbeke, 2007:340). As with broader trends throughout Africa, this arises primarily from the role women play as food providers for their households (Van Averbeke, 2007:340; Rogerson, 1993:25). Nevertheless, using UA as a food strategy is included in an already busy daily schedule (Shackleton *et al.*, 2010:516). In comparison, men are more likely to gain access to land for free, tend to sell ten per cent or more of their yield than women, and earn more from UA than women do (Shackleton *et al.*, 2010:295&299; Cloete *et al.*, 2009:28). Due to findings such as these, some NGOs have chosen specifically to target women in their UA programmes (Nicolle, 2011:58). Researchers also recommend that policy development for UA in South Africa target women specifically (Rogerson, 1998:180).

2.8 Conclusion

This chapter has attempted to sketch the broad debates relating to UA in Africa, how it is defined and some of the issues that emerge in terms of its viability and sustainability. What is evident is that there is no clear-cut definition and that there are various angles to the debates in terms of the benefits. Another important factor identified is that UA is practised in various ways, depending on the networks of cultivators, their access to resources and their affiliation with institutional role players. What one sees is that UA essentially can be divided into four distinct categories depending on type – informal individual cultivation, formal individual cultivation, informal group cultivation and formal group cultivation. This typology will be used in this study to determine whether there are differences in terms of the physical and social benefits of each type and which types exhibit a greater measure of benefit over others.

What the literature shows is that informal cultivators face numerous challenges that undermine the sustainability of their production, reduce the effectiveness of the resources they use, and ultimately limit the benefits that accrue from UA. However, formal cultivation in the form of a business is out of reach of low-income cultivators. Thus, low-income cultivators experience the greatest degree of sustainability and accrue the broadest range of benefits when they are formalised, and thereby receive state and NGO support.

In Africa, key limitations of such support relate to states either failing to recognise UA as a legitimate activity, or failing to provide an adequately supportive environment. This deters both

NGOs and donors, which increases the vulnerability of cultivators. Thus, a supportive policy environment is vital to UA's empowerment potential. Policymaking, however, depends on the clear conceptualisation of UA, which the start of this chapter revealed as limited. UA is inconsistently defined in Africa, and the usage of key terms is haphazard.

In South Africa, NGO involvement and a supportive state contribute to UA having greater potential to benefit the marginalised than it does in the rest of Africa, where low-income and female cultivators experience considerable marginalisation. Nevertheless, due to the lack of a national policy and varying levels of commitment in local government, UA has developed haphazardly from one municipality to another. The only role players that are practically involved in UA to a noteworthy degree in South Africa are NGOs. In cases in which NGOs promote UA, food security, economic viability, ecological integrity, empowerment and gender equality are prominent goals. Thus, NGOs are key role players in pro-poor UA in South Africa.

This conclusion is important for the following chapter, which focuses on Cape Town, as it reviews the literature on a city in South Africa that demonstrates some prime examples of NGOs supporting UA in low-income areas. Cape Town also exhibits some of the strongest support from local government in South Africa, and serves as a good case study to understand the physical and social benefits of UA.

3. CHAPTER THREE: THE CASE OF URBAN AGRICULTURE IN CAPE TOWN

3.1 Introduction

Cape Town is an exemplar of official support for UA in South Africa. The municipality of the City of Cape Town has been supporting UA for more years than any other South African municipality (Rogerson, 2010:381). Furthermore, Cape Town is home to one of the largest and oldest NGOs promoting UA in South Africa (De Satge & Williams, 2008:2) and it is the only African city with a UA policy (Battersby, 2012:44).

Despite such a supportive environment, the statistics on UA in Cape Town are disappointing. Fewer than 5% of households in Cape Town's low-income areas grow their own food (Battersby, 2012:44). Furthermore, the majority of those cultivators who do grow their own food still are food insecure (De Swardt, Puoane, Chopra & Du Toit, 2005:107&108). Given the low uptake of UA in Cape Town, and the reasons relating to limited access to resources, local attitudes and skill shortages, some recommend that it is imprudent to promote the expansion of UA in Cape Town (Battersby, 2012:45). Others argue that UA does provide food security to various degrees and that in some cases it can generate household income, and as such recommend encouraging the expansion of the sector (Jacobs & Xaba, 2008:193). This study focuses on Cape Town, but before discussing the findings it is necessary to gain a greater sense of what the state of UA is in Cape Town.

The aim of this chapter is to provide an overview of the debates on UA in Cape Town, as well the types of UA that appear to provide the most notable benefits. For comparative purposes, the discussion will follow the same pattern as the previous chapters in terms of how UA is defined, the typical characteristics of UA, the typology of cultivators and a description of the key role players. Finally, benefits of and limitations to practising UA in Cape Town are discussed.

3.2 Definitions

The literature on UA in Cape Town shares a common feature with the broader body of scholarship on UA in Africa in terms of a lack of consensus over on UA should be defined. Prior chapters in the present study demonstrate that some of the leading scholars on UA in Africa developed a number of definitions of UA, while others state that UA is too complex for a

universal definition. A number of authors writing on UA in Cape Town have developed their own definitions, but these clearly draw on broader influences.

Slater (2001:636), for example, proposes a definition that closely resembles that of Thornton (2008:243) in its basic elements. Both definitions may be paraphrased as any agricultural activity undertaken within an urban area. Inasmuch as each author's definition is constructed of the same elements, they bear the same limitation, namely the ambiguity of how "agricultural activity" may be interpreted. A more precise definition is offered by the 2007 Urban Agriculture Policy for the City of Cape Town. This document defines UA as "the production, processing, marketing and distribution of crops and animals and products from these in an urban environment using resources available in that urban area for the benefit largely of residents from that area" (City of Cape Town, 2007:3). This definition bears resemblance to Mougeot's (1996:138), especially as both state that UA uses inputs and supplies consumers from the area in which cultivation occurs. The City of Cape Town's (2007:3) definition, however, is more concise than Mougeot's. In subsequent years, the City of Cape Town has developed an even more concise definition. The City of Cape Town Zoning Scheme (City of Cape Town, 2012b:115) defines UA as "the cultivation of crops, on relatively small areas within the urban area or edge, for own consumption or sale in neighbouring markets". While the reference to "relatively small areas" is ambiguous, the latter definition is nevertheless more appropriate for Cape Town than the former, as processing and marketing are not present in all examples of UA in Cape Town.

As diverse as definitions for UA in Cape Town may be, one common characteristic is that cultivation must take place within the urban edge to be called UA. This point is explicitly supported in the 2007 Urban Agriculture Policy for the City of Cape Town (City of Cape Town, 2007:2), which states that the scope of the policy does not include "agricultural activities outside of the urban edge". Some problems with this designation are highlighted in the broader debates on UA in Africa. Binns and Lynch (1998:778), for example, highlight the political, geographical and social elements that contribute to defining or blurring the urban edge. While such influences exist in Cape Town, as they do in any urban area, a clear definition for Cape Town's urban edge is provided by the City of Cape Town Development Edges Policy: Urban and Coastal Edges (City of Cape Town, 2010:2). In spite of the clarity on where the urban edge lies, in practice some examples of agriculture not contained within the urban edge are referred to as UA, while others that do lie within the urban edge are not.

A number of large commercial farms are located within the municipality of the City of Cape Town, but outside of its urban edge. These farms are not considered examples of UA, due both to their location and their scale of production, the size of their market and their history of being rural. The presence of such characteristics means that, even in the case of farms in the Constantia area extending into the urban edge, the exclusion of such farms from the title of UA goes without question (Geyer *et al.*, 2011:43). Thus, as the City of Cape Town Zoning Scheme's definition states, factors such as the size of the property, the source of inputs and the location of the market play a role (City of Cape Town, 2012b:115). For this reason, when an agricultural area falls outside of the urban edge, but draws on local inputs and supplies local markets, the question of how to categorise it arises. Such an example is provided by the Philippi Horticultural Area.

The Philippi Horticultural Area is often included in discussions on UA. In such texts, it is implied that the geographical location of the Philippi Horticultural Area, and its close ties with urban Cape Town, qualify it for inclusion in UA research (De Satge & Williams, 2008:1; Municipal Department Partnership for Eastern and Southern Africa, 2008:2). The Philippi Horticultural Area presents an interesting case because, although zoned outside of the urban edge, it is surrounded by residential land (Battersby-Lennard & Haysom, 2012:13; City of Cape Town, 2012a:3; City of Cape Town, 2010:74). In addition, as it produces highly perishable fresh produce, the majority of farmers sell their produce to the local community (Battersby-Lennard & Haysom, 2012:53; City of Cape Town, 2008:5). Thus, in terms of geographical location and market, the Philippi Horticultural Area bears some similarities to UA. Nevertheless, the Philippi Horticultural Area does not fit the City of Cape Town Zoning Scheme's definition completely. For example, the land it is on is historically rural land and is still classified as such (Battersby-Lennard & Haysom, 2012:15). That it is surrounded by urban development is a result of urban growth over time; it is not an example of urban land being transformed into productive urban open spaces. Furthermore, as the condition "relatively small" is open to interpretation (City of Cape Town, 2012b:115), the average farm size of 32 ha in the Philippi Horticultural Area is incomparably greater than the mere 0.5 ha attributed to the largest of UA plots inside the urban edge (Battersby-Lennard & Haysom, 2012:13; Nieuwoudt, 2008). Thus, inasmuch as the Philippi Horticultural Area fulfils a vital role in local food security, it does not fulfil the requirements of land zoning, nor do the farms in it fit the requirements of size to qualify as examples of UA

according to the present study. This example illustrates how challenging it is to contain UA in a theoretical frame.

In the literature on UA in South Africa, Webb (1996:4) draws attention to how difficult it is to contain the diversity of UA in a definition. This challenge is exacerbated by inconsistencies in the use of key terms relating to UA. For example, the discussion of the literature on UA in Africa demonstrates that key terms such as “urban agriculture” and “urban farming” are used by some to denote different concepts, whereas others use the terms interchangeably (Ellis & Sumberg, 1998:215; Van der Blik & Waters-Bayer, 1996:259; Rogerson, 1992:229). As such, the literature on UA in South Africa leaves core concepts “fuzzy and ill-defined” (Rogerson, 1998:178). The literature on UA in Cape Town replicates these shortfalls. As a result, no key terms retain a consistent meaning.

The most commonly adopted key term referring to cultivation within the urban edge, according to the literature on Cape Town, is “urban agriculture” (Geyer *et al.*, 2011:42; Hoekstra & Small, 2010:17; Reuther & Dewar, 2005:97; Slater, 2001:636; Karaan & Mohammed, 1998:71). Some, such as Jacobs and Xaba (2008:186) and Slater (2001:636), use the term “urban and peri-urban”, even though the prefix “peri” is redundant due to the precision of Cape Town’s urban edge. Also common is the term “urban farming”, which is generally used to distinguish the practice of cultivation from the broad theoretical concept of “urban agriculture” (Cloete *et al.*, 2009:12; De Satge & Williams, 2008:5; Jacobs & Xaba, 2008:188). Even so, this meaning is not consistent. For example, the term “farming” may denote commercial UA, distinguishing it from subsistence UA (Reuther & Dewar, 2005:97). In other texts, however, “farming” designates only cultivation in rural areas, while other terms are used for cultivation in urban areas (Geyer *et al.*, 2011:41; City of Cape Town, 2007:2).

Another ambiguous key term is “food production”. This term replaces “urban agriculture” in De Satge and Williams (2008:2), but it is far more commonly used to refer specifically to subsistence cultivation (Cloete *et al.*, 2009:12; City of Cape Town, 2007:4; Karaan & Mohammed, 1998:74). At times, the term “gardening” is also used to denote subsistence cultivation (Hoekstra & Small, 2010:17; Karaan & Mohammed, 1998:69&70). Some, however, use the term “gardening” only to refer to group cultivation (City of Cape Town, 2008:4; De Satge & Williams, 2008:6; Reuther & Dewar, 2005:97). Others reserve the term “gardening” for referring only to individual cultivation

(Cloete *et al.*, 2009:47). In yet other texts, “gardening” refers specifically to urban horticulture, distinguishing it from animal husbandry (Geyer *et al.*, 2011:42; City of Cape Town, 2007:9). “Cultivation” is also used for a variety of purposes. It may denote urban horticulture, as in De Satge and Williams (2008:3), but it may also refer to any type of UA, as in Rogerson (2010:378).

Key terms for UA may be used for specific purposes by some authors, but the uniformity of meaning is not maintained from one author to another. At times, key terms may even be used inconsistently within the same text. A prime example is Rogerson (2010:378), who uses the terms “urban cultivation”, “urban farming” and “urban agriculture” interchangeably. The inconsistent usage of key terms in the literature on UA in Cape Town is not only confusing, but makes scholarly analysis of UA difficult, as one is left wondering whether the author is referring to individuals, groups, plants or animals, or cultivation that is commercial, subsistence, rural or urban, or indeed whether all the above are being referred to at once. When making comparisons, such as in a study like this, taking cognisance of this is imperative in terms of drawing conclusions.

Inasmuch as key terms for UA are inconsistent, so too are key terms for those practising UA. As indicated, in the literature on UA in South Africa, the terms “gardeners”, “farmers”, “producers” and “cultivators” have all been used to convey the same meaning. The literature on UA in Cape Town uses many of the same key terms as that on UA in South Africa, with the exception that the only unambiguous term, “cultivator”, is not used at all. A term most commonly used in the literature on UA in Cape Town is “producer”. However, “producer” includes foresters, and is thus too broad a term (Republic of South Africa, 2012:8&9) to describe the type of UA commonly practised. For this reason, I have opted to use the term “cultivator” from the South African literature as the most appropriate to describe those involved in UA in the Cape Town context, even though it does not appear in the literature on UA in Cape Town.

3.3 Characteristics of UA

3.3.1 Cultivation methods

Three sources play a role in shaping UA methods in Cape Town: the climate, poverty and the ideologies of the NGOs promoting it. The hot dry summers on the Cape Flats, combined with high winds and sandy soil, reduce the viability of traditional farming methods (Karaan & Mohammed, 1998:70). Furthermore, high unemployment and low education levels exclude the

majority of residents from participating in high-tech modern agriculture (Small, 2007:266). One of the features of UA in Cape Town is that NGOs have been customising cultivation methods for the Cape Flats (Small, 2002:30). These methods use indigenous plants for windbreaks and use mulching and water-conservative irrigation to reduce water loss from the soil. Composting, crop rotation and intercropping maintain high nutrient levels in the soil without compromising on sustainably high yields (Small, 2002:30&31). These reflect the basic principles of organic cultivation methods, even before ‘organic’ became vogue. Organic methods are well suited to the Cape Flats, because such methods require minimal financial investment and are easily taught to individuals with low education levels (Small, 2007:266&267).

3.3.2 *Produce*

In many ways, the same basic trends are found in the choice of UA products in Cape Town and those recorded in the literature on South Africa and Africa, but a key difference in Cape Town is the emphasis on the health and ecological benefits of organic cultivation (Dunn, 2010:156). Cape Town has a Mediterranean climate, with hot, dry summers and cold, wet winters. Thus, there is a clear distinction between summer and winter crops (Fermont *et al.*, 1998:25). Some summer crops, such as tomatoes, are very profitable and are grown specifically for their market potential within the cultivators’ communities. Other highly marketable crops include maize, turnips, lettuce and spinach (Fermont *et al.*, 1998:36). A distinction is drawn, however, between the organic methods of UA and the commonly available produce from supermarkets. This is not only a key value that cultivators attribute to what they grow to eat, but it forms the core marketing strategy for produce that is sold to the higher-income markets. This is evident in a community-supported agriculture scheme that sells boxes of fresh produce from low-income areas to the higher-income suburbs of Cape Town (Harvest of Hope, 2013). Thus, while many cultivators value their own produce, esteeming its health benefits over mainstream produce, organic cultivation methods have a definite commercial advantage.

3.3.3 *Motive*

Economic motives for practising UA in Cape Town are diverse. Texts on the subject use different approaches to categorise motives, as the needs of cultivators from one category are vastly different to those of another. A common thread throughout the literature on UA in Africa, South Africa and Cape Town is the emphasis on food security and income. The potential for UA to

providing food security and income are the driving force for government, NGO and donor support in Cape Town.

Institutional support for UA, from government, NGOs and donors is primarily motivated by the relatively narrow goals of income and food security. In fact, the City of Cape Town (2007:4) explicitly states that its purpose for promoting UA in Cape Town is food security and income creation, in light of the dire economic circumstances in Cape Town's low-income areas such as high unemployment and cash-based food access. These economic motives are reflected by donors, who support income-generating UA initiatives (Jacobs, 2009:145). Thus, the City of Cape Town's and donor's motives for supporting UA are economically focused, addressing questions of income creation and daily survival (Jacobs, 2009:145). The NGOs who promote UA in Cape Town cater for these motives, as public and private donations are vital to their operations. For example, an NGO newsletter states, "[W]e are able to replicate abundant food security and jobs for all, in any village, town and city" (Newsletter 39, 2012). Thus, a highly economic view is taken of UA's potential by key role players. This stance presents certain limitations, particularly a lack of attention to the complexity of motives the cultivators themselves adopt and therefore a different measure of UA's performance between the role players and the cultivators. A closer look at the cultivators themselves reveal that their motives are not limited to such narrow economic outcomes, and even their economic motives are highly complex.

The typology developed in the present and previous chapter describes cultivators' economic motives in five ways: contributing towards increasing food access, adding variety to the diet, selling out of a desperate need for cash, even though there is little access to healthy food, selling surplus opportunistically and operating commercially. Many cultivators in Cape Town are at the subsistence level, supplementing their diet with what they grow (Dunn, 2010:141&153; De Swardt *et al.*, 2005:107). Also prevalent are commercial opportunistic cultivators, who sell surplus on an ad hoc basis (Dunn, 2010:157; Dunn, 2008; Small, 2007:268). Commercial deliberate cultivators are less common in Cape Town, but are well documented. These earn a reliable income from UA, selling their produce informally in the neighbourhood and in public places, or formally to local restaurants and through community supported agriculture schemes (Dunn, 2010:122&156; Ward, 2007:49; Sombalo, 2003:26). Commercial desperate cultivators,

who sell their produce even though they have limited access to healthy food, are not highlighted in the literature.

The strong emphasis on economic motives for cultivation in the literature, which are reflected by role players in Cape Town, tends to ignore the importance of non-economic motives. Non-economic motives are important because they influence the choice of UA over other livelihood strategies. Reuther and Dewar (2005:103) find that cultivators who are motivated primarily by economic gains soon leave UA in preference of other income opportunities. To these ends, a number of studies find non-economic motives such as social responsibility to be a major motivating factor for cultivation in many cases in Cape Town (Dunn, 2010:139&154; Kirkland, 2008:98; Small, 2007:269). For example, Nieuwoudt, (2008) recorded a cultivator saying, “Even though I am poor [...] I cannot just sit and look on as people die of hunger because they are too ill from AIDS to plant their own vegetables or find a job”. In addition to social responsibility, other motivating factors include personal fulfilment found in the peacefulness, creativity and physical exercise achieved through cultivation (Dunn, 2010:141&154; Dunn, 2008; Slater, 2001:642). Thus, while categorising motives for cultivation based on economic reasons is important in terms of food security and income, economic reasons alone do not explain cultivators’ motives for practising UA.

3.3.4 *Land*

UA plot sizes in Cape Town cover a broad spectrum, but plots tend to be larger further away from the home. Depending on the availability of time, inputs and land, plot sizes range from 4 m² to 250 m² for home cultivation, and tend to be between 300 m² and 500 m² per person in cultivation groups on open spaces (Newsletter 37, 2010; Municipal Department Partnership for Eastern and Southern Africa, 2008:23; Reuther & Dewar, 2005:118). Collectively, group cultivation plots on open spaces may cover as much as 5 000 m² (Nieuwoudt, 2008).

Plots of this size are possible in Cape Town because there is much marginal land, but most of the marginal land in Cape Town is of a poor quality for agriculture, as it is 96% sand and highly alkaline (Fermont *et al.*, 1998:25). Thus, a notable investment of organic matter is required prior to cultivation (Small, 2006:161). The cost of such an investment is a limiting factor to the size of the plot, as compost is one of the greatest expenses for UA in Cape Town (Reuther & Dewar,

2005:107). Therefore, the legality of access to land plays a major role in the viability of making such an investment.

Land may be accessed formally for UA if the cultivator owns the land or if the landowner enters into a formal agreement with the cultivator. UA on formally accessed land typically takes place at home, at institutions or on public open space with the permission of the municipality (Small, 2007:267). Municipal land is only accessible by filling out an application (Nieuwoudt, 2008). A landowner may permit cultivation on his or her land through an informal agreement.

Informally accessed land may be occupied legally or illegally. Informally, legally accessed land for UA in Cape Town typically comprises cultivators being permitted to use a marginal tract of land on the grounds of a school, clinic, early childhood development centre or religious institution (Dunn, 2010:139; Jacobs & Xaba, 2008:194; Small, 2007:267; Ward, 2007:48; Sombalo, 2003:23&27). Illegal land access in Cape Town is rare. In one such example, cultivators gained illegal access to power-line servitude land. Although Eskom (South Africa's electricity provider) initially was opposed to the land being cultivated, access was informally granted (Ward, 2007:48). As one cultivator stated, "we feel secure on [this] land because there is no other alternative use for it" (Sombalo, 2003:30). The possibility of finding land in Cape Town that does not compete with other uses is difficult. There is no land reserved for cultivation within Cape Town's low-income areas (City of Cape Town, 2010:74). Thus, although there is much open space in the City of Cape Town's low-income areas, it is not easily accessible by low-income individuals.

3.4 Typology

As indicated, a number of terms are used in the literature on UA in Cape Town to describe individual cultivators and cultivation groups. Individual cultivation is typically referred to as a "home garden" (Municipal Department Partnership for Eastern and Southern Africa, 2008:23), but this term excludes individuals cultivating on public open spaces. Some common terms for cultivation groups are "community garden" and "livelihood garden" (Small, 2006:161; Karaan & Mohammed, 1998:70). These terms, however, do not indicate whether the group is formal or not and so will not be used in this study. Two new terms appear in the literature on Cape Town, the "institutional garden" (Municipal Department Partnership for Eastern and Southern Africa, 2008:24) and the "garden centre" (Kirkland, 2008:76). Institutional gardens are naturally formal,

being owned by an institution such as a school, clinic or church, but they may be cultivated by either an individual or a group. Garden centres are also formal, as these are owned by the NGOs who provide training and support services to cultivators. The garden centres operate as non-profit nurseries, providing “free advice and subsidised gardening inputs” to cultivators in the area (Kirkland, 2008:76). Information on institutional gardens and garden centres in the broader literature appears limited. Whereas many key terms are used in the literature, the present study’s terms, “informal individual”, “formal individual”, “informal group” and “formal group” will continue to be used.

3.4.1 *Informal individual*

Informal individual cultivators in low-income areas face more challenges to their cultivation than any other type. This holds true throughout the literature on UA in Africa, South Africa and Cape Town. Thus, NGOs in Cape Town who train and support cultivators in low-income areas target informal individual cultivators for recruitment as members (Dunn, 2010:112). Cultivators, however, may choose to purchase subsidised resources from NGOs but remain informal (Small, 2002:30). Such cultivators use property at home or may have informal access to the grounds of institutions (Dunn, 2010:138&140). They typically use produce to feed a household of four to nine individuals (Dunn, 2008). The majority of cultivators find it challenging to provide in their household’s food needs under such conditions. Given these demands, even though cultivators in Cape Town use UA to provide for some of the household’s food requirements, many remain food insecure (Frayne *et al.*, 2010:42).

The economic motive for individual informal cultivation is primarily subsistence, and produce is typically horticultural. Some cultivators keep livestock, such as chickens, goats, cattle and sheep, which often present health risks and road hazards as the animals are left to graze on road reserves (Geyer *et al.*, 2011:42; Dunn, 2010:157; Municipal Department Partnership for Eastern and Southern Africa, 2008:23; City of Cape Town, 2007:8). Cultivators may attempt to gain access to larger plots illegally, such as vacant public plots, and as such are unable to protect their land with fencing, rendering them vulnerable to theft. These and other limitations, such as lack of inputs, tools, infrastructure and training, severely limit the potential for UA to benefit such cultivators (Municipal Department Partnership for Eastern and Southern Africa, 2008:23-27; Fermont *et al.*, 1998:25; Karaan & Mohammed, 1998:75; Eberhard, 1989:5). Some of these limitations are overcome by forming groups informally.

3.4.2 *Informal groups*

As seen in the broader literature, cultivating in groups tends to be more efficient than cultivating alone. Thus, informal groups may form when individuals who have experience in cultivation decide to combine their assets to increase their efficiency by sharing tools, networks and land (Dunn, 2010:141; Reuther & Dewar, 2005:117). Informal groups use marginalised land illegally, such as public open spaces, as informal individuals do (Jacobs, 2009:66). Produce is typically horticultural and the motive for cultivation is either subsistence or commercial opportunistic (Nieuwoudt, 2008).

While efficiency is increased by group formation, being informal has its limitations. For example, informal groups often lack training, and thus are not as efficient as formal groups (Reuther & Dewar, 2005:116). Furthermore, without official support in the form of inputs and infrastructure, plots belonging to informal groups are liable to be trampled by cattle and be exposed to theft (Newsletter 37, 2010; Jacobs, 2009:66). Informal cultivators, both as groups and as individuals, are uncommon in Cape Town because of the ease with which one can join an NGO, which opens up possibilities for many benefits.

3.4.3 *Formal individuals*

Formal cultivation includes membership of a local NGO or employment with a registered UA business and tends to be more efficient than informal cultivation because of greater access to resources and training. Membership at an NGO typically requires a small fee, for which the cultivator receives training, inputs and infrastructure far more valuable than the fee itself (Ward, 2007:47&48). While formal individual cultivators typically cultivate for subsistence, some cultivators cultivate a surplus, which is sold opportunistically (Newsletter 35, 2008). They may also receive training for commercial cultivation through their NGO or from a business and cultivate commercially as a deliberate income strategy (Food Pods, 2013; De Satge & Williams, 2008:14). While formal cultivation offers individuals greater opportunities for efficient cultivation, low-income members of NGOs are still limited by a lack of space (Newsletter 35, 2008). For many, the space at home is inadequate for subsistence cultivation, as at least 100 m² are required for UA to contribute to household food security (Farm Garden Trust, 2009). More space is available per individual in formal groups.

3.4.4 *Formal group*

Formal group cultivation offers the greatest opportunity for food security to cultivators and their households. Literature on UA in Africa shows that groups with official support have a greater efficiency of production than individuals (FAO, 2012:31&59). The same applies to South Africa, where NGO support is prominent. Moreover, in Cape Town, cultivators in formal groups enjoy more privileges than any other type.

The majority of cultivation groups in Cape Town are formal (Reuther & Dewar, 2005:120). Formal groups are located primarily on the Cape Flats and consist of between three and 16 members (Harvest of Hope, 2013; De Satge & Williams, 2008:12). A group is formalised either when an informal group applies for support from an institution or organisation, or when an NGO, business or school form a group themselves (Dunn, 2010:133&147). Individuals may join a group after paying a membership fee of anything between ZAR 25-00 and ZAR 100-00. This payment is normally once off, but some groups choose to renew membership after a time (Sombalo, 2003:30). The membership fee, along with group income from the sale of produce, goes into a shared bank account and each group has its own method of distributing this income among its members (Jacobs, 2009:67; Sombalo, 2003:30).

Formal groups use primarily municipal land, or land that belongs to an institution (Jacobs & Xaba, 2008:194; Municipal Department Partnership for Eastern and Southern Africa, 2008:25). Land size varies, but at least 300 m² are needed per cultivator before it is possible to earn a profit (Reuther & Dewar, 2005:118). Groups normally achieve this, and as such generally operate on a full-time commercial scale. In addition to earning an income, groups regularly take the food they grow home with them and so reduce their food expenses. Furthermore, formal groups donate anything between 10 and 60% of their produce to those in the surrounding community whom they perceive to be in need (Jacobs & Xaba, 2008:193&195). Thus, formal groups exhibit a broad range of benefits. A key contributing factor in this regard is the high level of assistance that groups typically receive from NGOs (Reuther & Dewar, 2005:115).

Formal groups receive the most support of the four types here described. Formal group members not only receive subsidised inputs and free infrastructure such as fencing, boreholes, irrigation systems and tools, but access to markets and ongoing monitoring and evaluation are also provided by NGOs (Dunn, 2010:149; Hoekstra & Small, 2010:19; De Satge & Williams,

2008:13; Reuther & Dewar, 2005:115; Sombalo, 2003:28, 29&36). While there is much benefit to participating in groups, at times conflicts need to be resolved. These typically occur over how money is to be handled (De Satge & Williams, 2008:26). In general, however, it appears as if the physical benefits of UA are most prominent in formal groups due to the support received from NGOs in terms of investment and market access.

3.5 Role players in UA in Cape Town

3.5.1 Government

Government plays a key role in promoting UA for food security. Cases in Africa show that, in a context where UA is not supported by law, marginalised cultivators are vulnerable to eviction and harassment (Maxwell, 1994:54). In South Africa, however, national government is supportive of UA, but due to a lack of capacity at the local government level, UA is practised haphazardly from one municipality to another (Rogerson, 2011:191). The City of Cape Town, on the other hand, provides one of the most supportive legal environments in Africa (Battersby, 2012:44).

The City of Cape Town is exemplary in creating a supportive legal environment for UA. Its primary goal is to facilitate UA by providing cultivators with resources such as land, infrastructure and inputs, as well as to reduce bureaucratic hurdles (Rogerson, 2010:379). The primary rationale given by the City of Cape Town for promoting UA is the need for food security and income in light of the inevitable food price rises associated with global climate change (City of Cape Town, 2011:72). The City of Cape Town also has a strong urban greening agenda and believes UA can reduce Cape Town's carbon footprint (City of Cape Town, 2008:4). The foundation to achieving these goals was laid soon after South Africa's transition to democracy.

In 1998, metropolitan municipalities in the Western Cape began formulating policies for UA (Rogerson, 2010:378). The City of Cape Town held the First Urban Agriculture Summit to determine the state of UA in Cape Town, in May 2002. This, and the Second Urban Agriculture Summit in 2003, were key steps towards developing the 2007 Urban Agriculture Policy for the City of Cape Town (De Satge & Williams, 2008:6). This policy remains central to the supportive legal environment for UA in Cape Town, as it formalises UA as a land use, entitles cultivators to receive assistance from local municipality and sets parameters for the safe practice of UA (Geyer *et al.*, 2011:43). Furthermore, the City of Cape Town demonstrates its support for UA through campaigns, press releases and public appearances (De Satge & Williams, 2008:3; City of Cape

Town, 2007:5&6; Small, 2006:31), but seems not to have the capacity to support the growth of UA in Cape Town in a sustainable way (De Satge & Williams, 2008:8). Such support is only provided for starting up UA projects, but the sustainability of such projects depends on long-term support services, which NGOs alone provide (Kirkland, 2008:114). What one then sees is that, even though the City of Cape Town has created a supportive legal environment, it is ultimately the NGOs that are facilitating the development of UA within low-income urban communities.

3.5.2 *NGOs*

Many examples from South Africa show how NGOs link donor funds to community asset bases with positive impacts on household food security (Nicolle, 2011:40&41). Cape Town presents a prime example of the positive role NGOs can play in promoting UA (De Satge & Williams, 2008:2). NGO support for UA originated as early as in the 1980s, but apartheid's restrictions on the Black population limited the uptake of these projects (Eberhard, 1989:6&7). Due to such limitations, an evaluation at the time found UA to be economically nonviable, but this seems to have changed in the post-apartheid era (Fermont *et al.*, 1998:5; Eberhard, 1989:9). Nevertheless, the longstanding NGO support for UA is arguably one of the key reasons why the City of Cape Town has adopted the most progressive and proactive stance on UA in the country. Due to such support, the 2002 UA summit found UA to be relatively popular in Cape Town, leading to subsequent summits and ultimately to policy development. Over the two decades prior to the first summit, NGO support for UA had been growing the sector to a notable size. Thus, NGOs are arguably the key role players in creating the progressive legal environment UA enjoys today.

Amongst NGOs promoting UA in Cape Town there is a movement towards strategies with strong empowerment agendas. For example, while NGOs satisfy immediate needs for cultivation through providing inputs, infrastructure and basic training, they also invest in the cultivator's human capital through entrepreneurial training, conference attendance, networking and access to broader markets (Kirkland, 2008:83,96&111). Furthermore, NGOs promote sustainable cultivation methods through organisational capacity building, monitoring and evaluation, extension services and conducting research (Small, 2006:160; Sombalo, 2003:22). Finally, NGOs promoting UA focus on empowering women as community leaders and on educating children (Newsletter 38, 2011; Ward, 2007:47).

The holistic approach taken by NGOs to UA is paying dividends as cases emerge in which UA contributes to household food security and earns cultivators a meaningful income (De Satge & Williams, 2008:17; Reuther & Dewar, 2005:104). However, as with the case of many other UA initiatives involving NGOs, their efforts are rarely sustainable without the support of donors.

3.5.3 *Donors*

Donors play a key role in the sustainable development of UA. As the broader literature shows, donors not only fund the basic inputs needed to practise UA, but they also provide resources for training, infrastructure, research and development. Donors have been supporting UA in Cape Town for over 25 years (Small, 2007:267). Through this support one sees great strides towards achieving greater efficiency and profitability. The reliability of this support appears positive, as some donors have been funding UA in Cape Town for many years. Major donors are typically banks, international corporations and trusts, but local entities such as businesses, service groups, organisations and individuals also play a role (Newsletter 39, 2012; Farm Garden Trust, 2009; Newsletter 36, 2009). Such donors primarily donate funding, but major donors may choose to donate inputs (Newsletter 35, 2008).

Donations of physical capital are referred to as “donations-in-kind” (Newsletter 39, 2012). Knowledge and expertise may also be donated, for example by academic institutions offering research and consultation services (Small, 2006:30). Additionally, individuals with expertise in marketing, research, communication, administration and information technology may work as volunteers (Newsletter 35, 2008). The most influential NGO in Cape Town, in terms of the number of cultivators it supports, is Abalimi¹. Abalimi receives general donations totalling ZAR 3 million per annum from local and international individuals and organisations, as well as substantial donations of expertise and materials (Moodley, 2009; Newsletter 35, 2008).

3.6 Benefits

3.6.1 *Food security*

Having access to sufficient food, or food security (Frayne et al, 2010:7), is a core rationale throughout the literature in the present study. In Africa, UA provides food security for individuals

¹ Commonly referred to as Abalimi Bezekhaya, this organisation is formally registered as “Abalimi” with the National Department of Social Development and will therefore be referred to as such in this study (Republic of South Africa, 2013).

without access to formal markets. In South Africa, UA furthermore increases the volume and diversity of diets for low-income households (Nicolle, 2011:82). This rationale is also evident in the literature on UA in Cape Town, where studies show that UA increases not only household food security for cultivators, but contributes to the food security of the surrounding community (Dunn, 2010:155; Kirkland, 2008:110).

In Cape Town, government, NGOs and cultivators associate UA with increased food security. The City of Cape Town, for example, supports UA in the belief that it will play a “pivotal role” in the food security of low-income households (City of Cape Town, 2007:4). Food security is strongly promoted as an outcome of the work of NGOs promoting UA (Newsletter 39, 2012). Cultivators themselves echo these beliefs with examples of how they were unable to afford fresh produce prior to cultivation (Nieuwoudt, 2008; De Swardt *et al.*, 2005:108).

UA provides food security in Cape Town through three basic means. The most direct contribution is through eating the produce. In such cases, cultivators no longer need to buy vegetables, as they have a consistent supply (De Satge & Williams, 2008:21; Kirkland, 2008:98). However, this contribution is limited to fresh produce. An indirect contribution comes from saving on fresh produce and using that money to buy other food items (Dunn, 2010:159). In the same way, commercial cultivators may use the profits from the sale of produce to buy staples such as rice, bread or milk (Dunn, 2008).

Benefits from sales are not limited to the cultivator’s household. UA also contributes to the food security of the surrounding community. Without UA, fresh produce is unavailable in some low-income areas in Cape Town (Newsletter 34, 2007). In such cases, the closest source of affordable fresh produce may be a supermarket outside the area (Battersby, 2011:25). UA therefore is a key source of fresh produce. Moreover, produce sold directly from the plot is typically cheaper than the same product in a local supermarket (Sombalo, 2003:27).

There are a number of limitations to the food security potential of UA in Cape Town. For example, food insecurity in Cape Town rises steeply in the winter months as more income is spent on fuels and energy (Battersby, 2012:41). Cultivation, however, also slumps in winter (Sombalo, 2003:21). Under such circumstances, cultivators may sell even the produce intended

for their own subsistence (Kirkland, 2008:91). These limitations contribute to UA in Cape Town making a negligible contribution to alleviating food insecurity (De Swardt *et al.*, 2005:108).

UA in Cape Town reflects the broader food security issues found in South Africa. South Africa as a whole exhibits a low uptake of UA, and UA in South Africa makes a poor contribution to food security compared to the situation in the rest of Africa (Shackleton, 2010:517; Altman *et al.*, 2009:356; Thornton, 2008:250). Nevertheless, in recent years cases have emerged from Cape Town in which UA contributes to income and food security. These cases are generally associated with large initial investments that increase the economic viability of cultivation.

3.6.2 *Economic viability*

Cultivators typically increase the economic viability of production by using free inputs where possible. In Africa, such inputs include organic wastes, naturally occurring water and derelict land (Bryld, 2003:81&82; Asomani-Boateng, 2002:601; Mougeot, 1994:17; Streiffeler, 1987). The same occurs in South Africa, where official support further assists to reduce costs for cultivators (Reuther & Dewar, 2005:120). Cape Town is the only city in Africa with a UA policy (Battersby, 2012:44). Furthermore, it is the home of the only NGO in the country with decades of experience promoting UA. Thus, the City of Cape Town believes that UA can augment household income (City of Cape Town, 2007:5), and some prime examples of economically viable cultivation are found in Cape Town.

Some of the key elements to establishing an economically viable practice are inputs, infrastructure and training. Both the local municipality and NGOs provide these (Hoekstra & Small, 2010:19; Reuther & Dewar, 2005:119; Sombalo, 2003:28). With such support, cultivators are able to save money, or even to earn a living. Income is directly related to experience, with some cultivators earning just over ZAR 1-00 per square metre per month, while experienced cultivators could earn almost four times that (Reuther & Dewar, 2005:115). Plots for commercial group cultivators are typically 500 square metres per cultivator. Thus, an experienced cultivator who is part of the social enterprise Harvest of Hope typically earns between ZAR 1 000-00 and ZAR 3 000-00 per month (Newsletter 37, 2010). While this may not appear to be much, in a context of high unemployment and food insecurity, these earnings, coupled with the ability of cultivators to take home fresh produce, make a significant contribution to their livelihoods. The

income generated typically is used for other necessary household commodities, electricity and school fees (Dunn, 2010:158; Kirkland, 2008:95).

Limitations to economic viability confront cultivators throughout the cultivation process.

Locating a tract of free land is difficult in Cape Town (De Swardt *et al.*, 2005:108). Such land is usually derelict and covered with illegally dumped rubble and litter (Newsletter 37, 2010).

Having cleared and prepared the land for cultivation, vast quantities of inputs are required, as the land is unfertile and the climate harsh (Kirkland, 2008:73; Karaan & Mohammed, 1998:70).

During growth, crops are liable to theft if further investment has not been put into fencing and storage (Kirkland, 2008:104&99). Thus, these limitations need to be addressed, and cultivators rarely have the resources to do so without outside assistance. Cases from Africa show that, without such assistance, the benefits of UA accrue to the wealthy and low-income cultivators resort to hazardous practices out of desperation.

3.6.3 *Ecological integrity*

In general, UA exhibits a tendency towards ecological integrity. In Africa, cultivators use freely available organic inputs rather than purchase commercial chemical inputs (Asomani-Boateng, 2002:601). In South Africa, NGOs play a leading role in promoting the more deliberate use of organic inputs (Nicolle, 2011:64). The ecological benefits of UA are not highlighted in the City of Cape Town's UA policy, but form a prominent rationale for the NGOs promoting UA. These NGOs emphasise the ecological integrity of UA and how the ecological benefits are needed in the Cape Flats. Due to the climate in Cape Town, mainstream agricultural methods are unsuitable, thus without the training offered by NGOs, cultivation is unlikely to succeed (Fermont *et al.*, 1998:25).

In Cape Town, UA uses ecologically benign methods. Results in this regard are immediately visible, as cultivators restore litter-strewn, sandy open spaces with large inputs of organic matter (Ward, 2007:47; Fermont *et al.*, 1998:37). Thereafter, lush growth is maintained with irrigation systems that conserve water, such as drip irrigation, and water storage tanks using rainwater reduce the pressure on municipal supplies (Jacobs, 2009:61; Sombalo, 2003:32). Water is further conserved by using indigenous windbreaks and mulches that prevent the evaporation of water from the soil surface (Kirkland, 2008:89; Fermont *et al.*, 1998:40). A dual function of mulch and vegetation is that it also attracts wildlife such as birds and other species that prey on crop pests

(Nieuwoudt, 2008). The natural predators, in addition to cultivation methods that build plant resilience, notably reduce the vulnerability of crops to pests and diseases (Kirkland, 2008:87; Small, 2002:30). The accumulative effect of these methods is an increase in soil quality and biodiversity over time (Small, 2006:161; Fermont *et al.*, 1998:70), which further contributes to raising the aesthetic value of the area. For example, a resident overlooking a garden complimented the cultivator by saying, “Every time I get up in the morning it looks so green. Every time I open my window, it’s so bright” (Dunn, 2008). Thus, cultivation methods in Cape Town are beneficial not only to the natural environment, but also to the social environment.

3.6.4 *Empowerment*

UA provides opportunities for empowerment from the broader community level to the level of the individual. The empowerment literature discussed in the previous chapter indicates that collectively, empowerment means engagement with government and collective decision-making. Additionally, for individuals, empowerment includes participation, sharing and leading. In Africa, UA facilitates empowerment by encouraging networking, group bonding and building self-worth. The same applies to cases in South Africa. As will be shown here, UA in Cape Town reflects the broader literature on empowerment. Due to its strong empowerment potential, UA is supported by both the City of Cape Town and NGOs.

Empowerment has positive impacts on local economic development. This is particularly true in Cape Town, where cultivators donate or sell produce in the local economy. Cultivators feel concerned for the wellbeing of those around them, and as such donate produce to clinics for AIDS and tuberculosis patients, early childhood development centres and school feeding schemes, thereby assisting in the relief of extreme poverty (Jacobs & Xaba, 2008:195). In addition to donations and sales of produce, UA stimulates local economies as cultivation groups use their spare time to begin other businesses on the plot, such as seedling nurseries, crafts and the sale of refreshments. This economic climate creates a favourable environment for other small businesses, which become established around formal groups (Small, 2006:160&161).

At the group level, empowerment takes place when friendships are forged and social issues are confronted through the strength of unified voice. Groups may begin when a leader gathers cultivators who do not necessarily know each other (Ward, 2007:47; Sombalo, 2003:24). Alternatively, friends may choose to join up to cultivate (Dunn, 2010:141). In either case, a deep

trust develops over time, exemplified by group members sharing produce, meals and even money (Jacobs, 2009:77; De Satge & Williams, 2008:21). Cultivation groups have proven to be powerful change agents in Cape Town, as they voice community concerns to government and take action against crime (Ward, 2007:49; Slater, 2001:648).

At the individual level, cultivators are empowered as their skills increase and as they gain self-esteem. Training courses of different levels are offered to cultivators, and formal education is not a limitation to training (Reuther & Dewar, 2005:119). For example, one of the core programme coordinators in a major Cape Town NGO has not completed primary school (Ward, 2007:48). Skills are also transferred informally, as cultivators share knowledge with each other, with children and with family in rural areas (Newsletter 38, 2011; Jacobs, 2009:79; Dunn, 2008). Cultivators gain self-esteem through cultivating, expressing a sense of pride, health and peace (Dunn, 2010:122; Kirkland, 2008:90; Reuther & Dewar, 2005:119). Thus, the empowerment benefits at both the individual and group level that have been discussed in the broader context are also evident in the case of Cape Town.

The broader literature indicates that empowerment is limited by social isolation and top-down development. These aspects do not appear to play a notable role in limiting UA's empowerment benefits in Cape Town, but a key limitation in Cape Town is the perception that agriculture is an inferior means of earning an income. This is especially prevalent for those who have left rural areas to find work in the city (Small, 2002:31). While those who are committed to UA see many benefits, there still is this image that this is a last-resort means of survival for some. Thus, the perceived illegitimacy of UA as a means of urban economic empowerment curtails its empowerment potential in reality. Fortunately, this limitation is not pervasive. UA in Cape Town is increasingly being used for economic empowerment, particularly by women.

3.6.5 *Gender issues*

In Cape Town, 72% of urban cultivation is performed by women (Battersby, 2011:18). What is interesting is that motives for food security and income generation are strongly divided along gender lines. Men's motives for cultivation are more commercial, seeing it as a job, while women tend to view cultivation as a food strategy (Fermont *et al.*, 1998:23&26). Furthermore, men have more time to spend cultivating, and thus gain greater rewards from doing so (Ward, 2007:49). Nevertheless, women-only cultivation groups give a far larger percentage of produce away than

men-only groups (Jacobs & Xaba, 2008:196; Nieuwoudt, 2008). Thus, by specifically targeting women for training and support, as both the City of Cape Town and local NGOs do, the benefits of UA are more likely to impact a larger portion of society.

UA empowers women cultivators by giving them a degree of financial independence, a feeling of being settled and an aspect of life over which they have control. Many women cultivators are from rural areas. Having moved to urban areas to be with their working male partners, the change in lifestyle has little familiarity with the rural lifestyle they came from. In such cases, UA provides a measure of familiarity, as well as a space in which women may express creativity. Such women are typically dependent on their male partner's income. Thus, UA also provides a measure of financial independence (Slater, 2001:644).

Empowering women in patriarchal societies may however create conflict. In one particular case, a few men were allowed to join a women-only cultivation group. After a time, the men felt that the garden was not commercial enough and wanted to sell a greater proportion of the produce, rather than giving it away or taking it home (Small, 2002:31). When the women disagreed, the men attempted to intimidate them into compliance (Fermont *et al.*, 1998:26). In this case, the men came off worse, being driven from the garden with whips and sticks, and henceforth were expelled from the group (Newsletter 37, 2010).

At the household level, women often come off worse when using UA to challenge patriarchal norms. In some cases, cultivation is ridiculed by the male partner. In worse cases, the male partner retaliates with physical violence (Slater, 2001:642&646). Throughout the literature there are examples of women overcoming noteworthy limitations from patriarchal culture to practise UA. The results are often beneficial to the broad community. Thus, the strong focus of the City of Cape Town and of local NGOs on supporting women cultivators and raising women leaders in UA is strategic for optimising the impact UA has on food security in Cape Town (Newsletter 37, 2010; City of Cape Town, 2007:8).

3.7 Conclusion

UA in Cape Town appears paradoxical. Case studies frequently record the value that cultivators attach to UA as a source of food and income as well as an opportunity to socialise and relax. Yet quantitative research reveals that not only is UA one of the least used food strategies in Cape

Town, but it rarely contributes to food security for the households who practise it. Thus, debates on the viability of UA as a food strategy and as a means to improve the livelihoods of the urban poor in Cape Town remain highly contested. This chapter sought to tease out some of these debates on UA in Cape Town, and to look at under which circumstances UA may be considered successful and by whom.

Using the framework created in the previous chapter allows one to make some general observations and compare these to UA found in Cape Town. What is evident from the literature is that NGOs in general, but in Cape Town in particular, play an important role in developing UA, not only by providing financial support for cultivators, but in terms of training. In this regard, government does little to stimulate the development of UA in a practical sense, but it has created a positive legal and political space for NGOs to function and to run with initiatives. This, combined with a supportive legal environment, means that the benefits of UA for low-income cultivators in Cape Town are far more accessible than such benefits are to the marginalised elsewhere in Africa. It also means that UA in Cape Town does not exhibit the risks seen facing low-income cultivators in the broader literature. Thus, if the sector could be scaled up it appears to have considerable potential for community development. To establish the potential, more in-depth research at grassroots level is needed to establish the diversity of factors that influence the viability, as well as physical and social benefits, of UA. This is the focus of the study, but first it is imperative to examine one of the key theories, namely the sustainable livelihoods framework, to enable us to gain deeper insight into the resources cultivators use and the effects of their environment on access to such resources.

4. CHAPTER FOUR: THE SUSTAINABLE LIVELIHOODS FRAMEWORK

4.1 Introduction

Literature on UA throughout Africa shows that UA makes a substantial contribution to household food security. However, the success depends on a number of natural factors, such as land, climate, flora and fauna, human factors such as education, ability and motives, physical factors, including property and infrastructure, financial factors that influence the viability of production, and social factors such as household size, empowerment and gender. While cultivators may use capitals from any of these areas to sustain their livelihoods, access to and the quality of such capitals is affected by the social context and the cultivator's ability to adapt to change. As indicated in the previous chapters, some of the pivotal role players influencing change and resilience are NGOs, government and donors, who can either promote or hinder the benefits of cultivation.

Many social and development approaches such as sustainable economic development, sustainable resource management, social capital and feminism present different approaches to study, or construct, best practice models for UA. These are outlined and discussed briefly. An approach that takes the full range of factors influencing UA into account, however, is the sustainable livelihoods framework, which encompasses all of the above theoretical approaches and makes sense of the "complexity and diversity" of UA (Rutherford, Harper & Grierson 2002:112). In terms of this study, I have found the sustainable livelihoods framework to be a useful conceptual framework to unpack UA from various perspectives.

Accordingly, this chapter lays out the basic elements of the sustainable livelihoods framework. It begins by describing popular theoretical approaches applied to UA, the theoretical origins of the sustainable livelihoods framework, as well as various definitions and terms. The sustainable livelihoods framework is then described, beginning with the five capitals of sustainable livelihoods and moving on to the contexts within which livelihoods operate. Finally, having described the sustainable livelihoods framework, ways in which it may be applied are discussed and a method most appropriate for the context of the present study is selected.

4.2 Theoretical approaches to UA

Much of the literature on UA in Africa does not adopt an explicit theoretical approach. Debates are often devoid of theoretical interpretation, are merely descriptive and often focus only on specific aspects or best practice (FAO, 2012; Mougeot, 2000). Where scholars have engaged with the topic of UA theoretically, they have tended towards adopting a sustainable development lens, focusing on sustainable economic development, sustainable resource management and sustainable land management. Some texts from the social sciences apply a social capital or a feminist lens. Any theoretical perspective risks losing the complexity of UA, as this is a holistic activity embedded in social, economic and natural systems. Thus, focusing on one aspect alone, such as land, social networks or gender, fails to appreciate critical issues that fall outside of the framework. This section therefore reviews key theoretical approaches to UA, but argues that a framework that incorporates all these approaches is needed for studying UA.

4.2.1 *Sustainable development*

Many theoretical approaches to UA are based on sustainable development principles. This is not surprising, as UA “fits neatly into” the sustainable development approach (Webb & Kasumba, 2009:31). For example, key strengths of UA, such as achieving economic, ecological and social wellbeing, are central tenets of sustainable development (Webb & Kasumba, 2009:31; May & Rogerson, 1995:178). Within the broad sustainable development approach, UA case studies tend to focus on sustainable urban development because “sustainable development is unthinkable without sustainable urbanization” (Smit & Nasr, 1992:152), and such texts believe that UA is a key strategy in this regard. To these ends, key foci are sustainable urban development, sustainable economic development, sustainable resource management and sustainable land use. Each of these is outlined below.

4.2.2 *Sustainable urban development*

Sustainable development principles are applied in a number of ways, one of which is urban development. The application of sustainable development goals to urban areas followed from an awareness of the increasing urbanisation of the global population (Deelstra & Girardet, 2000:45). One of the disconcerting results of urbanisation is that urban centres in general became the loci of competition between economic growth and ecological wellbeing. Moreover, in developing countries in particular, a third challenge for urban centres emerged, that of food access. These development challenges were addressed at the 1996 United Nations City Summit in Istanbul,

where 180 countries committed themselves to following sustainable development principles in urban development (Deelstra & Girardet, 2000:46). In this regard, UA is seen to play a pivotal role. In fact, sustainable urban development is “inconceivable” without UA (Smit & Nasr, 1992:152). For example, UA addresses food access challenges in an ecologically sustainable and economically viable way by improving basic food security, reducing fossil-fuel consumption and creating employment (Webb & Kasumba, 2009:31; Baumgartner & Belevi, 2001:11; Deelstra & Girardet, 2000:46). In developing countries in particular, UA plays a key role in food access as it increases the self-reliance of urban centres (May & Rogerson, 1995:166), for example by reducing dependence on imports of fresh produce from rural areas or from other countries. Furthermore, in South Africa, Rogerson (1998:180) identifies UA as “a key element in broader strategies for sound urban management”. One of the ways this is achieved is through sustainable economic development.

4.2.3 *Sustainable economic development*

Research on urban development has been criticised for failing to acknowledge markets (Thom & Conradie, 2012:3). Thus, some research focuses specifically on markets by means of a sustainable economic development approach. While sustainable economic development is important for any economy, it is particularly pertinent in developing countries, because their local markets tend to perform poorly. This results in low wages, high unemployment, high food prices and a lack of adequate infrastructure. In the past, attempts have been made to address such crises at a national level through large-scale, centralised projects, but most of these failed to achieve sustained economic growth. Thus, sustainable economic development calls for smaller scale bottom-up approaches that stimulate local economic development (Hampway, 2008:1&2).

Many promote UA as a key strategy in this regard, because UA stimulates local markets both through the sale of surplus fresh produce, as well as in the opportunity for value adding (Thom & Conradie, 2012:2). The impact that UA has on economies is felt in cities such as Addis Ababa (Ethiopia) and Kampala (Uganda) and in many small towns throughout Kenya, where a large proportion of the food economy depends on UA (Mougeot, 1994a:13&14). This potential has led the City of Cape Town to believe that UA may stimulate economies in its own poor areas (City of Cape Town, 2007:3). Reuther and Dewar (2005:108) demonstrate that this belief is well founded by reviewing a case study in which UA in Cape Town proves to be economically viable. They state, however, that a low demand for UA products may limit opportunities for commercial UA

in Cape Town. This market potential is evaluated by Thom and Conradie (2012:18), who find that demand for local produce does in fact exist, but that, as stated by Crush *et al.* (2011:296), local markets are not yet capable of “getting household-level produce to the commercial consumer”. While this may be true on a broad scale, smaller-scale initiatives such as Harvest of Hope, an organic food box scheme that sells UA produce to middle-class consumers in Cape Town, is doing well (Newsletter 38, 2011). While success stories such as that of Harvest of Hope present a best practice model for stimulating local markets through UA, larger scale economic growth in cities is generally associated with ecological degradation. A sustainable resource management approach seeks to address this.

4.2.4 *Sustainable resource management*

Cities are economic hubs, but economic growth often occurs at the expense of the natural environment. A sustainable resource management approach attempts to address this challenge by promoting renewable resources and reducing waste. Urban waste is considered one of the most important challenges in urban centres today, and this problem is often greatest in developing countries (Bryld, 2003:84). In this regard, UA contributes notably to sustainable resource management by closing nutrient loops through the re-use of organic wastes, thereby replenishing soil nutrients and reducing the need for chemical inputs that use non-renewable energy sources. In this way, UA also reduces quantities of solid waste going to landfills (Baumgartner & Belevi, 2001:11). The social contribution UA makes to sustainable resource use is no less important. For example, Nemudzudzanyi *et al.* (2010:58) apply a sustainable resource management approach to a traditional Zulu garden, or *muzi*, and find that the *muzi* preserves valuable indigenous knowledge about resource management, such as indigenous edible foods, urban greening and nutrient recycling. As Zulu households become increasingly modernised, they risk losing this knowledge. Thus, the *muzi* not only operates on sustainable resource management principles, but forms the context for educating subsequent generations about sustainable resource use too. One of the key resources that feature in the sustainable resource management perspective is land. Land, being the core resource for UA, is focused on in more depth through the sustainable land management perspective.

4.2.5 *Sustainable land management*

Urban land is a contested resource in demand by many user groups. Without public support for sustainable land management, urban land is at risk of becoming overcrowded and polluted

(Bryld, 2003:84). Both overcrowding and pollution are considerations in the context of Cape Town. Although prime agricultural land exists within Cape Town's urban boundaries, Geyer *et al.* (2011:41) find that this land is being consumed by residential development because local government has not protected it from development. Geyer *et al.* (2011) recommend that high-value land within the urban edge be protected and that low-value land outside the urban edge be reserved for residential expansion instead. Overcrowding from residential areas or industry presents a threat not only to the size of arable land, but also to its quality. Soil quality is central to the viability of UA, thus pollution from chemical waste, illegal dumping or traffic-related heavy metal contamination presents risks to the expansion potential of UA (Baumgartner & Belevi, 2001:11). While UA depends upon good soil quality, it also contributes to it by building up soil nutrients (Baumgartner & Belevi, 2001:11). Thus, while sustainable land management is a consideration for UA viability, UA also promotes the sustainable use of urban land.

The theoretical frameworks and their application described above focus on aspects within the broad sustainable development approach. While sustainable resource use and sustainable economic development are vital issues, these approaches nevertheless fail to address who gains access to resources and who participates in the local economy (Hovorka, 2005:137). UA case studies clearly show that women, although in the majority among cultivators, are often excluded from local economies and are marginalised when it comes to resource use (Freeman, 1993:20). Furthermore, elite capture and patron-client relationships mitigate the benefits that low-income cultivators derive from UA. Thus, while UA relates closely to sustainable cities, a theoretical lens that takes social aspects of UA into account is also of vital importance.

4.2.6 *Feminist theory*

Gender is defined as the socially constructed roles that men and women act out in their daily lives. These roles are created and reinforced by law, development policies and customs. Gender roles are unequal in terms of rights to access and affect the rights of men and women in labour markets, political structures and in the household (Meena, 1992:1, in Gabel, 2005:112).

Throughout UA in Africa, women have limited access to resources for cultivation. The marginalisation of women begins in childhood education, as African women cultivators on average have a lower education than men. As a result, women earn less and therefore have less tools and smaller tracts of land that is of a lower quality than that to which men have access (Hovorka, 2005:147; Freeman, 1993:20). In addition, women have demands on their time relating

to running their households and are less able to protect their crops from “theft, predation or destruction by the authorities” (Freeman, 1993:20). Although women cultivators are systematically disadvantaged, they are the majority of cultivators in Africa, particularly as the heads of remittance-dependent households (Rogerson, 1998:180; May & Rogerson, 1995:171). This phenomenon is explained by Foeken and Owuor (2008:1979), who state that such women use UA to cope with their declining purchasing power by increasing their informal income-generating activities.

Feminist approaches to UA in Africa address patriarchal constraints to cultivation and the economic importance of the role of women cultivators for their households (Rakodi, 1991:39). In some ways, women use UA to assist them in fulfilling gender roles, while in other ways it helps them to resist gender roles. Moser (1993:40) calls the gender roles that women want to fulfil, “practical gender needs”. In contrast are “strategic gender needs”, which refer to gender roles that women want to oppose. UA plays a role in both regards. For example, Hovorka (2006:221) describes how women in Gaborone are taking up chicken cultivation, which fulfils a traditional gender role. These women, however, are producing on a commercial scale and are participating in business transactions, such as land sales, which traditionally are masculine activities in their culture. Thus, through UA, women are simultaneously fulfilling and challenging gender roles in their society. The same is found in Cape Town, where women are grateful for UA, as it allows them to grow crops for household consumption, an activity that connects them with their rural cultural heritage (Slater, 2001:644). Nevertheless, while this culture is patriarchal, women in cultivation groups feel a sense of ownership of their plot that supersedes patriarchal norms. For example, male group members were excommunicated by their female colleagues after the men tried to enforce male leadership of the group (Newsletter 37, 2010). The central role of women in UA and the nuances of gender that relate to UA indicate that a feminist lens is of vital importance to research on UA.

A number of popular theoretical perspectives for UA have been reviewed in the preceding subsection. All appear highly relevant to UA in some respects, but each focuses on a different, yet vital, aspect. Thus, in order to incorporate all aspects of UA, a framework is needed that encompasses all of the above approaches. This is achieved through the sustainable livelihoods framework.

4.3 Theoretical roots of the sustainable livelihoods framework

The sustainable livelihoods framework emerged at the end of the twentieth century as an instrument to analyse existing livelihoods in the planning phase of development projects. The sustainable livelihoods framework provided a framework by which cases can be analysed and suggestions can be made for policy, for a development project or for further research (Morse & McNamara, 2013:17&18). It was initially applied in developing countries, specifically in rural areas, but over time its application became more widespread to include urban case studies and, specifically, UA.

The birth of the sustainable livelihoods framework is linked to a series of international development conferences that redefined understandings of poverty and re-evaluated community development approaches. The earliest mention of sustainable livelihoods is attributed to the Brundtland Commission on Environment and Development in 1987. Until then, perceptions of poverty were concerned only with material flows, namely income and expenses. The Brundtland Commission reframed poverty as multidimensional to include physical and social wellbeing, and challenged the modernist interpretation of poverty as inadequate (Chambers, 1988:9). Following the Brundtland Commission, the concept of livelihoods and livelihood resilience was taken forward by the United Nations Conference on Environment and Development in 1992 (Krantz, 2001:6). This conference is best known for producing an agenda for the twenty-first century, or Agenda21, which states that every person must be given an “opportunity to earn a sustainable livelihood”. Sustainable livelihoods were further emphasised in the in the UK Department for International Development’s White Paper in 1997, which states that global poverty alleviation will be addressed “through support for international sustainable development targets and policies that create sustainable livelihoods for poor people, promote human development and conserve the environment” (DFID, in Unwin, 2004:1504). Thus, the sustainable livelihoods framework is a holistic approach that encompasses the complexities of poverty and development.

Characteristics of the sustainable livelihoods framework can be traced from older approaches (Morse & McNamara, 2013:22). The sustainable livelihoods framework has two main roots, those related to people-centred development and those to development in rural settings. While many principles from both of these traditions are useful, and thus are synthesised by the sustainable livelihoods framework, other aspects are limiting and these are excluded (Chambers, 1988:15). For example, human development took a “basic needs” approach, which focused on a

community's limitations rather than its strengths (Morse *et al.*, 2009:8). The sustainable livelihoods framework rather focuses on people's assets, namely those characteristics in a community that contribute to sustainable livelihoods (Farrington *et al.*, 2002:17). A strength of the human development approach, however, is the understanding that resilience is directly correlated with diversity. This understanding is adopted by the sustainable livelihoods framework (Morse & McNamara, 2013:24). While the sustainable livelihoods framework was developed for rural settings, which until recently remained the locus of poverty, studies are increasingly applying the sustainable livelihoods framework to urban case studies (Chirau, 2012:10).

The sustainable livelihoods framework is equally compatible with rural and urban settings. Livelihoods in urban and rural areas have some key differences, but the types of assets utilised are relatively generic. Key differences between rural and urban livelihoods relate to the emphasis placed on cash incomes. For example, urban livelihoods are primarily cash based and income is therefore foundational to urban livelihoods. Rural livelihoods, on the other hand, are less dependent on cash income because of the greater availability of "free" natural resources such as firewood, land and forage (Farrington *et al.*, 2002:8). Nevertheless, Rutherford *et al.* (2002:120) argue that there is very little difference between rural and urban livelihoods for low-income households, as "many of the same people are involved in both [areas], there are many 'rural' enterprises in cities, such as [...] vegetable farms [...] and many household livelihood strategies depend on exchanges and movement between the two [areas]". Thus, while some apply the term Sustainable Urban Livelihoods Approach when applying the sustainable livelihoods framework to urban settings, the sustainable livelihoods framework applies equally well to both rural and urban areas and introducing the adjective "urban" is redundant (Morse & McNamara, 2013:8).

4.4 Definitions of the sustainable livelihoods framework

The sustainable livelihoods framework incorporates key terms that may be misunderstood without clarification. By addressing three key questions, some consensus of understanding may be achieved. The first question deals with what a livelihood is and how it differs from an occupation. The second question deals with what is meant by "sustainable". The final question asks how the concept "sustainable livelihood" may be operationalised. Such questions are addressed by a number of texts.

Early concepts of poverty adopted a narrow definition relating only to flows of income. According to such a concept, poverty reduction related simply to increased employment. Those living in poverty are vulnerable to a range of influences from their environment and, as such, find it necessary to invest in a “portfolio of activities” rather than in one enterprise (Chambers, 1995:192). Thus, while employment may be one component of a livelihood, it is not a livelihood in itself (Chambers, 1995:174).

Early definitions of livelihoods were as narrow and simplistic as early definitions of poverty. For example, Food 2000 (1987:3, in Chambers, 1988:10) defines livelihoods as “adequate stocks and flows of food and cash to meet basic needs”. A livelihood is broader, however, than mere economic equations, as it incorporates material and social capitals and capabilities (Grown & Sebstad, 1989:941). Thus, while a livelihood may include food and income, it is far more nuanced than simply material flows, as it “comprises people, their capabilities and their means of living” (Chambers & Conway, 1992:i). Thus, the widely accepted definition for livelihoods is that a livelihood “comprises the capabilities, assets (stores, resources, claims and access) and activities required for a means of living” (Chambers & Conway, 1992:7).

Addressing poverty does not equate to creating livelihoods, but to sustaining them. Poverty alleviation relates not to the livelihoods themselves, but to increasing their resilience over the long-term (Chambers, 1995:191). Nevertheless, applying the term “sustainable” to livelihoods raises questions regarding what is to be sustained, and at what expense. Sustainability includes environmental and social dimensions, which are not necessarily compatible (Chambers & Conway, 1992:9). For example, farmers employing slash-and-burn methods for farming may find laws against deforestation detrimental to their livelihood. Thus, the sustainable livelihoods framework attempts to balance both environmental and social sustainability by coping with change as well as by creating them (Carney, 2002:4).

The ability for a livelihood to cope with change is called its “negative” dimension, because it is reactive or defensive. The negative dimension refers to “the ability of a livelihood to be able to cope with and recover from stresses and shocks” (Scoones, 1998:6) such as economic slumps, natural disasters, disease and crime. The positive dimension, by contrast, relates to “enhancing and exercising capabilities in adapting to, exploiting and creating change, and in assuring continuity”, and thus is proactive (Chambers & Conway, 1992:10). Creating change could take

the form of experimentation with new crops, growing a variety of products or expanding networks with other cultivators. A definition of sustainable livelihoods therefore would incorporate both the positive and negative dimensions of livelihood resilience while not neglecting to balance social and ecological sustainability. This is achieved by Carney (2002:4), who defines a sustainable livelihood as one that “can cope with and recover from stresses and shocks and maintain or enhance its capabilities and assets [...] while not undermining the natural resources base”. This definition is illustrated in Figure 1 (below), in which “capabilities and assets” are grouped into five “capitals”, while negative and positive dimensions of change relate to the institutional and vulnerability contexts. This is followed by discussion of these aspects of the sustainable livelihoods framework.

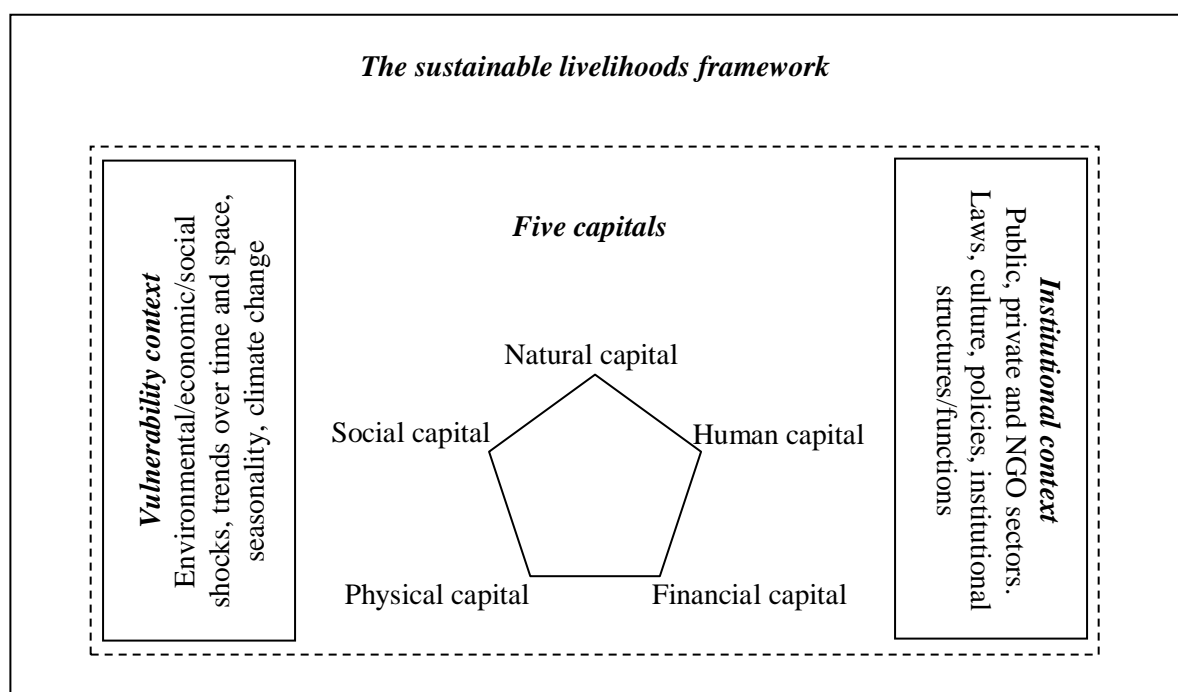


Figure 1. The sustainable livelihoods framework diagram²

4.5 The sustainable livelihoods framework capitals

The sustainable livelihoods framework identifies five capitals. These are natural, human, financial, physical and social capital (Farrington *et al.*, 1999). These capitals may be the private property or personal abilities of an individual, but they also include the public resources and social networks to which an individual has access (Grown & Sebstad, 1989:941). While the term “capital” is used, the components of livelihoods are not strictly capitals in an economic sense,

² Adapted from Morse and McNamara (2013:19)

namely “the product of investment which yields a flow of benefits over time” (Department for International Development, 1999). Instead, they are the “building blocks” of a livelihood in that they collectively contribute towards livelihood resilience (Farrington *et al.*, 1999). Thus, capitals in the sustainable livelihoods framework are not simply economically rewarding, but create meaning and ascribe agency (Morse & McNamara, 2013:30).

Livelihoods are constructed with a broad range of capitals. This is especially relevant for poor people, who tend to have limited access to the resources that grant access to mainstream economies, such as finances (Department for International Development, 1999). Such individuals may substitute a lack of financial capital with access to public land (Rakodi, 2002:10). In this way, food is obtainable from the land, rather than through a financial transaction at a retailer.

It is not always possible to substitute capitals, however. Shortages of some capitals may have a limiting effect on the potential to gain other capitals. For example, financial capital is largely dependent on human capital. The greater the amount of human capital, such as education, the more opportunities there are to increase financial capital through work opportunities (Farrington *et al.*, 2002:20). A low level of formal education therefore has negative impacts on the possibility to gain financial capital.

Low-income households have limited access to many mainstream capitals, such as education, finances and private land. For such households, the resilience of livelihoods relates directly to the portfolio of capitals to which they have access, so that limited capitals may be substituted with those that are available, such as abilities, resources or time (Chambers & Conway, 1992:10). For this reason, Rakodi (2002:7) states that low-income households are unlikely to support themselves “on the basis of a single business activity”, but rather tend to combine multiple sourcing of cash incomes, such as state grants and temporary labour, with activities that substitute the need for cash, such as UA. As pointed out in the previous chapters, UA is particularly important as it not only provides food, but allows for savings that may be spent on essentials such as school fees, or even contributes directly to the household income through sales of surplus produce (Foeken & Owuor, 2008:1978). Thus, UA plays a key role in the economic aspects of a livelihood.

There also is a social and psychological dimension to the components of a livelihood. In the sustainable livelihoods framework, capitals enable people to “engage more fruitfully and meaningfully with the world” and provide people with “the capability to change the world” (Bebbington, 1999:2022). As such, capitals are not mere “things”, but are “a basis for power to act” (Morse & McNamara, 2013:30). Thus, Rogerson (1998:179) recommends that increasing livelihood resilience be done through “a broad set of programmes” that “improve human capital, augment social capital” and strengthen “productive assets and household relations”. This recommendation was confirmed by a development initiative in South Africa that incorporated small-scale cultivation in community development. In this case, Nel *et al.* (2001:12) found that small-scale agriculture, for example, could be a vehicle for community development if adequate stocks of human and social capital existed in addition to the natural and physical capitals already present. Thus, all the capitals of the sustainable livelihoods framework are important for UA and, as such, will be considered in turn. What is interesting to note is how they link to the factors discussed in the previous chapter on the debates on UA and the social and physical benefits that accrue from this activity.

4.5.1 *Natural capital*

Attention to the preservation of the natural environment is a key focus of the sustainable livelihoods framework. One reason for this is that the natural environment holds a wealth of resources vital to human wellbeing. Exploitative use of the natural environment may yield short-term benefits, but the livelihoods of future generations are undermined. The sustainable livelihoods framework therefore places emphasis on the conservation of natural capitals (Morse *et al.*, 2009:7).

Natural capitals include resources, goods and services. Resources are either renewable or non-renewable. Renewable resources replenish themselves and therefore are sustainable if used in moderation, such as forests, grazing land and forage (Farrington *et al.*, 2002:12; Chambers, 1995:192). Non-renewable resources, such as fossil fuels, are extracted and become depleted with use (Ellis, 2000:32). Goods refer to common resources such as air and water, which are freely available. Services are also free, and refer to natural functions such as nutrient cycling or oxygen production (Farrington *et al.*, 2002:21; Department for International Development, 1999).

The resources provided by natural capital are especially pertinent for substituting the cost of food through urban cultivation. In cases such as Nigeria and Cuba, the free use of “spare” land provides households that have little financial capital with access to healthy food, as the land is accessed at no financial cost (Meikle, 2002:39&40). Land in urban areas has high value, thus formally accessed private land is beyond the budget of poor households. Nevertheless, “access” need not imply ownership. Thus, land access frequently means usage of public land and available open spaces such as road verges and land set aside for development. This is practised by low-income cultivators in Nakuru, Kenya. This case study found, however, that although low-income cultivators were able to gain access to free land by these means, the downside was that such plots frequently were some distance from the home, which decreased the viability of production by increasing the time and effort needed and exposing crops to a greater risk of theft (Foeken & Owuor, 2008:1979-1981). In such cases there is the temptation to use short-term benefits at the expense of the natural environment (Chambers, 1988:14). Cases from Africa show that cultivators without tenure security try to maximise their yield by overusing chemical fertilisers, or by spraying toxic pesticides. In Cape Town, however, a priority is placed on organic methods by the NGOs that promote and support UA. Thus, far from exploiting the natural environment, UA in Cape Town invests in the natural environment by improving soil health and increasing ecosystem resilience and biodiversity (Kirkland, 2008:108).

In Cape Town there are a number of key natural capitals available for UA. Two of the most important of these are arable land and the Cape Flats aquifer (Jacobs, 2009:62). Although there is enough land and water for the expansion of UA because of these resources, low-income cultivators cannot gain access to either of these without assistance from NGOs. For example, while all residents, even those in informal settlements, have a limited amount of space around their dwellings, it is not sufficient to increase cultivation to a commercially viable scale. Cultivation only becomes viable on greater tracts of land, as demonstrated by Reuther and Dewar (2005:99). Free access to such land, however, conflicts with other user group interests and may therefore be difficult to obtain (De Swart *et al.*, 2005:108). Furthermore, in terms of water access, adequate water is freely available from the Cape Flats aquifer, but this water is only accessible after capital investment in a borehole system (De Satge & Williams, 2008:20). Thus, although the natural capital to support UA in Cape Town is ample, mediators such as NGOs are vital for assisting cultivators with access to these. One of the reasons the NGOs are able to accomplish more than cultivators can alone is that NGOs have higher stocks of human capital.

4.5.2 *Human capital*

Human capital is the “skills, talents, leadership capacity and charisma possessed by members of a community” (Nel *et al.*, 2001:4). Without adequate human capital, development would be unlikely to succeed, as human capital directly affects the potential to invest in the other capitals (Department for International Development, 1999). For example, ill health or a low level of formal education has a direct impact on financial capital by limiting the possibility to earn a wage (Chirau, 2012:17). Sustainable development therefore requires that human capital is developed through training, apprenticeships and extension services (Rutherford *et al.*, 2002:121).

Human capital increases with experience. For example, cultivators in Kenya’s urban areas know which crops are best suited to their needs. Such cultivators prefer kale (*Brassica oleracea*) because it is a nutritious, resilient crop that grows all year round. As a cultivator stated, “you can easily grow [it], it hardly needs any care and it is resistant to drought” (Foeken & Owuor, 2008:1981). In Cape Town’s low-income areas, where space is limited around the home, cultivators need to know how to use such space effectively. Thus, cultivators need to know which crops do best in shade or sun, and in wet or dry conditions, and when the appropriate season is to grow these (Kirkland, 2008:108). Thus, although many cultivators have a considerable knowledge of cultivation from their rural heritage, it is inadequate for cultivating in the remarkably different conditions they encounter in Cape Town. For this reason, NGOs that have spent years customising organic cultivation methods to conditions in Cape Town play a vital role through providing training and extension services. Trainees are taught how to cultivate in Cape Town over a course of a few weeks, and support is provided to cultivators for a number of years following the course (Jacobs, 2009:62). In this way, an extensive investment in human capital is made by local NGOs, which is vital for success in UA.

While NGOs may increase existing human capital, such as knowledge of cultivation, they may also introduce new facets of human capital, such as the ability to market produce. In a case study by Nel *et al.* (2001:9) on cultivators in the Eastern Cape province of South Africa, it was found that cultivators lost opportunities to make a profit from cultivation because they did not market their produce. The disillusionment cultivators felt at losing such an opportunity caused younger cultivators to give up and seek work elsewhere. Thus, human capital is a determinant of financial capital and the sustainability of UA as a livelihood strategy.

4.5.3 *Financial capital*

Financial capital refers to the availability of cash or commodities that may be exchanged (Department for International Development, 1999). Two main types of financial capital are recognised, namely stocks and inflows of money. Stocks refer to savings as well as liquid assets such as livestock, furniture or jewellery, while inflows include salaries, state grants or remittances (Chirau, 2012:17&18). In urban areas, financial capital is especially important, as cities are “commoditised” and access to resources is based largely on the exchange of cash (Farrington *et al.*, 2002:19). Thus, salaried employment in the urban labour market plays a major role in bringing financial capital to low-income urban households (Rogerson, 1998:177). Due to the low value of human capital in the labour market, financial capital from labour alone is often inadequate for household needs (Tambwe, 2010:77; Department for International Development, 1999). Thus, the urban poor operate primarily through the informal market.

The informal market plays a notable role in access to financial capital in urban areas. The informal market primarily includes hawking, vending and food cultivation through UA (Chambers, 1995:194). Participants in the informal market may be employees, but the informal market is typically self-employed. Self-employment is particularly high among low-income households in metropolitan areas, compared to self-employment in low-income secondary cities and small towns (Rogerson, 1998:177).

Income from the informal sector, however, is limited and irregular. Thus, state grants such as child-support grants or pensions play a vital role in the incomes of low-income households because they are predictable (Foeken & Owuor, 2008:1979). Household savings on the food budget made possible by growing one’s own food are also valuable, as low-income households spend the majority of their money on food and cooking fuel (Rutherford *et al.*, 2002:113). By reducing expenditure on fresh produce through UA, households may use the money they save for other expenses, such as fuel or staple foods.

All of the above applies to UA in low-income areas in Cape Town. In a study on UA in Cape Town, Jacobs (2009:61) shows that cultivators receive incomes from formal employment, informal employment, the sale of produce and pensions. Other forms of income include receiving money from family members or donors, as well as indirect income through saving on food

expenses by harvesting their own food (Jacobs, 2009:62). Although Maxwell (1995:1677) states that UA is a strategy for those with land access but no income, financial capital is nevertheless important for urban cultivators, as performance in cultivation is directly proportional to income (Foeken & Owuor, 2008:1988).

4.5.4 *Physical capital*

Physical capital includes private property and public infrastructure, both of which help people to be more productive (Department for International Development, 1999). Private property includes resources such as housing, tools and equipment that people rent or own (Farrington *et al.*, 2002:21). Infrastructure that is typically central to sustainable livelihoods includes water and sanitation, clean, affordable energy, affordable transport and access to information (Department for International Development, 1999).

For the urban poor, some of the most important types of physical capital are public infrastructure, housing, water and energy. Public infrastructure is a characteristic of urban areas and a draw factor for migrants from rural areas. While infrastructure delivery is criticised in low-income areas, improving infrastructure may have negative effects on those living in informal housing. In such cases, improving infrastructure could mean the eviction or relocation of existing informally settled families. Adequate housing nevertheless is a key asset for the urban poor, as it is used not only for shelter, but also for income generation through rent, informal businesses or UA (Farrington *et al.*, 2002:22-23).

Physical capital contributes notably to increasing the economic viability of UA. With adequate physical capital, cultivators can run “prosperous, relatively small farms” that produce higher-value crops and increase profit margins through post-harvest value adding (Satterthwaite & Tacoli, 2002:53). By implication, inadequate infrastructure considerably limits the viability of UA. For example, in a case study on small-scale cultivation in the Eastern Cape it was found that cultivators were forced to sell their produce below the unit price to traders because the roads were poor, telecommunications were unavailable and the cultivators had no transport (Nel *et al.*, 2001:9). Furthermore, a shortage of water in Kenya, following two successive droughts, meant that cultivators lost their crops even though they had irrigation systems. Between 1999 and 2000, water in Kenya became so scarce that cultivators were forced to buy it, and they could only afford enough for household needs. Over the two years, productivity reduced to the point that

some of the poorest cultivators ate nothing from their plot and were forced to buy what little food they could afford (Foeken & Owuor, 2008:1982). These examples illustrate how important physical capital is to the viability of UA. At times, however, some groups are excluded from accessing physical capital for social reasons. Thus, social capital is also a key consideration.

4.5.5 *Social capital*

Social capital is the “[f]eatures of social organization, such as trust, norms and networks that can improve the efficiency of society by facilitating coordinated actions” (Putnam, 1993:167). Two independent publications emerged in the 1980s that are recognised as fundamental to contemporary understandings of social capital. These are Bourdieu (1986), on the relationship between the individual and formal institutions, and Coleman (1988), on the link between family support and school performance. While both theorists are credited with conceptualising social capital, there is another, far more popular, theorist in community development circles, namely Robert Putnam. Based on the work of Coleman, Putnam (1993) reformulated social capital by studying how trust, norms and civic participation relate to the economic success of a number of Italian societies.

Putnam’s (1995:665) research argues that social capital increases social cohesion in society. Such cohesion contributes to increasing individual wellbeing and creating prosperous communities. This is an important component of developing sustainable livelihoods, because “the social networks of the poor are one of the primary resources they have for managing risk and vulnerability” (Woolcock & Narayan, 2000:242). This statement indicates the relationship between social capital and economic forms of capital, namely physical and financial capital.

Social capital shares some similarities with physical and financial capital. One of the earliest observed similarities is that social capital facilitates the accomplishment of desired outcomes (Coleman, 1988:101). For example, individuals with a greater share of social capital have increased capabilities and increased access to other forms of capital (Sen, 2005:154; Coleman, 1988:99&100). Social capital reduces transaction costs, therefore greater shares of social capital contribute to greater savings of financial capital.

There are however ways in which social capital is markedly different from other capitals. Most notably, unlike financial or physical capital, social capital increases with use, it does not become

spent or worn out. This attribute creates a “spiralling up” effect, in which an exponential increase in social capital and other capitals are seen (Emery & Flora, 2006:32). Just such an example is recorded by Coleman (1988:99), who finds that increased social capital has a positive effect on human capital in subsequent generations, as it promotes safe, supportive spaces for the development of children (Coleman, 1988:99&109). Social capital is therefore a key capital for both physical and social benefits. A core component to social benefits is found in generating trust and reciprocity in communities.

A core component of thriving communities is life satisfaction, which includes happiness and a sense of contentment in individuals. This relates directly to interpersonal trust, and social capital is essential in this regard (Brehm & Rahn, 1997:1007&1015). Thus, the more people are dependent on each other, the greater the trust between them and the happier a community is. An example of this is found in Kenya, where Gallaher *et al.* (2013:396) compared cultivator households with those that do not cultivate and found that cultivators showed a higher frequency of positive interactions with their neighbours, such as exchanging goods, food, cash and even services such as child-minding. These cultivators stated that these social interactions had strengthened their friendship bonds, increased networking among women in the area and created a general sense of community identity (Gallaher *et al.*, 2013:397). This increase in social capital made considerable contributions to community wellbeing. Most notably, it increased trust among community members, led to higher levels of food security, as people shared food, as well as a stronger local economy as people were more inclined to buy from, sell to or lend money to neighbours they trusted. It appears likely that the same occurs in Cape Town, where cultivators exhibit trust and reciprocity within cultivation groups, in addition to the altruism expressed through sharing produce with the broader community (Jacobs, 2009:93).

UA in Cape Town provides cultivators with opportunities to dream, plan and achieve tangible outcomes, such as becoming self-employed or receiving official recognition in the form of awards (Newsletter 34, 2007). The outcome of such positive interactions is the expansion of social networks that have positive impacts on society as well as an increased sense of self-worth, as expressed by cultivators (Dunn, 2008). This is particularly important from a community development sense because sustainable development is promoted through bottom-up development, where community members identify and pursue their own development goals, rather than having development imposed from an external agency. Low-income communities,

such as those on the Cape Flats are typically targets for development projects run from outside agencies, and such agencies often describe poor areas hopeless, helpless and degraded. Even residents begin to adopt this view of themselves (Mathie and Cunningham, 2003:2). Thus, the opportunities presented through UA in Cape Town reverse the negative reinforcement imposed on low-income residents as victims and counteract the dependency mind-set that is pervasive in poor areas. UA stimulates self-determination as well as community cohesion and creates a sense of pride in the community as well as self-worth. This may be a goal in itself, as it contributes to quality of life by increasing self-worth, but it also has measurable outcomes in the form of higher food security, economic growth (Gallaher *et al.*, 2013:397), fewer incidences of conflict and a lower level of crime (Putnam, 1993:171).

Social capital plays a key role in the success of UA (Nel *et al.*, 2001:4). Social capital is both created by UA, as well as a prerequisite for the success of UA. Thus, a degree of social capital needs to exist before UA begins, but it is often found that UA also scales up existing levels of social capital (Nel *et al.*, 2001:4-5). NGOs are key agents in accomplishing this. The complementarity between UA and social capital was observed by Gallaher *et al.* (2013), who studied the relationship between UA and social capital in Kenyan informal settlements. Gallaher *et al.* (2013:402) found that households with existing networks who participated in UA further increased their stocks of social capital through UA, because UA encouraged interaction between cultivators and other community members. Thus, this aspect of UA is particularly important in contexts such as the Cape Flats where social ills such as gang violence undermine trust and altruism (Karaan & Mohammed, 1998:69).

Three types of social capital are recognised, namely bonding, bridging and linking social capital. Bonding and bridging ties operate between actors of the same level of power, such as between community members, while linking capital operates across power hierarchies, such as between a community member and a local official (Misselhorn, 2009:190). Bonding capital refers to friends and family, while bridging capital to membership of informal groups, such as community savings or credit schemes, and membership of formal organisations, such as NGOs. Linking capital could refer to connections with individuals who have an influence in the daily life of cultivators, such as government officials (Jacobs, 2009:62). Bonding, bridging and linking capital are core aspects of social capital for community development, and the potential effect of this needs to be explained more fully.

Bonding capital brings individuals closer who already know each other (Gittell & Vidal, 1998:15). These ties may be “dense” and “strong”, such as those found between family and friends, or they may be weak, as between acquaintances (Vervisch, Vlassenroot & Braekman, 2013:272&276). Whether weak or strong, bonding capital provides intra-community support that allows individuals to “get by”, especially in a context of low levels of financial capital (Woolcock & Narayan, 2000:227). Bonding capital is especially important in low-income households, as it is a key source of emotional and practical support. This is especially prevalent in female-headed households, as discussed by Beall (2002). Beall (2002:73) found that female-headed households in low-income urban areas have greater bonding capital, expressed through emotional and financial security, than do male-headed households. Thus, “single-parent households are often the outcome of a positive choice by women”, rather than a situation women passively accept (Beall, 2002:73).

Bonding capital is not limited to operating intra-household, but also operates inter-household and provides an informal safety net as neighbours, friends and acquaintances share resources (Vervisch *et al.*, 2013:272). Furthermore, bonding capital may even extend over vast distances, especially between migrant labourers who leave family members in rural areas to seek urban employment. For example, Foeken and Owuor (2008:1979) found that the urban poor in Kenya maintain strong ties with their rural relations by sending and receiving funds, food and goods, as well as by frequent visits. The same is confirmed among urban cultivators in Cape Town, who visit family in the rural areas annually (Kirkland, 2008:112). While bonding capital provides support, its weakness is that resources available through it tend to be redundant, as new information or resources tend only to be accessible through bridging capital (Vervisch *et al.*, 2013:272).

Bridging capital brings people who do not know each other together (Gittell & Vidal, 1998:15). In this way, bridging capital enhances an individual’s network and increases his or her ability to “get ahead” (Woolcock & Narayan, 2000:227). The idea of bridging social capital originates with Granovetter (1973:136), who argues that links between groups are important for sharing new information such as employment opportunities. Bridging capital therefore is especially relevant to individuals in low-income communities, as information is vital to creating an array of livelihood options. Among cultivators in Cape Town, NGOs play a key role in creating and strengthening

bridging capital, as they broker linkages between the cultivators themselves, as well as between cultivators and other community members or middle-class consumers outside of the community (Jacobs, 2009:97). Without assistance from NGOs, it is unlikely that cultivators would be able to create these networks alone, as bridging capital tends to be scarce in low-income areas (Woolcock & Narayan, 2000:227). When bridging capital is low, linking capital may undermine development.

Linking capital is the capacity to engage power structures such as chiefs, officials and social workers (Vervisch *et al.*, 2013:272). This form of capital is important for community development as it provides an avenue for a community to voice its needs (Misselhorn, 2009:190). As with bridging capital, linking capital tends to be rare in low-income communities, which means that individuals in low-income areas often cannot interact with the institutions that have an impact on their livelihood (Vervisch *et al.*, 2013:273). Such a situation is illustrated in a case study on low-income households in South Africa in which the poorest households feel isolated and have no opportunity to participate in community-level institutions (May & Norton, 1997:112). In this regard, however, it was found that NGOs play a pivotal role in broadening the networks of low-income cultivators in Cape Town, as they bring community concerns to the attention of local government and private donors (Jacobs, 2009:92). The work of such NGOs is crucial for ensuring fair exchanges. Without such mediators, communities may be exploited by powerful actors with whom they share linkages. Such is the case when communities have strong linking capital, but weak bridging capital.

The ideal is for an individual to have all three types of capital – bonding, bridging and linking, but this is rarely possible in low-income communities. In low-income communities, bonding capital may be prevalent, but bridging capital tends to be rare. A lack of bridging capital opens such communities up to exploitation by elites as community members cannot operate in unison for their own interests (Getz, 2008:569). This is illustrated by a case study on low-income cultivators in post-conflict Burundi. In this case, weak bridging ties between cultivators left them powerless to negotiate deals with companies buying their stock. Cultivators, who had no access to markets, had to accept terms of sale that increased their debt to and dependence on such patrons. The result was “a downward spiral of dependency, usury practices and indebtedness” (Vervisch *et al.*, 2013:283). NGOs therefore can play a vital role, as they broker linkages between cultivators, donors and markets (Brown & Korten, 1989:3), but nevertheless experience

limitations of their own, as discussed later in this chapter. Thus, social capital presents a number of considerations vital to community development. But social capital has also received some criticism.

Weaknesses in the social capital perspective relate primarily to a lack of attention paid to the negative effects of social capital. This idea is introduced by Fine (2007) in his critique on social capital. Fine's key critiques include that social capital research tends to focus on positive social interactions, while ignoring issues of power and conflict (2007:568). For example, Fine (2007:569&572) states that social capital has a "dark side", exemplified in racist organisations, institutional corruption and organised crime. In such cases, social capital is high among members, but the effect on society is negative. This argument is supported by Portes (1998:15), who illustrates how some elite groups may exclude others from economic participation. In the context of UA, women cultivators are excluded from access to prime land, from education and from markets by the patriarchal systems that are rife throughout Africa. Thus, high social capital in some groups could impact negatively on society. Even beneficial social capital may be degraded.

Such has been recorded in contexts where the opportunity or inclination to participate in society declines (Putnam, 1995:666). UA typically contributes to increasing social capital, with resulting benefits being greater levels of trust in a community, higher food security and economic growth, as discussed. The social capital benefits of UA may however be curtailed if social capital is destroyed or degraded. An example of this is provided by Vervisch *et al.* (2013:274-275), who shows that corruption, civil war and forced migration can destroy social capital in agricultural communities. By contrast, social capital among cultivators in Cape Town may degrade as groups become more, rather than less successful and they start competing for market share. For example, research by Jacobs (2009:92) shows that some of the older cultivation groups became more exclusive over time, and the more financially motivated groups less generous as their wealth increased (Jacobs, 2009:92). These examples show that social capital can be withheld deliberately or it can be replaced by other forms of capital. This observation tempers the naive assumption that all social capital is good, or indeed that social capital gains translate into economic wellbeing and positive community interactions. Thus, as with economic capital, stocks of social capital may be reduced by external influences and social capital may be used for selfish gain. High social capital may also reduce economic gain in some cases.

Portes (1998:16) demonstrates that strong social capital in a group may place pressure on economically successful individuals to distribute their wealth among group members, thereby undermining the potential for future investments and ultimately limiting their economic potential. Kirkland (2008:112) records the same phenomenon among some cultivation groups in Cape Town, where cultivators feel pressure to visit their family members in rural areas in December. This subsumes considerable financial costs for travel, and the cultivators furthermore risk losing their entire crop to dehydration, as December marks the beginning of the hot, dry summer in Cape Town. Thus, whereas Foeken and Owuor (2008:1979) state that rural-urban linkages are important for the livelihood of the urban poor, Kirkland (2008:112) confirms that excessive claims from family members in rural areas may undermine some aspects of the livelihoods of cultivators in Cape Town.

Social capital has other negative implications, which support Fine's (2007) critique. For example, Misselhorn (2009:202) recommends that indicators of social capital take community perceptions of leadership effectiveness into account, as well as levels of conflict in the community. In this regard, cultivators in a small-scale cultivation project in South Africa's Eastern Cape province believed the leadership of their cooperative to be "dictatorial" because management was not receptive to their viewpoints. Furthermore, internal conflicts within the cooperative almost collapsed the project on a number of occasions (Nel *et al.*, 2001:4&11). Thus, to achieve a balanced understanding of the level and nature of social capital requires considering its limitations.

The critique that social capital fails to consider power inequalities is also applied to the sustainable livelihoods framework. For example, Silvey and Elmhirst, (2003:876), Baumann and Sinha (2001:2) and Krantz, (2001:4) all raise issues relating to the failure of the sustainable livelihoods framework to address power inequalities in the development process. Farrington *et al.* (2002:25) go so far as to introduce a sixth capital to the sustainable livelihoods framework diagram, namely "political capital", to address this shortcoming. The failure of the sustainable livelihoods framework to address power struggles in the development process is an outcome of inadequately engaging with the weaknesses of social capital theory. If the negative aspects of social capital are taken into account, namely exclusion, excessive claims on group members, internal conflicts and perceptions of leadership, then a sixth capital "should not be necessary", as power hierarchies and gender issues are "in principle, intrinsic to the livelihoods perspective"

(Beall, 2002:73). In addressing the negative as well as the positive aspects of social capital it is possible to avoid a key weakness in the sustainable livelihoods framework, namely failing to consider the possibility that “enhancement of the livelihoods of one group or stratum or class will undermine the livelihoods of another” (Murray, 2001:7).

4.6 The sustainable livelihoods framework context

A discussion of the sustainable livelihoods framework capitals only highlights the types of capitals that may be available. Without reliable access to such capitals, livelihoods cannot be sustainable. Community development requires adequate stocks of human, natural, social, financial and physical capital to be successful, but these alone are usually insufficient because of factors in the social, political or natural environment that limit the access community members have to these capitals. The distinction between availability and access is made by Sen (2005:153), using the term “capability” to express “what a person is able to do or be”. In the Cape Town context, the capability of poor residents to access sufficient nutritious food, to enjoy public open spaces and to interact in positive ways with their community is limited. Sen (2005:155) argues that the freedom to have something is more important than actually having it. For example, being unable to access healthy food is an issue of justice, while choosing to eat unhealthily indicates freedom of choice. NGOs that promote UA in Cape Town aim to increase the capability poor residents have to access healthy food. Such NGOs are part of the institutional context, as they play a role in mitigating limitations and enabling access, along with other institutional role players such as donors and government. Capability is also influenced by the vulnerability context, which is the ability of livelihoods to withstand stresses and recover from shocks (Nel *et al.*, 2001:4&8). Thus, sustainable livelihoods are affected by both the vulnerability context, which affects the quality and availability of capitals, as well as the institutional context, which affects access to capitals (Morse & McNamara, 2013:36; Chirau, 2012:23). Each will be discussed in turn.

4.6.1 Vulnerability context

The vulnerability context refers to the resilience of livelihoods, that is, the ability that livelihoods have to withstand or create change. There are two dimensions to vulnerability (Chambers, 1995:175): the external dimension, which refers to the influences outside of an individual’s control that undermine his or her livelihood capitals (Ellis, 2000:37), and the internal dimension, which refers to the ability the livelihood has to withstand these influences (Farrington *et al.*,

2002:2). Livelihoods tend to be more resilient the more diverse they are. Thus, low-income individuals use multiple income sources and UA to diversify their livelihoods, thereby increasing their resilience (Rogerson, 1998:178). Threats from the external dimension are broadly distinguished as stresses and shocks.

Stresses take place over the long term and generally are predictable. Although being predictable, they are nevertheless distressing if nothing can be done to mitigate them. For example, many urban areas in Africa experience declining demands for manual labour linked to economic slumps. The dropping market and its effect on demand for labour may be well known by the urban poor, but they are powerless to address this issue (Morse & McNamara, 2013:35). This example relates to what is called a continuous stress. Stresses may also be accumulative because the negative impacts of a stress may undermine the resilience of a livelihood. For example, in a case study of small-scale agriculture in the Eastern Cape, cultivators experienced the stress of irregular water supplies. This was caused by impoundments upstream, insufficient reservoirs and temperamental water pumps. Over time, the stress of irregular water supply had an accumulative effect, as it led to a gradual but significant reduction in the planting area (Nel *et al.*, 2001:9). Whether stresses are continuous or accumulative, they compel people to invest more for lower returns (Chambers & Conway, 1992:10). Shocks, by contrast, occur unexpectedly and may eliminate key livelihood capitals in one event.

In contrast to the slow, predictable pressure of stresses, shocks occur suddenly. In terms of agriculture, shocks from the natural environment, such as droughts or floods, are familiar (Morse & McNamara, 2013:35). In rural South Africa, an agriculture-based community development project almost collapsed when a year of flooding was followed by a year of drought (Nel *et al.*, 2001:8). In urban areas, however, shocks are likely to be “man-made”, for example relating to pollution, theft or other human factors (Rutherford *et al.*, 2002:121; Rogerson, 1998:179). Theft is an especially influential shock in urban areas because it is widely prevalent in low-income areas and has severely negative effects on both physical and human capital. Theft reduces the viability of higher-value cultivation, such as livestock (Chambers & Conway, 1992:11). Chickens, for example, could dramatically improve the livelihoods of the urban poor, as shown by Hovorka (2006:221). Because of their value, chickens are a target for theft, however, and “you cannot keep an eye on your chickens at each and every moment”, a Kenyan cultivator observed (Foeken & Owuor, 2008:1982). In many African urban centres, official harassment also hinders

micro-enterprises by removing or damaging physical resources and crops (Rutherford *et al.*, 2002:121). As the above examples show, cultivators may have access to capitals, but the cultivators alone do not have the resources to mitigate stresses or shocks to their stock of capitals (Rutherford *et al.*, 2002:120). Thus, a supportive institutional context can go a long way to improving the viability of production.

4.6.2 *Institutional context*

The institutional context refers to the structures and processes that play a role in facilitating or limiting the resilience of livelihoods (Department for International Development, 1999). Institutions can influence access to capitals in positive and negative ways and, in so doing, play a notable role in the viability of production. For example, organisations that are external to the community have a vital role to play in community development, because the existing stock of capitals belonging to a community “may, in itself, be insufficient to ensure the success of community development endeavours” (Nel *et al.*, 2001:5). For this reason, external agents have a valuable role to play by introducing new capitals into a community through infrastructure delivery, insurance or protection (Morse *et al.*, 2009:5; Farrington *et al.*, 2002:30). There are nevertheless risks involved with outside intervention, such as “top-down” assistance, which creates dependency (Nel *et al.*, 2001:5), or restrictions placed on livelihood activities, such as restrictions on livestock keeping in urban areas (Scoones, 1998:12). Thus, the institutional context is a key consideration for understanding the context within which capitals exist.

Included in the institutional context are organisations that make and implement policies or legislation, deliver services, trade and perform other functions, all of which influence livelihoods (Department for International Development, 1999; Scoones, 1998:12). These are called institutional structures, and may be formal or informal, public or private. Formal organisations range from those at the local level, such as cooperatives, NGOs, small business and the local municipality to large multinational companies and international donor organisations (Morse *et al.*, 2009:6; Department for International Development, 1999). Informal organisations include things such as labour exchange groups and rotating credit schemes (Chirau, 2012:26). While levels of authority may vary from one organisation to another, both small- and large-scale organisations are relevant to livelihoods. In addition to institutional structures, institutional processes are also part of the institutional context.

Institutional processes are the laws, policies and cultural norms that dictate how institutional structures function (Scoones, 1998:12). Thus, institutional processes mediate change in society by controlling how actors relate to each other (Morse & McNamara, 2013:36). Formal institutional processes, such as policies and legislation, structure the way the public sector interacts with society. Informal processes such as norms, conventions and customs develop out of cultures and inform how individuals interact with each other (Department for International Development, 1999). The power relations inherent in norms and culture may constrain people according to factors out of their control, such as their age, gender or race. Whether or not such constraints are formalised or are cultural, they determine who gains access to which capitals and thus affect livelihood resilience.

Institutions provide an enabling environment for livelihoods to thrive by planning for sustainable resource use, increasing access to land and facilitating the uptake of both informal and formal cultivation (May & Rogerson, 1995:177). In a UA context, institutions supply cultivators with land and inputs, as well as collect, process and market produce on behalf of cultivators. One of the key roles government plays in this regard is making land available at a low cost. Some cases demonstrate how important it is for government to provide affordable land for UA. In some Kenyan cities, for example, the local municipality opportunistically increases the rental on land, which excludes low-income cultivators from starting up (Foeken & Owuor, 2008:1981). Kenya may find itself repeating Paraguay's mistake, where only elites practice UA, which eliminates the contribution UA could be making to the food security of low-income households (Satterthwaite & Tacoli, 2002:54, 56, 64). By contrast, supportive government in South Africa has contributed considerably to the food security potential of UA. For example, in the Eastern Cape province, small-scale agriculture gained a notable advance in its potential for community development when provincial government granted a cooperative a ten-year lease on arable land. The security of tenure not only increased the viability of production through expanding cultivation, but also boosted the morale of the cultivators (Nel *et al.*, 2001:9). Similarly, UA in the City of Cape Town is supported by a UA policy (City of Cape Town, 2007). This policy legitimises all public support for UA in Cape Town, such as the provision of free public land, fencing and infrastructure, and inputs (Jacobs, 2009:63). Such support is particularly important, as the South African government believes that UA can contribute to the food security of low-income households.

While government has an influential role in the viability of UA in Africa, a far more influential role player in the development of UA in South Africa and Cape Town is the NGO. NGOs play a key role in development as they address challenges that government does not have the capacity to address, particularly in developing countries (Nel *et al.*, 2001:5). For example, NGOs are “able to deliver higher-quality services than government to the very poorest sectors of society, while remaining cost-effective and efficient” (Mercer, 1999:247, in Nel *et al.*, 2001:5). Furthermore, NGOs play a key role by balancing the “top” of development, in terms of the policy environment and state involvement, with the “bottom” of development, namely practical involvement on the ground (Nel *et al.*, 2001:5). Brown and Korten (1989:32) therefore describe NGOs as a “counter weight” to the state when it comes to community development. The question, however, is how NGOs can facilitate the development of livelihood capitals without leading development (Mathie & Cunningham, 2003:6). One such approach is found in the hub model of the sustainable livelihoods framework.

4.6.3 *The hub model*

The hub model is an adaptation of the sustainable livelihoods framework that emerged from workshops facilitated by the International Fund for Agricultural Development in 2002. At these workshops, participants adapted the sustainable livelihoods framework according to how they thought it would apply to their experience in the field. The hub model is intended to place the poor visually at the centre of a livelihoods framework, and by implication at the centre of the development process. Participants felt that the sustainable livelihoods framework focused inordinately on the asset bases of the poor, while not paying attention to the poor themselves, namely on their political will, their rights and their spiritual beliefs. The experience of the poor, according to the hub model also includes elements relating to gender, age, class, caste and ethnic grouping that play key roles in determining access and rights for poor people (Figure 2) (Hamilton-Peach and Townsley, 2004:1&2). The hub model attempts to improve on the sustainable livelihoods framework by placing the poor at the centre of development as well as by emphasising the close links that exist between the poor, their actions and their context. To these ends, the hub model makes social factors such as gender, class and age explicit and adds “personal” capital to the existing five capitals, referring to “internal motivations”, the “will to act and promote change” and “their drive to assert their rights” (Hamilton-Peach and Townsley, 2004:2).

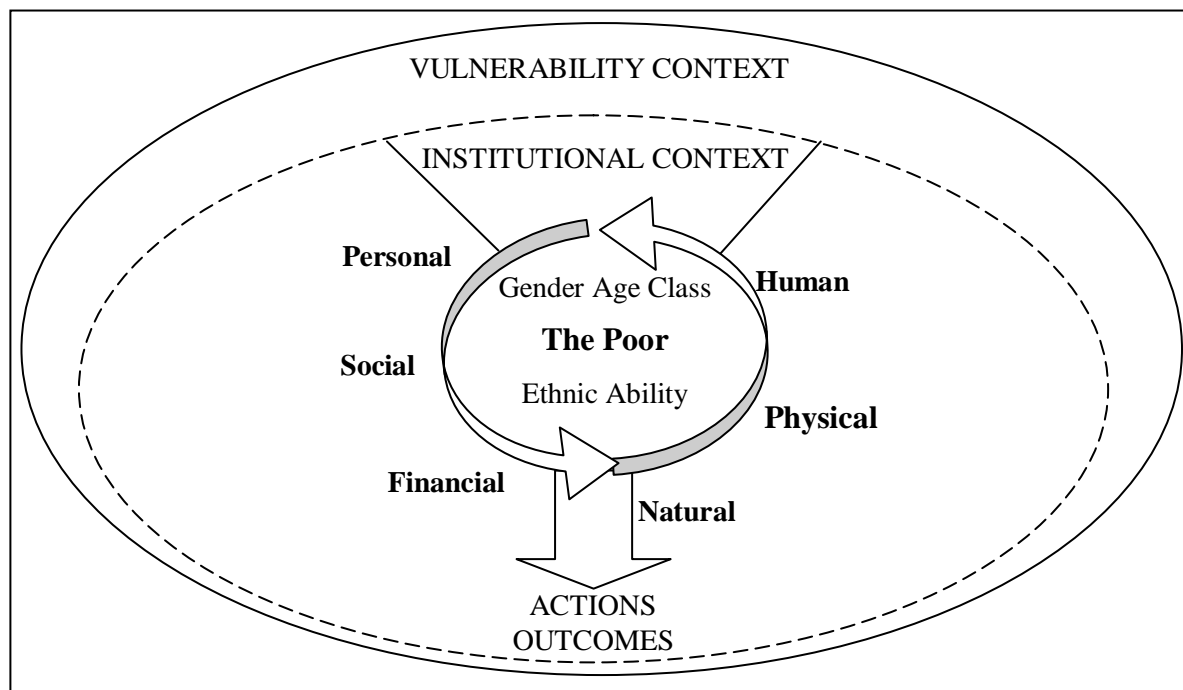


Figure 2. The hub model³

In terms of UA, the hub model highlights some key issues. These relate to low-income cultivators and the challenges intrinsic to their livelihoods. As indicated in the broader literature on UA in Africa, development approaches for UA tend to marginalise the poorest members of society, even though the intention is to create economic empowerment. Other shortcomings include the marginalisation of women, a key focus of this study. By placing the poor at the centre of a livelihood diagram, and by drawing attention to social influences such as gender, class and caste, the hub model can highlight some of the most neglected foci in many UA-centred development processes. Nevertheless, as important as this contribution may be, the present study does not find the hub model superior to the sustainable livelihoods framework already presented.

The hub model's addition of personal capital and placing the poor and their issues at the core of development discourse are indeed notable contributions. However, while the reformulated diagram appears to revolutionise the existing sustainable livelihoods framework, closer analysis reveals that the hub model is remarkably similar in its basic elements, albeit it has more arrows (indicating the interrelation of the elements) and the addition of personal capital. This study finds these additions to be of little consequence. Personal capital is not a novel category when one begins to inspect its indicators. For example, strength of will, confidence and aspirations are

³ Adapted from Hamilton-Peach and Townsley (2004:3).

already subsumed in human capital, while elements such as gender, class and caste would be accommodated within social capital. Thus, while the hub model is helpful in that it highlights aspects of a development context, the sustainable livelihoods framework remains a far more useful approach as it is grounded in the asset-based approach to community development (ABCD).

4.6.4 *The asset-based approach to community development*

The sustainable livelihoods framework makes it clear that sustainable development cannot be achieved through short-term, externally led interventions, because the institutional and vulnerability context mediates access to livelihood capitals. This concept is practically applied through the ABCD, which identifies the asset bases in communities, as well as restrictions to accessing and mobilising these (Martin, Rogers, Cook & Joseph, 2004:2653). This approach originates from an evaluation of successful community development case studies in which it was found that NGOs, community members and local government were key role players (Kretzmann & McKnight, 2005:31). This approach is the opposite of a needs-based approach, which maps the deficiencies in a community and channels resources from outside to address these limitations. A needs-based approach undermines a community's capacity to solve its own problems and turns community members into consumers of development aid (Kretzmann & McKnight, 1993:2, 4&14). By contrast, the main purpose of ABCD is to enhance the abilities, self-worth and relationships of community members (Kretzmann & McKnight, 2005:31). In so doing, ABCD develops the assets in a community, using these as the raw material for community development (Kretzmann & McKnight, 1993:10).

Assets are imbedded in the livelihood capitals. For example, assets are identified as the skills and passions of individuals (human capital), land and infrastructure (physical and natural capital), economic aspects such as the local market (financial capital), and local groups (social capital) (Kretzmann & McKnight, 2005:1&2). These assets are prevalent in low-income communities, but their potential for contributing to sustainable livelihoods remains dormant if they are not linked together and mobilised. This is the core ethos of ABCD.

The challenge in low-income communities is not that they are void of community asset bases, but that existing assets are unused or underutilised because the community has no access to them (Mathie & Cunningham, 2003:8). Key limiting factors relate to institutional processes, such as

bureaucracy in government, or economic limitations relating to poverty (Green & Haines, 2002:10). A community experiencing such limitations is rarely able to access and mobilise its assets without some kind of external assistance, and this is why NGOs are important. While NGOs may not necessarily apply the ABCD framework intentionally, they adopt the core values of the ABCD in many cases by identifying local assets and building social capital to mobilise these (Mathie & Cunningham, 2003:9).

In this way, ABCD is considered “a practical application of the concept of social capital” (Mathie & Cunningham, 2002) because it emphasises relationships in a community, arguing that other assets can only be mobilised in an environment of trust and reciprocity (Mathie & Cunningham, 2002). Thus, social capital is vital for community development because, without it, access to all the other capitals is limited (Green & Haines, 2002:101). Nevertheless, on its own, social capital represents only “a propensity for collective action” (Mathie & Cunningham, 2003:5). Activating social capital requires a mediating agency that can provide the necessary support in connecting community members with the state or markets. This role is typically taken by an NGO.

The key role played by NGOs is that they foster the formation of bridging and bonding capital by facilitating projects such as UA that create a safe space for people to work together without fear of being taken advantage of by their peers (Jacobs, 2009:93). NGOs also create safe linkages between individuals and power holders such as government and donors so that such outside resources do not create dependency (Kretzmann & McKnight, 1993:9), while also ensuring that high-value resources will be used effectively by the community (Vervisch *et al.*, 2013:286). Thus, by applying the sustainable livelihoods framework through ABCD, it becomes clear that the viability of livelihood capitals is increased by identifying and mobilising community asset bases, and this is best achieved through NGOs.

By grounding the sustainable livelihoods framework by means of ABCD, some important issues become clear: one, that the sustainability of livelihoods is increased through mobilising and increasing access to community capitals; two, that this is achievable through social capital formation; and three, that NGOs are key role players in social capital formation because they foster bonding and bridging capital within communities, but also mediate linking capital to ensure that outside resources are used effectively. These points are fundamental to framing the work of NGOs in training and supporting cultivators in Cape Town, as will be covered in the

following chapter. While NGOs are often the key role players in community development, there are some critiques of NGOs be considered.

4.6.5 *Critiques of NGOs*

With the increase in NGO involvement in community development, especially since the 1980s, there has developed a considerable body of literature debating the shortcomings of the NGO sector (Reimann, 2005:39). While this is not the focus of this study, some critiques should be addressed, considering the central role played by NGOs in the UA sector in Cape Town. The critiques that will be reviewed here briefly relate to the tendency for NGOs to cater to donor priorities and move away from grassroots constituencies, the unsustainability of NGOs because they rely on short-term project-based funding, and the risk that NGOs create dependency instead of fostering development.

The first critique states that the focus of NGOs is likely to move away from their target group and towards their donors. This is because the overwhelming majority of an NGO's income and resources come from donors, without which an NGO would collapse. This creates tension between an NGO's self-defined mandate and the agenda of donors, with the financial incentive weighted towards satisfying donors (Banks & Hulme, 2012:4&16). Ultimately, the NGO becomes a "development consultancy", as its time is spent accommodating donors and their wishes on how funding should be spent (Bebbington, 1997:1795). While this critique appears logical, there are countermeasures to prevent NGOs devolving into development consultancies. For one, they are not only accountable to donors. NGOs also have their target group, local government, staff and other donors to consider (Banks & Hulme, 2012:16). The cost of losing legitimacy by pleasing one donor and alienating all other parties is likely to be too high. On the contrary, NGOs will most likely strengthen their legitimacy by turning down funding contracts that do not align with their predefined aims. Therefore, well-established and respected NGOs are incentivised to accept funding contracts that promote their core objectives and to reject those that do not (Brown & Korten, 1989:14). This point is underscored by the second critique.

The second critique is that NGOs cannot be sustainable because they are dependent on short-term project-based funding. Funding is more likely to be released for short-term projects with defined timescales and measurable outputs. Such projects typically centre on the development of physical

capital, and fundraising is highly competitive, forcing NGOs to work in isolation or even in competition with other development agencies. Such projects are unlikely to contribute towards sustainable development (Banks & Hulme, 2012:19). While it is true that NGOs typically depend on short-term funding, there “is no inherent contradiction between its reliance on external funding and its commitment to sustainability” (Brown & Korten, 1989:12). The purpose of an NGO is not to become economically self-reliant, but rather to foster self-reliance in its target group. Therefore, an NGO is sustainable as long as it can maintain “credibility and legitimacy with a wide variety of external constituents, including donors” and target groups (Brown & Korten, 1989:12). Thus, what makes an NGO sustainable is not its ability to generate its own funds, but it is sustainable “as long as it maintains its independence in defining its agenda and strategy” (Brown & Korten, 1989:12). This further supports the response to the previous critique, namely that the incentive is for NGOs to maintain their core focus rather than to please donors. The final critique relates more specifically to relations between NGOs and their target group.

The final critique is that NGOs create dependence. This critique states that NGOs operate like corporations, selling development (Reimann, 2005:44). As development professionals, NGOs are expected to hold the decision-making power, rather than to garner participation from their target group (Bolnick, 2008:324). This creates a cynical view, namely that NGOs are simply giving the appearance of “doing something”, and never really deal with the root causes of poverty (Chandler, 2001:699). Inevitably, such a scenario may be played out by some NGOs, but this is not the tendency for NGOs located in their target communities. Such NGOs are of a relatively small size, allowing them to be innovative, relatively free from political constraints and unhampered by bureaucracy (Brown & Korten, 1989:16). Such NGOs “align their core values [with] local realities” by designing their management policies, programmes and budgets according to these. In such cases, local realities have a greater influence in the identity of such a NGO than programmes developed by professionals out of touch with the target community and implemented from the top (Banks & Hulme, 2012:14).

One needs to take cognisance of these critiques when assessing how NGOs involved in UA operate. Most of the literature points to the positive contributions locally-based NGOs make in promoting UA in low-income communities. Rather than creating reliance, these NGOs try to foster self-reliance by teaching people to grow food at very low cost, using freely available local materials, and in some cases even help cultivators to become commercial. While this is true, one

cannot ignore the fact that cultivators are dependent on NGOs to a large extent for their success (Nel *et al.*, 2001:3). For example, cultivators rely on NGOs to mediate access to such resources, as well as to provide training (Jacobs, 2009:63; Kirkland, 2008:112). Thus, NGOs are arguably the most important role players in the institutional context for UA in Cape Town, and their influence affects the success and sustainability of UA.

4.7 Conclusion

This chapter has attempted to describe the sustainable livelihoods framework, demonstrate how it applies to the UA context and highlight aspects of the framework that are particularly relevant to the Cape Town case study. Based on the preceding discussion, it is clear that the sustainable livelihoods framework is a useful lens through which to assess the factors that influence the viability of UA projects run by NGOs. Looking at the factors that influence UA, the physical and social benefits that accrue from UA and the five capitals that affect the viability of UA, one is able to see that, while access to livelihood capitals is key to increasing UA's viability, these are influenced heavily by the institutional and vulnerability context. This is an important consideration for cases such as Cape Town where low-income cultivators practise UA, as they are especially vulnerable to the influence of role players, the ecology and social ills.

While the argument above describes the basic workings of the sustainable livelihoods framework, critiques of this framework have pointed out that that, because the sustainable livelihoods framework gives a macro-view of community development, micro-level discrimination within the community may be overlooked. This applies particularly to the socially and economically marginalised, such as the poorest of the poor, those with disabilities and women in patriarchal cultures. That socially and economically marginalised cultivators are at risk of missing out on the benefits of UA is already evident from the broader literature on UA. Thus, in applying the sustainable livelihoods framework to the Cape Town case study, these micro-level interactions must be given particular attention. To these ends, the ABCD plays a key role, as it identifies the community asset bases that often are hidden by the broader context.

The sustainable livelihoods framework provides the methodological underpinning for empirical research in the chapters that follow. It will highlight the key capitals that cultivators use for achieving a range of benefits from cultivation, as well as the main challenges that limit the resilience of their livelihood. Furthermore, the sustainable livelihoods framework will highlight

the key role players in the institutional context to address how they support or hinder the benefits of UA to cultivators in Cape Town.

5. CHAPTER FIVE: METHODOLOGY

5.1 Introduction

Many NGOs in Cape Town practise UA to various degrees. How to select the appropriate NGOs to establish what physical and social benefits accrue from UA and the factors that influence the viability of such projects is a methodological challenge. The aim of this chapter is to explain how I went about selecting the cases for this project, the research methods used to interview respondents, how the data was collected and analysed, and lastly to reflect on the research process itself that shaped this project.

To these ends, a case study approach was adopted in order to do justice to the depth and variety of data on UA in Cape Town. This chapter begins by describing how a database of NGOs training and supporting cultivators in Cape Town was compiled, as none existed from which to select a representative sample. Thereafter, the selection of NGOs using criterion sampling is related, while noting the merits and limitations of such a design. The profile of these NGOs is provided to explain the characteristics of each NGO, their similarities and differences. The selection of cultivators from within each of these NGOs made use of purposive sampling to ensure that the full variety of UA types was well represented in terms of age, gender, location and physical ability. Thereafter, the data collection and analysis are provided, before some conclusions are drawn in terms of the limitations, generalisability and validity of the findings.

5.2 Creating the population frame

NGOs are the primary role players in UA in Cape Town, both in terms of the numbers practising UA, as well as the influence in promoting and sustaining it. The problem is that no database exists that identifies the NGOs practising UA in Cape Town. This made it extremely difficult to select cases to analyse and meant that such a database had to be established before selection could take place. This was possible as there are a number of lists of NGOs that practise UA in Cape Town, although no list is complete. To illustrate, there are lists of all the NGOs in Cape Town that are registered, but none of these lists mention whether they practise UA or not. The lists of NGOs that practise UA in Cape Town were clearly incomplete, based even on my rudimentary knowledge of those active in the field. The Republic of South Africa Department of Social Development's list of registered non-profit organisations in the Western Cape (Republic of South Africa. 2013) (hereafter the list of registered non-profit organisations) played a vital role in

this process. However, over eleven thousand organisations appear on the list of registered non-profit organisations and there is no way to tell which ones practise UA. Thus, while the list of registered non-profit organisations was not a good starting point for compiling the database, it was invaluable in terms of establishing whether any organisations I found were NGOs or not.

The next step was to trawl through online search engines, using certain key terms such as “urban agriculture”, “NGO” and “Cape Town”. While this approach initially appeared to limit results only to those NGOs that had an online presence, an unexpected benefit was coming across the City of Cape Town’s Procurement Notices. These listed dozens of drop-off sites for manure and compost, part of the City of Cape Town’s commitment to support UA. By cross-referencing the names on the procurement notices and other hits from the online search engines with the list of registered non-profit organisations, the first entries in the present study’s database could be made.

The above procedure identified 56 NGOs that practise or promote UA in Cape Town, but it was not possible to know how many NGOs were still out there. A longstanding personal interest in UA and a network of relationships in the field made it clear that the internet search had not found all of the relevant NGOs. After having discussed this with a number of people working in the field, the list I compiled was distributed among them and they started to add to the list based on their own databases. One such individual sent an attendance register for the 2011 City of Cape Town Economic and Human Development Department’s Urban Agriculture Summit, which included the names of a number of NGOs that attended the summit but were not on any of the lists. Another individual sent a list from the City of Cape Town that was used for distributing assistance to cultivators, which included a number of NGO names. Another NGO sent their membership database, which included the NGOs that they have trained in UA.

Based on all the information obtained from the various government sources, NGOs, personal networks and internet searches, a population frame of 136 registered NGOs in Cape Town that practise UA was created from which to select suitable cases for this study (Table 1). At this point, all possible sources for new data on NGOs practising UA in Cape Town were exhausted, and the database was deemed comprehensive enough to draw specific cases to study.

Table 1. Sources listing NGOs that facilitate UA in Cape Town

	Source	Number of new finds
1	Internet search	57
2	2011 UA summit register	9
3	City of Cape Town's assistance distribution list	48
4	NGO membership database	22
Total number of registered NGOs practicing UA in Cape Town found		136

5.3 Selection procedure for the case study

A case study was selected as an empirical research method best suited to the research aim because it “allows you to gather rich, detailed data in an authentic setting” (Willis, 2007:240). This is especially important for contexts such as UA in Cape Town, where UA is diverse and has not yet been captured adequately by empirical research. A case study may be defined as in-depth descriptions of a number of cases, to form an understanding of an issue or phenomenon (Mouton, 2001:149). In the context of this study, NGOs were to form the cases for understanding the phenomenon of UA in Cape Town. It was however impossible to study all 136 NGOs, so the question of how to select appropriate cases arose. While the population frame makes it possible to use probability sampling, this was not considered appropriate because the study wanted to understand exemplary cases, not to draw conclusions about the general population based on a random, statistically representative sample. The literature had already established that the general population of cultivators was not realising the potential of UA, while a small key group of exemplary cultivators were. This study wanted to select key representatives of this exemplary group in order to learn from these cultivators “by focusing in depth” on their motives, methods, needs and successes (Patton, 1990b:169).

Based on the literature and the list of NGOs practising UA, it was possible to start narrowing down the selection process based on various criteria. The criterion used for selection was whether the NGOs were providing training and support to cultivators, and not their viability or profitability, as the benefits associated with UA extend beyond just the economic benefits.

Accordingly, a criterion sampling selection process was followed that fit with predetermined criteria of importance. While this may relate to improving systems or programmes by selecting cases that perform sub-optimally to find flaws in the system (Patton, 1990b:177), the present study adopted the opposite approach in that the purpose was to select exemplary cases from

which the benefits and viability of UA could be understood. While findings from criterion sampling do not reflect universal trends in the population, as would be possible with a positivist methodology, this in no way reduces the validity of this method, as the richness of information provided by criterion sampling is valuable for understanding both the case in question and other contexts if applied reflectively. This is particularly relevant in the case of UA because of the diversity that exists. The next step was to establish which NGOs in the population train and support cultivators.

Given the fact that I have been involved in UA in Cape Town for a number of years, was familiar with the different forms and types of UA, had visited many UA projects that were open to the public and attended UA workshops and presentations, I had a sense of what was happening on the ground. I also signed up to all the UA newsletters that were available, and to the social media of UA-based organisations in Cape Town. With this experience and the list of 136 NGOs, the next step was to select the cases I wished to study. Once this was established, the grey literature, personal interactions and social media provided additional data with which to decide how to classify and select the exemplary NGOs for this study.

Based on this information, it became clear that the overwhelming majority of these NGOs merely cultivated a portion of their plot and provided no training or support to cultivators in the broader community whatsoever. Thus, they did not qualify for selection based on the sampling criteria, although, as will be shown, some of these were exemplary cases of institutional cultivation, a type of UA that is still to be discussed, and therefore they were selected on that merit.

Surprisingly, only four NGOs in the entire population frame were actually responsible for training and supporting cultivators. This is important because the literature indicates that cultivation in Cape Town is not viable without specialised training and follow-up support. For the reason that these NGOs alone provide this, the overwhelming majority of formal cultivation in Cape Town is attributable to these four NGOs. These four NGOs share some similarities, such as cultivation methods, but range dramatically in terms of their age, target area and size of operations. Thus, all four cases were selected to provide a complete representation of the NGOs training and supporting cultivators in Cape Town. Also surprising was that, although these NGOs are so important for UA, only one of them had been researched in any depth.

The case study method is now however without limitations. A critique of case study research comes from the positivist outlook, which sees it as impossible to collect data of any value if not done in a controlled environment. According to this view, case study data comprises merely casual observations and memories that have no creditability (Campbell & Stanley, 1963:6). The limitations to attempting to understand qualitative research methods from a positivist value system is the failure to realise that the validity in qualitative research is found in the richness of the findings, not in their universality. Qualitative research seeks to understand, not to explain. For this reason, observation and reflection are valid methods of data gathering, as long as the data they gather is rich. Such richness helps us to understand the phenomena in question, or other comparable cases, even if the data is not statistically representative in a quantitative sense (Patton, 1990b:181). This study believes to have accomplished this richness. Considering this, the following cases were selected based on the criteria that they provide training and support to cultivators, and all such cases were selected to encompass the diversity of differences between them in terms of duration of existence and size in terms of membership (Table 2).

Table 2. Profile of NGOs and membership

NGO	Started training	Membership	Operational (estimate)	Interviewed
Abalimi	1982	4 558	3 545	30
Soil for Life	2003	1 930	1 000	16
Sozo	2011	60	40	7
Inity	2013	15	14	6
		6 563	4 599	59

5.4 Description of NGOs

5.4.1 *Abalimi*

Abalimi is the largest NGO⁴ training and supporting cultivators in Cape Town, with 4 558 cultivators registered. It was started in Athlone in 1982 by Catholic Welfare and Development (then Catholic Welfare Bureau), but moved to Nyanga in 1985, where it established the first of its two garden centres, the other being in Khayelitsha. In 1997, Abalimi became an independent NGO. Abalimi currently employs seventeen members of staff, of which ten women and two men make up the management team.

⁴ Of the four NGOs, Abalimi alone rejects the term “NGO” as pejorative. Abalimi prefers the term social profit organisation. However, permission was granted to the researcher to apply the term NGO to Abalimi in the present study for the sake of consistency in the use of key terms.

Abalimi practises organic cultivation methods. Two of the cofounders who still work for Abalimi were trained in horticulture and biodynamic farming in America and England respectively. This training has been adapted for conditions in Cape Town. Abalimi's cultivation methods consist primarily of trench bedding, in which compostable materials are buried below the cultivated area, and sheet mulching, in which these are laid on the surface and covered with topsoil. New cultivators sign up for training at either of the two garden centres for a small fee. Training at the garden centres includes all the necessary inputs and, from then on, members receive a membership discount. Although Abalimi's chief aim is household food security, they facilitate the development of cultivators to a commercial level through their "Development Continuum", a theoretical tool that proposes four sequential phases every low-income cultivator moves along: survival, subsistence, livelihood and commercial (Small, 2006:162). Cultivators of each of these phases feature in the present study, as outlined in the coming section on cultivators. Some of Abalimi's best examples of commercial cultivation are found in their cultivation groups that produce for Abalimi's community-supported agriculture initiative, Harvest of Hope. Harvest of Hope collects produce on a weekly basis and sells it to higher-income earners who pay in advance. This initiative began in 2008, supported by eight formal groups (Hoekstra & Small, 2010:18). By 2012, the number of formal groups involved had grown to twenty-eight (Newsletter 39, 2012).

Abalimi has developed innumerable links with donors, volunteers, businesses and organisations over the years. Marketing to donors is achieved primarily through their biannual newsletter, as well as through bi-weekly tours to one of the leading cultivation groups, the Nyanga garden centre and Harvest of Hope's packing shed. One of Abalimi's key funders is a local retailer that has been funding them for many years. This retailer chooses to support Abalimi because it believes that Abalimi empowers low-income individuals and teaches people to care for the environment. Abalimi benefits from a constant influx of volunteers, both local and international. Local links with commercial farms also play a key role, both in sourcing inputs such as manure, as well as for outsourcing organic produce such as the eggs that are included in Harvest of Hope's organic food box. Abalimi also shares links with other organisations that focus on UA. One such organisation is SEED (School Environment Education Development), a non-profit organisations that encourages schools to teach UA.

5.4.2 *Soil for Life*

While younger than Abalimi, Soil for Life is nevertheless also a major contributor to the expansion of UA in Cape Town, having 1 930 cultivators currently registered. Soil for Life started in Cape Town in 2003. It currently employs thirteen full-time staff members, which includes a management team consisting of three women.

Soil for Life practises organic cultivation methods based on permaculture principles. The founding director developed the training programme. Soil for Life's cultivation methods consist primarily of soil-building techniques such as trench bedding and sheet mulching, but they also include container planting in their training course to encourage home cultivators to utilise all available space for cultivation. Aspiring cultivators sign up for training through Soil for Life trainers in the field or at any of Soil for Life's garden centres in Constantia, Seawinds or Lavender Hill. Soil for Life trains about fifteen cultivators at a time through an eleven-week practical training course. One training session is held per week at each of the cultivator's homes, and cultivators receive coupons to redeem at the garden centres with which to buy seedlings and inputs for the following season. Thereafter, cultivators are expected to be completely self-sufficient by making their own compost, capturing their own seeds and growing their own seedlings. Soil for Life aims primarily for household food security through home cultivation, but also provides training for commercial cultivation.

Soil for Life interacts with a number of donors in the form of volunteers, businesses and organisations. These links are facilitated primarily through their website, social media, networking and proposals, of which proposals are the most important means of generating funds. For example, funding has been provided by the City of Cape Town, as well as by local and international businesses. One of their key donors is an organic winery that values the stance Soil for Life takes on encouraging ecologically responsible food cultivation. Valuable human capital is donated by skilled volunteers, many of whom are young adults looking for work experience. Physical capital in the form of compostable waste is vital for Soil for Life's operations, and such inputs come from landscaping companies, supermarkets and stables on a weekly basis. Soil for Life also has close links with a number of schools, churches and NGOs whom they train, support and partner with. An ongoing relationship exists with a smaller NGO in Vrygrond, namely Sozo, which also teaches UA.

5.4.3 *Sozo*

The Sozo Foundation is much younger and smaller than the prior two NGOs discussed. Having begun in 2011, the Sozo Foundation has trained sixty cultivators to date, all of whom reside in Vrygrond. The Sozo Foundation's staff structure is different to that of Abalimi and Soil for Life because The Sozo Foundation is not focused solely on UA training and support. The Sozo Foundation runs three programmes, of which one focuses on UA training and support. The other two programmes include afterschool education for high-school scholars through a programme called Educentre, as well as home renovations through the programme Boutique. The Sozo Foundation as a whole employs twelve members of staff on a full-time basis, of which two women are assigned to Sozo Eden, one as programme manager and the other as the garden centre manager and trainer. This study focuses only on the UA programme, Sozo Eden, which will be referred to simply as Sozo, as this is the name used by staff members and cultivators.

Sozo practises organic cultivation methods learned from Soil for Life and therefore, in terms of cultivation methods, is identical to Soil for Life. Cultivators are supported by Sozo's garden centre in Vrygrond, where they may purchase inputs with coupons or barter for inputs by exchanging produce or labour. Cultivators, however, are encouraged to be completely self-sufficient through producing their own compost and seeds.

Sozo shares some key links with local and international organisations, as well as a local church. The church in question is part of an international church network that has proven to be a considerable source of funding and volunteers. Sozo also shares an understanding with a local stable, supermarket and residential estate, from which it collects donations of raw material for composting.

5.4.4 *Inity*

Inity is the smallest of the four NGOs in the present study. Inity began in 2009 as a cultivation group, but expanded its operations to training and support for home cultivators in 2013. Inity has trained 15 cultivators to date, all of whom reside in Nkanini, Khayelitsha. One male director, himself a local resident, runs operations.

Inity was trained by Abalimi and thus Inity's cultivation methods reflect those of Abalimi. Inity's approach to training and support is more informal, however, due to the small number of

cultivators it supports. Inity's home cultivators are supported by Inity's garden centre in Nkanini, from which they receive free inputs of seeds, seedlings and compost.

Inity has very few links, but those that it has are vital to its wellbeing. The most important link is with a Cape Town-based business that has chosen to practise corporate social investment in Nkanini. This business runs a feeding scheme for children in Nkanini and they pay Inity's director a salary for administrating the feeding scheme. This business has also invested in Inity's infrastructure. Another important link is the City of Cape Town Directorate for Economic and Human Development, on which Inity relies for donations of compost.

5.5 Sampling design of cultivators within each NGO

The problem with selecting a representative sample of cultivators involved in UA is that the terrain is quite fluid. Individuals may take up, adapt or temporarily abandon UA for a range of reasons, or plant produce on more than one plot and so forth. Selecting exemplary cases is also difficult as there is no means to develop a standardised selection method. For example, some NGOs, such as Inity, were so small that the director knew all the cultivators personally, while NGOs like Abalimi and Soil for Life are so large that the actual number of cultivators in operation at any one time can only be estimated.

Cases were selected that could most effectively address the research question. For example, Patton (1990a:1197) argues that the purpose of qualitative research is to understand and illuminate important cases, not to take a representative sample. This sentiment is echoed by Maxwell (1992:294), who states that the strength of qualitative research is in describing key aspects of the cases it strives to understand. Thus, non-probability purposive sampling was adopted with the aim of selecting cultivators who were actively involved in UA and who could reflect on the physical and social benefits associated with their involvement. Thus, while the proportion of cultivators selected in some types appears small, the selection was sufficiently large for the needs of the present study, as new cultivators within in each type were selected for interviews until data for that type reached the point of saturation (Lincoln & Guba, 1985:202). That is, no new categories of data were emerging, and no new data was being added to existing categories. To have persisted with interviews beyond this point would have simply bulked up numbers and wasted resources, not generated any more information.

5.5.1 *The types of UA in Cape Town*

The selection of cultivators, however, was not quite this simple and also required a purposive sampling approach in the larger NGOs, in that cultivators operated in different ways, and this too needed to be captured. A typology was developed based on the type of UA supported by the NGOs. Each type has a different emphasis and therefore potentially different benefits. The four types are home cultivation, cultivation groups, institutional cultivation and garden centres. These are described in detail below. While each NGO had a list of cultivators that received training from them, it was impossible to know which were still operating. Moreover, the present study was interested only in the exemplary cases. Due to the difference between the NGOs, selection criteria were customised for each NGO as well as for each type, as will be described below.

5.5.2 *Selection criteria within each NGO*

Selection in the smaller NGOs was relatively easy, as their smaller size enabled directors to know each cultivator on a personal basis. The directors of these NGOs therefore referred the researcher to their exemplary home cultivators and indicated where they could be found. The larger NGOs proved more challenging due to the scale of operations. While the larger NGOs had membership databases containing home cultivators and their addresses, it was impossible to know who was still practising, let alone whether they qualified as an exemplary case. Furthermore, the lack of street names in the informal settlements made it impossible to locate cultivators by means of a map. The garden centres came into play in such cases. For Abalimi, the researcher spent time at the Nyanga garden centre, interviewing cultivators who came to buy goods. Soil for Life was hosting advanced training for their home cultivators at their Constantia garden centre and invited the researcher to interview the cultivators. In terms of institutional cultivators, Soil for Life's membership database only records individuals, thus there is no indication of which cultivators represent institutions and which are home cultivators. Interviews therefore were conducted with institutional cultivators that Soil for Life knew. Abalimi does not differentiate between institutional cultivators and cultivation groups. Thus, exemplary cultivation groups were recommended by Abalimi's director, while institutional cultivators were located with the assistance of a local cultivator with extensive knowledge of the area.

Taking a purposive sampling approach was vital for researching UA in Cape Town, as rigid sampling methods such as simple random sampling would be limited in practice for a number of reasons. For example, simple random sampling would underrepresent men, young adults and

disabled cultivators, as well as garden centres and cultivation groups, because all of these are in the minority. Furthermore, locating cultivators would have been extremely challenging, as described above. Purposive sampling made it possible to ensure that all UA types were represented, although women were still in the majority. Furthermore, while universality is an issue for all qualitative methods, the validity of the sample was ensured by selecting data-rich cases and striving for data saturation in each type (Patton, 1990b:185) (Table 3). To these ends, a complete range of cultivators was represented, not only in terms of the type of cultivation they were practising, but also in terms of the development continuum described above, as well as in terms of age, race, gender, physical ability and location. Thus, the selection ranged from pensioners to teenagers, the functionally illiterate to college students, included informal settlements and low-income suburbs, and spanned the entire Cape Flats, from Vrygrond to Mfuleni and from Nkanini to Langa. The cultivators and context are outlined below.

Table 3. Types of cultivators

Type of cultivator	Registered with NGO	Operational (estimate)	Interviewed
Home cultivator	6 563	4 559	30
Cultivation group	206	108	11
Institutional plot	<i>No data</i>	<i>N/A</i>	11
Garden centre	7	7	7

5.6 Description of cultivators

Cultivators throughout Africa share a number of characteristics, namely that the majority are women of forty years of age and older who are responsible for the food security of relatively poor households. Cultivators in Cape Town reflect these broad trends, as was confirmed by NGO representatives and the cultivators themselves. Thus, while the selection for the present study is not statistically representative of the population, the selection reflects the broad trends. For example, the majority of cultivators selected were over forty years old (74%), with 34% of the total selection being of a pensionable age, 65 and over. The sample is therefore biased towards older cultivators. This reflects the age profile of cultivators elsewhere in South Africa (Shackelton *et al.*, 2010:294). Furthermore, by including a larger proportion of this age group the present study highlights certain key issues in UA in Cape Town at present. Nevertheless, the future of UA in Cape Town is determined by the uptake of UA among the younger generation, which is affected by their employment needs as well as their perceptions towards UA. Therefore, it was important to include younger cultivators as well.

Further demographics for the sample address gender, race, education and employment status. The majority of cultivators in this study are women (60%). Xhosa cultivators are in the overwhelming majority in this study (85%), the rest being primarily Coloured Afrikaans speakers (12%), with only 3% representing Zimbabweans. The semi-structured nature of focus groups and interviews meant that not all participants discussed their employment and educational status, but of those that did discuss these subjects, the majority were not employed in formal employment outside of cultivation. An explanation in this regard may relate to the relatively low formal education level of the respondents, many having not completed high school. Cultivators' demographics are indicated where possible in the findings, so that their voices can be placed into context. Where possible, race and location are indicated but every cultivator is assigned a unique identifier that includes gender and age. For example, the second participant, being a female cultivator aged over 40 but below 65 will receive the identifier F2 \geq 40⁵.

The cultivators in the present study were primarily female household heads who assume responsibility for the food security of their household. They are typically unemployed or retired, but rely on the state welfare grants they receive for childcare or pension. Many cultivators are single mothers, caring for between four and seven children, but some are assisted financially by adult children or an income-earning partner. Few cultivators have completed their formal schooling. Cultivators on the Cape Flats tend to be either Coloured Afrikaans speakers or African Xhosa speakers, corresponding to the racial demographic of their areas.

Cultivators on the Cape Flats operate under difficult social conditions. Participants describe their neighbourhoods as poor, listless and crime-ridden. The high level of gender-based violence in their areas was confirmed by a number of female cultivators who had experienced domestic abuse and sexual violence first-hand from male family members, or knew friends who had. While the cultivators believed that UA provided many opportunities for surviving or overcoming the challenges in their daily life, they also believed that such challenges negatively affected the potential benefits of UA.

⁵ Three age intervals are used: \geq 18 (18-39), \geq 40 (40-64) and \geq 65.

5.7 Description of types of UA

The literature on UA in Africa describes only three types of cultivation, namely home cultivation, cultivation groups and institutional cultivation. The present study found that these three occur in Cape Town along with a fourth, garden centres, which play a supportive role in the operations of the first three types. All of the NGOs in the present study implement garden centres and home cultivators, while in addition to these, Soil for Life and Abalimi include institutional cultivators and Abalimi also supports cultivation groups. The motives for cultivation differ slightly between the different types, as do the benefits cultivators derive from each type. These differences will be related in the present subsection, but the benefits will be discussed in greater depth in the findings chapter. While different types of UA are identified, the present study found that the individual cultivator might practise more than one type simultaneously.

5.7.1 *Home cultivators*

Home cultivators are distributed throughout the Cape Flats. A common motive among home cultivators for signing up for training is the belief that UA would provide a cheap source of healthy food for their family.

Home cultivators cultivate the property around their home, using between two and eight square meters of soil for trench bedding. They also use tyres, the back cover of televisions and plastic crates as containers for seedlings and leafy vegetables. Crops are typically grown for household consumption, but small amounts may be sold to bring in a little cash. Spinach⁶ and tomatoes are profitable, being easy to grow and having a relatively high market value. Carrots, onions, beans and turnips are easily grown but have a lower market value, so these tend to be eaten rather than sold. Some home cultivators grow fruit, typically Cape gooseberries and strawberries. Other niche crops include edible herbs and medicinal plants. Common medicinal plants include African wormwood (*Artemisia afra*), malva (*Pelargonium*) and bulbinella (*Bulbine frutescens*). Very few home cultivators keep goats or chickens because of space limitations and the disturbance to neighbours. Some keep pigeons as pets and use the guano for fertiliser.

⁶ Cultivators rarely distinguish between spinach (*Spinacia oleracea*) and Swiss chard (*Beta vulgaris*), thus reference to spinach may refer to either.

5.7.2 *Cultivation groups*

Abalimi is the only NGO that trains and supports cultivation groups. These groups are fully commercial enterprises, made possible primarily through Harvest of Hope. Cultivation group cultivators are typically full-time cultivators, working up to ten hours per day, six days per week. Work begins every day before sunrise and, on market days, cultivators begin harvesting at 04:30 in the morning. Due to the workload of cultivation groups, group members are rarely employed in any other occupation. Cultivation groups in the present study consisted of any number of cultivators between two and thirteen. Many are of mixed ages and genders, while some groups' membership is uniform.

The cultivation groups selected for the present study were all commercially motivated, selling produce to Harvest of Hope as well as to the surrounding community. A great variety of products were grown, many of which are high-value vegetables such as aubergine, sweet peppers, rhubarb, Asian greens and herbs for the higher-income market. Many cultivation groups were growing great quantities of spinach, which were being sold to the surrounding community.

Cultivation groups divide their plots into commercial crops and crops for feeding their own households. Due to the area available to them, cultivation group cultivators are able to produce enough to take produce home on a daily basis all year round. Although cultivation groups are primarily focused on commercial cultivation, they play a key role in the food security of the households of non-group members that would otherwise be unable to afford healthy food.

5.7.3 *Institutional cultivators*

Institutional cultivation, as defined by the present study, is cultivation on the property of an institution by a group or individual, the produce of which remains the property of the institution. Typically, the cultivator is employed by the institution. Institutional cultivation in the present study operates primarily at schools and early childhood development centres. The purpose of institutional cultivation is to supplement institutional meals, as well as to assist with education. While produce from institutional plots at public schools is used in school meals, the size of the garden does not appear to be adequate to contribute in any notable way. In contrast, UA at the far smaller early childhood development centres (accommodating between fifteen and thirty children) appears far more effective in supplemented the daily meals of rice, maize meal or potatoes. Typical additions from the plot include leafy greens, carrots, beans and turnips. UA at

early childhood development centres plays an additional educational role. The children of all the early childhood development centres in the present study spend time in the garden on a daily basis, learning how to cultivate, about the importance of nature and the value of healthy eating. Thus, while institutional cultivation has little commercial potential, it plays a key educational role.

5.7.4 *Garden centres*

All cultivators, whether they are home cultivators, group cultivators or institutional cultivators, are supported by a garden centre. Garden centres are vital to the operations of all the NGOs in the present study. Garden centres play a number of key roles, namely as the forefront of interaction between the community and the NGO, as the technical hub for training and support services, and as an exhibit of the cultivation methods promoted by the NGO.

Garden centres provide support for the NGOs through storing the vast quantities of inputs required for running training courses and supporting cultivators. In addition to supporting operations, garden centres are commercial hubs from which both the public and home cultivators may buy inputs. Most of the cultivators that frequent garden centres are within walking distance and purchase small amounts on a regular basis. In addition to purchasing inputs, home cultivators stated that they visit the garden centre for advice, to see which seedlings are in season, or just to have a look around.

5.8 Data collection method

Data collection took place throughout the Cape Flats, in all of the main areas of the NGOs' operations. Thus the garden centres in Nyanga, Khayelitsha, Nkanini, Vrygrond, Lavender Hill and Seawinds, as well as Soil for Life's Constantia garden centre, were visited. As these garden centres are the support hubs for cultivators, the home cultivators, formal groups and institutional plots that were visited were primarily located in these areas. Nevertheless, some that were visited were located in other areas of the Cape Flats such as Mfuleni. The research therefore covered both of the main socio-demographics of the Cape Flats, namely Afrikaans-speaking Coloured individuals and Xhosa-speaking Black individuals, as well as the socio-economic representation ranging from informal housing areas to lower-income suburbs.

The primary instruments were semi-structured interview schedules for NGO, government and donor representatives, while focus group discussion and semi-structured interview schedules were used for cultivators, depending on the type of cultivation and circumstances (Appendix A). These types of instruments were chosen because they allow for free discussion on selected topics. Both instruments were formatted to cover the broad themes discussed in the literature review chapters, but provided sufficient freedom for the participant to direct the conversation to topics that they felt were important. More particularly, the semi-structured interview schedule had the advantage of providing a degree of privacy, allowing participants the safety to talk about personal issues such as household income levels, relationships or aspirations. Personal matters were also raised during focus groups, but the advantage of a focus group was that the issues raised in focus groups were seen as matters group members had in common. As such, the advantage of a group setting inspired camaraderie and vehement agreement or disagreement between group members, thus deepening the discussion beyond what the interviewer may have been able to elicit. Such issues related for example to group dynamics, the relationship between cultivators and their NGO or perceptions of government support for UA. Thus, each instrument had unique strengths, and as such both instruments contributed to the present study.

The interview schedule and focus group were piloted at Sozo because the researcher has a good relationship with the director after having volunteered as a UA trainer at this NGO for a number of years. Both the focus group and interview schedule covered the broad themes that emerged from the literature review, relating primarily to the benefits of UA and asking cultivators about the resources they use when cultivating, as well as about cultivation methods, perceptions of other role players and experiences. Discussion with NGO representatives, government and the funder were more focused and dealt with the role of the NGO, government or funder respectively, as well as perceptions of the other role players that influence the viability of UA. In addition to these, field notes were taken in conjunction with interviews for participant and non-participant observation, as described for data collection.

5.9 Data collection

Fieldwork began with a short pilot study in the first week of March 2014. The pilot study tested the interview schedule for role players, cultivators and focus groups, respectively. Prior to the pilot study, draft interview schedules were structured as open-ended questionnaires with space for writing responses. It was found during the pilot study that such an approach would be

impractical, as the data was far too rich to write out by hand during the interview. Thus, these instruments were reformulated into interview schedules so that interviews could be voice recorded and transcribed.

Empirical research commenced directly thereafter and ran until August 2014. All interviews and focus groups were voice-recorded and transcribed (Appendix B). Field notes were taken in conjunction with recordings, as well as during observations of the cultivated plots. Non-participant observations were made when visiting plots, as data on plot size, location, cultivation method, crop type and water sources were able to be gathered by such means. Participant observation provided richer data than non-participant observation, because of the rapport that developed from the researcher working with cultivators. For example, a depth of understanding of cultivation methods was gained by participating in cultivation, rather than talking about it. Furthermore, the more casual environment working together creates allowed the researcher to raise sensitive issues for discussion that more formal interview schedule situations would have rendered awkward, such as grievances with the NGO or other cultivators. This rapport was especially important in the well-known cultivation groups, where cultivators had developed a degree of research fatigue. In such cases, being able to work alongside cultivators, or even to relate one's own experience of cultivation, immediately dismantled the perceived divide between 'researcher' and 'subject' that such cultivators had developed. These cultivators had a negative perception of researchers, as cultivators spent much time answering similar superficial questions to constant flow of media, government and academic researchers, and never appeared to gain from doing so. By describing my own training at Soil for Life, experience volunteering at Sozo and experience as a cultivator, I was able to present myself as a fellow cultivator that shares their aspirations for UA in Cape Town. Nevertheless, being an 'insider' also carries some risks.

Being an insider allowed me to gain richer data by minimising social distance between myself and the participant, offering a basis for "emotionally empathetic, egalitarian and reciprocal rapport" (Mauthner, 2002). A risk this carries however is that the distinction between scientist and friend is blurred. Mauthner (2002) refers to this as "faking friendship". Balancing rapport with appropriate social distance was a challenge during fieldwork. For example, participants requested that I contact the local municipality on their behalf, or proposed to start an urban agriculture business with me. A further concern of being an insider is that it may blur the line between researcher and participant, which can undermine the researcher's ability to reflect

critically on the participant's perceptions. For example, my own bias towards UA in Cape Town could blind me to shortcomings in the sector, such as instances where UA fails to provide household food security. This study addressed such risks by being clear with participants about the purpose of the research, as well as by reflecting critically on their perceptions. In so doing, it was possible to gather rich data without misleading cultivators and incurring ethical shortcomings.

The first language of cultivators was predominantly Xhosa or Afrikaans, but the majority were fluent in English. Thus, many cultivators chose to speak English throughout the interview, even though I had a Xhosa translator with me and informed them that I was proficient in Afrikaans. Some cultivators reverted to their first language for moments during the interview and, if this was Xhosa, the translator would translate. Even if choosing to speak Xhosa, all the cultivators in this study were able to understand English and therefore could ensure that their exact meaning was conveyed during translation. The translator was a young Xhosa man residing in Khayelitsha who was fluent in English. The translator was also a cultivator, which provided a depth of insight that a non-cultivator may not have had. Furthermore, the translator played a vital role as a consultant on Xhosa etiquette. This role was even more important than translation, as the majority of Xhosa cultivators were comfortable with English, but establishing rapport with Xhosa cultivators by conducting the proper introductions and indicating respect through the appropriate tone and body language would have been impossible without the consultative role the translator played. All voice-recorded data in English and Afrikaans was transcribed, as well as the translations from Xhosa. It was not necessary to have the Xhosa responses transcribed because interpretation into English was done in the presence of the cultivator, who had the opportunity to ensure that his or her meaning was accurately translated, as mentioned. A translator was not required for interviews with NGO representatives, government or the funder, as all chose to speak English.

5.10 Data capturing and analysis

All data from the interviews and focus groups was transcribed using Microsoft Word 2007. The transcriptions, along with field notes and journal entries, were coded according to the themes that emerged from the literature review chapters. To these ends, this study used a "code and retrieve" method of data processing. In this method, data is coded according to existing or emerging themes and then "retrieved" or grouped according to these (Willis, 2007:135). The code and retrieve method may provide new perspectives on existing themes, or new themes may emerge on

a subject. This study grouped responses into five broad themes defined by the sustainable livelihood framework capitals, namely natural capital, human capital financial capital, physical capital and social capital. The indicators for each of these capitals were drawn from the literature. For example, data grouped within the social capital theme included issues such as local networks, trust between cultivators, relationships with neighbours or family members and accounts of cultivators relating to NGOs or government. Data grouped in the human capital theme looked at issues such as knowledge on cultivation, or examples of empowerment. The financial capital theme addresses economic aspects of cultivation. Natural and physical capital are so closely related in this context that these themes were dealt with simultaneously by addressing issues such as cultivation methods and the technology or natural resources employed by cultivators. By adopting the five livelihood capitals, and operationalising these with indicators drawn from the literature on Africa, South Africa and Cape Town, it was possible to address the potential contribution UA can make to sustainable livelihoods, while also incorporating the key areas of discussion from the literature.

Much information exists in the literature on UA in Africa that relates to the themes adopted by this study, but the voice of Cape Town's cultivators is not well represented in the literature. The value of the code and retrieve method was therefore twofold. First, it represented Cape Town's cultivators in existing discussion themes on UA, and second, it brought to light new categories of discussion that have not emerged from case studies in Africa. An example of the latter is found in the transformation of values relating to diet or the environment, as well as the employment of women in leadership roles. The volume of data, although sizeable, was not too large for manual coding and sorting during the data collection process. This was possible because of the inductive process by which data was grouped according to the existing categories immediately after transcription. While manual sorting was labour intensive, it facilitated a greater degree of engagement with the data.

5.11 Limitations and considerations

The present study aimed to understand the physical and social benefits of UA for low-income cultivators in Cape Town, and what influences its viability. The lessons learned from exemplary cases in this regard contribute to addressing this research question. While the selection made in the present chapter is exemplary for answering the research question, it is important to highlight other role players in UA in Cape Town that were not selected.

The broader literature on UA indicates that the full range of benefits and the most sustainable practices are found in cases where NGOs train and support cultivators. The same was found in Cape Town, where four NGOs use UA training to support the livelihood strategies of low-income cultivators, and in so doing see benefits in terms of food security, income, ecological health, empowerment and a focus on women. While there are a number of organisations involved in UA in Cape Town that do not fit these criteria, they are nevertheless well known and as such require an explanation for being excluded.

Only one of the organisations here described is also an NGO, namely Schools Environment Education and Development, better known as SEED. SEED focuses on facilitating UA training in schools throughout South Africa. This is done through UA curricula developed by SEED that incorporate practical training on a plot that SEED helps the school to establish on their property. This NGO was not included in the present study because it does not facilitate the creation of sustainable livelihoods in Cape Town. Furthermore, NGOs such as Abalimi and Soil for Life also assist schools in the same way, hence even through SEED was excluded, this aspect of UA in Cape Town is still addressed.

The rest of the organisations are not NGOs. One of these, Food Pods, is a business that targets low-income cultivators. The business model involves selling a plastic milk crate in which seedlings are planted to low-income cultivators. The cultivators who buy the containers are expected to raise the seedlings themselves and then sell the harvest within their community for a profit (Food Pods, 2013). This business model is still at the conceptual stage, and far greater economic returns are already being achieved with Abalimi's community-supported agriculture scheme, which will be described in the findings chapter. It therefore would be redundant to include Food Pods in the present study.

The remaining organisations target middle-class, not low-income, cultivators, and therefore are excluded. These include Oranjezicht City Farm, Green Guerrillas and Urban Harvest. Oranjezicht City Farm is best described as a community-based organisation. It produces organic vegetables that are sold at a weekly fine foods market hosted on their property in Oranjezicht, a wealthy suburb in Cape Town's city centre (Oranjezicht City Farm, 2013). Any links Oranjezicht has with low-income cultivators is through Soil for Life, which uses the organic market as one of the

locations for selling products for the cultivators they support. Green Guerrillas and Urban Harvest both provide consultation on horticulture, as well as maintenance services for cultivated plots (Green Guerrillas, 2014; Urban Harvest, 2014). Green Guerrillas also teach UA in schools, but this does not qualify them for inclusion, as discussed regarding SEED. Thus, while a number of popular cases of UA-based organisations are excluded from the present study, the key reason for their exclusion relates to them failing to meet the selection criteria, namely the facilitation of sustainable livelihoods through UA and the incorporation of all five areas of benefit. In Cape Town this is achieved by the four selected NGOs.

5.12 Reflection on the research process

This study had to manage the tension between achieving breadth of description and depth of understanding. This tension is described by Patton (1990b:184), who states that “[i]n-depth information from a small number of people can be very valuable [...] if the cases are information-rich. Less depth from a larger number of people can be especially helpful in [...] trying to document diversity and understand variation”. While these goals are in opposition, the present study had to satisfy both, namely documenting the diversity of UA but also achieving a depth of understanding of cultivators. Achieving breadth was negotiated by selecting all four NGOs, by creating a typology to represent the breadth of UA types, by selecting the broadest possible range of cultivators in terms of socio-demographics, and by interviewing representatives from all key role players, such as directors, government and donors. Achieving depth was negotiated by selecting information-rich cases within each type of cultivation, as well as by using a variety of data collection methods ranging from in-depth interviews, focus groups, participant and non-participant observation and field notes.

Achieving this balance, and conveying both the breadth of UA and the depth of experience from the perspective of the cultivators, contributed a depth of understanding to the phenomenon of UA in low-income areas, and highlighted the value of NGO and government support. The generalisability of the findings was assured by interviewing cultivators from each UA type until the point of data saturation. This allows the patterns that emerge from this research to be applied reflexively in future research on UA in Cape Town or in other developmental contexts.

A few possible limitations to the empirical research require attention. These relate to challenges encountered during fieldwork, the applicability of other research methods, and possible

influences on validity. The key limitations to fieldwork related to research fatigue in some key participants. While academic literature on UA in Cape Town is limited, it focuses on one NGO, Abalimi, and even on the same handful of formal groups selected within that NGO. An explanation for this phenomenon is that Abalimi is well known to the public and the formal groups in question are easily accessible, being on main roads. The result, however, is that the key participants perceive academic research as an unfair use of cultivators' time from which only the academic profits. This perspective is understandable, but it was surmountable through showing respect and being flexible. In retrospect, it is useful to consider whether another research method would have suited conditions better. Quantitative research would not have been applicable, as discussed, but a qualitative method already employed for UA in Cape Town is the life-history method (Slater, 2001). While a strength of this approach is the richness of data it gathers, it is far too narrow in focus. Thus, a case-study approach was adopted, as it provides depth but also allows for the breadth of focus needed to do justice to the diversity of Cape Town's UA sector. The validity of the data could have been influenced by a "halo effect", that is, participants trying to "show off" by making UA appear more beneficial than they experience it to be (Patton, 1990a:1202). I was aware of this risk during the research, but found that the cultivators were quite candid. Cultivators who had complaints or grievances were explicit about them because they wanted them addressed, even suggesting that I publish their names along with their specific complaints. For such cultivators, having a voice was more important than looking good to one researcher. Furthermore, the validity of the findings was ensured by the large variety of data collection methods that were employed. This is a form of triangulation, as information recorded in interviews is confirmed by observation in the field, or in dialogue during participant observation or in discussion with other role players (Patton, 1990a:1195). Thus, the data in the present study was validated multiple times during the research from a number of sources, and these responses were what ultimately became represented in my findings. These findings are related in the following chapter.

6. CHAPTER SIX: FINDINGS

6.1 Introduction

The literature on UA in Africa, South Africa and Cape Town offers an overview of the benefits associated with UA, as well as the challenges cultivators face. However, little is known of the physical and social benefits that accrue from UA in Cape Town and the factors that affect the viability of UA, particularly among low-income cultivators who are trained and supported by NGOs. This chapter presents the findings of empirical research on cultivators who affiliate themselves with the four NGOs that promote the uptake of UA.

Due to the close similarities among the NGOs relating to cultivation methods and the benefits associated with UA, the findings are discussed thematically in relation to the various capitals that influence both the benefits and viability of UA. Where key areas of difference occur in terms of NGO affiliation or UA type, these are indicated. The findings deal primarily with the experiences of the cultivators, but a greater breadth of understanding is furnished by discussions with representatives of the senior management of each of the NGOs on the role of NGOs in Cape Town's UA movement and, to a lesser extent, with key individuals representing government and major UA donors. These views are included where they speak to specific issues within the themes. All quotations from cultivators are assigned a unique identifier that distinguishes cultivators from each other and indicates their gender and age. For example, (F2≥40) indicates female, participant number 2, aged 40 or over but below 65⁷. Role players are not assigned identifiers because this may compromise their anonymity, especially in the case of NGO directors.

6.2 The use of and contribution to human capital

Cultivators in other African countries appear to use inherited knowledge from rural family members to apply identical cultivation methods successfully in urban areas. Xhosa cultivators in Cape Town may have been farming in rural areas as children and migrated to Cape Town to seek work, or they may have grown up in urban areas but are part of families that farm. Some Coloured cultivators in Cape Town had no experience whatsoever of farming, while others grew up on smallholdings in families that farmed. Regardless of background, cultivators in Cape Town

⁷ Three age intervals are used: ≥18 (18-39), ≥40 (40-64) and ≥65.

agreed unanimously that they would not be able to practise UA in Cape Town without training. This is because the soil is too barren and the ecology too harsh on the Cape Flats for mainstream or traditional methods. NGOs therefore are key role players in developing the human capital for cultivation in Cape Town.

6.2.1 *Prior experience*

Many cultivators felt an affinity for UA because of agricultural links in their families. The Xhosa cultivators stem from the Eastern Cape and have an agricultural family heritage, even if they did not farm themselves. Some of the Coloured cultivators grew up on smallholdings in Cape Town before being relocated through the Group Areas Act under the apartheid government. Cultivators from both backgrounds stated that it was the positive recollections from their childhood that drew them to UA. A woman from Vrygrond recalled,

I grew up just outside the Vrygrond area. My grandmother reared me. We had acres of land: horses, sheep, goats, chickens. My mother made a living from her garden. My uncle used to sell the produce on the horse carts, but they drank up most of their profits. She grew veg and flowers. That's where I picked up my knowledge. That's where I got my love of gardening (F2≥40).

While childhood experiences with farming led some to sign up for UA training, other cultivators were already applying such knowledge, but with limited success. Some Xhosa cultivators had already farmed in the Eastern Cape, but came to Cape Town to find work. Some Coloured cultivators had experience in commercial farming. For example, one worked full-time for a commercial nursery and some cultivators provided seasonal labour on commercial farms in the area. Such cultivators stated that when they applied mainstream farming methods in Cape Town, the results were disappointing. An elderly Xhosa man explained, "I know about [farming] from the Eastern Cape, but in the soil, not in the sand. I learned from Abalimi to plant in the sand" (M33≥65). Thus, although the cultivators' existing stocks of agricultural knowledge drew them to UA, this knowledge alone is insufficient for UA in Cape Town.

A limited number of cultivators had negative associations with cultivation from their childhood. An elderly Coloured woman recalled having to walk the streets of Fish Hoek as a child, selling cut flowers for her abusive grandmother. An elderly Xhosa woman who grew up in an informal settlement recalled hating being taught agriculture by the apartheid schooling system,

I hated agriculture because we were learning it in Afrikaans in high school. It was very hard to pronounce words. I was failing my tests but I didn't even mind because I thought it was not relevant. I hated agriculture; I didn't see a reason for it. I was a township girl; I'm not from the country (F17≥65).

6.2.2 *Training*

Regardless of their experiences in cultivation, the cultivators described the growing wonder they felt towards cultivation because of their training. Cultivators stated that they were forever learning, and had a hunger to know more about cultivation. A young Xhosa man described how he used his local library and the internet to grow in his understanding of UA,

I intentionally go to the library and go to the internet so I can gain more information. So, I can't say I'm a finished product. I am a man that wants to learn more so that I can improve my mind and share what I have with other people (M14≥18).

The sharing of knowledge among cultivators played a notable role in their learning process. While transport limitations restricted their ability to create broader networks with those outside of their immediate neighbourhood, those within walking distance of each other were often in contact. A young male cultivator in Nkanini explained, "It is a wise thing that you interact with other farmers [...] one reason is that it makes you grow mentally, seeing how farmers are progressing in terms of skill, technique, business wise and so forth" (M19≥18).

Through their interaction with NGOs, cultivators were given opportunities for advanced training courses. For example, Abalimi and Soil for Life give courses in income generation. Soil for Life provides further training in skills relating to UA, such as growing seedlings, making compost, earthworm farming and building garden accessories, all of which may be used for income generation. Abalimi and Soil for Life also offer advanced courses to cultivators who want to train others. Some newly qualified trainers explained how much they had learned from training others, as reflected in the following quote from a male Xhosa cultivator (M14≥18): "The training is fantastic because when you train you unconsciously give yourself information. The impact of training does not only happen to the recipients, but also to you." Some cultivators had even taken computer literacy courses and fire safety courses through their NGO.

The opportunities provided by UA for increasing one's skills and abilities has made notable changes in the lives of many cultivators. One woman who had been a janitor was managing one of the garden centres after having being trained in computer literacy. She aspired to manage the NGO's training programme as the next step in her career (F1≥40): "I can see myself taking over when I have more experience on the computer. Then there will be space for someone else [to run the garden centre]." Thus, while UA training in itself is valued by a broad range of cultivators, being in contact with NGOs opens up other learning opportunities.

6.2.3 *Physical health*

The demands of cultivation do not limit UA to the physically able. By contrast, many cultivators are elderly, suffer from terminal illnesses or are physically handicapped. For example, an elderly woman in Vrygrond who suffered an accident that damaged her leg, stated that she had to discontinue the renovations she was doing on her house after her accident. She nevertheless was thankful for UA, with which she now occupies her time.

The physical health benefits of UA are propounded by many cultivators. Key benefits relate to a healthy diet and exercise. Most cultivators in the present study ate from their plot on a regular basis and savoured the quality of the food they grew. Home cultivators described the enjoyment of going out into the garden to pick ingredients for a meal. Examples include herbs for roast chicken or spinach leaves for creamed spinach. A middle-aged man from Lavender Hill stated:

The turnips are my favourite – with the leaves; and the parsley. I grate them into soup. I had Chinese cabbage – almost like lettuce. I put it on a cheese sandwich. The first time I was amazed! It was so crispy. It was so nice (M8≥40).

The importance of healthy eating was highlighted by many cultivators. Some cultivators explained that poor diets in their areas contribute to diabetes and other diseases that "can be treated if you eat properly" (M14≥18). A female cultivator who had been on HIV/AIDS awareness training stated that the disability grant patients receive is insufficient for them to be able to maintain a healthy diet. This cultivator believed that UA could play a vital role in the lives of those living with HIV (F4≥40): "You can't live on a disability grant when you have HIV [...]"

that is why people deteriorate so quickly, because there is not the right food. And that is where the garden is going to come in.”

Cultivators expressed how their understanding of diet changed because of UA. A young male cultivator stated, “I have become conscious of what I eat, what I put in my mouth and what I buy” (M14≥18). An elderly Xhosa woman stated, “Most of the stuff I was eating before I don’t eat [anymore], like junk food. I used to buy fried chips or KFC⁸ [...] now I eat healthily” (F17≥65). Cultivators learn about healthy eating as part of the training they receive, but observing how soil nutrient levels affect plant growth contextualises their understanding of the importance of their own diet. For example, a young female cultivator explained that she had not realised that “putting bones in the soil gives the plants calcium”, and that when you eat those plants, “that [calcium] is going to come back to you” (F15≥18). The transformative effect of UA on household diets occurs in spite of strong cultural mores relating to diet. A Xhosa man, for example, explained that “African people [...] only believe in the meat, but now we learn to really enjoy the vegetable” because of UA. He went on to explain how his family had begun to prioritise vegetables in their diet, to the extent that “some days we don’t even cook the rice, we cook just vegetables” (M35≥40).

The health impacts of such dietary changes are notable. A middle-aged Xhosa woman described, for example, how eating produce from her plot at home helped her son recover from malnutrition. The child was diagnosed with an iron deficiency. His mother stated that “I started feeding him greens. He went for a check-up and it turned out he was fine” (F15≥18). Following this experience, this cultivator said she “fell in love with” UA.

In addition to diet-related health benefits, cultivators find that UA promotes physical exercise. For example, a middle-aged Xhosa woman stated that she felt tired after a day in the garden, but that it was “a nice tiring [...] it’s part of my exercise actually” (F56≥40). Such exercise is also therapeutic, contributing to the mental health of cultivators, as many of them attested.

⁸ Fast food from the restaurant chain KFC.

6.2.4 *Mental and emotional health*

A key aspect of the benefits cultivators derive from UA relates to mental health. Many cultivators had personal experiences of violence against them and most lived in high-density, busy and dangerous areas. In such an environment, even a small plot provides solace. Many cultivators described how working in their garden relieved their anxiety, settled their thoughts or created a feeling of safety. A Coloured female cultivator in Seawinds stated (F18≥40): “*Dié plek is n baie deurmekaar plek. Veral as die gangsters baklei. Maar as ek in the tuin is, is dit amper soos ek is weg van alles af*” (This area is crazy, especially when the gangsters are fighting. But when I am in the garden, it is almost like I am away from it all).

For many Xhosa cultivators, the informal settlements they live in are a stark contrast to the vastness of the rural Eastern Cape where their family resides. For these, UA provided a taste of the peaceful rural areas for which they longed. An institutional cultivator illustrated this point (F56≥40): “I’m here in Cape Town, but when I am in the garden, I don’t miss the Eastern Cape that much because a part of the Eastern Cape is here with me.”

Cultivators found their time in the garden to be a vital part of their emotional and spiritual development. UA provides a rare outlet for the stresses and frustrations of daily life, and the cultivators recognised this and cultivated deliberately to restore peace in their own lives. A Xhosa woman who ran a crèche sums this up well (F56≥40):

It’s only you. The children are not there, the husband is at work. It is a quiet time. These little veggies, they are not talking back to you, they are there to listen; you plant them in a gentle way, you give them love. I’m telling you, you will sense the Holy Spirit when you are gardening, and then you will come up with the peace of letting go. You let the problem go. You say, “Okay, God; you are going to solve this problem”. Peace. Then at the end of the day, you see each problem go.

Cultivators of different abilities and different backgrounds all attested to the benefits provided by UA in terms of their physical and mental development. “You grow as a person”, a cultivator explained (F31≥40). Others confirmed that the sense of achievement they derived after applying themselves, enduring hard work and waking up early to cultivate, gave a sense of self-worth, “You are proud at the end of the day because you have done it yourself” (F4≥40). This self-worth inspires greater aspirations. A young man described this feeling by saying, “A giant in me had

arose” (M14≥18). Such cultivators begin to strategise for their future. Some cultivators from the Eastern Cape wished to return and start a farm, others who ran crèches wished to expand to address other needs in their community, and yet others who were employed aspired to develop their careers. The impact of UA on individual lives extends beyond UA and encourages individuals to advance the positive impact they are experiencing in their communities. This point cannot be better made than by a middle-aged male cultivator (M8≥40), who stated:

I am growing. Yes, it’s wonderful. Last night I was thinking: one day in my old age, sitting there, being able to think back to the wonderful things I did. Not drinking or smoking *tik*⁹ or things like that, but thinking about the flowers: how much money did I make, the lovely things that I ate from my garden, the wonderful people I met through this and conversations I had with people about simple things – things that we just pass, things we don’t care about but that would be wonderful to our lives. I was an alcoholic before. Bad, very bad alcoholic – laying in the street. That is why I am saying, one day I can think back, [but] not about being a bad person. This is something I want to do in my old age, if God spares me, and reflect on my life.

The human capital benefits contributed by UA to cultivators in Cape Town are expansive. The extent of human capital that cultivators have when they join training is typically limited to basic familiarity with agriculture and an enthusiasm to learn more. With training and support, they expand their knowledge and skill bases and experience considerable benefits, such as education as well as physical, emotional and mental health. The findings therefore confirm the importance of UA training espoused in the literature, but provide greater depth as to the benefits to human capital that are experienced by the cultivators. The literature also indicates that human capital relates directly to financial capital, as income increases with ability. The following section therefore considers the contribution made by UA to financial capital in Cape Town.

6.3 The use of and contribution to financial capital

Financial capital, the availability of cash or commodities, is central to the lives of the urban poor. Without financial capital there are scant opportunities for obtaining food, cooking fuel and other resources. From the broader literature it is clear that financial capital is a prerequisite for UA, but UA also relieves financial pressures by providing products to sell, and reduces the pressure on the food budget. Existing research on UA in Cape Town reveals that key sources of financial capital

⁹ Methamphetamine

for cultivators include state grants such as pensions and child support grants, formal and informal employment and the sale of produce.

6.3.1 *Inflows other than UA*

The income strategies employed by the cultivators are typical of low-income communities, and an array of income sources contribute to their livelihood strategies. In the present study, typical incomes included state welfare grants such as pensions and childcare grants, in addition to incomes from self-employment such as handicrafts, writing curricula vitae and leasing accommodation. While retired cultivators in formal groups rarely had other forms of employment, some cultivators below retirement age from all UA types worked part-time in formal employment in addition to cultivating. It would be a mistake, however, to consider only an individual's sources of income, because incomes are often distributed among family members, even those who are separated geographically. For example, a Xhosa cultivator, along with the rest of the family, was contributing to the construction of his mother's house in the Eastern Cape. Cash flow within families is well illustrated by a Coloured single mother of seven in Vrygrond who was employed part-time in a formal group ($F1 \geq 40$):

The community garden helps me. They pay me once per week to help [out]. If I have nothing at home, [at least] there is money at the end of the day – otherwise I must wait until the end of the month for my boarders to pay. I get grants for four [of my] kids, and my two [older] sons are working. My eldest son is working at the scrap yard, but he only gets paid four hundred Rand per week. The other one is working with his dad and he is getting one hundred Rand per day. He is working on roofing. But they must pay their kids, their girlfriends [...] they must pay off their phone, so they don't have money to give me [...]. They want the name brands, like they will make a lay-by for the name brands [...]. The electricity is a problem, it is five hundred Rand per month for me and the boarders must buy more if it is used up. Food, I buy seven hundred Rand for the week, but it is even not enough for my kids. It's not enough for the month.

This case illustrates the array of inflows and outflows of cash in cultivator's families. Some inflows, such as leasing rooms to boarders, provide a predictable income, but it only occurs once per month. Other sources of income are unpredictable, such as that of adult children who may spend all of their income on status symbols. The mother in this example could not wait until the month's end for her larger sources of income to pay out, thus she stated that casual labour and

opportunistic sales of fresh produce from her garden provide her with a little cash for groceries and a prepaid electricity top-up. For many cultivators, UA therefore is one of many livelihood strategies that contribute to long-term planning as well as short-term survival.

6.3.2 *Inflows from UA*

For the cultivators, the additional income from UA played a vital role in economic survival. As the cultivator above illustrates, even a little money for daily needs is appreciated, while larger income sources can be reserved for groceries or energy bills. For example, a single mother stated (F1 \geq 40):

It is a lot of stress for me to raise kids on my own. So I will do anything for my kids, just so there can be food at home – any work with my hands. Even if it is just fifty Rand for the day, I don't mind, just so it's bread for them to eat.

Home cultivators found it difficult to account for the income UA generated because seasons affected the volume produced, needs determined the volumes sold and no records were kept of these transactions. Cultivators preferred to refer to the purpose to which sales were put, rather than the amount they made. Some cultivators stated that the stocks of produce on their plot were an insurance against the daily stresses of financial poverty. For example, a few bunches of spinach were sold when money for electricity or bread was needed. For others, UA provided an injection of funds to invest in bulk purchases, appliances or tools. A middle-aged male cultivator explained (M8 \geq 40):

I made about two hundred and twenty Rand. I bought me a kettle because the kettle broke down. And a wall clock, I bought a wall clock from it. Ten kilos of sugar, and a screwdriver – that's two hundred and ten Rand. So I came home after I bought this stuff, I put it down and went out again [...]. [When] I came back, my wife asked, "Where did you get this money from?" I said, I got it from my yard.

While UA is one of the myriad livelihood strategies employed by home cultivators for "hand-to-mouth" survival (M19 \geq 18), the formal groups have a deliberate commercial motive and use UA as a fulltime job. In such cases, the financial contribution made by UA is far larger and better recorded.

The formal groups in the present study made their income from sales to Harvest of Hope, as well as from sales to surrounding community members. Community members turned up at formal groups to purchase food, but some groups also took wheelbarrows of produce out into the community. One formal group stated that they were able to sell thirty bunches of spinach in a day from wheelbarrows. Abalimi's representative believed that informal sales to community members may even equal the income from formal sales through Harvest of Hope in some groups.

Harvest of Hope is run by Abalimi. Through Harvest of Hope, cultivators have access to the higher-income markets of suburban Cape Town. Such customers pay Harvest of Hope in advance for boxes of organic produce, namely ZAR 87-00 for a small box and ZAR 120-00 for a large box. Half of this money is paid back to the cultivators on a monthly basis, and the other half is used to cover running costs. Harvest of Hope provides a form of credit to cultivators, as they are able to buy inputs such as manure or seedlings on credit at Abalimi's garden centres. The purchase is then subtracted from their monthly income. Cultivators in the present study made between ZAR 1 000-00 and ZAR 3 000-00 per month after expenses from Harvest of Hope. The opportunity provided by Harvest of Hope for cultivators to make an income was highly appreciated by the cultivators, particularly due to their lack of market access and limited resources. One cultivator stated that "it is an honour" to be a part of Harvest of Hope because "Abalimi Bezekhaya are providing the seedlings, is providing the transport of the harvest [...] and there is no other place that could [offer the same service]" (M33≥65).

While this cultivator correctly observed that no better opportunity for commercial cultivation was provided other than Abalimi's Harvest of Hope, that is not to say other NGOs are providing no market opportunities. On a far smaller scale, in terms of number of cultivators involved and volumes sold, Soil for Life and Sozo also facilitate market access. Soil for Life, for example, provides market opportunities for cultivators from their entrepreneurship course. Fresh produce, seedlings, herbs, compost and higher-value products such as jams and handmade garden accessories are sold at their Constantia garden centre, at farmer's markets and at commercial organic stores in the area. Sozo had only recently begun delivering fresh produce from their garden centre to upper-income residents in the suburbs adjacent to Vrygrond. Thus, while Abalimi models the potential there is for full-time commercial cultivation, Soil for Life and Sozo's income-generating models are more diverse and operate on a smaller scale.

While the larger plots belonging to formal groups are able to produce consistently all year round, and make a consistent income through Harvest of Hope, the home cultivators and institutional cultivators found that their incomes fluctuate. An institutional cultivator stated, for example, that they only ate from the garden in winter, but when cultivation picked up in the summer they were able to produce a surplus and sell it (F7≥40): “Our best season [for planting] is August because it’s almost spring, you see. Spring, it’s September. Then we start the garden at that time. Then by October we do sell.”

While fresh produce is produced all year round on the Cape Flats, cultivators chose to emphasise certain varieties in different seasons. For example, spinach was the mainstay for commercial cultivation during the winter, when higher-value crops such as tomatoes, peppers and aubergines are not cultivated and before the slower-growing winter crops ripen. A cultivator stated, “In the winter, we are putting spinach first, so that any other crop that we could be getting would follow after spinach. Because we know that there is too much demand for [spinach]” (M19≥18).

6.3.3 *Indirect inflows from UA*

While UA has direct impacts on the inflow of cash, it may also positively affect inflow in an indirect way. All cultivators found that UA saves on food expenses. Formal group cultivators reported taking food home on a daily basis and, as a result, never having to buy fresh produce. Many formal groups had an area of the plot reserved for commercial cultivation and another area for producing food to supplement the family’s diet. Formal group cultivators stated that by doing this they had healthy food at no cost and made money with which to buy necessities. As a cultivator stated (F31≥40):

You get money out of it, and at the same time [food] for the home [...]. So, something that you cannot grow, you can buy with the money you make from whatever you sell, like flour and oil and sugar and coffee. But anything veggies, at least you know you got here.

While many home cultivators did not sell much produce, they found that cultivating the plot around their home allowed them to save money on some food expenses. Home cultivators stated that the money they saved by growing their own produce went towards electricity, cooking oil or

maize meal. A Xhosa female cultivator stated that she only needed to buy maize meal when she shopped, so with her budget of ZAR 100-00 she was left with ZAR 40-00 change because the other ingredients for a meal were already growing at her home. A Coloured female cultivator echoed this by saying, “If you want to cook your food, you have got your spinach for soup. I don’t have to buy soup ingredients. I have turnips” (F18≥40). Thus, those who did not sell produce, or that produced on a small scale, found that some pressure was removed from their food expenses when they had food growing at their home.

6.4 The use of and contribution to natural and physical capital

In Cape Town, natural and physical capital are closely related. For example, water is a freely available natural resource, both from winter rainfall and through the Cape Flats aquifer, but without physical capital there is no means of storing or tapping into it. Thus, these two capitals are dealt with simultaneously.

In the literature, UA experiences a range of benefits and challenges from the natural environment. In some countries, UA appears to have a deleterious effect on the ecology, and the health risks of some cultivation methods are considerable. Such risks are not presented by UA in Cape Town, primarily due to the supportive legal environment and the key role NGOs play in training and supporting organic-friendly cultivation. Nevertheless, while cultivators in Cape Town are largely of benefit to the natural environment, they face some challenges.

6.4.1 Resources

Two key resources for UA in Cape Town are water and land. Access to both of these, however, was limited for the cultivators without assistance from NGOs or the local municipality due to the financial, human or physical capital required to access them. Water, for example, is abundant in winter in Cape Town. During the summer, however, there is insufficient rainfall for horticulture and there is a need to irrigate. To address these seasonal shortages, some cultivators had been donated rainwater storage tanks with a capacity of five thousand litres. The cultivators on every plot that had one of these said that the stored rainwater lasted far into the summer and reduced the need for expensive municipal water. A more reliable but costly source of water is the Cape Flats aquifer. Water from the aquifer is available throughout much of the Cape Flats. For example, an NGO representative stated: “You can put a hole down anywhere and get decent water.” The limitation is the cost of borehole drilling and the equipment. Thus, only formal groups and some

garden centres had boreholes, which were sponsored by their NGO or by the City of Cape Town. In conjunction with rain tanks and boreholes, all formal groups had irrigation systems. Other pieces of equipment for irrigation include watering cans and hosepipes. The NGOs encouraged cultivators to be creative in their use of physical capital by repurposing the litter they find around them. Thus, tins and plastic containers are used by many home cultivators for irrigating small areas.

Land is one of the most important natural capitals required for UA. Many cultivators had a rural heritage and explained that cultivating on small areas was a novel concept for them. They stated that, without training, they would not have believed UA to be possible. One cultivator, who had moved away from her rural family to Cape Town, told her father she was cultivating. Her father replied, “Do you have the land to do that?” I said, ‘No, but you will be amazed, we are using tyres, containers, cardboard.’ He said, ‘Take a picture of that’”. The cultivator explained, “He does not understand, because in the Eastern Cape they think to be a farmer you need big land”.

While many home cultivators were content to use their limited space productively, many formal groups that were more commercially minded expressed a desire for more land and were frustrated at being unable to access the vast tracts of unused land in their areas. A number of formal groups had attempted to gain access to this land by inquiring at their local municipality. Such attempts were unfruitful, as they were sent from one office to another until they gave up, or were unable to contact the person to whom they were referred. It therefore is easier to negotiate informal agreements with schools, churches and community centres. In such cases, a minimal lease fee is typically charged to cover water and energy expenses. In Cape Town the cost of land thus is not yet a hindrance, because there is much derelict land, but negotiating bureaucratic hurdles before gaining access to it is a problem.

One of the key issues in this regard is obtaining consent from the relevant City of Cape Town department. For example, a representative of the City of Cape Town stated that, to obtain permission to use land, one had to apply to the specific line department, as “parks are under the management of the parks department, [...] clinics are under the management of the health department [...] [and] if it is land that is not allocated to a specific line department, then you go to property”. Even this official stated that the process was “cumbersome” and therefore “it [was]

currently one of the bottlenecks” to the expansion of UA in Cape Town. Thus, NGOs found it easier to negotiate private agreements.

Cheap land is accessible for UA on the Cape Flats because open spaces tend to be derelict. According to a representative of Sozo, the land that they used for their garden centre “was a rubbish dump”, and preparing the land for cultivation involved digging a metre into the ground to remove the rubble and refuse buried in it. Even good quality land on the Cape Flats consists almost entirely of white sand, and preparing the land for cultivation requires vast amounts of organic material. Due to the NGO’s commitment to organic cultivation, no chemical inputs are used and the soil is fertilised only with manure or compost. Such organic inputs transform the sterile sand into a rich loam. Many of the cultivators’ plots used to be desolate and barren, the haunt of vagrants and a target for illegal dumping. They drew this contrast with pride, indicating their positive impact. This change was noted by neighbours, whom cultivators explained were pleased by the uplifting effect on their area.

Other physical resources that play a key role for UA in Cape Town include fencing, shipping containers and tools. NGOs donate tools to home cultivators when they complete their training courses. Formal groups receive donations of tools from the City of Cape Town, as well as other resources such as shipping containers and fencing. A city official stated, however, that fencing and other infrastructure could only be provided for cultivators on land owned by the City of Cape Town, “because it is a capital improvement. [...] [W]e cannot put up a fence on private [land] or land other than City-owned land”. Shipping containers and fencing are essential in Cape Town due to the problem of theft. Without these, tools and other resources are inevitably stolen. Shipping containers serve as secure storage at night and function as site offices and shelters during the day.

6.4.2 *Services*

Services, or free natural functions, play a key role in UA in Cape Town. Some of the most important relate to pest control. Success in any form of agriculture is affected by pests and depends on how these are controlled. No cases in the present study made use of chemical pesticides for controlling pests, but instead relied on natural resources such as insectivorous birds and insects. Prior to their training, the cultivators were ignorant of how the ecosystem works. For example, a home cultivator from Lavender Hill said that he did not even know whether the bees

visiting his garden were damaging his crops or not. “I said, ‘Must I kill the bees?’, but [the fieldworker] said, ‘No, bees are good’” (M8≥40).

The cultivators exhibited a basic understanding of animals found on their plots. Earthworms were perhaps the best known, being valued for their contribution to soil fertility. Other beneficial animals included predatory reptiles such as lizards, chameleons and frogs. While many cultivators said they encouraged such animals in their garden, a few were suspicious of frogs because of the association with witchcraft. Opinions were also divided on birds. Some cultivators believed birds were useful for removing pests, but many were unwelcoming to birds, believing they ate the seedlings of leafy vegetables and peas. However, no distinction was made between different species of birds.

Typical pests include snails, aphids and caterpillars. Where natural systems fail to control these, cultivators resorted to picking pests off crops by hand, or making repellent solutions to sprinkle around crops. Popular pest repellents include soapy water infused with garlic and chillies, or a rotting solution of snails in water. While pest control requires daily attention, especially in the early morning, none of the cultivators felt that pests presented a threat to the viability of their cultivation. Many cultivators expressed a fascination with the functioning of the natural systems in their garden and wished to learn more.

6.4.3 *Repurposing*

One of the key benefits of UA for the natural environment is the recycling of organic waste. Both Soil for Life and Sozo placed great emphasis on recycling organic waste, both by modelling it themselves and by teaching cultivators to do the same. These NGOs found it challenging, however, to source enough organic waste, both because of the competition from other groups using food and fresh produce waste, such as pig farmers, as well as because of the cost of transport required to collect waste from around the city on a weekly basis. The cultivators also struggled to source organic waste for composting because very little food was wasted and any scraps were fed to the dogs. Some cultivators overcame these challenges by thinking creatively about the resources around them. Some collected weeds and composted them, while others approached informal vegetable traders for their waste. One cultivator described going to the beach from time to time to collect kelp with which she makes a liquid fertiliser (F18≥40): “I like

to go to the beach alone. I pick it up and carry it back on the train. I don't worry about the people.”

In addition to composting waste, cultivators repurposed litter in their areas. Common examples include broken baths being used for worm farms, scrap wood for fencing, tyres for growing seedlings and bottles for bordering beds. One plot at an early childhood development centre had dozens of trench beds, all of which were bordered with innumerable plastic soft-drink bottles. A cultivator explained that all of the bottles were collected in the area by children, “I ask these boys. I say I will give them fifty cents, two bottles for fifty cents. They are so fast! When they have made five Rand for the day, I say, ‘Okay, stop it now. Come tomorrow’” (M35≥40).

6.4.4 *Stewardship*

The interaction UA facilitates between cultivators and their environment creates notable changes in the value they place on natural capital. The cultivators grew to appreciate the natural environment and felt responsible for making a positive contribution to their surroundings. As a young Xhosa woman stated (F16≥18):

I would not be happy to be one of those people that are adding to global warming and climate change. So, I want to learn as much as I can [...]. If we continue to use chemicals on our land, the world will soon become a desert. This is a wake-up call.

The lessons learned from UA were not limited to adults. Through participating in UA at their early childhood development centres, children learn about disposing of litter responsibly. A teacher in Vrygrond related that the children from her crèche were educating their parents about littering (F56≥40):

[The parents] used to litter chip packets but now the children are telling them they must not litter [because] they don't like plastic bags around. They tell their parents not to throw out newspapers, but rather to take them to the school to use in the garden.

With their limited access to high-tech physical resources, the cultivators applied creative solutions and, along with assistance from NGOs and local government, overcame these limitations. With such support, vital capitals such as land and water, and inputs such as compost

and manure, became accessible. While a lack of NGO involvement and unsupportive policies throughout Africa present notable challenges to the participation of low-income cultivators, NGO support in Cape Town ensures that the limitations evident in the literature are not encountered. Furthermore, NGOs are educating adults and children about natural systems and ecological stewardship, which further increases the ecological benefits of UA.

6.5 The use of and contribution to social capital

Social capital, say Nel *et al.* (2001:4&5), is a prerequisite for successful UA, as well as a positive outcome of it. Other cases from Africa confirm this. Nevertheless, some, like Vervisch *et al.* (2013:283), claim that the only form of social capital prevalent in low-income communities is bonding capital, with implications for exploitation by the power elites to whom such communities may be linked. In the Burundian case recorded by Vervish *et al.* (2013:283), for example, low-income cultivators were trapped in debt by those who funded their operations. Vervish *et al.* (2013:283) argue that bridging capital in the form of networks between cultivators would have addressed this limitation. Others, such as Jacobs (2009:97), point to the importance of NGOs for fostering bonding capital and providing the necessary bridging capital for effective UA. The present subsection investigates this relationship and deepens the understanding of the nature of social capital and its benefits for cultivators in Cape Town.

6.5.1 Existing bonding capital

According to the broader literature, bonding capital is found within families and friendships. It manifests as emotional or practical support, utilising what capitals may exist in a group but rarely introducing new resources. Thus, while bonding capital helps individuals to survive shocks and stresses, it does not help individuals to progress in terms of expanding their opportunities. The present study found that, in Cape Town, bonding capital is the key contributor to the spread of UA by word of mouth and that UA makes a notable contribution to the strengthening of bonding capital within families and between community members. This is achieved primarily through sharing produce and cultivating together.

While examples of bridging capital facilitating the spread of UA may exist, for example through media releases or doing a presentation, these are exceptions. Far more consistent is the spread of UA through the conversations cultivators have with friends and family members. The existing social capital is utilised by some NGOs, who ask cultivators that sign up for training whether

they know of any family or friends who may be interested. In many cases, however, the spread of information is more informal, as indicated by a home cultivator in Vrygrond (F4≥40):

The lady at the library and I go to church together. So I asked why they are in a workshop and she said it's Sozo. I said, "What do they do?" She said, "They do the gardens". So I said "I would love to come to a workshop".

In addition to facilitating the spread of UA, existing bonding capital plays a key role in expanding the benefits of UA in families and neighbourhoods. A high level of bonding capital in neighbourhoods facilitates the distribution of produce to those who need it. There appeared to be little difference between the informal settlements and low-income suburbs in this regard. Cultivators from all areas stated that they were familiar with who was in need in their area and targeted such individuals with food donations. A cultivation group from Khayelitsha stated, "You know how it is with this community. If I know something, I tell you. You tell the other person. The other person tells somebody else. That's how we get people together. It is not difficult at all" (F31≥40). While cultivation groups, which have a greater volume of produce, donate to schools, clinics and crèches, home cultivators frequently give to the elderly, single mothers and anyone that is "hard-up" living in their proximity (F24≥65). A cultivator from Capricorn stated (F4≥40):

I am one of the few people in Capricorn that is, not rich, but have enough. So, what I do is I grow my stuff, but to give it to people in homes where there is a lot of children – especially where there are a lot of children.

While UA surplus was donated within neighbourhoods in many cases, a more consistent contribution to food security occurs through the bonding capital within families. The sharing of produce within families is far more consistent and no less important than the humanitarian concerns driving its distribution in neighbourhoods. All cultivators reported using produce to feed their families. The majority of cultivators, however, were women. A key explanation for this phenomenon is the role of mothers as food providers. Thus, in the context of family food security, UA has a clear gender dimension. As the director of Inity stated:

I would say, in most cases it is the mothers that are responsible for households. As we know, most kids are being raised by their mothers. Their fathers, you see [...] those men, although they regard

themselves as fathers, they end up skipping that responsibility. So, you find that mostly, in the community, it is single parents that are raising those kids, and who are mothers [...]. It is mothers that are now seeing the importance of the family being fed, and that “I can grow and so feed my family”.

A number of female cultivators stated that although they found being single parents challenging, they had chosen to raise their children alone because they had been living with an abusive partner. Thus, the present study confirms Beall’s (2002:73) findings that female-headed households in low-income areas occur as a positive choice by women. The findings also confirm that female-headed households have greater bonding capital. Bonding capital facilitates the food security benefits of UA in such households. While bonding capital facilitates the uptake of UA and the distribution of produce, UA also creates bonding capital, especially in families and neighbourhoods.

6.5.2 *Creating bonding capital*

The NGOs in the present study claimed that UA was more likely to succeed where greater bonding capital existed. Thus, they promoted the growth of bonding capital by encouraging cultivators in the same area to share tools, by hosting a barbecue at the end of training sessions and by hosting an annual prize giving. While these certainly had a positive effect, dialogues with cultivators indicated that UA’s role in the strengthening of bonding capital was more spontaneous. UA appeared to increase the strength of bonds between families, friends and neighbours.

UA facilitates the strengthening of family bonds, both between children and parents, as well as between adult siblings. Home cultivators often indicated that UA encouraged interaction between family members, especially in terms of food preparation and sharing meals. For example, a cultivator from Vrygrond described how much she enjoyed having her daughter-in-law prepare a relish from the onions, tomatoes and spinach growing at their home. UA also encourages the interaction of young children and parents by providing opportunities for recreation. Many cultivators stated that their young children were eager to join them when they worked in the garden.

The interaction of children and young adults with positive role models outside of the family is also facilitated by UA, especially at the garden centres. In one of the garden centres located at a primary school, for example, children who were targets for bullying began to frequent the garden centre and spend their break times assisting and chatting to the garden centre manager. The manager stated (F18≥40): “To stay out of trouble, they will run to me [...] to work [or] [...] to just stand here and talk to me, or whatever.” At another garden centre, young adults volunteering as part of their tertiary education course stated that they appreciated the opportunity to share their lives with the elderly garden centre manager (F54≥18):

We chat about a lot of things. Sometimes we talk about our issues, you know, because Mama¹⁰ is not just the person we work with, we share with her everything and she understands. So, when we have a problem at home, we come and share it with Mama and she understands. And we talk about many things, school, books and the veggies.

In other garden centres, bonds are facilitated between adult cultivators. Cultivators who come to purchase goods at garden centres take the opportunity to talk to each other about life. In Sozo’s garden centre they spend time chatting over tea or coffee. A cultivator from Sozo stated that she had made five friends through her training course and that she had met other ladies from her area that inspire her. Friendships are also forged in formal groups, as cultivators do not necessarily know each other when they join. Even group members who know each other find their relationships deepening, as the group’s success depends upon working together. As a group member from Mfuleni stated, “We are like a family. You see that friendship among us” (F7≥40).

The facilitation of friendships extends beyond cultivators to the surrounding community. UA often presents the only green area in a neighbourhood of corrugated iron dwellings. As such, it is a space that draws attention and stimulates conversation. A cultivator from an institutional plot that has a number of trees on the periphery described how neighbours draw up their chairs on the other side of the fence to chat in the shade (M35≥40): “When it’s hot, they just sit under the tree there. They appreciate the view. They enjoy themselves there. They enjoy it.”

¹⁰ Not her real name

While such examples show how UA facilitates interpersonal communication, it also strengthens bonding capital by encouraging exchanges. In families, gifts may be exchanged to indicate affection. For example, a middle-aged male cultivator who cared for his elderly mother described how she gives him gifts of vegetable seedlings (M50≥40):

There is only my mother at home. She is old, so I support her. I love this thing, the garden. If my mother gets some money, then she comes here and surprises me: says, “Look, I bought you some vegetable [seedlings]”. Then I plant them quickly.

Many cultivators also exchanged their produce with neighbours. These exchanges may have a more practical function, as an informal way of creating a form of credit. Thus, giving produce to one’s neighbour was especially important for cultivators who may otherwise have had no resources with which to exchange. For example, a middle-aged male cultivator in Lavender Hill stated (M8≥40):

[My neighbour and I] have a close relationship. So, if I don’t have electricity or bread, I ask my neighbour, and they come and ask me for teabags – you know how it goes? So [now] I can give them something from my garden.

Cultivators were well aware of the investment they made through these exchanges, as giving produce to one’s neighbours when you have a surplus creates an obligation through which you may receive necessities at another time. As a Xhosa male cultivator explained (M48≥40): “I don’t sell it, I give it for free [...]. In exchange, they give me plenty.” By giving ‘gifts’ of surplus produce to their neighbours, cultivators deliberately created an informal insurance mechanism.

6.5.3 *Bridging capital*

Existing bridging capital plays a minor role in the uptake of UA. This may indicate low levels of bridging capital in the areas being studied, which would confirm Woolcock and Narayan’s (2000:227) observation that bridging capital is scarce in low-income communities. UA thus plays an important role by creating bridging capital in these areas.

UA facilitates connections in a number of ways between people who do not know each other. One such way is by creating a common interest. A Xhosa cultivator at a garden centre stated that

they were continuously meeting cultivators from the area who stop to chat about cultivation (F54≥18):

We chat to everyone that comes here every day. People chat about the garden being beautiful. They want to know something, like how to get rid of worms in their cabbages – all kinds of things – what kinds of soil, what season we are supposed to plant what – all questions about their garden.

One of the key reasons why UA facilitates conversations between strangers is that cultivated plots are usually visible to passers-by. Being a unique and vibrant space, it stimulates conversation. A home cultivator recalled, for example, how she gained her first customer (F5≥65):

I had tomatoes – big tomatoes – and this gate was open, and another lady passed – my first customer – and she said, “*Sjoe*, you’ve got beautiful tomatoes and stuff”. And I wanted to give her, but she said, “No, I can’t just take, here’s something for you”.

In the previous subsection on bonding capital, it was shown that family and friendship bonds facilitate the spread of UA. In addition to such examples, UA facilitates its own spread through the creation of bridging capital. This is achieved primarily through the attractiveness of cultivated plots. A female Xhosa cultivator from Vrygrond described how this comes about (F56≥40):

I joined Sozo at the beginning of the year. Last year I was crazy about Sozo’s garden. Every time I go to a parent’s workshop, I popped in to have a look at the garden. I fell in love with the garden. I said to my husband that I want to have this yard green with veggies, flowers and so on.

After cultivators join the NGOs, they find far more opportunities for expanding their networks, not only with others in their community, but also with people of a different class, race and socio-economic background. The attraction of UA draws the interest of a broad spectrum of individuals from outside the cultivator’s community, such as volunteers, customers and tourists. This interaction may have positive or negative implications. Some cultivators spoke positively of relationships that had been fostered between themselves and others from outside their communities. These may have photographs of times they enjoyed with visitors, or may have

ongoing relationships. A negative aspect, however, that some cultivators felt they simply were being used as a tourist attraction.

A number of groups and institutional cultivators stated that they received “a lot of visitors”, primarily tourists. Tourists may find out about the garden from social media, from affiliations with the institutions where the gardens are located, or through the NGO by which the cultivators were trained. While Abalimi’s formal tours are not disruptive to the work of cultivators, the informal means by which tourists find out about gardens are less controlled and have a disrupting effect. Newly established cultivation groups feel privileged to be visited by overseas guests, but the novelty wears off. Cultivators from older groups feel annoyed by these disruptions, especially because they gain nothing from them. For example, one such cultivator stated (M21≥18):

They are tourists from Germany, from Australia. They just say “The garden is nice, it’s fantastic” and then they just take those notes [...]. So I said, “When you bring somebody here, make sure that he or she is going to donate something”, because we are working hard here.

NGOs therefore play a key role in the facilitation of bridging capital through UA, especially between cultivators and non-community members. The role NGOs play is both as a facilitator of links that cultivators do not have the resources to broker themselves, but also through protecting cultivators from self-serving actors, which relates to linking capital.

6.5.4 *Linking capital*

Linking capital is essential for community development, as it connects community members with the actors who influence their lives. For cultivators in Cape Town, such influences include government officials, community leaders, funders and markets. The literature indicates, however, that linking capital may have a detrimental effect on community capital when it is not kept in check by community-level networks facilitated through bridging capital. This study found that NGOs are vital sources of linking capital for low-income cultivators in Cape Town because, in addition to facilitating bridging capital, NGOs mediate access to powerful actors on behalf of the cultivators.

Linking capital is limited among cultivators in Cape Town. Many cultivators felt isolated from government and a number of cultivators related stories of frustrated attempts to communicate

with officials regarding land access or donations of inputs. While cultivators demonstrated notable doggedness in trying to contact the relevant officials, their messages remained unanswered and going to the departments in question required the financial costs of multiple trips out of town, the frustration of being referred from one office to another, and days of waiting to be given an appointment. For example, a cultivator who tried to gain access to land for a formal group, stated (M20≥18):

Here there are vacant spaces. There is land that is right behind the waste yard – huge land. We went to those offices, it was around Khayelitsha [but] they shifted to [...] Eersterivier, [so] we did go to Eersterivier [...] and [there] we find that that particular chunk of land is under the provincial government, under the housing department. There's a lady called Cindy¹¹. I interacted with her office but I was not fortunate in terms of, like, having to talk with her. Each and every time they were referring me to her assistants, which doesn't help because each day they [said they] don't have the powers [...] We were then giving up on that land, and that land is very, very, very fertile land – for any type of farming. But we can't gain access to that land.

While cultivators find it frustrating to deal with departments directly, they ought to be communicating with the City of Cape Town's Directorate for Economic and Human Development, as this department facilitates all interactions between cultivators and the state. Very few cultivators were aware of this, however, and they therefore felt disillusioned with the state, as the support they initially had received from other departments was discontinued. The 2007 Urban Agriculture Policy for the City of Cape Town states that formal groups will receive full assistance from the state in terms of infrastructure and input provision through the Directorate for Economic and Human Development, but very few cultivators were aware of this (City of Cape Town, 2007:11&12). A representative of the Directorate for Economic and Human Development stated that, although the policy was in place, they did not yet have the human resources to carry out such a commitment to all the cultivators who should request it, and had therefore refrained from publicising this information. Furthermore, this department faced considerable bureaucratic hurdles themselves in trying to cooperate with other municipal departments. Some of the key hindrances to cooperation related to negative perceptions towards UA within government. For example, this government representative stated that

¹¹ Not her real name

[m]y biggest limitation at the moment is [...] to get the consent of the landowner – meaning the City [of Cape Town]. The process is too long and then also the other thing is that there are still officials within the City that does see urban agriculture more as a nuisance or an unsuccessful activity than a real, progressive kind of activity.

This official went on to explain that a contributing factor to officials outside of the Directorate for Economic and Human Development seeing UA as a nuisance and a waste of time is that “they do not go in to Khayelitsha”, and are therefore have no empirical understanding of how UA is benefitting cultivators and uplifting communities. Thus, NGOs remain the key role players supporting UA on the ground.

Without the support of NGOs, cultivators are vulnerable to exploitation. All NGOs in the present study brokered relationships with the state and donors on behalf of the cultivators, and three of the four even expanded market opportunities. Without this assistance, linkages created between power-holders and cultivators were rarely fruitful, as indicated by a number of personal accounts. While the degree of exploitation related by case studies such as Vervish *et al.* (2013) is not evident in Cape Town, the cultivators in the present study found that attempts to broker partnerships end in much time and effort being wasted.

Some cultivators attempted to utilise linking capital to broker relationships with government, donors and markets, with poor results. A large formal group described an ongoing attempt to forge a business agreement with a local retailer (M27≥65). “We try to arrange it but they chop and change [...] They tried to accommodate us but they chop and change. It is a difficult situation.” A number of formal groups and institutions are registered non-profit organisations in their own right and therefore may raise their own funds. However, funding opportunities are lost because they cannot meet funders’ demands. On some occasions, cultivators accommodated arbitrary demands for the sake of receiving funding, such as wearing certain colours on days donors visit the plot.

Nevertheless, donors have a right to ensure that their funds are being used responsibly and are achieving community development targets. To this end, a donor stated: “It is important for us that [NGOs] are able to manage their activities as well as their funds in a transparent manner.” It also is important that NGOs are clear about their objectives, and that they have a good relationship

with their target groups. For example, the funder continued that important issues to address when funding an NGO are

who they've worked with before, how successful they've been, how do they manage their funds – very important – and who are they engaging with, in terms of the community [...]. We also look at the philosophy of what the organisation is, you know, what are the objectives, and [...] is there any strategy for pursuing these objectives, how do they interact with communities [...]. There is a problem if there is not a good relationship between [the NGO] and the community. So, we do look at how their network works.

The NGOs in this study had a high degree of legitimacy in this regard, as they operated professionally and had good relationships with the cultivators through training and ongoing support. In such cases, donors were happy to continue supporting the NGO. For example, the donor stated: “We have had such an easy-going relationship with [the NGO]. We know them and the relationship has been long.” This donor stated that they began supporting the NGO many years ago because they had the same values, such as food security, supporting small business, ecologically sustainable cultivation methods and building community cohesion. This shows that a donor is likely to continue supporting an NGO as long as it achieves its objectives and handles funding transparently. Nevertheless, NGOs face a number of challenges in dealing with some donors.

The challenges faced by NGOs, even though they have extensive linking capital, are remarkable. The larger NGOs stated that they were constantly challenged by self-interested potential partners. For example, one NGO stated: “We are asked to compromise, but a lot of the time we will stand our ground.” A common example involves funders having unrealistic expectations about the numbers of individuals that can be trained with the funding they are prepared to give. Due to the breadth of their networks and the authority they carry, NGOs are able to negotiate agreements with funders, or to reject a partnership and seek solutions elsewhere. For this reason there is little interaction between NGOs and the state, because NGOs find they can gain access to land or inputs more easily through fostering agreements with private actors than by negotiating the numerous bureaucratic hurdles and power plays involved in dealing with state departments. A representative of one of the NGOs stated, for example,

[t]hat's why we don't want to deal with government, on the whole, who come along with their agendas and they try and give you too much work to do. You've got to do all this admin for them. All the big shots [...] they all sit there, they want to get involved. I say, 'We would love you to get involved, but you do the paper work [...] we will do the farming'.

Thus, without the assistance of NGOs, cultivators would have little opportunity to create their own linking capital, or to mobilise it in a way that served their needs. NGOs recognise their own vital role in this regard. For example, a representative of an NGO stated:

People don't have the wherewithal to make those market connections themselves. They lack the confidence to speak to people and they feel out of their depth. They feel belittled and condescended to because they don't know. They feel very shy and nervous [...]. So, I'm not sure who would be the market link if [NGOs] disappeared. Because businesses don't have time – they're a business and must get things done. They're like, "Come on, hurry up, get to the point". And [cultivators] would be like, "Well, I've got something that sort-of, you know..." – like, not necessarily succinct, to-the-point language. Even logistics is much more complicated than it seems [...]. So, we are kind of a go-between.

This support depends on NGOs receiving ongoing funding. However, there are some limitations to donors maintaining their support, with implications for sustainability. These relate to donors only wanting to fund short-term projects, not having a relationship with the NGO, NGOs being supported by too few donors and difficulties relating to fundraising. Donors prefer funding specific projects, rather than general running costs, because projects are measurable and time-bound. The challenge, however, is that the sustainability of an NGO depends on running costs such as paying its staff and administration fees. For this reason, unless an NGO has a donor that is happy to fund administration costs, the NGO has to rely on once-off donations from businesses motivated by tax reductions, who donate a percentage of their income at the end of their financial year. These funds rarely have strict funding criteria, as they are given simply because "this is an easy way to get points on their BEE¹² scorecard", as an NGO fundraiser explained. Businesses may give funds or donations in kind, of anything from one to ten percent of their net profits after tax. This is one of the ways to improve a business's BEE status, which reduces their tax. While

¹² Black economic empowerment: a formal government policy in South Africa that aims to promote equal representation of race in South Africa's economy by promoting the employment of "Historically Disadvantaged Individuals (HDIs)" (Western Cape Government, 2013)

such income is welcomed, the limitation of such funding is that it is rarely based on a funder wanting to support an NGO for the long term. As a result, this is not a sustainable way to fundraise. Much more sustainable is if an NGO can develop a long-term relationship with donors.

NGOs such as Abalimi and Soil for Life have a number of committed donors, while Inity relies on only one donor with whom they have a relationship. An NGO representative stated that relying on only one donor may be “a challenge to sustainability” because “if you are relying on only one or two funders [...] [and] they pull out, it’s over”. Building a relationship with new donors is difficult, however, because, as an NGO representative explained: “Donors get hundreds of proposals a day.” Furthermore, the key words in funding proposals are inconsistent. According to the fundraiser, “[e]ach donor has a different way and uses different language meaning the same thing [...] Donors don’t explain what they mean by their key terms”. All of the NGOs in this study stated that fundraising was their key source of income. This is a real concern for them in the future, as three of the four NGOs stated that, although they were financially stable at the time, they had faced serious funding shortages in recent years. Thus, the sustainability of the NGOs in this study depended on ongoing funding support.

Due to the risk of relying completely on funding, some of the NGOs were beginning to earn some of their own income. This is compatible with their non-profit status because any income goes into operational costs, or directly to the cultivators. An NGO representative explained: “NGOs have to move to self-sustainability – making an income – which is a huge shift, because they used to wait for handouts [...]”. Examples of this are already present in Cape Town, primarily through Harvest of Hope, which is a social enterprise. Profits from Harvest of Hope are returned to the cultivators after covering running costs. However, a representative of Abalimi explained that Harvest of Hope was currently only “breaking even”, but that it should become profitable if more cultivators were able to join and if they could continue to increase their efficiency. Thus, alternatives to relying only on donor support already exist, but these are not yet operating at a scale that allows for economic independence.

The findings in the present chapter therefore confirm the findings in the broader literature on social capital among low-income cultivators, namely that linking capital may be detrimental to cultivators who do not have the connections or human capital to prevent exploitation. NGOs play a key role in this regard, as they broker linkages between donors, government and markets on

behalf of cultivators, but the sustainability of NGOs depends upon maintaining relationships with a number of key donors. This is being achieved by the larger NGOs, such as Abalimi and Soil for Life. Nevertheless, what was found in all four NGOs was that cultivators receive the benefits of linking capital, such as donations, land access and higher-value markets, without the risks associated with dealing with power brokers.

6.6 Conclusion

The interviews with NGOs and cultivators provided a deeper understanding of the physical and social benefits of UA as promoted by NGOs in Cape Town. The findings show how UA contributes towards both short- and long-term food and income strategies. One of the key contributions is through the development of human capital. While cultivators approach UA with a limited stock of human capital in the form of experience and willingness to learn, the human capital gains are extensive, relating primarily to physical and psychological health. Some also receive advanced levels of training, which are directly related to increases in financial capital. While a limited number of cultivators obtain financial capital from UA to the degree that it is their primary income source, almost all cultivators find that UA makes an important contribution to daily survival through savings or opportunistic sales.

The need for physical capital investments to start up is beyond the cultivators, and NGOs play a key role. For small-scale operations such as home cultivation, NGOs sponsor the inputs and tools required for start-up. For larger formal groups that operate on a commercial level, a considerable investment in physical capital is required. Although the state, and to a limited extent private businesses, sponsor physical capital, the role NGOs play is nevertheless invaluable, as NGOs broker linking capital between cultivators and donors. Without this service, cultivators are extremely vulnerable to self-serving power holders who may place impossible demands on those they sponsor. In addition to providing a safe environment for linking capital, NGOs both deliberately and inadvertently contribute to advances in bridging and bonding social capital as cultivators share tools, socialise, meet new people, cultivate and share meals together. In this way, UA exhibits considerable social benefits.

However, the viability of UA is entirely dependent on the NGOs. Even in the cases of formal groups that operate on a commercial scale, the capital investment and the loans of inputs on a monthly basis are vital to their continuation. All NGOs stated that their key limitations related to

funding, while cultivators were limited by bureaucratic hurdles to land access. Thus, it appears that the physical and social benefits of UA, while currently located in small pockets throughout the Cape Flats, may expand if these limitations are addressed. The findings indicate that, with adequate funding, the expansion of commercial formal groups is possible, especially as a number of linkages with higher-income markets already exist. Nevertheless, even the home cultivators, institutional cultivators and garden centres exhibited considerable benefits, primarily in the areas of human and social capital.

The findings indicate that the social and physical benefits of UA are apparent, but that the viability of UA is determined not only by the type of UA, but also by the degree to which cultivators have access to the five capitals. This, in turn, is greatly influenced by the institutional context. In the following chapter, these findings will be analysed in greater depth to contextualise the validity, reliability and applicability of the findings.

7. CHAPTER SEVEN: DISCUSSION AND CONCLUSIONS

7.1 Introduction

The municipality of the City of Cape Town recognises the potential that UA can contribute to the food security of low-income households. For this reason, it has held a number of UA summits that contributed to writing up a policy for UA in Cape Town. This policy legitimises official support for UA through streamlining land access and providing donations of resources, specifically for projects that target the poor and the previously disadvantaged. Nevertheless, cultivators still face considerable hurdles when attempting to access the benefits the policy entitles them to, and bureaucratic intransigence limits the policy's potential. Given the local municipality's commitment, this study set out to determine what physical and social benefits accrue to cultivators who are trained and supported by NGOs in Cape Town.

To gain a broader understanding of UA, an extensive literature review was conducted to gain a deeper understanding of the factors that influence the viability and sustainability of UA projects. Based on this, a conceptual framework was constructed as a means to explore this subject and to evaluate the status of UA in Cape Town.

The aim of this chapter is to analyse the findings in the light of the contextual and conceptual framework provided in Chapters Two and Four respectively. It begins by discussing the debates surrounding UA's benefits before evaluating more closely the physical and social benefits that accrue to those involved in UA. An assessment is made of how sustainable UA projects run by NGOs are, before reaching some general conclusions in terms of the validity, reliability and limitations of this study.

7.2 Debates on the benefits of UA

UA is widely practised as a food strategy throughout Africa (FAO, 2012:19), but a number of debates surround its potential for this and other benefits. In addition to food security, other areas of debate include the potential to increase household income, to benefit the ecology and to empower women in patriarchal societies and those who are economically marginalised.

The benefits of UA are evident primarily in situations where institutional support is provided. In such cases, access to land and support for marginalised groups, such as the poor or women in

patriarchal cultures, ensures that the benefits of UA are available to those with limited resources or social standing. Some key interventions in this regard relate to increasing access to land (Maxwell, 1995:1677), ensuring the use of organic inputs, which build up soil health (Ashebir *et al.*, 2007:224), developing human capital through training or social capital through increasing a sense of belonging (Webb & Kasumba, 2009:38; Rogerson, 1998:179) and adopting a focus on women who may be limited by patriarchal structures (Hovorka, 2006:219). In these ways, as well as through providing resources, governments and NGOs mobilise community asset bases and increase the access of low-income cultivators to these (Kretzmann & McKnight, 2005:31). Thus, UA has the potential to contribute numerous benefits, all of which feed into creating sustainable livelihoods. However, the degree to which such benefits accrue to cultivators depends on a number of external factors.

Some studies find that the benefits of UA to low-income cultivators are curtailed or, even worse, that UA harms people and the environment. For example, Webb and Kasumba (2009:35) find that UA practised informally in low-income areas makes an insignificant contribution to food security. This is especially the case when key assets such as knowledge, land and financial resources are limited (Rogerson, 2011:193; Nell *et al.*, 2000:811; Ellis & Sumberg, 1998:221). Furthermore, Bryld (2003:81) and Rogerson (1993:26) both argue that practising UA with limited knowledge and resources may rob cultivators of time that could be spent more productively in other activities. In terms of the ecology, a context in which institutional support is limited may lead to deleterious practices, such as using cheaply available toxic pesticides (Asomani-Boateng, 2001:601). Finally, cases throughout Africa demonstrate that female cultivators in patriarchal societies face a myriad of challenges when cultivating without support from institutional role players (Redwood, 2009:1; Drescher, 1996:229; Linares, 1996:104; May & Rogerson, 1995:165; Tinker, 1994:ix). This illustrates what a central role institutional support plays in promoting the benefits of UA for low-income cultivators in Cape Town.

7.3 Physical benefits of UA in Cape Town

7.3.1 Food security

Food security is the most common benefit associated with UA. UA contributes to food security by providing a source of food for those who do not have financial capital. In Africa's urban areas, food security is largely dependent on a cash income to purchase food, rather than a lack of the availability of food (Battersby, 2011:25). In such contexts, UA provides an alternative food

source that is not reliant on cash, but rather is dependent on the availability of natural resources such as land and water (Maxwell, 1995:1677). In African urban centres, such resources are usually accessed more easily than paid employment. As a result, UA plays a central role in the food security of dozens of African cities (FAO, 2012:3).

In the broader literature it is found that the way in which UA contributes to food security is primarily through growing food to supplement the household diet. Freeman (1991:121), for example, found that some cultivators in Nairobi are completely dependent on what they grow to provide enough food for the household. The same was found in Accra, where many cultivators do not earn enough to purchase the variety needed for a balanced diet (Asomani-Boateng, 2002:600). Based on the literature on UA in South Africa, it does not appear as if UA makes the same contribution to household food security. For example, Webb (2000:65) states that UA does not provide adequate nutrition and does not make a significant contribution when compared with non-cultivating households. Similarly, Battersby (2012:45), referring to UA in Cape Town, claims that it is the least used food source and not a viable food strategy for poor households. Such findings appear to suggest that UA forms only a small part of a viable food strategy in South Africa. While this may be the case, these arguments only measure the physical contribution of food security to the household and do not identify qualitative aspects, such as attitudes towards healthy eating and other social benefits.

The findings of this study support those of other authors in terms of the volume of produce, namely that this is limited due to the small scale at which most cultivators operate. Most cultivators in Cape Town that are supported by NGOs cultivate in their small gardens at home and supplement meals with the little they produce. However, a greater contribution to food security is found in the larger cultivation groups. In formal groups, a few hundred square metres are available per cultivator and this produces substantial amounts that can be sold and consumed by the cultivators throughout the year.

While plot size affected production volumes, attitudes towards healthy eating were changed regardless of the scale of cultivation. This is due primarily to the influence of the NGOs, which teach cultivators about nutritional requirements as well as the nutritional value of specific vegetables. They also encourage cultivators to experiment with new foods in order to increase variety in the diet. A significant finding of this study is that no matter what the scale, a central

ethos of all NGOs is cultivating healthy eating habits and this is integral to the training cultivators receive. For example, NGOs teach cultivators about balanced diets, the effects of a monotonous diet high in refined carbohydrates on the body, and the health benefits of eating freshly picked produce that has not been treated with pesticides. While this cognitive understanding undoubtedly plays a role in changing dietary preferences, it appears as if the experience of cultivating and eating what one produces solidifies this understanding.

What was also interesting is how UA contributes to transforming dietary preferences by providing an opportunity to grow and try new things. Cultivators are given a range of seeds to cultivate, some of which are unknown to them, such as Asian greens. Having taken the time to grow something, and watching it develop from a seed, provides enough familiarity with the crop to warrant trying it out, even where it seems strange or foreign. Cultivators may never spend money on vegetables they are not familiar to them, but are enthusiastic to try those that they have grown. Many cultivators describe being “amazed” at how enjoyable they found a vegetable they had never eaten before. This experience, supported by the education cultivators receive on healthy eating, plays a major role in changing diets and food preferences. As such, UA transforms even the most entrenched food cultures. For example, a Xhosa male cultivator stated that he and his kin used to “only believe in the meat”, consistent with Xhosa culture, but UA had transformed his diet to the point that “some days [...] we cook just vegetables”.

A reverence for wholesome food develops in cultivators as they see the effects of healthy soil on plant development. In the areas where the cultivators live, the dominant dietary preference is for foods that are as cheap and as flavourful as possible, such as oily foods and foods with artificial flavourings. Some cultivators are horrified at what they used to eat habitually and express concern for those around them who continue to do so. This paradigm shift begins with training, as NGOs explain to the cultivators why they need to use organic matter to fertilise the soil and inform them about the nutrients provided by the types of organic waste being used. For example, cultivators are taught to add bones and eggshells to the soil to give their plants calcium. By understanding how nutrients affect plant growth, cultivators easily understand how food affects their own development and health. As a young female cultivator explained, the nutrients with which she fed her plants built her body up when she ate them: “[You give] the plants calcium that is going to come back to you.” Although NGOs only teach this so that cultivators can understand how to raise healthy plants, and to understand how fresh produce contributes to a balanced diet,

cultivators interpret this experience at a deeper level, interpreting this process metaphorically. For example, an elderly female cultivator referred to the “junk food” she had removed from her diet and “the right food” with which she had replaced it. Thus, a key finding of this study, which was somewhat unexpected, is how involvement in UA actually transforms food preferences, as expressed by one of the young male cultivators who stated, “I have become conscious of what I eat, what I put in my mouth and what I buy”.

What this study shows is that the food security benefits of UA extend beyond satisfying temporary food needs. This finding is not reflected in the broader literature, which tends to focus on quantifiable food security benefits, rather than on attitudes and perceptions of food. One can attribute this finding mainly to the emphasis placed on this aspect by Cape Town NGOs in their training, which is not common elsewhere. In Cape Town, the organic methods employed place great emphasis on understanding natural processes and seeing the soil as a living system. The effort cultivators put into building soil fertility, and the understanding they are given as to why this is done, play a key role in internalising lessons about nutrition and the value of healthy eating. This is valuable because food preferences are entrenched by habit and culture, and changing diets therefore is not only about access to healthy food.

As such, being involved in UA assists society in addressing some of the root causes of the unhealthy diets that contribute to endemic problems such as obesity and high blood pressure in these areas. What this demonstrates is that UA contributes to human capital not only by increasing the physical benefits through nutrition, but providing social benefit in terms of empowering the individuals through knowledge of how to live a healthy lifestyle, even under such impoverished living conditions. Thus, although the quantitative food security benefits of UA are present for a minority of cultivators who operate on a relatively larger scale, the transformation of attitudes towards food benefits all.

7.3.2 *Income*

In addition to food access, the potential for UA to generate an income is a focus in much of the literature. UA is said to provide a source of income for otherwise economically marginalised people. This is achieved through deliberate commercial cultivation, in which cultivators strategically cultivate crops for the market, as well as through opportunistic sales if smaller-scale cultivators produce a surplus. In terms of viability, what the broader literature indicates is that

those operations that are more profitable are typically run by those who are already relatively well off, because they can afford the investment in higher-value products (Frayne *et al.*, 2014:186). The poorer cultivators sell produce that is easier and cheaper to produce, and typically operate on a smaller scale. Even though these profits may be small, they provide some income with which to buy cheap staple foods or other essential items (Maxwell, 1995:1677).

Different commercial motives for cultivation are described in the literature. Nell *et al.* (2000:818) describe full-time commercial production by low-income residents who were helped by local government and a university in Bloemfontein, South Africa. For these cultivators, UA provided their sole income, as they worked full time and sold their produce through formal market channels. For other cultivators, incomes are derived from a variety of sources, and UA is not used deliberately as an income strategy. Such cultivators are described by Onyango (2010:163) in Johannesburg, where cultivators use UA to increase the variety of food in their diet. For these, produce is only sold when there is a surplus, but having a little extra money is valued.

The findings reveal that these motives are also present in Cape Town, and although the incomes derived from UA are very different from full-time cultivation and opportunistic sales, the commercial aspect of UA nevertheless is valuable for all cultivators who sell. Full-time commercial cultivation is only practised by a minority of cultivators who participate in formal groups. These groups sell to the local community and the key to their success is the formal market channel that is provided by Harvest of Hope. Harvest of Hope is a community-supported agricultural scheme to which cultivators are contracted. Every week their produce is collected and transported to outlets in upper-income areas where the produce is sold directly to the public. Because the “middle man” in this case is an NGO, the profits go directly to the cultivators after running costs are absorbed. As a result, profit margins are kept as high as possible, making small-scale production economically viable. Cultivators are immensely appreciative of Harvest of Hope, explaining that they would have neither the transport nor the business acumen to operate on an equivalent commercial scale. Some cultivators who attempted to form their own linkages with grocery stores found it very difficult to broker an agreeable contract, saying: “We try to arrange it but they chop and change [...]. It is a difficult situation”. The profits earned through Harvest of Hope vary dramatically, but all cultivators involved have an acceptable livelihood, especially since they derive an extra income from selling to the community and save much money by taking all the produce they can eat home with them. Thus, making a living through UA

is possible, as demonstrated by the formal groups selling through Harvest of Hope. Here it is doable because of the physical capital for set-up, credit for inputs and a market for sales, as well as the intensive training and monitoring provided by the NGO Abalimi.

While larger-scale cultivators use UA as a primary income strategy, smaller-scale cultivators use UA to increase the variety of livelihood strategies and incomes through opportunistic sales. Whereas formal groups tend to produce a variety of crops for upper-income markets, home cultivators find it safer to plant crops that are easy to grow and that produce high yields. One key crop in terms of produce and consumption is spinach, as it grows all year round and the leaves can be harvested indefinitely. Spinach is grown by almost every home cultivator, and is used for preparing meals as well as for sale when a little extra cash is needed. Cultivators who sell a little surplus use the money to buy a loaf of bread and maize meal, or to top up their prepaid electricity or buy paraffin so that they can cook a meal. Other small-scale cultivators use UA as an investment strategy. Even if a large surplus is sold infrequently, the cash injection obtained provides a strategic investment in bulk purchases of non-perishable food, in tools or in appliances. Smaller-scale cultivators, although not using UA as a primary income source, nevertheless find opportunistic sales vital for increasing the resilience of their sustainable livelihood strategy.

Relating these findings to research on UA in Africa, one sees that, typically (as in the case of Cape Town), the income potential of UA at the home cultivation scale is negligible (Frayne *et al.*, 2014:178). However, as in the present study, it has been found that even where this activity does not yield high returns, the little income cultivators make remains beneficial (Maxwell, 1995:1677).

Full-scale commercial production would also not feature in broad quantitative studies because the representation of formal groups is very low in terms of the general population. Nevertheless, formal groups provide an example of how cultivators may earn a living full-time through UA. Thus, formal groups provide a rare yet successful model for economically viable commercial production. The success of these groups is attributable to NGO support in connecting them with asset bases outside of their community, such as higher-income markets. Nevertheless, these formal groups also utilise community networks to sell their produce. This not only increases stocks of financial capital for such cultivators and their families, but it is an important aspect of

community development, because legal and resilient entrepreneurship is vital to increasing the flow of financial capital in poor communities.

What this shows is that the value of UA to cultivators, in terms of its income potential, is not limited to full-time commercial production. UA has the potential to provide full-time jobs, as illustrated through the formal groups contracted to Harvest of Hope, but even where this is not the case and cultivators sell opportunistically, they nevertheless find that being involved in producing their own food provides not only an additional source of food and income, but also purpose in their lives.

7.3.3 Bartering

The role of UA in the household economy is not limited to cash sales. UA also provides commodities with which to barter, as reflected in a case study in Kenya, where cultivators exchanged services, cooked food and shared fresh produce with their neighbours (Gallaher *et al.*, 2013:395). As such, UA is a form of financial stocks, according to the sustainable livelihoods framework that defines stocks as commodities that may be exchanged. As a form of liquid asset, UA crops increase the financial capital of cultivators, even if no cash changes hands.

Cultivators in the present study habitually exchanged goods with their neighbours. Typical commodities that were exchanged in return for vegetables include bread, tea bags, sugar and money for electricity. Even when nothing was received in return, the vegetables took the guise of a gift because the product being given was not immediately redeemed. As such, a debt is created through the exchange, to be repaid later when the giver is in need. For example, a cultivator stated: “I don’t sell it, I give it for free. In exchange they give me plenty”. While the products that neighbours normally exchange need to be bought, UA produce is available to cultivators without having to spend money. Therefore, by exchanging such products for bread or teabags, a cultivator can reduce the outflow of cash from her own budget. From this it is clear that UA increases the financial capital of cultivators in more ways than simply selling produce.

Even if cultivators do not sell their produce, bartering increases their access to commodities that would have had to be bought. Furthermore, bartering notably reduces transactions costs, namely the time and effort involved in selling produce and the time, effort and cost involved in buying commodities at a commercial outlet. This is a key component of sustainable livelihoods because

trading stocks represents a form of financial capital, while also eliminating the need to spend cash. This practice originates entirely from within the community and reflects a truly local economic asset base. Considering that bartering is common practice in their communities, it may be assumed that this is generalisable to all cultivators.

7.3.4 *Savings*

Another benefit of UA is that it increases savings on the household food budget (Maxwell, 1995:1677), but to do this, input costs have to be kept as low as possible. Throughout Africa, cultivators reduce the cost of production by eliminating the need for purchasing resources through mainstream commercial channels. For example, cultivators use freely available derelict land, they recycle organic wastes into compost, and rely on natural bodies of water (Bryld, 2003:82; Asomani-Boateng, 2002:601; Mougeot, 1994a:17; Streiffeler, 1987). In such ways, the greatest costs of production are eliminated. In Cape Town, NGOs approach cultivation in much the same way, even training cultivators how to use the freely available natural capitals around them to reduce the cost of cultivation. Key cost-reduction strategies include using free land, producing one's own compost, using cheap water and encouraging the resilience of natural systems such as pest control.

Cultivators in Cape Town gain access to free land by a number of means. Home cultivators simply cultivate the land they already own, whereas production on a larger scale typically requires negotiating an agreement with a landowner. This is vital for tenure security. Land used for UA by cultivators in this study was typically owned by organisations such as churches, clinics and community centres, as well as by the local municipality or the parastatal electricity provider, Eskom. The findings show that negotiating access to land from organisations is the easiest, as the landowner is identifiable and making contact with the relevant authorities is straightforward. In many such cases, at least one of the cultivators or a member of the NGO already had a relationship with the landowner and this is how access was granted. In such cases an agreement is entered into between the parties, typically involving that the formal group pay a few hundred Rand per month to cover electricity fees for the borehole pump or municipal water bills. In comparison, land access through local government is more complicated.

Gaining access to municipal land requires a lengthy process of applying through the Directorate of Human and Economic Development, which then brokers an agreement with the relevant municipal department that owns the land. Even government describes this process as “very lengthy” and “cumbersome”, and cultivators who have attempted it soon gave up in frustration. NGOs such as Abalimi are more successful in this regard, having the human capital and other resources needed for undertaking such a process. While a number of formal groups have been granted access to use power-line servitude land by Eskom, the use of this land was initiated by a group illegally cultivating it. In this case they were not evicted, but granted permission to continue as the land beneath the power-lines was unserviceable for any other purposes. What this demonstrates is that there are a number of ways to access land for UA in Cape Town without paying full commercial rates, but cultivators need assistance and NGOs typically facilitate this.

Having obtained land, building up the quality of the soil with organic inputs is imperative to rendering it arable. NGOs teach cultivators to make their own compost, but this is often not viable as cultivators do not generate enough organic waste, nor do they have the transport to collect it. The NGOs have the transport as well as the human capital to establish relationships with those who generate large volumes of organic waste, and so cultivators tend to buy this compost from the NGOs. It is possible to arrange that the City of Cape Town deliver free compost to formal groups, but very few groups knew about this. Some also complained that the application process was too lengthy, or that the compost was of very poor quality. Access to compost is thus also mediated primarily by NGOs and is one UA expense that most cultivators find unavoidable.

In addition to compost, access to water is vital. There are two primary sources of natural water on the Cape Flats, namely winter rainfall and the Cape Flats aquifer. The latter is not freely accessible, as a considerable investment in infrastructure is required before it may be utilised. For this reason, smaller-scale cultivators such as home cultivators and institutional cultivators are not sponsored to gain access to aquifer water, but larger-scale producers, primarily formal groups and some garden centres, have been donated borehole systems. The home cultivators use municipal water to irrigate their plots, but remain below the threshold for municipal rates and therefore are not charged for the water. Grey water was not seen to be used for irrigation, as the cultivators believed that it would be harmful to their crops. Garden centres and institutional plots that do not have borehole systems use either large-capacity rainwater tanks or municipal water from public

taps. Although installing a borehole system or rain tanks requires a large financial investment, this is often sponsored by the NGO. Thus, for all cultivators, irrigation costs are minimal or non-existent.

Natural services contribute considerably to the economic viability of cultivation in Cape Town. Key natural services are the decomposition of organic matter by microorganisms and pest control by natural predators. All of the NGOs in the present study train cultivators of all types in how to foster ecosystem balance and how to make compost. Using chemical inputs in the cultivation process is strongly rejected, even at a commercial scale.

The findings reveal that cultivators notably reduce or eliminate expenses in a number of ways. This reflects some aspects of the broader literature, where studies have found that cultivators in Africa use derelict land, natural water and organic waste (Asomani-Boateng, 2002:601). By doing so, the cost of cultivation is kept to a minimum, which to some extent counteracts Webb and Kasumba's (2009:34) critique that UA costs more than the value of its product in terms of financial expenditure. However, cultivators explained that the processes by which financial outlays are reduced divert costs to their time. For example, obtaining access to municipal land involves huge outlays of time, as numerous trips are made to a number of municipal offices and much time is spent waiting for an appointment. Gathering waste materials for building infrastructure or creating compost also requires significant portions of time. Some time expenses, such as tending the plot, may arguably be considered recreational because doing so promotes physical and mental wellbeing, as cultivators explain, but the cost of negotiating access to land and resources cannot be considered recreational and thus UA in Cape Town would benefit from such activities being streamlined. Recommendations in this regard will be made in the conclusion.

7.3.5 *The ecology*

Cultivators throughout Africa tend to use cultivation methods that are beneficial to the natural environment. In some cases, this is a deliberate effort motivated by ethics, but much of the time it is simply because chemical inputs are costly, whereas natural capital is freely available from the surrounding environment (Asomani-Boateng, 2002:601). Some of the most important natural capitals used for UA include land and forage, common goods such as natural water bodies or

rain, and natural functions such as nutrient cycling and pest predation (Farrington *et al.*, 2002:12; DFID, 1999; Chambers, 1995:192). It is in the interests of cultivators to steward these resources carefully, as natural systems contribute to the sustainability and economic viability of their livelihoods (Morse *et al.*, 2009:7). Although such motives are purely economic, working with natural systems and natural goods contributes to increasing ecosystem resilience, improving soil quality and beautifying an area (Bryld, 2003:81; Lynch *et al.*, 2001:169; Freeman, 1993:15; 1991:114).

Ecologically friendly cultivation methods are prevalent in Cape Town, but these originate from an ethical motive relating to care for the environment, not merely as a by-product of low-cost cultivation. Support for ecologically beneficial cultivation originates from a number of sources. For example, the City of Cape Town specifies that UA must not “impact harmfully” on the natural environment (City of Cape Town, 2007:3). This is further supported by a growing market in metropolitan Cape Town for organic fresh produce (Rogerson, 2010:377). The central role players in promoting ecologically friendly cultivation in Cape Town are the NGOs that promote UA, as they take a strong stance against chemical inputs, which they believe harm the ecology. The findings confirm observations in the literature, namely that the organic cultivation methods these NGOs promote have ecological benefits, such as improving soil quality, reducing wind-blown sand through mulching, beautifying derelict land and creating habitats that support ecosystem diversity (Jacobs, 2009:61; Kirkland, 2008:89; Ward, 2007:47; Sombalo, 2003:32; Fermont *et al.*, 1998:37&40).

All of the NGOs in the present study focus primarily on maintaining soil health through a large initial investment of organic matter into the soil and subsequent surface applications of compost. Nutrient cycling breaks down organic matter to the point that the nutrients may be absorbed by plants. Nutrient cycling has a key role to play in UA on the Cape Flats because it sustains the tilth of the soil. Without this service, the sand on the Cape Flats would be non-arable.

In addition to nutrient cycling, pest control is a vital natural service that is integral to a balanced ecosystem. Thus, a basic understanding of the principles of an ecosystem is taught by all of the NGOs and the use of pesticides is prohibited. The NGOs teach cultivators to attract insectivorous birds and predatory insects and reptiles to their gardens. Such training is vital, as prior to the training the cultivators lacked an understanding of the animals in their areas and their functions.

This is illustrated by a cultivator who was concerned to see bees visiting his crops and wondered whether he should kill them. The foundation of such an ecosystem is the indigenous vegetation that cultivators are provided with to encourage bird and insect life.

These indigenous shrubs conserve soil moisture by breaking the prevailing wind. For UA to be viable, it is important to use water sparingly and reduce evaporation from the soil. Cultivators are trained in water-conservative irrigation methods, such as hand-watering primarily and using drip-irrigation for larger plots. A core aspect of training is mulching, which is important because the sandy soil does not retain water. Cultivators are taught to mulch using straw, grass-clippings, newspaper or other suitable organic matter that is freely available. This also illustrates how cultivators are taught to repurpose the litter they find in their area.

Another important aspect of training is the use of litter as a resource. For example, cultivators are taught to turn the back cover of televisions, milk crates, tyres and other larger containers into plant containers, while tins and smaller plastic tubs are perforated and used as watering cans. Cultivators are also taught to make bird deterrents from reflective foil crisp packets and compact disks. The core principle of this aspect of training is to inspire cultivators to think creatively about the challenges they may face and to use the resources they find around them to overcome these. They often came up with ingenious solutions. For example, a cultivation group had bordered several dozen vegetable beds with hundreds of plastic bottles, all of which were removed from the streets and public places in their area.

The concern cultivators feel for the natural environment even extends beyond their immediate areas. For example, a cultivator explained how, prior to training, she had no idea how negatively pollution was affecting the world ecology. She stated that she received a “wake-up call” when she began to understand how human actions are polluting the world. Those involved in UA thus become more conscious of their impact on local and global systems, and that the training NGOs give is central to this.

The findings relating to ecological wellbeing are present in the broader literature, but no research that I came across exposed this in as much depth. In general, the ecological benefits of UA are described, such as improving soil health, beautification and waste recycling, but these are viewed primarily a by-product of cultivation (Bryld, 2003:81; Lynch *et al.*, 2001:169; Freeman, 1993:15;

1991:114). This study has shown not only the holistic impact UA has on agriculturally sterile regions in the Cape Flats, but also that, through training and practise, a sense of ecological ethics is imbued in cultivators. Attitude changes contribute to efforts to refrain from littering, collect litter, raise consumer awareness and the transform from a consumerist culture to a culture of environmental care. Thus, the deep transformation of attitudes towards the ecology found throughout the cultivator types in this study possibly is unique to Cape Town because of the specialised training the cultivators receive. UA is transforming mind-sets from dependency and introspection to creativity, independence and care for one's environment. This is a major physical benefit, but it is not quantifiable and therefore is not picked up by research focusing only on UA's economic value and not on the social benefits that accrue.

7.4 Social benefits of UA in Cape Town

The social benefits attributed to UA are reflected in a number of case studies, particularly those on UA in Cape Town. While NGOs play a key role in developing human capital through training, the ABCD approach adopted by NGOs stimulates the development of existing asset bases within communities. The existing asset bases relating to human and social capital are fundamental to community development, and mobilising these is potentially the most valuable contribution that UA is making on the Cape Flats.

7.4.1 Empowerment

The findings indicate some unique ways that UA contributes to individual empowerment in Cape Town. These centre primarily on human capital advances and have received scant attention in the broad literature. Possible explanations for the lack of attention given to this aspect relates to the active presence of NGOs in Cape Town for training and support, which is not a strong finding in most studies. UA contributes notably to increases in human capital by providing education opportunities. This is an important benefit because human capital is directly related to sustainable livelihood strategies, being a determinant of the potential to invest in other capitals (Department for International Development, 1999). In the broader literature, UA is made possible through existing knowledge of agriculture gained from a rural upbringing, but it contributes to increasing human capital through experience over time and as cultivators share knowledge (Foeken & Owuor, 2008:1981). Knowledge may be transferred between adult cultivators and children, and between urban cultivators and their rural families (Newsletter 38, 2011; Jacobs, 2009:79; Dunn,

2008). Although formal training is almost non-existent in UA throughout Africa, it is prevalent in Cape Town because of the presence of NGOs. Thus, many cases demonstrate how UA makes notable contributions to human capital, but this contribution is enhanced through the training provided by NGOs in Cape Town.

Many cultivators already have some form of experience in agriculture, but this is not a determinant of their success, as the climate in Cape Town differs vastly from the area most cultivators come from, namely the Eastern Cape. This experience does not provide knowledge for cultivation, but fosters a desire to learn how to cultivate in Cape Town. All of the NGOs in this study provide such training, which is an essential prerequisite to viable cultivation on the Cape Flats. Being a member of the NGO also opens up further opportunities for advanced training, such as computer literacy training, and training in horticulture and entrepreneurship. For example, a female cultivator who progressed from working at an NGO garden centre to managing it aspired to manage the basic horticulture training courses as well: “I can see myself taking over when I have more experience on the computer.” Thus, horticultural training not only helps cultivators to be more successful at UA, but also has the potential to advance their careers.

In addition to formal training courses, cultivators learn informally by interacting with one another, sharing knowledge gained from experience, and doing their own research. A young male cultivator who conducted his own research on UA said that he “wants to learn more so that I can improve my mind and share what I have with other people”. This statement indicates that, in addition to advancing knowledge through education, UA develops skills and aids in people-centred community development, as community members feel empowered to use what they have gained to benefit others around them. This even spills over to children in terms of the effect of littering on the environment. For example, a local preschool teacher stated that children were telling their parents not to litter because “they don’t like [having] plastic bags around”. These examples show that UA-facilitated learning not only contributes to an increase in knowledge, but also to an increase in personal development.

The role UA plays in personal development is notable. Being involved in a meaningful activity improves self-worth, as reflected in such statements as “A giant in me [...] arose”, made by a young male cultivator. This self-worth is more than the sense of achievement from harvesting one’s first crops or making one’s first sale; it is the result of reconnecting to humanity, no longer

as a beneficiary, but as a contributor. It also inspires a desire to learn, to improve one's knowledge and skills and to contribute to the wellbeing of the broader community.

In this respect, what is absent in the broader literature on UA is its potential for developing human capital. References to human capital in the broader literature on UA tend to refer to knowledge and learning, and although this is an important aspect of a sustainable livelihood strategy (Department for International Development, 1999), much of the value of such learning is overlooked. The findings reveal that NGOs invest in human capital through training, but that this begins a process of personal growth and development that goes beyond 'head knowledge'. The success cultivators experience in UA contributes to enthusiasm and self-worth, which in turn encourage self-learning and wanting to train others. From an ABCD perspective, this clearly indicates that key asset bases such as passion and willingness to learn are imbedded in human capital (Kretzmann & McKnight, 2005:1). What NGOs do is use the existing assets within communities to empower people to increase their self-worth and to grow in terms of knowledge and experience. They accomplish this primarily through providing training, which is developed specifically for the socio-economic conditions on the Cape Flats, particularly in terms of using what is freely available and easily accessible in their surroundings. Doing so is vital to community development, as individual asset bases are the fundamental components of community development (Kretzmann & McKnight, 1993:10).

The findings on UA's contribution to empowerment highlight key aspects of UA that prior literature has not placed great emphasis on. The broader literature indicates that cultivators in other African countries use their existing rural agriculture knowledge to farm, supplementing their food and income needs. The present study indicates that such is impossible in Cape Town, hence NGOs train cultivators for Cape Town's unique conditions. Coupled with this contribution to basic agriculture training is the networking opportunities that these NGOs provide, being network hubs, as well as the sense of achievement having gained a new set of skills inspires. As indicated by the sustainable livelihoods framework, human capital is both education as well as willingness to learn and participate. Hence, UA in Cape Town builds human capital at all levels. The case in Cape Town therefore presents some convincing arguments in favour of UA for community development that goes beyond simple economic or food security issues. Another unique finding relates to a sense of life satisfaction in cultivators.

7.4.2 *Life satisfaction*

“Life satisfaction”, refers to a sense of contentment (Brehm & Rahn, 1997:1007). It may be felt in a number of ways. Some key contributors to life satisfaction are increased interaction, dependence and trust between community members, and it is expressed as a sense of peace and wellbeing. While this topic is poorly represented in broader African case studies, numerous scholars have identified this as a social benefit of UA in Cape Town. Dunn (2010:122), Kirkland (2008:90) and Reuther and Dewar (2005:119), for example, found that UA contributes to individual wellbeing through creating a sense of peace and providing an enjoyable pass-time.

This is reflected in the findings, confirming that UA enriches the lives of people in many respects. For some, working on their plot or garden was peaceful and relaxing and literally provided a safe space, especially in the gang-ridden areas of the Cape Flats. They commented that it took their mind off their immediate problems, and provided a place to unwind and reflect. As one cultivator said: “These little veggies, they are not talking back to you, they are there to listen.” Cultivators took the time working on their plot to process their thoughts and to come up with solutions to their problems. Being involved in UA provides many with a place to get away from their stressful environments. A middle-aged Coloured cultivator said that being involved in UA helped him to see beauty in his surroundings, to appreciate the “simple things, things that we just pass [by]”. This indicates that UA increases quality of life not only in terms of beautifying surroundings, but by changing perceptions of one’s surroundings, namely focusing on what is ‘good’ in life, even if the physical changes are limited. This is a contribution to human capital that is not highlighted in broader literature on UA, although it appears in other studies on UA in Cape Town. The present study contributes to previous research by indicating that life satisfaction opens up opportunities for other livelihood capitals to be mobilised. In this case, creating a sense of peace and time to reflect increases cultivator’s problem-solving abilities, and UA provides increased opportunities for positive interactions such as sharing goods or visiting plots. As indicated by Mathie and Cunningham (2003:2), a sense of wellbeing and the ability to participate in improving one’s community makes a powerful contribution towards community development by reversing pervasive mindset of dependency and hopelessness. It is however unhelpful to present UA’s contribution to life satisfaction as a panacea to the experience of poverty. True, the flourishing plot provides rare and brief respite, but violence and crime could undermine the

positive influences of social capital. Thus, returning home, cultivators still face the chaos and hardship of their living environment. Therefore, although the social benefits of UA deserve more attention than they have hitherto received in the literature, praise for UA must be tempered with an understanding of the reality cultivators face.

7.4.3 *Sharing*

UA enriches people's lives by increasing positive interactions between community members. These interactions engender a sense of trust and generosity between community members, and ultimately contribute to thriving communities (Putnam, 1993:171). Such is the case in Kenya, where Gallaher *et al.* (2013:397) found that the giving and trading of UA products between cultivators and their neighbours strengthened community bonds and, by so doing, increased the resilience of cultivators' livelihood strategies. Findings from research in Cape Town show the same, but also how this is used to assist those in need by donating produce to people who would never be able to reciprocate, such as the ill and the elderly (Dunn, 2010:159; Jacobs & Xaba, 2008:195; Kirkland, 2008:98). In addition to produce, cultivators share tools with each other, and even lend money to needy parents so that they may buy food for their children (Jacobs, 2009:71).

The giving of produce to those in the surrounding community is prevalent among all the cultivators in this study. Regardless of the scale of cultivation, cultivators frequently gave a portion of their produce away. Some gave produce with the intention of facilitating a reciprocal bond as a form of insurance, as discussed under UA's economic benefits. For many cultivators, however, giving was simply an act of generosity. Such cultivators stated that they were well aware of the needy in their area and felt concerned about their wellbeing. As such, they valued the opportunity to assist such people with donations of produce. Cultivators operating on a smaller scale, such as home cultivators, gave to the ill, elderly, disabled or unemployed single mothers in their area. The larger-scale cultivators supplied institutions such as schools, clinics and crèches in their immediate vicinity.

The sharing that UA facilitates is an important contributor to sustainable livelihoods because, in an environment of trust and reciprocity, other community asset bases become available (Mathie & Cunningham, 2002). This is illustrated by Gallaher *et al.* (2013:402), who describe the sharing of food, time or labour between cultivators and their neighbours in Kenya. The present study

confirms these findings, and supports the findings of other studies on UA in Cape Town, namely that UA facilitates sharing both between cultivators as well as in broader circles. The positive implications of this aspect of UA is found in its contribution to social capital. Putnam (1993:167) states that civic engagement is a core factor in community development because it creates a sense of community, encouraging people to be generous with and trusting towards each other. Although Jacobs (2009:92) recorded a group becoming less generous with their increased wealth after selling produce, this appears to be an isolated exception, because the findings indicate that cultivators in Cape Town are inclined towards generosity, as a system of gift exchange already exists with other commodities such as tea bags and bread, and the more productive groups increased their giving, for example to local schools and clinics. It is therefore worth noting that while the generosity of UA groups is not a given, it would appear that cultivators do tend to mobilise the community asset base of networks of reciprocity and generosity to channel their surplus produce to those who need it. The present study shows therefore that UA facilitates community development by encouraging community members to mobilise existing asset bases (namely social networks and norms of gift exchange) to increase community food security, especially for vulnerable community members such as single-parent households.

7.4.4 *Community cohesion*

Fostering trust and cohesion is extremely important on the Cape Flats, because cultivators live in a context where shocks relating to opportunism, distrust and violence are commonplace, in addition to the stress of economic poverty. In such areas, risk and vulnerability are managed primarily through social networks in which trust and reciprocity are found (Woolcock & Narayan, 2000:242). Many stated that UA provides them with opportunities to meet and converse with others. The cultivators who worked in groups mentioned how they had built up strong friendships working together on the plot. Those involved in home gardens said the same in terms of how it had strengthened family bonds as they work together and share meals made from their own produce. UA not only strengthens bonds between those who know each other, but encourages new people to meet, as it provides an immediate topic of conversation as passers-by inquire about the garden or ask to purchase something. UA even strengthens bonds between community members who are not cultivators, as the shade and peaceful atmosphere around a community garden provides the ideal spot to spend time chatting. Thus, UA plays a facilitating

role in positive social interactions in a broad range of social contexts, from relationships between cultivators, bonds within families and networks throughout the community.

By expanding networks and increasing positive interactions, UA is increasing social capital on the Cape Flats. This is vital for sustainable livelihoods and community development. Green and Haines (2002:101), for example, argue that social capital is a prerequisite for access to any of the other livelihood capitals. For example, Jacobs (2009:90) finds that higher social capital in cultivation groups correlates to increased exchanges or donations of cash, both within the group and between the group and surrounding community members. On a broader scale, generating social capital has a community-wide impact, as “trusting communities thrive” (Putnam, 1993:171). There are however some negative implications of this cohesion. For example, the cohesive force between group members may be so strong that the involvement of other community members is reduced. This was observed by Jacobs (2009:92) in one of the cultivation groups on the Cape Flats. The present study found however that the exclusivity of group membership was necessary for fostering trust within the group, as labour and wealth had to be distributed equitably. However, this did not reduce the positive interactions between these groups and their community. On the contrary, these groups were often the most generous. Thus, by building social capital, UA has a vital role to play in holistic community development on the Cape Flats. In Cape Town, bonding capital is most prevalent in women-only groups, which suggests that gender is a key issue in this context.

7.4.5 *Gender issues*

In much of Africa it appears that UA provides some opportunities for women, but that many difficulties are faced relating to patriarchal contexts. For example, the literature shows that women are in the majority among cultivators, as UA is compatible with rural and patriarchal gender views on women as food providers for their households (Redwood, 2009:1). In such contexts, some women find in UA the opportunity to earn an income (Freeman, 1993:18), but it would appear that, for the majority of female cultivators throughout Africa, the viability of their cultivation is lower than that of their male counterparts because women face far more challenges (Flynn, 2001:666; Sawio, 1994:25).

The findings reveal that female cultivators use UA primarily to provide food for the family. Many who were practising UA bore the responsibility for providing for their family, as confirmed by a cultivator from Nkanini, who stated: “In most cases, it is mothers that are responsible for households.” This appeared particularly important to the single mothers who used UA to increase their livelihood strategies, as reiterated by a single mother in Vrygrond, who stated that she experienced “a lot of stress” raising a family alone but that UA provided a way to ensure that “there can be food at home”, especially as she did not have employment. In this way, UA helps women to fulfil gender roles that are deeply entrenched. However, in terms of day-to-day interactions, UA provides opportunities to challenge gender hierarchies.

Many of the formal groups interviewed for this study were mixed in terms of gender. What was remarkable is that not one of these was led by men. In all cases where there was one leader it was a woman, and where leadership consisted of a team, women were in the majority. In mixed leadership teams it was clear that patriarchal authority would not be tolerated. For example, the female team members of one such team stated that they had told the elderly male co-leader “that he can be the boss at home, but in the garden there is no man or woman”. This sentiment was repeated in a number of formal groups. Thus, even though patriarchal structures are entrenched in the broader society, UA creates a microcosm of gender neutrality, if not superiority, as this is a space where women are in the majority, have the knowledge and are firmly entrenched.

An important contributor to this gender neutrality is that most of the NGOs were run by women. While Inity only had one member of staff, a young man, all of the other NGOs were led predominantly by women from senior management down. Thus, male cultivators typically were under the authority of a number of women operating at different levels, from director to field officer. Although some male cultivators appeared to accept the leadership of women reluctantly, many were content, saying, “[w]omen must take the lead”, as “they were disadvantaged by men” in the past. Female trainers, even the youngest at nineteen years, stated that they had no trouble with gender issues during training. Thus, while UA allows women to fulfil gendered roles such as that of food provision, women also are empowered through UA in Cape Town by being in the majority in leadership, by having equal opportunities for earning an income through UA, by having equal rights in terms of tenure security, and by refusing to tolerate patriarchal attitudes in formal groups.

These findings concur with those in the broader literature, namely that women are in the majority and, due to patriarchal cultures, predominantly are growing food for household consumption (Redwood, 2009:1). In Cape Town it appears as if NGOs have purposely sought to empower women. It is indeed a weakness of the sustainable livelihoods framework that gender is not explicit in livelihood capitals. Neither is gender an aspect of ABCD's community asset bases, but taking a feminist perspective indicates that UA facilitates strategic gender needs by challenging patriarchal systems, both through the leadership structure of the NGOs as well as in formal groups. This is very important for community development, because a macro-focus on development is blind to power structures within the community. Through a focus on women, NGOs ensure that the benefits of UA are not captured by men but accrue to female cultivators, who are primarily responsible for household wellbeing. This provides an indication of how important role players such as NGOs are for promoting sustainable and viable UA among low-income cultivators in Cape Town.

7.5 Conclusion

This study has shown how NGOs in Cape Town facilitate UA at various levels and the various benefits that accrue to cultivators as a result. Under the present status quo, the supportive institutional context in Cape Town contributes to the resilience of the UA sector, suggesting that there is huge potential for it to expand. What is evident from this study is that there are many social and physical benefits associated with UA that cannot be measured purely in economic terms. These are highlighted by applying a sustainable livelihoods framework.

Food security is the foremost topic in the literature on UA in Africa. Nevertheless, existing research on UA in Cape Town argues that UA performs poorly in this regard. However, by applying the sustainable livelihoods framework, this study has found that UA contributes considerably to food security through developing human capital, for example by educating individuals about healthy eating even in cases where the physical contribution to food intake is negligible. A key finding is that food security benefits do not relate merely to quantity, but also to the quality it introduces to the livelihoods of cultivators and their families. UA contributes to food security in the traditional sense of providing adequate healthy food at all times for the minority of cultivators who are operating on a relatively large scale in formal groups. Due to the scale of production, they are able to take food home daily. UA also contributes to food access for home cultivators and although such cultivation is at a small scale, this model indicates that UA is

able to provide food for low-income households on the Cape Flats. What is more important is the value-added aspect of UA. At a deeper level, UA contributes to an understanding of healthy eating. This aspect is hardly ever mentioned in the literature, and yet it is one of UA's most vital aspects. Diets on the Cape Flats tend to be high in fat and carbohydrates, and as such contribute to high levels of malnutrition and obesity, as well as lifestyle diseases such as high blood pressure and diabetes. Thus, UA contributes to healthy diets by developing human capital, both through healthy eating as well as through understanding what healthy eating is and why it is important.

In addition to improving how people eat, UA contributes to human capital by improving how they think. The key benefits in this regard relate to learning, sharing and feeling enriched. All the cultivators received formal education in basic horticulture, and many found the experience to be empowering. This inspired them to further their training, either by doing advanced courses, or through self-study and interacting with other cultivators. Furthermore, UA provides peaceful places to be alone, which are rare in the dense, stressful conditions of the Cape Flats. Cultivators use this space to relax and reflect, which they find vital to overcoming the daily challenges of life. Thus, the sustainable livelihood framework indicates that UA is enriching for both physical and mental development and as such makes a key contribution to human capital.

Another key area of debate in UA literature relates to financial capital, or the economic viability of UA. All cultivators in this study mentioned that UA provided some kind of economic benefit that, however small, was significant from a sustainable livelihoods point of view. Such benefits related to contributions to household income, which even small-scale cultivators would otherwise not have had, reducing household expenditure, having additional stocks with which to barter, or simply participating in reciprocating kindness. All of these benefits contribute to the livelihood strategies of those who practise UA in these impoverished communities. Thus, according to cultivators, the contribution UA makes to financial capital is considerable, albeit not necessarily in the popular sense of quantifiable and statistically significant contributions to real income.

The food security and economic benefits of UA are mobilised primarily by mothers as an aid to caring for their families. Such is evident throughout Africa, and Cape Town is no exception. UA's potential for putting women at the centre of community development is a vital aspect of addressing the micro-level structures that tend to rob marginalised groups of the benefits of

community development. The findings indicate that women are at the centre of UA in Cape Town, not only in terms of representation at the cultivator level, but are present throughout the management structures in formal groups and in the NGOs. Furthermore, patriarchy is not tolerated in cultivation groups, even though it is prevalent in the broader community. This is worthy of attention, as addressing issues of access in marginalised groups is vital to holistic community development. A weakness of the sustainable livelihood framework is that it does not address gender directly, but gender may easily be incorporated within social capital which deals with power and inequalities.

The relationship between UA and social capital is extensive. UA is advanced through existing social capital, primarily bridging capital, but UA also augments social capital considerably at all levels – bonding, bridging and linking. For example, sharing is prevalent among all cultivation types, which contributes to bonding capital among families and groups, as well as bridging capital between cultivators and the broader community. This contributes to a sense of belonging, trust and reciprocity. UA also provides opportunities for interaction between community members and power structures, such as government, NGOs and patriarchal leadership. UA provides opportunities for collaborative interactions, such as discussions between cultivators and local government about land access, as well as confrontations, as seen in cases where female cultivators reject patriarchal leadership in their community gardens. These social benefits are vital to creating thriving communities, as social capital is a prerequisite to accessing and advancing other capitals and facilitating positive community interactions.

In addition to the social and physical benefits cultivators derived directly from UA, there also are a number of contributions UA makes to natural and physical capital in Cape Town. Cultivators are taught to steward the natural environment and to repurpose waste in their environment creatively. Such cultivators exhibit strong concern for both their immediate vicinity as well as the ecology in general. The changes in attitude engendered by this, namely self-reliance and a sense of care for one's environment, are fundamental to community development, contributing to people taking responsibility for the wellbeing of nature and the areas around them. This stands in considerable contrast to prevailing attitudes towards the natural environment in these areas. Taking responsibility for the environment is a vital aspect of UA because the natural environment plays a major role in the quality of life of human beings, besides the ethical obligation humanity has towards conserving ecological health in its own right.

By adopting a sustainable livelihoods approach, this study has indicated that the contribution UA makes to community development goes far beyond simple quantitative impact analyses on food security or income. Even in cases where such benefits appear minor in a quantitative sense, for example in terms of food security or income, there are nevertheless considerable qualitative advances, for example through valuing healthy food or establishing informal financial safety nets with neighbours. A sustainable livelihoods approach reveals just how narrow are the debates that gauge the viability of UA on measurable food security or financial benefits. This study reveals that UA's contribution is holistic, impacting human capital, financial capital and social capital as well as physical and natural capitals. Thus, UA contributes considerably to holistic community development, even if such benefits are not quantifiable in a material sense.

This study uses qualitative methodology in the belief that so doing would provide a depth of understanding of UA in Cape Town by means of thick descriptions. Guiding this approach is the sustainable livelihoods framework. In reflection, it would appear that this study achieved the desired depth of understanding, even having negotiated the challenge of providing adequate breadth, to include all UA types as well as all key role players. The sustainable livelihoods frameworks provided a vital contribution in this regard, as its livelihood capitals framed the perspective of the cultivators, while the vulnerability and institutional contexts broadened the focus to include role players and other influences from the broader environment.

The sustainable livelihoods framework is a good way to conceptualise not only whether UA is viable, but how it contributes to livelihood resilience. A shortcoming is that this framework does not appear to provide adequate tools for thinking about how best practice models may be replicated, or even how the existing models may be scaled up. Another problem is that it does not engage critically with issues of power at the micro-level, such as internal politics, favouritism and interpersonal conflict, which present a 'dark side' to the relationship between cultivators and NGOs. This study did not really pick up on this aspect in the interviews with the cultivators, but one should not be blinded to the fact that such tensions must exist.

What this study has shown is how vital the NGOs involved in UA are, not only in developing these capitals, namely economic, financial, natural, human and social, but in how they connect cultivators to these capitals and, in so doing, develop the capitals through training and educating

cultivators. Some NGOs, such as Abalimi, have been teaching, supporting and expanding UA in Cape Town for thirty years. NGOs typically have adopted an asset-based approach to UA, by not only identifying, but also developing, these assets in order to increase the capability of individuals involved in UA (Carney, 2002:4).

The value of ABCD is found in its ability to increase the capability of marginalised people to access the assets in themselves and their community, thereby placing people at the core of community development. In case studies throughout Africa we see many benefits evident, but a closer look reveals that these often accrue to those that are already well off, either financially or as men in patriarchal societies. The tendency for benefits to bypass the marginalised is because marginalised people rarely have the means to mobilise or access the capitals around them, and external assistance is needed to begin this process (Mathie & Cunningham, 2003:9). In many cases, external assistance is provided through a top-down approach, where resources are simply injected into communities without any investment being made in the assets and capabilities of the people themselves. What the NGOs involved in UA in Cape Town have typically done is adopt a bottom-up approach to community development, by developing the capacity of cultivators using the assets within the community and linking them with the necessary capitals to make this viable.

The key assets in this regard are found in human and social capital. In terms of human capital, the cultivators that join have a propensity for agriculture, primarily from good experiences of agriculture in their family heritage. Equally important are the social networks, primarily friends and those that the cultivators are in frequent contact with, from whom they hear about UA training. These capitals alone are not sufficient for viable cultivation, however, which indicates the importance of other organisations and institutions. The NGOs in this study advance human capital through training and provide access to the necessary asset bases within and outside of the community. Furthermore, the monitoring and evaluation provided by NGOs is vital to facilitate the slow process of learning that is fundamental to establishing viable UA. Only after assets are mobilised through inputs, training and long-term support do the benefits described above become apparent. Thus, the NGOs in this study are the key role players in the viability of UA in Cape Town.

The centrality of NGOs to the viability of UA in Cape Town raises questions relating to the key critiques of NGOs. These questions deal with the pressure on NGOs to bend to the wishes of

donors, the tendency to fund-raise for unsustainable short-term projects, and the risk that NGOs create dependency.

Most NGOs, including the ones in this study, are non-profit organisations and are unable to provide the support necessary to develop the capacity of cultivators without ongoing donor funding. All of the NGOs in this study have at least one long-term relationship with a donor. Support from these donors is not sufficient, however, for the budgets of the larger three NGOs, which therefore have to apply for funding on an ongoing basis. If such support should diminish, UA would most likely cease to expand and the benefits found in this study would be severely curtailed. This implies that these initiatives could probably not be maintained unless government plays a more proactive role to fill the void that would be left by the NGOs, and unless alternative sources of income, such as social enterprises, are brought to scale. Thus, although the sector is incredibly valuable to cultivators, its dependence primarily on donor funding renders it somewhat fragile. However, because NGOs have essentially adopted an ABCD approach to UA, capacity has been developed from below to sustain some of the initiatives as the capitals exist, or have been created.

What we therefore see in these examples is the role of outside intervention in mobilising community asset bases and supporting cultivators to access these. This is achieved through training and support given by the NGOs and the garden centres, which are pivotal in this process. However, because the NGOs have taken an ABCD approach, what we do not see is cultivators thinking of themselves as deficient or as victims without any self-determination, as would result from needs-based approaches (Kretzmann & McKnight, 1993:4). By contrast, what we see are individuals with a high degree of self-worth and determination applying their assets effectively to earn a living or produce food. This is the core ethos of ABCD and indicates a healthy community environment. However, in terms of sustainability, which in itself is a highly complex subject, the results of this study lend one to draw the following conclusions.

Firstly, that the spread and development of UA in Cape Town has the potential to expand with the support of NGOs in terms of the current role that they are playing. Second, that the non-profit garden centres seem to be the hub of UA in terms of providing centres for education and training, for purchasing seed, for exchanging or marketing goods, and where social networks are formed.

A weakness in the current model for non-profit garden centres is that cultivators buy their inputs from the garden centres with cash, which presents a notable limitation to participation for the target group, who already have limited access to cash. Research on replacing cash purchases with a bartering system, through which a food and seed bank are established, would do much to advance the sustainability of UA in Cape Town. Implementing such a model would mobilise the hitherto underutilised local asset base of bartering that is currently being practised informally. Cultivators could bring surplus harvest, self-caught seeds or organic waste to trade for compost and seedlings. Establishing such a model would utilise the existing asset bases in these areas and thus would do much to advance the sustainability of UA on the Cape Flats.

Another way that the City of Cape Town could facilitate UA is through establishing composting plants that can be easily accessed by the cultivators directly. Currently, NGOs are using their limited resources to promote composting, while the infrastructure and vehicles necessary to collect and compost organic waste on a large scale already exist in the municipality of the City of Cape Town. All the necessary raw materials, particularly manure, plant and food waste, are abundant in the City but currently are being taken to landfills. By setting up composting plants, the City of Cape Town would both relieve the pressure on municipal landfills and reduce the cost currently being absorbed by the NGOs. Another problem is land access. Streamlining this process within the municipal departments would do much to ensure a growing and vibrant UA sector in Cape Town.

The present study deals in depth with certain socio-demographics such as gender, but the influence of age in the uptake and practice of UA was not a prominent feature. The sample in the present study was biased towards those over 40, with roughly a third of participants being pensioners. While such a sample correlates to the proportions in age among the broader population of cultivators, paying more attention to age and its influence in UA in Cape Town could have elicited more nuanced findings. This is relevant to discussion on the future of UA in Cape Town, as it is the younger generation that faces the greatest need in terms of employment, a lack of self-esteem and life satisfaction in these impoverished communities. A question that remains unanswered by this study, and warrants further research is why the youth are not attracted to partake in UA projects. Are they excluded by the older generation, do they lack certain capitals, or do they simply have no interest in this activity? This warrants investigation as the benefits of UA are clear.

What this study has shown is that NGOs are playing a critical developmental role in this regard, and that this role can be expanded with the necessary political, legal and financial support. Such expansion requires a more holistic approach to food security, looking at it not only through the lens of physical benefits in terms of income and nutrition, but in terms of the broader social and psychological benefits that UA can engender. Clearly, what this study has shown is that UA, practised on a small or large scale, is enriching and empowering and has the ability to build and bridge the community relations that have been destroyed by abject poverty, crime and hopelessness.

This study makes a unique contribution to the field of UA by showing that the current focus taken by scholarship, which looks primarily at quantitative impacts UA has on food security and household finances, fails to appreciate the complex role UA plays in sustainable livelihoods. For example, some of UA's most important benefits, such as empowerment and life satisfaction, do not even feature in such debates. Thus, an attempt has been made to address some gaps in the existing literature. The broader literature on UA in Africa has tended to be descriptive, focusing on ways UA is practised and the limitations that cultivators face. Where benefits are mentioned, these are predominantly oriented around direct contributions to food security and income. There appears to be a dearth of research that has both breadth in terms of the key factors or role players influencing the viability of UA, and depth with respect to the experiences of cultivators, the meaning they make from UA, the assets they use and the contribution UA makes to their livelihoods. Obtaining this balance is vital for understanding UA and its potential for increasing the resilience of livelihood strategies, both in the broader context, but especially in Cape Town, where UA is promoted by NGOs and supported by government. These are key areas for future research on this important subject, which has the potential to improve the livelihoods of many people living in abject poverty in a sustainable way, if they receive the necessary support.

8. REFERENCE LIST

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9. APPENDIX A: SAMPLE OF INTERVIEW SCHEDULE

FIELD NOTES

a. Description of interview location

i. Neighbourhood

ii. Surroundings

iii. Venue

b. Description of group

#	Gender		Age			Notes
	F	M	<40	40-64	≥65	
1	F	M				
2	F	M				
3	F	M				
4	F	M				
5	F	M				
6	F	M				
7	F	M				
8	F	M				

B. INTERVIEW SCHEDULE

1. ECOLOGICAL INTEGRITY, METHODS & PRODUCE

Prompts:

- wildlife in the garden: what is found in the gardens?
- quality of the soil and soil preparation
- Talk about water use: sources, cost...
- Talk about plants that are a favourite to eat, a favourite to sell, medicinal and traditional.

2. ECONOMIC VIABILITY & LAND

Prompts:

- time spent in the garden
- things that need to be bought
- Who owns the land?
- impression of the amount of space they use
- experience of commuting to plot and back

3. MOTIVES & FOOD SECURITY

Prompts:

- Could you tell me about a time you grew so much that you had to sell some?
- Does anyone plant crops that they actually plan to sell later?
- Sometimes people sell vegetables to buy food for their family. Has anyone done this?

4. SOCIAL CAPITAL:BONDING & GENDER

Prompts:

- How this group got to know each other
- Who makes decisions in the group, or how to you make decisions together?
- What do you share with each other in your group?
- disagreements group has and how they resolved them.
- Activities together, outside of the garden?
- challenges overcome together.
- family help with farming

5. SOCIAL CAPITAL:BRIDGING

I would like to know more about how [the NGO] and those around you help with farming.

Prompts

- Where do you meet the sort of people that have helped you with this garden?
- Can you give me an example of when you have given food away that you grew?
- What are some good or bad things neighbors, friends or family say about your garden?
- What experiences have you had with crime in your garden, or on your way to the garden?

6. SOCIAL CAPITAL:LINKING

Prompts

- Help you from the municipality? Please describe how you feel about it.
- Do you get help from other organisations, like churches or groups in the area?
- Do your crops go to anyone outside of your neighbourhood? Please explain.
- Do you get help from people outside of your neighbourhood?
- What is the most important help [your NGO] gives you?
- Is there anything you wish [your NGO] could do differently?

10. APPENDIX B: SAMPLE OF TRANSCRIPT

Participant number 56

Gender: Female

Age: ≥40

Location: Vrygrond

On Sunday it was me and my husband in the house. When he woke up I was not there. I put on my gown and I come outside. The rain was like, there is this peace in the rain. Then I took my little spade and then I took off the grass from my plants, in the rain. It's very, like it was not hard, it's like – and then I did it and whatsoever. It's a nice tiring. It's a part of my exercise actually. I believe that the bending to the tyres is helping my stomach and flexing my body also, and then after some time I go back to the house. If I want peace, I go to plant. If I am stressed, if I am looking for answers, I am going to plant. And then after I do something there, something will come up I will have nice answers in my head. I go to church and tell the ladies there. On Saturdays, in the women's group, most of the women will cry, "My husband is abusing me, my husband is hitting me, my child has got a boyfriend, my boy is smoking", and stuff like that – women's problems. Then I say there is another side of finding the peace of the Holy Spirit talking to me, and then I mention garden. And then their faces are like [doubtful expression], and then I say, "You know what, try it, you're going to see it. It's only you, the children are not there, the husband is at work. It's a quiet time". These little, like, these little veggies, they are not talking back to you, they are there to listen, they listen to you, you plant them in a gentle way, you give them love. I am telling you, you will sense the Holy Spirit with you gardening, and then you come up with peace of letting go, you let go of the problem. You say, "OK God, you are going to solve this". Peace. Then at the end of the day things will go like, you see, each problem will go. I don't know if I am mad, but to me it's a very purifying, worshiping way. You thank the Lord about this beautiful soil, "God you manage this plant, you give food to this plant". I think it is another side of worshiping. I wish people can notice it. I don't know if it's me only. It's another part of worshiping. Those plants they can't take anger. They want gentle, they want peace, they want love, which is, God belongs there in that environment. I can talk the whole day about the garden, I can't stop.