

1 Defining and Theorizing Global Urban Agriculture

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Urban agriculture (UA) is sprouting up in empty spaces of post-industrial landscapes throughout the industrialized world – in vacant lots, road medians, parks – reminiscent of the patchwork of vegetable gardens and livestock enclosures that are part of the urban streetscape in much of the Global South.

(McClintock, 2010, p. 191)

1.1 Introduction

Time has come to rethink and theorize urban agriculture (UA) at a global scale as its importance continues to rise in a world that is becoming ever more urban, and perhaps more importantly, a world in which the differences between the Global North (GN) and the Global South (GS) regarding the practice and motivations for urban agriculture are lessening. The objective of this volume is to bring together research that focuses on productive cultivation in urban spaces from around the world and to place these empirics in a theoretical context to provide cohesion. The motivation for compiling this book and titling it as I have come from years of research on home gardens and urban agriculture in the Global South (e.g. Winkler-Prins, 2002, 2006; Murrieta and Winkler-Prins, 2003; WinklerPrins and de Souza, 2005,

2009, 2010; Gallaher *et al.*, 2013a, b, 2015) while also advising students on the topic (Egger, 2007; Gallaher, 2012; White, 2014). Years ago, while working with my Amazonian collaborator on our home-garden project, she asked what I grew in mine. Although I do indeed cultivate some vegetables and fruits, this launched us into a conversation about how most home gardens in the Global North contain plants primarily for landscaping (aesthetic) purposes. This baffled her, as it seemed a waste of potential utilitarian plants. This exchange provided me with thoughts and insights about the role of plants about us. This, combined with an awareness of the surging movement in urban agriculture in the Global North through teaching on sustainable food systems at American universities, has propelled me to interrogate the divide between the GN and the GS. In reading about these practices in the various places, I sensed differences in the cited literature, semantics, and the approach between case materials from the GS and the GN, with literatures rarely crossing over. Yet the trends in practice that are occurring point to a seeming convergence in practice. On the one hand, for example, urban agriculture in Detroit, Michigan (e.g. White, 2011; Colasanti *et al.*, 2012; Safransky, 2014) and other rust-belt cities of the USA has become a survival

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strategy for the disenfranchised and marginalized left behind in that city's tumultuous de-industrialization and is, in many ways, becoming similar to the self-help survival strategies witnessed in many cities of the GS (Zezza and Tasciotti, 2010; Opitz *et al.*, 2016). On the other hand, as wealth has increased in the GS, middle-income women are gardening in the cities of Senegal (White, 2015; Chapter 11, this volume) for reasons that have less to do with their immediate need for food and is more in line with gardening as a recreational and time-filling activity, reminiscent of urban gardening in the GN.

Despite the seeming convergence in practice, the literatures on UA in the GN and GS remain impressively separated, with researchers working on case material in the GS and rarely referencing work on the GN, and vice versa. The moment is here to think about UA at a global scale and focus on shared experience. My intention with this volume is to move towards greater interaction and engagement across this divide, as this will enrich both focus areas of inquiry. I refer here to urban theorist Ananya Roy and her invocation of the term 'worlding', which refers to 'alternative modernities that produce multiple urban sites and experiences and can speak to and inform one's analysis of other places' (Roy, 2011, p. 828).

In addition to the increasing convergence of motivations and practice, there is the potential for convergence in theorizing UA as well, and this book makes an attempt to do so, both in some of the individual chapters and *in toto*. This can be done by engaging with a broadly defined urban political ecology, especially its attention to UA as a way of healing the metabolic rift, as well as attention to the idea of 'urban assemblage' and new ideas from critical urban studies. The food relocalization movement in the GN has focused its attention on UA as a way of reconnecting people and their food sources, as well as the numerous environmental benefits such as UA's role in greening the city and contributing to urban sustainability. The livelihoods framework and its attention to the five capitals that the poor have access to – physical, natural, human, financial and social – is also a helpful way of framing empirical studies. More on the theoretical approaches used in this volume is elaborated below.

Geographer Tom Bassett (1981) was quite prescient when he stated in his conclusions on the history of community gardening in America that 'what unites these groups [those that instigated gardening efforts] is their collective effort to make living in the city a more palatable experience'. This indeed remains the case, whether we are talking about self-help community organizations, development non-governmental organizations (NGOs), or formal governmental and international institutions in the GN or GS. The 'palatable experience' I see emerging as a unifying theme in global UA, and by extension a convergence of theory and practice, is the very active rethinking of the role and purpose, and even conceptualization of nature in the city, and of efforts to 'green' the city, not just to improve aesthetics and people's quality of life, but because a green city is a more sustainable city. UA contributes to a greening of the city by converting this green to productive spaces that nourish the city in more than aesthetic ways and also provide necessary ecosystem services.

1.2 Defining Urban Agriculture (UA)

Defining urban agriculture is not an easy task. Many definitions exist, and I settle here on a variation derived from Pearson *et al.* (2010, p. 7) which itself is an amalgam of other sources. For the purpose of this volume, *urban agriculture is the production, processing and marketing of food and related products in urban and peri-urban areas, usually through intensive cultivation and for consumption in the same urban or peri-urban area*. The existing literature covers a wide range of practice that some call 'gardening' and some call 'agriculture'. Gardening usually connotes leisure, aesthetics and recreation, small scale, and in some parts of the world is women's domain. In contrast, farming typically connotes production for subsistence or commercial purposes. It refers to a livelihood, a way of life, and is usually practised on a relatively larger scale than gardening. In many parts of the world, farming is associated with men and is considered a male domain. The reality is that, in practice, much of what we have traditionally talked about in UA is gardening, but it has taken on elements of farming and there is semantic fluidity between the

two. Neither term is entirely satisfactory for encompassing what actually occurs, and therefore I suggest that instead of using the terms ‘gardening’ and/or ‘farming’ that we refer to this suite of activities as ‘urban cultivation’ and refer to the people who practise it as ‘urban cultivators’. This is difficult to do given the deep embeddedness of the term ‘urban agriculture’, which is why in this volume there will be a mix.

Urban cultivation encompasses plants being grown for some utility, but also includes activities that involve animals. This may range from home gardeners keeping or enabling bee foraging in their yards through the planting of appropriate flowers to the keeping (legally or not) of chickens or other fowl, to the maintenance of cows (usually for milk) or even horses and other animals. Although more common in the GS, the keeping of poultry as part of the home-garden system is gaining traction in many cities in the GN as the health benefits of free-range and locally produced eggs and meat have become clear. Activists in cities large and small in the GN are working on the legal issues of keeping poultry, while those in the GS work to keep such activities from becoming illegal.

One of the characteristics of urban cultivation is its great diversity of practice. Nathan McClintock provides us with an excellent typology of urban agriculture (2014, p. 150) and I borrow from his work, as modified by Gray *et al.* (2014 and Chapter 3, this volume) to summarize the various forms of UA in [Table 1.1](#). Pearson *et al.* (2010) also provide a very helpful organization of UA typology, and they add to McClintock and Gray *et al.*’s typologies a discussion of the scale of the UA production (micro, meso and macro). I have incorporated their elements into [Table 1.1](#) as well. The range of UA practice ranges from individual household gardens, organized allotment and community gardens, and the use of interstitial spaces (Galt *et al.*, 2014) such as berms and public rights of way to macro-scale urban (hydroponic) farming on the ground or on rooftops, and even in the vertical dimension (Despommier, 2010). Used spaces range from the officially public to the intimately private.

In the GN, the focus of UA research has been on how it empowers local communities and how it contributes to the relocalization of a food system that has become disconnected from the community. It is usually conceptualized as something

organic that arises from the bottom up, from the community. It is often enveloped in the discourse of social justice that gives voice to marginalized people and empowers them to take control of their lives and communities. UA in the GN is often seen as a solution to many urban challenges, including addressing social woes and efforts to ‘green’ the city.

In contrast, in the GS the focus of UA research has been on how it assists the transition to urban subjects for newly arrived rural migrants and provides food security for those new arrivals, however marginal it may be. It is usually conceptualized as something that is a necessary process on the way to more ‘modern’ ways of urban living, including the purchasing of food in supermarkets. In the long run it should be eliminated. It is usually enveloped in developmentalist discourse and undergirded with top-down efforts to ‘aid’ locals (often by NGOs). UA in the GS is often seen as a necessary problem that needs to be dealt with as a city urbanizes.

Additionally, UA is seen as part of Alternative Food Networks (AFNs) (Jarosz, 2008) which capture ‘a wide array of new linkages between agricultural production and food consumption that differ from “conventional” processes and routes’ (Galt *et al.*, 2014, p. 134). Many UA practices are part of these networks, although in many places around the world, especially in the GS, they are seen as much more ‘conventional’ than in the GN. Additionally, aspects of a broadly defined UA are encompassed by what Galt *et al.* (2014) termed ‘SIFS’, or Subversive and Interstitial Food Spaces, a phrase that is meant to point to the fact that many activities encompassed by UA subvert the usual use of spaces and places, and are meant to challenge this normative use.

The essential similarity between UA in the GS and GN is that it increases social capital – that food production is important, but not as important as what comes with the process of cultivation. Research to date, very difficult to do, is that the amount of total food produced via UA is not enough to feed the cities of the world, no more than about 15–20% (Pearson *et al.*, 2010; Ackerman *et al.*, 2014; Thebo *et al.*, 2014). But as the shift in discourse in the GN, from UA being for recreational purposes to its greater role in urban sustainability and resilience, there is a convergence with what is closer to the focus of UA in the GS, where UA is a form of social resilience. The

Table 1.1. Range of urban cultivation. (Based on McClintock, 2014, as modified by Gray, 2015; also Pearson *et al.*, 2010.)

Type	Organized	Management	Location	Purpose	Scale
Home gardens; yards	Sometimes	Individual or household	Backyards, front yards, containers, sacks	Household food production, landscaping, recreation	Micro-Meso
Community gardens; allotments	Usually	Municipality or non-profit programme	Vacant lots, parks, open land	Food production, cultural reproduction, recreation	Meso
Non-profit urban farms	Yes	Non-profit organization	Vacant lots, rooftops	Education, food access, vocational training, youth and children's programming	Macro
For-profit urban farms	Yes	For-profit company (individual or individuals)	Vacant lots, warehouses, client yards, greenhouses	Food production, garden installation	Macro
Institutional gardens	Yes	Hired staff or volunteers	Schools, churches, prisons, hospitals	Education, rehabilitation	Micro-Meso
Interstitial food spaces (e.g. guerilla gardening, gleaning and foraging)	Sometimes	Individuals or group	Berms, traffic circles, alleys, parks, forests, backyards, front yards	Reclaiming urban spaces, food production and consumption, urban greening	Micro

overarching unity, and its strength as a social movement, is that UA is a series of processes through which communities gain greater resilience and thereby are more sustainable, with positive social and environmental implications. The small but marginally important food production aspects of UA, common in the GS, are becoming a more visible part of the portfolio of the urban poor in under-resourced cities of the GN, and expose the fundamental similarities in UA's importance to urban survival globally. Likewise, the rise of the middle class in parts of the GS and their desire and ability to garden for recreational purposes converges with elements of UA in the GN. Everywhere UA is seen as good for human health, including getting people moving and eating healthier foods, but also for their mental health, especially for the elderly and economically or culturally dislocated, as UA provides something to do that is meaningful and allows all to feel they are a productive part of society (Airress and Clawson, 1994; Egger, 2007; WinklerPrins and de Souza, 2009).

Globally, the growth in attention to UA also reflects a change in values and priorities. There is a long tradition of productive gardening in the GN as responses to crises (Bassett, 1981; Moore, 2006), but once the crisis has subsided, gardening loses its productive focus and becomes a way of creating aesthetic spaces, i.e. by demonstrating that you can afford to not have your garden be productive. In the GS, one can argue, there is a perpetual crisis for the majority of those in cities, hence the need for continuous UA and for it to be productive. Today in the GN, the movement towards making gardens, yards and other 'un-productive' spaces productive is motivated by different values that reflect not so much that you cannot afford to buy food, but that people want to be in control of the source of their food. This movement is part of the 'relocalizing' of food movement and urban sustainability. From the perspective of critical social science, this can be seen as a privileged position not available to the poor and marginalized who are closer to the majority that practise UA in the GS.

Another shift in values and aesthetics is one towards UA and its ability to 'green' the city: both literally, as UA provides green space in the city, and figuratively, as UA contributes to sustainability. It has always had that function, but this has not been seen as a valuable component

of its existence in the past. Today, UA is looked to, in both the GN and GS, as a way of making the city a *productive* green. UA thus can be seen as contributing to ecosystem services that make the city more pleasant and sustainable. Beyond the potential agricultural output is the acceptance of foraging as part of the cityscape, and a rethinking of nature in the city (McClain *et al.*, 2014). Green and productive cities have the potential of being more sustainable (and resilient) than those that are not, and there is an emerging global focus on a desire for the sustainable city in this era of global environmental change and rapid urbanization.

1.3 Theoretical Framing

Despite their differences in expression, there is an increasing convergence between UA in the GS and GN in practice, and that, by extension, there is the potential for convergence in theorizing. Work on UA is a convergence of early research in cultural ecology on home gardens and their biodiversity and spatial configurations (e.g. Christie, 2004; Kimber, 2004) combined with urban studies and urban planning, and a more recent turn toward critical theory. Much of the literature is highly applied and remains descriptive and at the case study level as a result. Where possible I have asked authors of this volume to engage with at least one of the following theoretical frameworks in order to emerge above the case study, emphasizing not just the uniqueness of their findings but the lines of similarity and convergence with their case and others in order to contribute to an emerging global UA.

Urban political ecology (UPE) asks questions about who produces what kind of socio-ecological configuration and for whom (Keil, 2003, 2005; Swyngedouw and Heynen, 2003; Heynen *et al.*, 2006; Wachsmuth, 2012; Angelo and Wachsmuth, 2014). It assumes that urbanization is a process of socio-ecological change and foregrounds the urban condition as fundamentally a socio-environmental process. UPE pays close attention to existing unequal power relations, the social construction of nature, and especially its attention to the 'metabolic rift' that has occurred between people and land in urban spaces. There are three dimensions that UA can

contribute to in terms of healing the metabolic rift (McClintock, 2010). First there is the ecological – the rescaling, or closing, of the nutrient cycle that occurs as spaces in the city are increasingly cultivated, ideally using materials already in place and engaging in waste (nutrient) recycling in the process of cultivation and reconstituting urban soil for cultivation. This is linked to the movement toward greening the city. Then there is the social, the building of community and social capital, which I have already outlined above and is the fundamental piece of the success of UA as a global effort as it reconnects dispossessed people to each other and helps build and support community at various scales. UA stands to be able to heal this social disconnect through its ability, not only to provision people with direct need, but also to empower the marginalized in urban places, which can lead to many other actions that improve their lives. Lastly, there is the healing at the individual level, in part also already mentioned above: UA as a means of reconnecting people to nature that improves their individual health, but also connecting them to work that makes people feel a productive part of society.

Nathan McClintock (2014) has elaborated on urban agriculture's necessary contradiction or tension, that it is at once both radical and neoliberal. It is radical in that its activities often stand in opposition to the accepted norms of what a city should look like and how its people should behave, but it also enables a neoliberal agenda to be pursued. He points out that what is common in all UA is that it can be seen as a subsidy from self-provisioning (self-exploitation), which lets the state get 'off the hook', as it were, from providing for its citizens. This is particularly strong in places where the state has failed, which has happened in both the GN and GS, as the state is often absent in its support for marginalized people. McClintock argues that UA enables the state to leave people behind because they do take care of themselves.

There are also forms of UA that are corporate and seek to profit from a new sector of production, and this vision sees little in unity with the small-scale and organic movements of much of UA to date. This contrast and contradiction, and what I call McClintock's 'tension', is well illustrated by the stops on a 2015 field excursion to see 'Urban Farms and Gardens' at the

Metropolitan Solutions Congress in Berlin, Germany. The title in itself is quite telling: farms and gardens are treated separately and were not placed under one category. And the excursion demonstrated the two extremes of the way UA is practised and conceptualized. The first stop was to a brand new urban farm, ECF FarmSystems, a demonstration farm for a company that will help others develop high tech aquaponic farm systems (including fish tanks and hydroponically grown vegetables) (Fig. 1.1). Not traditionally viewed as the norm of sustainable (urban) farming, although possibly its future, highly integrated and technologically sophisticated farming such as this is spreading to both rural and urban spaces. Hydro- and aquaponic systems in greenhouses permit year-round production in rural areas and permit a degree of intensification in urban spaces that might result in the volume needed to farm in the city in a self-sufficient manner, something that is questioned as a possibility. The second stop was at the community gardens at the abandoned Tempelhof airport (the 'air bridge' airport when Berlin was a divided city), *Stadtteilgarten Schilkerkiez*, a very organic (figuratively as well as literally) and grassroots effort to reclaim green space in the city and build community (Fig. 1.2). It is a classic community garden, including the challenges of maintaining land tenure, as the Tempelhof development plans are uncertain at this time and are an ongoing tension between the Berlin city government (who want housing and development) and its residents (who want to leave it as open green space). West Berlin, due to its existence as a virtual island during the Cold War, has long focused on being able to sustain itself, and though it is now reconnected with its hinterland, the principles of self-sufficiency pervade thinking about urban planning there. Both the urban farm and the community garden seek this self-sufficiency in very different ways. Their contrast embodies what is happening in many parts of the world.

From the field of *critical urban studies* comes the *urban assemblage framework* that focuses on the role UA plays in the assemblages of urban life and its multiple flows (food, people, knowledge, materials, etc.) (Brenner *et al.*, 2011; McFarlane, 2011a, b; Shillington, 2013). This approach seeks to view quite holistically the entirety of the urban system in a new light, and those using



Fig. 1.1. An urban demonstration farm in Berlin, Germany: ECF FarmSystems, a company that will help develop high-tech aquaponic farm systems in the city. (Photo by author, May 2015.)

this approach can understand the important component UA plays in urban assemblages today. This approach helps shift the discourse about UA from a developmentalist and problem-based narrative to a solutions-focused one, that emphasizes the creative powers of marginalized people in cities everywhere and focuses on their ability to make the city work, despite seemingly chaotic conditions. By extension I link here to the work of Roy (2011), her *urban 'worlding' theory*, in which she emphasizes the need to consider reversing the flow (or at least consider its potential for bi-directionality) from the usual urban theory flowing from models in the GN to applications in the GS – to treat ALL cities together, erasing the differences between them to have productive conversations. There is a great need to think creatively of global city-regions that can be compared, considering their extra-territoriality and the increasing reliance of megacities on a super exurban, post-border hinterland that is global in scope and scale. The GN can

learn from the experiences of the GS as much as the GS can from the GN.

The *sustainable livelihoods framework* has been effectively used by a number of investigators working primarily in the GS (Carney, 1998; Rakodi, 2002; Gallaher *et al.*, 2015). It started as a tool in rural development planning, but it has been adapted for use in urban settings. Livelihoods are the 'capabilities, assets and activities required for a means of living'. This approach is a tool that helps identify the main factors affecting livelihoods and the relationships between them, and places targeted households at the centre of the development process. It starts with considering household capabilities and assets, rather than just their problems, and it elaborates on the various 'capitals' the poor have – physical, natural, human, financial and social. Given the strong connection between UA and the urban poor in many studies of UA in the GN, this tool has the potential to be effectively applied in the GN as a framing of UA.



Fig. 1.2. The *Stadteilgarten Schillerkiez* community gardens at the former Tempelhof airport in Berlin, a grassroots effort to reclaim green space in the city and build community. (Photo by author, May 2015.)

1.4 Summary

In reviewing the state of research on UA it is clear that it is a field that has moved well beyond a description of food production systems to the role of UA in producing spaces of community, resistance and empowerment. UA is a way to claim a right to the city by those not necessarily seen as central to its function by those in power. This is not the way UA in the GS has been framed, but in practice it does work in this manner, and this approach has been used as a way of framing UA in the GN. UA is a way of exercising people's right to the city because of its metabolic role, especially its way of healing metabolic rifts and of being a part of an urban assemblage. UA represents a different framing and a making visible of the way an economy works, through social and other livelihood capitals, gifting, informal volunteer labour, salvage, guerilla gardening, foraging, and the growing of things in places where the norm has not placed them. In moving forward the key

is to focus on processes more than traits and treat cities as more similar than different (Roy, 2011). Lastly, UA is a rich field of interdisciplinary inquiry for developing ideas and ideals for urban sustainability. This richness will be ensured if investigators work towards erasure of the GN/GS divide, truly 'worlding' this field of inquiry by informing each other. The intent of this book is to make a contribution towards that end.

1.5 Outline of the Book

This chapter serves as an introduction to the volume, providing definitions and framing of the theoretical work. From here we move to two general chapters that provide focused overviews. In Chapter 2, White and Hamm discuss the role that urban agriculture plays in the broader context of urban food systems, especially in the Global South, arguing that UA should be an accepted urban livelihood and fully integrated into

urban processes. Gray *et al.* in Chapter 3 consider some of the barriers and benefits of UA, particularly in the form of community gardens in the Global North. Chapter 4 deepens our knowledge about community gardens, as Parece and Campbell discuss a survey they conducted in the US. The next few chapters develop a particular theme, illustrating it through rich case material. In Chapter 5, Bosco and Joassart-Marcelli, via an empirical study of community gardens in San Diego County, unpack and challenge the broadly accepted idea of 'community', which is often a highly contested notion, though taken for granted in the UA literature. Broadstone and Brannstrom, in Chapter 6, illustrate the challenges and difficulties in consistently mobilizing labour for UA through an empirical study in Houston. In Chapter 7, Bellwood-Howard and Nchanji take a close look at how products from urban agriculture are marketed in greater Accra, Ghana, via complex networks. Through a comparison of different community gardens in Greater Springfield, Massachusetts, LeDoux and Conz in Chapter 8 demonstrate the enabling power of community gardening as a form of social justice. In Chapter 9, Lowell and Law consider how the concept of sustainability is or is not fully engaged in UA with a comparative study of Austin, Texas and Havana, Cuba. In Chapter 10, Byrne *et al.* consider how UA maintains ecosystem services in Australian community gardens, while in Chapter 11 White illustrates how UA creates greater resilience in urban systems with a case from Senegal.

The next few chapters illustrate less expected elements of UA. McLees in Chapter 12, building on material from Tanzania, situates UA as urban process, considering the intersections, movements and flows in the continual processes of remaking that which defines and makes different. Hammelman, in Chapter 13, links UA as a survival strategy for refugee women who at the same time challenge the concept and notion of the ideals of a world city in Medellin, Colombia. Gallaher, in Chapter 14, shows how just a small amount of UA in one of the most densely populated urban places on earth can provide green respite for its residents. In Chapter 15, Hagolani-Albov and Halvorson share a highly innovative variation on urban community supported agricultural practices in Finland. In Chapter 16, Dryburgh, in a creative application of Foucault, deliberates the role of bees in the city, specifically in Washington DC. Horowitz and Liu in Chapter 17 take us to the challenging urban scape of China, where UA is practised on apartment balconies of the very newly urbanized residents, while structural limitations make UA illegal, yet so critical. Mujere, in Chapter 18, illustrates how perceived political affiliation can undermine the success of UA with a case from Zimbabwe. In Chapter 19, Chan *et al.* elaborate further on the idea of UA as a form of resilience by considering how community gardens in three very different locations are a form of socio-ecological refugia. The book concludes with a chapter that brings together the various elements illustrated in the chapters and poses some considerations for the future.

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