



university of
 groningen

faculty of spatial sciences

**EXPLORING BARRIERS TO AND OPPORTUNITIES FOR URBAN
 AGRICULTURE**
 in
 Bristol, United Kingdom



Emma Hetherington

January 2017

**Exploring Barriers to and Opportunities for Urban Agriculture in
Bristol, United Kingdom.**

‘The single greatest lesson the garden teaches us is that our relationship to the planet need not be zero-sum, and that as long as the sun still shines and people can still plan and plant, think and do, we can, if we bother to try, find ways to provide for ourselves without diminishing the world.’

- Michael Pollan

Emma Hetherington

Groningen, December 2016

Master Thesis - MSc Environmental and Infrastructure Planning

Faculty of Spatial Sciences

University of Groningen

The Netherlands

Supervised by: Dr Katharina Gugerell

ACKNOWLEDGEMENTS

Primarily, I would like to thank my supervisor for her support through this research process; your advice and support has been invaluable. Secondly, I am deeply grateful to all those who took time out of their busy lives to assist me with this research by taking part in various interviews. Without these brilliant individuals, this thesis would not have been possible.

ABSTRACT

As a fundamental starting point, this study recognizes the central role that food now plays in the increasingly interrelated fields of climate, water, land, labour and physical and mental health.

Taking previous studies into account that hark the social, environmental, economic and health benefits of UA to communities, this research explores the current state of UA in Bristol, UK, in an attempt to highlight the barriers to and opportunities for growth. Asking the question of why UA develops, this study initially explores previous research concerning AFNs, and the characteristics of quality, SFSCs, and social and territorial embeddedness. This study then goes on to highlight the diverse ways in which UA has developed practically across the city. Barriers to the growth of UA are noted, with the largest of all being the economic and political climate in which these projects operate. Finally, participants' suggestions of opportunities to overcome these barriers are discussed.

LIST OF TABLES, FIGURES AND ACRONYMS

TABLES		
Table 1	Selection of Urban Agriculture Projects	p.24
Table 2	Data Collection Methods	p.35
Table 3	Non-UA Participant Organisations	p.37
Table 4	Participating UA Projects	p.38-39
Table 5	Social Construction of Projects	p.40
Table 6	Variety of Products	p.42
Table 7	Routes to Market	p.43
Table 8	Type of SFSC	p.45
Table 9	Prevalence of Organic Principles and Reference to Quality	p.46
Table 10	Areas used by UA Projects	p.50
Table 11	Central Aims of UA Projects	p.56
Table 12	Overview of Social Outcomes	p.57
Table 13	Overview of Environmental Outcomes	p.57
Table 14	Overview of Economic Outcomes	p.57
Table 15	Hopes for the Future	p.58
Table 16	Additional income combinations	p.61
Table 17	Success Strategies	p.64-65

FIGURES		
Figure 1	The link between AFNs and UA	p.12
Figure 2	Conventional/Alternative Food System Spectrum	p.18
Figure 3	Central Dimensions of UA	p.19
Figure 4	Research process	p.32
Figure 5	Location of Bristol in UK	p.34
Figure 6	Point of Information Saturation	p.35
Figure 7	Location of Projects	p.49
Figure 8	Scale of Projects	p.50

ACRONYMS	
UA	Urban Agriculture
UK	United Kingdom
DEFRA	Departments for Environment, Food and Rural Affairs
AFN	Alternative Food Network
SFSC	Short Food Supply Chain
WW2	World War Two
BFP	Bristol Food Producers
BFPC	Bristol Food Policy Council
EU	European Union
PVQ	Portrait Value Questionnaire

DEFINING TERMS

URBAN AGRICULTURE – *'located within (intra-urban) or on the fringe (peri-urban) of a town, city or metropolis, which grows and raises, processes and distributes a diversity of food and non-food products, (re)-using largely human and material resources, products and services found in and around that urban area, and in turn supplying human and material resources, products and services largely to that urban area'* (Mougeot, 2000, p. 10).

ALTERNATIVE FOOD NETWORK – a system of interconnected people and practices engaged with the production and consumption of food. Characterized by the prevalence of short food supply chains, a focus on quality, territorial embeddedness and social embeddedness (Author, 2016).

SHORT FOOD SUPPLY CHAIN - food provisioning systems that prioritize a value-laden understanding of the whole supply chain of the product, and a minimization of links between the producer and consumer (Ilbery and Maye, 2005).

TERRITORIAL EMBEDDEDNESS – the marriage of product to place (Hinrichs, 2003).

SOCIAL EMBEDDEDNESS – a situation where economic behavior is integrated with and mediated by an extensive network of social relations (Hinrichs, 2003; Tovey, 2003).

OPPORTUNITY – a set of circumstances that make it possible to achieve something; a good chance for advancement or progress (Merriam-Webster, 2016).

BARRIER – a material or institutional structure or set of circumstances that prevents or hinders movement or action (Merriam-Webster, 2016).

CONTENTS

ACKNOWLEDGEMENTS	3
ABSTRACT	4
LIST OF TABLES AND FIGURES	5
LIST OF ACRONYMS	5
DEFINING TERMS	6
CHAPTER 1: INTRODUCTION	9
1.1 Taking a British Perspective	10
1.2 Societal and Research Relevance	11
CHAPTER 2: LITERATURE REVIEW	12
2.1 Introducing Alternative Food Networks	12
2.1.1 Short Food Supply Chains.....	13
2.1.2 A Focus on Quality	14
2.1.3 Territorial Embeddedness	15
2.1.4 Social Embeddedness	16
2.1.5 Somewhere on the Spectrum	17
2.2 Central Dimensions of Urban Agriculture	19
2.2.1 Location.....	20
2.2.2 Scale	20
2.2.3 Areas.....	21
2.2.4 Social Construction.....	21
2.2.5 Products	22
2.2.6 Destination.....	22
2.1.2 Making Sense of Diversity.....	23
2.3 Benefits and Critique of Urban Agriculture	25
2.3.1 Social.....	25
2.3.2 Ecosystem Services.....	25
2.3.3 Economic.....	27
2.3.4 Health	27
2.4 Barriers and Opportunities	29
2.4.1 Land Acquisition	29
2.4.2 Resources, Skills and Knowledge (RSK)	29
2.4.3 Institutional	30
CHAPTER 3: RESEARCH DESIGN	32
3.1 Literature Review	32
3.2 Case Study Approach, Case Selection and Data Collection	32
3.2.1 Selecting Bristol	33
3.2.2 Mixed Methods	34
3.2.3 Selection of Cases	35
3.3 Data Description and Qualitative Analysis	35
3.4 Ethical Considerations	36
CHAPTER 4: CASE STUDY INTRODUCTION	37
CHAPTER 5: DESCRIPTION, ANALYSIS AND DISCUSSION	40
5.1 Topic Cluster 1: Project Organization	40
5.1.1 Social Construction.....	40
5.1.2 Products and Routes to Market.....	42
5.1.3 Social Embeddedness and SFSCs	44

5.1.4 A Turn to Quality and Organic Principles.....	45
5.1.5 Organisational Barriers and Opportunities.....	47
5.2 Topic Cluster 2: Spatial Considerations	49
5.2.1 Location, Scale and Area.....	49
5.2.2 Securing Land	53
5.2.3 Territorial Embeddedness.....	54
5.2.4 Spatial Barriers and Opportunities.....	54
5.3 Topic Cluster 3: Looking Forward	56
5.3.1 Aims and Value.....	56
5.3.2 Policies.....	59
5.3.3 Economic and Political Barriers and Opportunities	60
5.4 DIGRESSION: BREXIT.....	63
CHAPTER 6: CONCLUSIONS	64
6.1 Opportunities for Success.....	64
6.2 Conclusion.....	65
6.3 Limitations.....	66
5.3 Reflections on the Research Process.....	67
APPENDIX 1: REFERENCES	69
APPENDIX 2: INTERVIEW GUIDE	77
APPENDIX 3: QUESTIONNAIRE.....	79
APPENDIX 4: CONSENT FORM.....	82

CHAPTER 1: INTRODUCTION

'In order to carry out a positive action, we must first develop a positive vision.'

- Dalai Lama

Contemporary relations between food, energy, and health have become progressively complex and interrelated as the global population has risen, leading to serious, high-level policy challenges in the fields of climate, water, land, labour and physical and mental health (Jahn, Stampfer and Willett, 2015; McMichael et al., 2007; Lang, 2010). Owing to subsequent environmental, ethical and health concerns, the conventional food system has received criticism (Ash, 2010; Garnett, 2011; McMichael, 2013). Consequently, there has been an increased interest in alternative food networks (AFNs) that have the potential to overcome these concerns (Goodman et al., 2012). Contrary to conventional food systems, generalised by large agribusiness and supermarket chains, high food miles and a disconnect between the producer and the consumer, AFNs are conceptualised by short food supply chains, a turn to quality, and social and territorial embeddedness (Hinrichs, 2003; Ilbery & Maye, 2005; Renting et al., 2003; Whatmore et al., 2003).

AFNs are closely related to urban agriculture (UA) in the sense that both practises commonly overlap on central values and aims. Much like AFNs, UA has been praised for its contribution to a more sustainable, fair and healthy food system that is more inclusive and resilient (Frediani, 2015; Kretschmer and Kollenberg, 2011). Resilient, as UA increases knowledge, skills, and the number of available producers in a region, leading to a reduced reliance on a small number of large, international food suppliers in the event of unexpected environmental or economic shocks (Carey, 2011). Inclusive, as urban farms offer a convenient opportunity within the city for citizens to re-connect with the land and become an agent in the production and consumption of their food.

Within the context of the West, considerable research has been undertaken to highlight the social, environmental, economic and health benefits of UA to communities. Benefits include community enhancement, cohesion and wellbeing (Brown and Jameton, 2000), youth education (Sommers and Smit, 1994), ecosystem services (Perez-Vazquez et al., 2005; Nugent, 1999), enhanced overall resilience and sustainability (Van Veerhuizen and Dubbeling, 2011), encouragement of new local industries (Garnett, 1996), increased economic diversity (Nugent, 1999), improved diets (Bellows et al., 2003) and reduced risk of various mental and physical

illnesses (Miles, 2007). However, a number of critiques and barriers exist that inhibit the creation and maintenance of UA operations. Commonly growers face barriers in the form of access to land (Kirschbaum, 2000), resources (Garnett, 2000; Feenstra et al., 1999), skills, knowledge (Kaufman & Bailkey, 2000) and in operating within existing institutional structures (Garnett, 1996). Critiques range from concerns about UA's influence on urban development (Mougeot, 2000), to assertions that UA is nothing more than a hipster trend for white and middle class citizens (Vitello & Wolf-Powers, 2014).

1.1 Taking a British perspective

Throughout history, food supply and trade has been central to the formation of cultural and economic life in many British cities (Carey, 2011). Yet, over the past century, the participation of everyday citizens in the growth of their own food has declined (Howe and Wheeler, 1998). In plain terms, the UK produces roughly half of the food it consumes, and is therefore around 60% 'self-sufficient' if exports and local consumption are considered against UK production (Cabinet Office, 2008). However, the degree of importation varies widely between food types and regions (DEFRA, 2016), and as with any agriculture, production is vulnerable to extreme weather and other risks such as economic instability or animal disease; the UK is no exception (Cabinet Office, 2008). Moreover, a large portion of UK food imports originate from the European Union (DEFRA, 2015). This, in the wake of BREXIT fosters additional uncertainty.

In 2015, CO₂ emissions resulting from the UK food supply chain amounted to 70 million tonnes, and of this, farming was responsible for 80% (DEFRA, 2015). In line with these findings and mounting public pressure for change¹, DEFRA (2016) issued a five year plan aiming to '*unleash the economic potential of food and farming, nature and the countryside*'. The second of the six objectives of this plan asserts to '*work with food, farming and fishing industries...to grow and sell more British food at home and abroad*' (DEFRA, 2016). With this in mind, the remainder of this thesis shall be based around food debates relevant to the UK, and the West more widely. It is true that UA is now a global phenomenon (Mougeot, 2000). However, the urgency and perspective in developed economies differs considerably from that in a developing context. Development perspectives are based around issues of food security, subsistence and empowerment (Armar-Klemesu, 2000; Bryld, 2003; Mougeot, 2010). However, this thesis is concerned with the Western European debate, and as a result, will focus on these debates exclusively.

¹ Consider for example; jamiesfoodrevolution.org/ bristolfoodconnections.com/ localfoodbritain.com

The objective of this thesis is to examine and outline the barriers to and opportunities for UA in the city of Bristol, UK.

Therefore, the central question is;

‘What are the greatest barriers to and opportunities for urban agriculture in Bristol?’

Specifically relating to the context of Bristol, the following sub-questions will guide the enquiry;

1. What incentives and motivations are stimulating UA?
2. How are the practical dimensions of UA developing?
3. What are the greatest barriers² to the development and continuation of UA?
4. What opportunities can be identified to encourage the growth of UA?

1.2 Societal and research relevance

This thesis includes a survey and qualitative analysis of UA in Bristol. Within this, motivations for and barriers to UA are outlined. This knowledge will support policy making and evaluation based on actual practices. More widely, thesis conclusions could assist comparable cities with developing or amending their own food provisioning strategies. Additionally, participant suggestions detailed in this thesis could provide useful insight for those attempting to redefine policies and food strategies in the context of a post-BREXIT Britain.

This thesis aims to answer the four sub-questions posed (1.2). Chapter 2 will therefore begin by provide an overview of previous literary conclusions. To do so, AFNs have been incorporated to provide greater clarity of the broad values which underpin UA (2.1). With this in mind, the practical dimensions of UA are expanded upon (2.2), before attention turns to associated benefits and critique (2.3). The chapter concludes with an overview of previously noted barriers to and opportunities for success (2.4). Chapter 3 articulates the process by which this research was conducted, and pays reference to related ethical considerations (3.4). Following on, Chapter 4 reveals the results of this study, and discusses the data in response to each sub-question alongside the conclusions of Chapter 2. Finally, Chapter 5 presents a complete set of suggested opportunities for success (5.1), and outlines any final remarks and conclusions (5.2).

² ‘Greatest barriers’ should be understood as circumstances which require the largest amount of effort, time and/or resources to overcome.

CHAPTER 2: LITERATURE REVIEW

This chapter will critically examine the literature surrounding UA. To do so, the central concepts underpinning AFNs will be discussed. Although AFNs and UA are individually distinguishable phenomenon, they share a close relationship due to the values, practices and products that each share (Figure 1). Thus, debate surrounding AFNs will provide insight to the motivations that underpin UA, and the context in which UA projects often operate. With this in mind, the central dimensions of UA will be outlined. The following section will then note the benefits and critiques of UA, before potential barriers and success strategies are indicated.

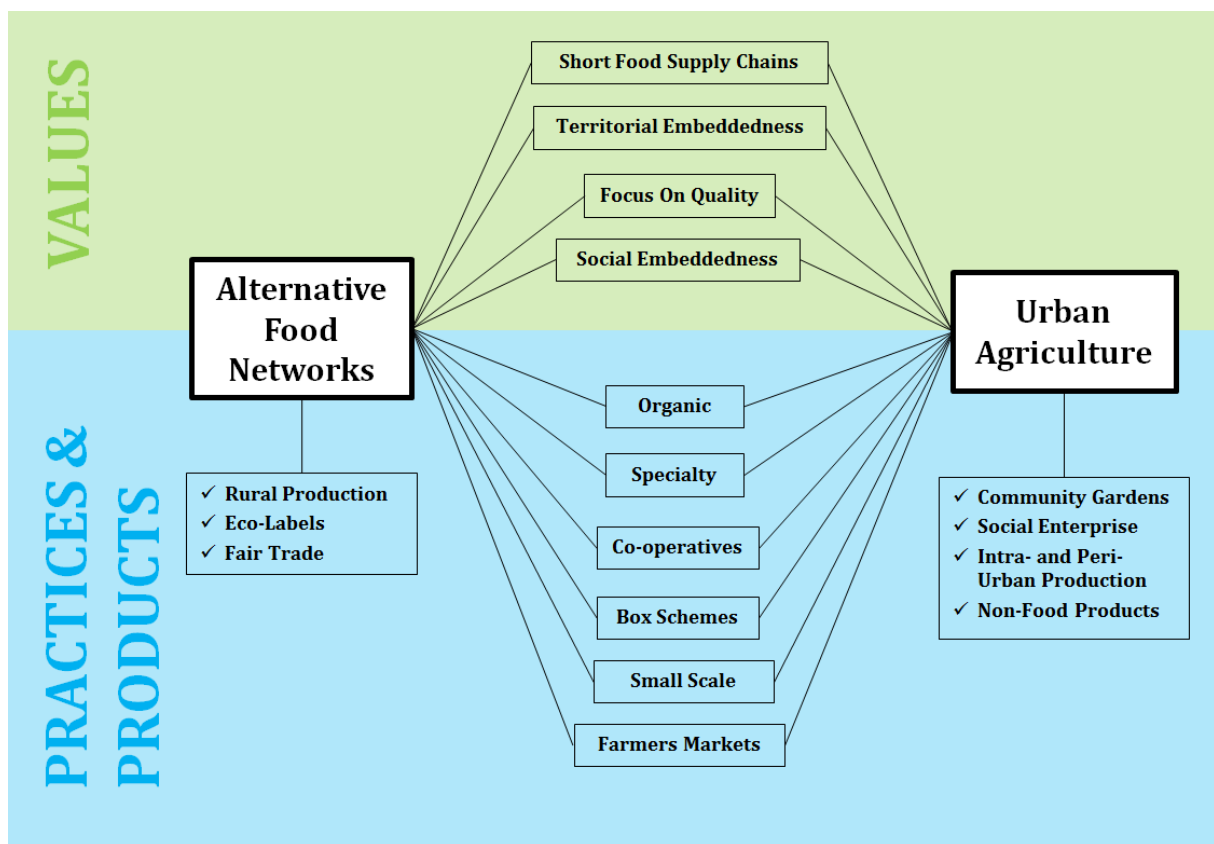


Figure 1: The link between AFNs and UA

2.1 Introducing alternative food networks

Over the past two decades, there has been a significant revival of interest in AFNs (Goodman and Goodman, 2009; Goodman et al., 2012; Jarosz, 2008; Maye and Kirwan, 2010; Renting et al., 2003). In the academic world, this resurgence has been mirrored by considerable efforts in social science to examine food networks perceived as 'alternative' as opposed to 'conventional' (Ilbery and Kneafsey, 1998; Lang, 2010; Maye and Kirwan, 2010). In general terms, conventional

supply chains can be characterized by long supply chains, economies of scale, monoculture, intensification and use of agrochemicals (Illbery and Maye, 2005), whereas AFNs are associated with the growth of fair trade, small-scale farming, organic, local, regional and specialty food products, farmers markets, farm shops, box schemes, community-supported agriculture and home deliveries (Cone and Myhre, 2000; 2000; Holloway and Kneafsey, 2000; Maye and Kirwan, 2010; Renting et al., 2003). Invariably, the increased interest and prominence of AFNs has been linked to a range of concerns associated with the global agri-food complex, as well as a rediscovered empathy for farmers and increased 'buy local' initiatives (Ilbery and Maye, 2005; Winter, 2003).

With the emergence of these alternative networks, it would be easy to view the food system as two increasingly distinct 'zones of production'; those producing on the grounds of economic standards of efficiency and competitiveness, and those attempting to trade on the basis of health, nutritional or environmental qualities (Murdoch and Miele, 1999, p. 469). However, as the following section will illustrate, there is considerable overlapping between the two theoretical zones. Nonetheless, AFNs are widely viewed as 'alternative' as a result of the values that underpin them (Watts et al., 2005). These values include 1) short food supply chains, 2) a focus on quality, 3) territorial embeddedness and 4) social embeddedness (Hinrichs, 2003; Ilbery and Maye, 2005, Renting et al., 2003, Whatmore et al., 2003). The following section will consider each value in turn, contrasting alternative practices and ideals with conventional food systems and exploring surrounding debates.

2.1.1 Short food supply chains (SFSCs)

SFSCs are understood to be food provisioning systems that prioritize a value-laden understanding of the whole supply chain of the product, and a minimization of links between the producer and consumer (Illbery and Maye, 2005; Renting et al., 2003). SFSCs are alternative to conventional practices as they 'short-circuit' the often long, and generally anonymous supply chains that dominate the industrial mode of food production (Marsden et al., 2000; Renting et al., 2003). Notably, SFSCs are conceptualised in terms of the nature of supply chain relations, rather than the physical distance the products must travel (Illbery and Maye, 2005). That is, SFSCs aim to facilitate information exchanges between actors. This is best exemplified in the case of farmers markets where producers meet directly with consumers; deemed 'face-to-face' SFSCs (Sage, 2003). 'Spatially proximate' and 'spatially extended' SFSCs also exist (Marsden et al., 2002; Renting et al., 2003) and these refer to scenarios where products are sold within the region of production, or where consumers are based outside of the production region (Sage,

2003). In such cases, knowledge of the production process and location is transferred to the consumer via product labels such as Fairtrade certifications.

However, the concept of spatially extended SFSCs meets considerable challenge as authors recognise how much they share with conventional food chains (Renting et al., 2003). For instance, fair trade, internet ordered produce must still be delivered, often by conventional carriers. Moreover, considering the harsh realities of the food industry, many alternative suppliers cannot rely solely of SFSCs and end up with a mixture of alternative (short) and conventional (long) supply chains (Illbery et al., 2004). Most commonly, this occurs where the 'upstream' dimensions of the supply chain have been overlooked (e.g. conventional suppliers of seed or animal feed) (Illbery et al., 2004). Evidently, financial considerations and practical limitations often result in a combination of both short and long food supply chains.

2.1.2 A focus on quality

A focus on quality emphasises a shift from '*economies of scale*' to '*economies of quality*' (Whatmore et al., 2003, p.390). As such, the quality of food is valued more than in conventional food supply chains (Whatmore et al., 2003). Within this, the presence of speciality products is a defining feature of AFNs, with a marked popularity of organic produce (Illbery and Maye, 2005; Winter, 2003).

Numerous debates surround the question of whether quality itself is truly alternative. Specifically, organic and speciality products are increasingly sold by conventional supermarket chains³, and organic principles have been applied in agriculture for thousands of years (Korcak, 1992). There is undoubtedly a contrast between local, organic box schemes and the glossy marketing of neatly packaged organic supermarket products (Winter, 2003). One explanation for the visible increase of such products in traditionally conventional markets asserts that as incomes have risen since the end of WW2, so too has the demand for specialist, luxury food items (Winter, 2003). Therefore, the increased availability of organic produce could be viewed as a symptom of the conventional system operating under normal market conditions. Furthermore, the fact that established, conventional brands continue to be crucial indicators of quality for numerous consumers raises further inconsistencies when claiming quality to be the sole domain of AFNs (Hanchion and McIntyre, 2000). The notion of 'pragmatic' organic

³ Tesco: Organic and Free From (www.tesco.com), Sainsbury's: Organic (www.sainsburys.co.uk)

producers (Winter, 2003) – that is, producers that pursue organic principles when economic and agronomic factors are favourable – further support this perspective.

Taking a step back, quality itself should be understood as a social construct that is essentially self-regulated within the context of producer and consumer relationships (Ilbery and Kneafsey, 2000). Therefore, quality involves a social process of qualification and each AFNs conceptualisation of quality is shaped by the different farming practices, consumer perceptions, cultural norms, organisational structures and institutional context they exist within (Renting et al., 2003). Yet, it is important to note that conventional suppliers often conceptualize quality as a set of standards (Mansfield, 2003), and therefore all producers are somehow engaged in making claims about the quality of their produce. The fact that '*food quality*' can be conceptualized in a multitude of ways (Kahl, Baars, Bugel and Busscher, 2011) means it can also be pursued for a multitude of motivations. Consumers may choose to purchase organic or speciality foods as a result of health concerns, environmental concerns, food safety, sensory variables, ethical concerns or value structures (Tregar, Dent and McGregor, 1994; Baker, Thompson and Engelken, 2004). Moreover, studies have recognised how individual decision making is influenced by feelings of moral obligation, specified by one's internal values and norms⁴, which themselves are shaped by social relations (Garling, Satoshi, Garling and Jakobsson, 2003; Sherif, 1936).

Therefore, groups of individuals who share certain environmental or health related values may be more inclined to expect produce that maintains a narrative inline with these values (Stern et al., 1999). This provides a possible explanation for the popularity of organic produce amongst AFNs, despite the fact that published literature lacks strong evidence supporting organic foods as significantly more nutritious or environmentally sound than conventional counterparts when undertaken on a mass scale (Smith-Spangler and Brandeau, 2012; Davidson, 2005). Ultimately, the conclusion can be made that although conventional and alternative food networks both entertain the concept of quality, each place considerably different emphasis on the term's meaning (Harvey et al., 2004).

2.1.3 Territorial embeddedness

Territorial embeddedness refers to the action of linking product to place (Hinrichs, 2003). In doing so, there is increased recognition of the contributions that farming and food can have in

⁴ A large number of studies have used the Norm Activation Theory (Shwartz S. , 1997) to frame this perspective.

supporting broader regional development and environmental and public health initiatives (Whatmore et al., 2003). In the same vein, the long-term health of a community's local food system is seen as an insightful indicator of its overall vitality, sustainability and resilience (Carey, 2011; Feenstra, 1997). The 're-localization' of food is partly due to discourses inherent in early sustainability directives, calling for decentralization and self-sufficiency (Feagan, 2007) in the face of anonymous international supply chains and a homogenization of foods (Ilbery and Maye, 2005; Goodman, 2004). Foods are thus linked more directly with local farming practices, nature and regional landscapes and resources (Renting et al., 2003).

While the legitimate benefits of food re-localisation have been studied (Knickel and Renting, 2000), in reality, all modern cities must reach beyond their regions to fulfil their existing food demand (Avery, 2011). Therefore it is crucial to remain sensitive to contextual factors (Morris and Buller, 2003). Specifically, one must recognise that local is not intrinsically superior; production can be fair or unfair, sustainable or unsustainable regardless of the scale (Born and Purcell, 2006). The contrasting perspective is embodied by the concept of '*defensive localism*'; the idea that local is unquestionably better (Winter, 2003). The danger here is that favouring local for the sake of local rides extremely close to nativism, which is rarely in line with positive social goals (Born and Purcell, 2006). A final point of discussion is based on the recognition that retailers – both conventional and alternative - will use the term 'local' in a vague sense, in many cases as a marketing stamp rather than a genuine commitment to sustainable values (Morris and Buller, 2003).

2.1.4 Social embeddedness

Social embeddedness refers to the recognition that economic behaviour is embedded in and mediated by a complex and extensive network of social relations (Hinrichs, 2003; Tovey, 2003). Section 2.1.2 highlighted the intrinsic importance of social relationships in the framing of quality in AFNs. However, the importance of social embeddedness in AFNs extends beyond this; maintaining social relations as well as a good ethical, social or environmental narrative is viewed as vital for success (Ilbery and Maye, 2005). The prevalence of direct producer to consumer relationships perhaps the most distinguishing feature of AFNs when compared with conventional systems (Sage, 2003). However, it is important to recognise that social embeddedness is not exclusive to AFNs and in reality all economic relations are socially embedded in a number of contrasting ways (Winter, 2003). As a result there are various degrees of social embeddedness existing in all food supply chains (Winter, 2003). The distinction is that AFNs rely almost exclusively on direct, personal relationships (Sage, 2003) whereas larger,

conventional suppliers traditionally employ various brand management techniques to maintain positive consumer perceptions (Rosenbaum-Elliott et al., 2015).

In AFNs, social relations can take the form of friendship, acknowledgement and mutual respect (Ilbery and Maye, 2005). However, as with any system dependant on interpersonal ties and trust, there is a susceptibility to uneven power relations, wider inequality and conflict (Goodman, 2003). That is, as interest in AFNs rise, small businesses each reliant on an overlapping consumer base may come into conflict with one another, creating tension amongst alternative producers (Ilbery and Maye, 2005). However, such conflict is equally present in conventional markets (Clifton, 1977).

2.1.5 Somewhere on the spectrum

Having considered the four central values of AFNs, it is obvious that there is significant blurring between alternative and conventional food systems (Maye and Kirwan, 2010). The values that underpin AFNs refer to the nature of the supply chain as well as the products themselves and the people and places related to them. While these concepts certainly embody an alternative system in theory, the complexities of the modern-day food supply system create a number of practical and theoretical issues to overcome when attempting to maintain a food system that is truly counteracting conventional market logic.

Whatmore and Clark (2006; cited from Maye and Kirwan, 2010, p.1) provoke this realization by defining AFNs as *'organized flows of food products that connect people who are concerned with the morals of their consumption practices in some way with those who want a better price for their food, or who want to produce food in ways counter to the dominant (or conventional) market logic'*. At once the practice aims to counteract dominant market logic (*'produce food in ways counter to the dominant market logic'*), whilst also re-enforcing and remaining embedded within it (*'those who want a better price for their food'*). Afterall, the predominant market logic of developed market economies - capitalism - fundamentally, is rooted in efforts to increase profit by means of trade and division of labour (Reisman, 1998). In practice therefore, it is important to recognize that both food supply systems often fall somewhere within the spectrum, rather than existing as two easily distinguishable groups (Figure 2).

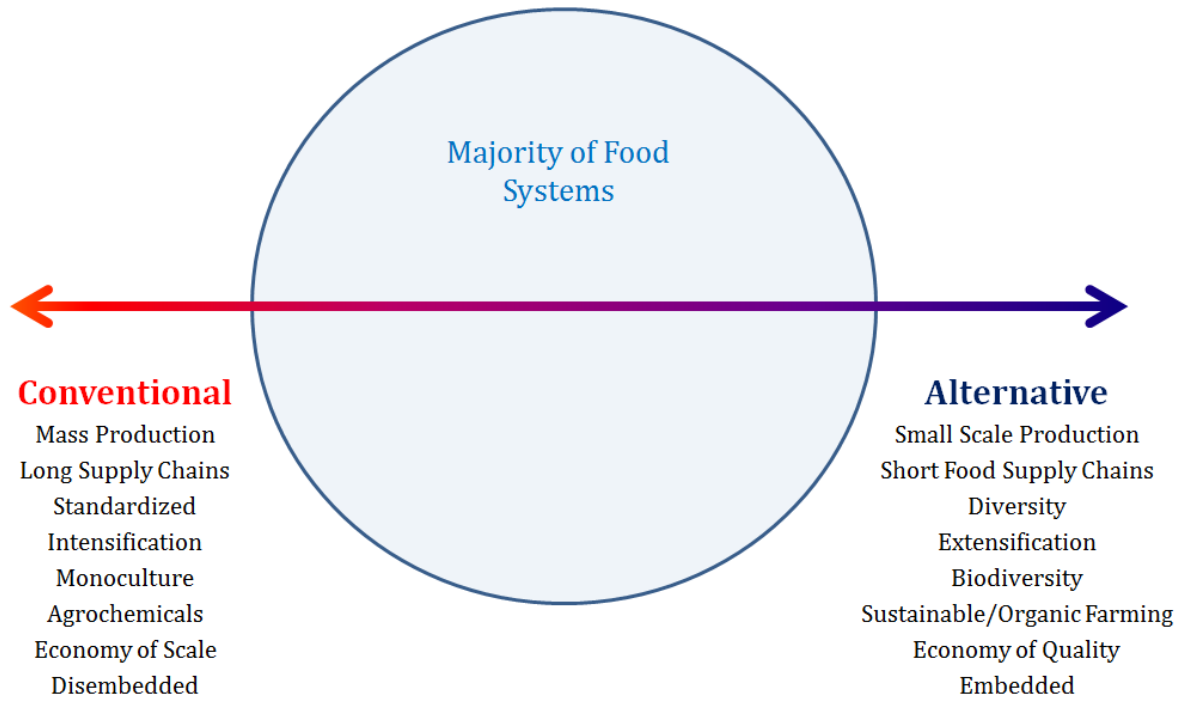


Figure 2: Conventional/Alternative Food System Spectrum (Compiled from Maye and Kirwan, 2010; Ilbery and Maye, 2005; Morris and Buller, 2003; Winter, 2003)

2.2 Central dimensions of urban agriculture

Section 2.1 provided insight into the academic debate surrounding 'alternative' vs. 'conventional' food systems, and provided greater insight into the shared values, practices and products of AFNs and UA (Figure 1). Establishing this overview has shed some light on potential motivations for the development of UA operations. However, despite general association with AFNs, it is important to recall that UA is a separate phenomenon, and therefore may just as easily operate as a node within the conventional food supply system. Therefore, although section 2.1 has established an understanding of the values that underpin *why* AFNs and UA operations may develop, it is paramount to take a closer look at the practical dimensions of UA specifically in order to understand *how* UA develops from the perspective of the literature.

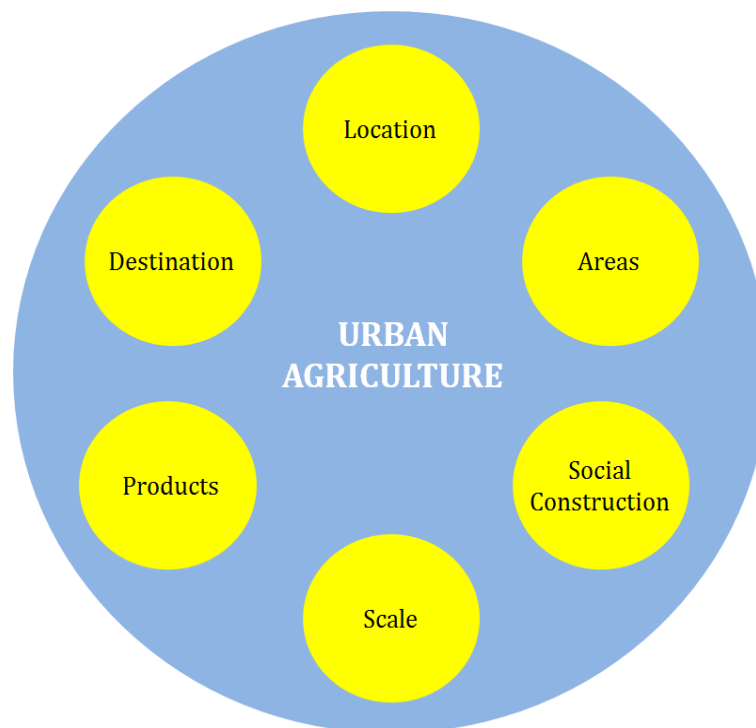


Figure 3: 'The Central Dimensions of UA', Author. Developed from Mougeot, 2000.

There exists a fair amount of publications on UA, often with varied descriptions of the phenomenon (Brown and Jameton, 2000; Tornaghi, 2014; Smit and Nasr, 1992; Van Veehuizen, 2006). Having reviewed this literature, the clearest observation that can be made is that diversity itself is a central tenet of UA (Mougeot, 2000). Indeed, even amongst developed nations alone, there exists many different types of UA projects that have little in common except for the fact they consist of growing edible plants in the city (Mancebo, 2016). In essence, UA occurs in a variety of forms with numerous functions, making it difficult to describe how such projects develop in a generalized manner (Van Veehuizen, 2006). Nonetheless, having considered a

multitude of interpretations, it seems the variety of UA operations can be outlined on the basis of six central dimensions (Figure 3). The dimensions are closely linked to dimensions outlined in a previous study by Mougeot (2000). However, Mougeot's dimensions have been modified to become more line with the central discussions of this thesis. Specifically, 'social construction' has been added as a dimension based on the recognition that UA develops socially as well as physically (Sage, 2003; Goodman, 2004; Winter, 2003). The remainder of section 2.2 shall outline each dimension.

2.2.1 Location

'Location' refers to the position of UA with regards to an urban area. Strictly speaking, UA *'refers to a wide range of agricultural ventures within city limits'* (Brown and Jameton, 2000, p. 21). However, academic consensus heavily supports the idea that UA operations can exist either within (intra-urban) or around cities (peri-urban) (Mougeot, 2000). Simply put, UA *'is a broad term which describes food cultivation and animal husbandry on urban and peri-urban land'* (Tornaghi, 2014, p. 551). While intra-urban sites are easily defined as being within the city limits (Brown and Jameton, 2000), peri-urban sites are harder to define (Mougeot, 2000).

Concerning peri-urban boundaries, size varies depending on the reach of urban influences (Stevenson et al., 1996). Others consider the zone as isochrones- a time travel band that stretches out along the main transport corridors; including travel time of non-resident farmers to their farm or travel time of products to reach the urban market (Mougeot, 2000). Other varieties include the maximum distance urbanites could travel to their farms in the peri-urban area on a daily basis (Mwamfupe, 1994), the maximum distance from an urban area that farms can supply perishables on a daily basis (Moustier, 1998), or the time it takes for urban residents to travel to engage in agricultural activities (Lourenco-Lindell, 1995). Evidently, there not only exists a large variety in the size of peri-urban zones, but also in the way these zones are specified. Nonetheless, if a conclusions is to be drawn in this respect, it would be that peri-urban zones depend completely on the contextual characteristics of the surrounding urban and rural area. With this in mind, all UA operations will be located somewhere between the city centre and the outer zone of urban influence within the urban-rural continuum.

2.2.2 Scale

'Scale' refers to the production scale and system and most commonly includes micro or meso enterprises (Mougeot, 2000). UA *'comprises a variety of production systems, ranging from subsistence production and processing at household level to fully commercialized agriculture'* (Van Veerhuzen, 2006). Therefore, there is considerable scope for diversity of scale within UA

projects and although small-scale (micro/meso) production is more common, it is possible to conduct UA on a macro scale.

2.2.3 Areas

'Areas' refers to the types of spaces in which UA is practiced. Contrary to 'location', 'areas' specify the type of land in question as opposed to its situation in reference to the urban centre (Mougeot, 2000). Thus, this dimension is concerned with three broad factors; development status of the land, the modality of tenure/usufruct of site and the physical setting (Mougeot, 2000). Development status refers to whether the land is built up, open space or somewhere in between. The modality of tenure may include cessions, a lease, sharing of a site, may be authorized or unauthorised, and be secured as a result of a personal agreement, customary law or a commercial transaction. Finally, physical settings include a broad variety of potential settings (Pearson et al., 2010). Potential areas include;

- 1. Aquaculture in tanks, ponds, rivers and coastal bays;*
- 2. Livestock (particularly micro-livestock) raised in backyards, along roadsides, within utility rights-of-way, in poultry sheds and piggeries;*
- 3. Orchards, including vineyards, street trees and backyard trees;*
- 4. Vegetables and other crops grown on roof tops, backyards, in vacant lots of industrial estates, along canals, on the grounds of institutions, on roadsides and in many suburban small farms' (Smit and Nasr, 1992, pp. 141-142).*

2.2.4 Social construction

'Social construction' refers to the organisation and inclusion of community members in the structure of UA projects. There is currently minimal literature that makes reference to the socially embedded nature of UA projects. However, as section 2.1 illustrated, there is a good degree of literature discussing the importance of strong inter-personal ties for 'small-scale, local food producers', or 'community supported agriculture (CSA)' (Jarosz, 2008; Sage, 2003; Winter, 2003). Having developed an informal overview of UA projects, it is clear that community involvement practices are common to many projects, and central to others. A direct result of the values of social embeddedness and SFSCs (Ilbery and Maye, 2005), community involvement in agricultural projects has arisen in an attempt to develop direct, cooperative relationships between producers and consumers (Adam, 2006).

A UA project may maintain social relations with the community on two counts; in terms of a customer network and in terms of support in day to day activities. However, *'if there is a*

common understanding among people who have been involved in CSA, it is that there is no formula. Each group that gets started has to assess its own goals, skills, and resources, and then proceed from that point' (Groh and McFadden, 1990, p. 7). Although CSA does not apply to all UA projects, a large number of UA projects take on CSA principles. Some projects choose to maintain social relationships with a customer base alone, whereas others fundamentally rely on the support of the community for continuation and employ practices such as volunteering, work shares and internships (Mougeot, 2010; Harvest, 2010; Adam, 2006).

2.2.5 Products

'Products' refers to the kind of outputs that are generated by the UA project (Mougeot, 2000). Most commonly, UA projects produce a variety of food items (Mougeot, 2000). However, production is not necessarily restricted to food products; UA is *'the growing, processing and distribution of food and other products...'* (UAC of the CFSC, 2003). This definition highlights how UA products can include a diverse range of food and non-food products for people or livestock (e.g. grain, vegetables, herbs, fruits, livestock, ornamental plants) (Mougeot, 2000). Others have described UA output as *'food and fuel'* (Smit and Nasr, 1992, p. 141). A further point to note is the fact that non-food products need not be limited to physical outputs and can include social outputs such as youth education or environmental therapy (Pearson et al., 2010; Sommers and Smit, 1994).

2.2.6 Destination

'Destination' refers to the target endpoint of the produce, and encompasses the issue of whether produce is grown for self-consumption or trade or both (Mougeot, 2000). There is little debate among the literature that food produced by means of UA is destined for local urban residents (Smit and Nasr, 1992; Tornaghi, 2014). However, there is a degree of discussion over how produce eventually reaches local residents, and what counts as UA in this sense. Some suggest that UA is limited to trade; *'produced directly for the market and frequently processed and marketed by the farmers and close associates'* (Smit and Nasr, 1992, p.141-142). Yet, the argument could be made that this specifically refers to 'commercial UA'. In such a case, this is achieved via farmers' markets, farm shops, box schemes and home deliveries (Mougeot, 2000).

However, the majority of literary definitions accept production for both self-consumption and trade (Deelstra and Giradet, 2000; Smit et al., 1996). Furthermore, others specifically recognise that UA incorporates projects purely for self- or community-consumption, such as community or school gardens (Brown and Jameton, 2000). A final point to note is that a number of UA projects disperse their produce in ways that do not fall into the strict categories of self-consumption or

market, such as via cooperative schemes, barter, gifting or work shares (Mougeot, 2000). For a large number of UA projects, produce is destined for self-consumption as well as for the market.

2.2.7 Making sense of diversity

Having considered several interpretations of UA, the definition of UA selected for this thesis must make reference to location, area, scale, social construction, products and destination. Fortunately, Mougeot (2000) provides a definition that ties these elements together neatly; UA is *'located within (intra-urban) or on the fringe (peri-urban) of a town, city or metropolis, which grows and raises, processes and distributes a diversity of food and non-food products, (re)-using largely human and material resources, products and services found in and around that urban area, and in turn supplying human and material resources, products and services largely to that urban area'* (Mougeot, 2000, p. 10).

Taking into account the above dimensions, the potential variation possible under the broad term of UA is apparent. However, by conceptualizing projects in terms of how they relate to each dimension, it is possible to bring an element of structure to the seemingly endless variety of UA. However, it is crucial to recognize that the above dimensions take into account only the practical elements of UA. When viewed in the context of section 2.1, it becomes clear that further variation is possible still. UA projects vary based on practical dimensions as well as the values that underpin the motivation for each project. To reiterate this observation precisely, UA projects vary with regards to *why* they exist, as well as *how* they go about existing. To demonstrate, Table 1 shows two UA projects from a European context (UK and the Netherlands), and contrasts them with two other projects located in a similar socio-economic context (Singapore and the USA). This table should illustrate the degree of practical and motivational diversity possible, even when projects from incomparable contexts are disregarded.

Project Name	Why the Project Exists	How the Project Exists
La Finca del Sur , South Bronx, New York, USA	Address issues of food access, environmental justice and community empowerment for woman of colour and tie these issues to broader systemic inequalities and global justice.	Outdoor, intra-urban, small-scale, community farm cooperative. Growing a variety of edible crops and providing outdoor space for families. Production for self-consumption (members) as well as trade (Bronx Farmers Market).
Growing Underground , London, UK	Promote sustainable practices and reduce food miles for retailers and consumers.	Micro greens and salad leaves produced in disused underground tunnels beneath Clapham using hydroponic systems and LED technology. Produce from this mid-scale, intra-urban project is purely for the market via external retailers and restaurants.
Sky Greens , Singapore	Aim to grow more food in less space to minimize the impact of agriculture on land, water and energy. Help cities with food security and safety. Promote the integration of low carbon footprint agriculture into urban living.	Indoor, intra-urban, low carbon hydraulic water-driven vertical farming system. Produce consists of a variety of Asian green vegetables that are for external urban consumer trade. Small-scale enterprise.
Goats Ridammerhoeve , Amstelveen, The Netherlands	Promote organic farming and provide space for educational activities.	Mid-scale, peri-urban farm consisting of goats, lambs, hens and chickens, pigs, cows and a calf, a horse and a pony. All products are for market via the on-site farm shop and restaurant.

Table 1: Selection of UA projects⁵

To recap, section 2.2 has surveyed a variety of UA interpretations. The central dimensions of UA have been outlined and discussed, with specific attention paid to the diversity of projects. Ultimately, diversity itself is a central component of what defines UA, and as such, any future consideration of UA should be careful not to overlook the importance of local contextual factors. Looking forward, section 2.3 will explore the academic debate on the benefits and related critique of UA.

⁵ Information gathered from the following websites accessed on 20.10.2015;
<http://www.communityfoodfunders.org/wp/wp-content/uploads/2016/08/La-Finca-del-Sur-brochure.pdf>
<http://www.skygreens.com/>
<http://growing-underground.com/>
<http://www.geitenboerderij.nl/>

2.3 Benefits and critique of urban agriculture

Having developed an overview of the *why* (2.1), and *how* UA projects develop (2.2), it is now necessary to consider the consequences of this phenomenon noted in the literature. A large body of academic studies have made reference to the social, environmental, economic and health benefits, as well as potential concerns and critiques associated with UA. Therefore, the following section is an overview of the discussion.

2.3.1 Social

With regards to the food supply chain, engagement with UA creates a strengthened food community by reconnecting consumers with farmers (McClintock, 2010). More broadly, UA has been associated with community enhancement, cohesion and well-being (Brown and Jameton, 2000; Nugent, 1999). UA provides ample opportunity to socialize and exchange ideas, in turn developing and strengthening local friendships (Perez-Vanquez et al., 2005). Furthermore, this has been linked to an increased sense of pride and belonging (Mogk et al., 2010). However, many small but commercial operations employ only a handful of people and market their produce to high-end restaurants that are out of reach to local residents (Vitiello and Wolf-Powers, 2015) highlighting the potential of UA to lead to gentrification (Crouch, 2012). That is, studies have recognized how the growth in demand for alternative food systems has not been experienced equally across race and class (Guthman, 2011; Jarosz, 2008), and that in general, the workforce of UA projects in the UK appear to be white and middle class (Lovett, 2016). As a result, debate surrounds the question of whether or not UA provides the aforementioned social benefits to average working people with little time or money (Dziedzic and Zott, 2012).

Contrary to this critique, studies have allied involvement in UA with youth education (Sommers and Smit, 1994) and minority empowerment; especially concerning women of low income households (Slater, 2001; Mudimu, 1996). Therefore, the combatting argument can be made that UA can result in a more equal community (Smit and Nasr, 1992). Furthermore, inner-city gardens have resulted in reductions in burglaries, thefts and illicit drug dealing in innercity neighbourhoods (Brown and Jameton, 2000). Others have toted UA's ability to generate employment (Mougeot, 2010; Van Veerhuizen and Danso, 2007) and develop new skills⁶ (Pearson et al., 2010). Lastly, studies have documented the satisfaction gained from watching things grow, and noted this as a contributory factor in raising reported quality of life (Perez-Vanquez et al., 2005).

⁶ Including but not limited to horticultural, events management, marketing and communication skills (Perez-Vanquez et al., 2005).

2.3.2 Ecosystem services

The body of literature recognizing the ecosystem services associated with UA refers to both direct and indirect gains. Generally, UA provides three main benefits for the environment; ecological health, sustainability and improved aesthetics of the urban living environment.

Concerning ecological services, UA has the capacity to improve air and soil quality (Nugent, 1999), assist with waste and nutrient cycling (McClintock, 2010) and water management (Deelstra and Giradet, 2000). UA's ability to recover wastewater and storm water run-off reduces agricultural water consumption and prevents instances of rainwater overwhelming sewage systems (Mogk et al., 2010; Wachter et al., 2010). Moreover, UA can lead to microclimatic improvements such as humidity increase, temperature reduction, dust/gas capture and solar radiation interception (Deelstra and Giradet, 2000; McClintock, 2010). Additionally, UA often creates more habitats for wildlife in the city (Perez-Vanquez et al., 2005). Finally, ecological farming practices associated with UA typically utilize a reduced amount of agrochemicals which contributes to reduced pollution and increased biodiversity (McClintock, 2010; Pearson et al., 2010).

However, a number of concerns also exist in relation to the ecological impact of UA. Namely, visual untidiness, destruction of vegetation, soil erosion, siltation, increased use (and potential depletion) of water bodies and pollution of resources (Mougeot, 2000). However, such outcomes are associated with the use of agrochemicals (Lourenco-Lindell, 1995). Indeed, irresponsible use of agrochemicals carries risk, yet in the context of Western Europe, environmental laws exist to combat such instances (EPA, 1990).

With regards to UA's indirect impact on wider sustainability, the production of food within proximity of a city reduces overall food miles (McClintock, 2010). This reduced need for packaging, refrigeration, storage and transportation decreases the demand on fossil fuels and limits the environmental costs associated with the production of food (Mogk et al., 2010). In turn, this contributes to a reduction of CO₂ emissions (Deelstra and Giradet, 2000). Such changes contribute to the sustainability and resilience of a city (Garnett, 2000; De Zeeuw et al., 2011). Furthermore, agriculture in cities can lead to greater recognition of the environmental issues, ultimately contributing to increased environmental awareness (Deelstra and Giradet, 2000).

UA is able to improve the urban environment by providing incentive for careful management of green space, and increases the overall amount of quality green spaces in cities (Pearson et al., 2010). Moreover, UA has the potential to create nice odours, a shadow and act as a wind break

(Deelstra and Giradet, 2000). Plus, the presence of UA projects can save undeveloped sites from being built up and this can maintain peace and quiet (Perez-Vanquez et al., 2005).

2.3.3 Economic

UA has the capacity to develop new, local industries and aid with economic recovery (Mogk et al., 2010). Moreover, individuals involved with trading their produce generate a supplementary income for themselves (Mougeot, 2000). In doing so, entrepreneurial efforts are amplified (Smit and Nasr, 1992). Additionally, local projects are more likely to source from other local businesses in terms of resources, marketing or labour (Ladner, 2011). In doing so, local supply chains are established which keep money circulating locally and reduce overall transport costs (McClintock, 2010).

UA is also noted as a productive use of vacant urban land (Madaleno, 2000). However there is some debate surrounding this assertion. Specifically, some are of the opinion that *'agriculture should be rural, as it interferes with more productive use or rent of land by other economic activities'* (Mougeot, 2000, p. 24). This argument follows that support for UA could seriously reduce public investment in rural agriculture (Mougeot, 2000). Consequently, many feel that agriculture remains a strictly rural endeavour (Kaufman and Bailkey, 2000), despite the fact agriculture has always taken place in urban areas (Howe and Wheeler, 1999). Nonetheless, UA has been noted to contribute towards an improved tourism industry (Garnett, 1996) as well as raise the value of local property (Perez-Vanquez et al., 2005).

2.3.4 Health

UA has the potential to improve the *quality* of urban diets, especially amongst children (Brown and Jameton, 2000). The more practical experience people have with growing fresh food, the more likely they are to eat it (Bellows et al., 2003). Thus, involvement in UA often leads to greater consumption of fresh fruits and vegetables over processed foods, creating a *'positive impact on dietary habits'* (Bellows et al., 2003, p. 2). Moreover, UA is able to improve public awareness of healthy eating and the importance of dietary diversity (McClintock, 2010; Nugent, 1999). On the other hand, some foster concerns over potential contamination of crops resulting from nearby traffic emissions (Van Veerhuizen, 2006). However, such an instance would be

unlikely in the context of European air quality laws⁷, but not impossible considering the consistent failure of the UK to meet the minimum standards since 2010⁸.

Regardless, UA is able to improve physical health by providing opportunity for regular exercise through healthy, active work (Bellows et al., 2003). This leads to improved fitness (Pearson et al., 2010) and a reduced risk of type 2 diabetes, some cancers and obesity (Miles, 2007).

Notably, UA provides a platform for keeping one's mind and body active in an outdoor setting (Perez-Vanquez et al., 2005). This has been shown to result in stress-reducing effects (Brown and Jameton, 2000), a minimized risk of clinical depression and other mental health illnesses (Miles, 2007), as well as other personal psychological benefits (Nugent, 1999). The following section will now consider existing knowledge of barriers to and opportunities for the success of UA.

⁷ European Directive 2004/107/EC and the Air Quality Framework Directive 2008/50/EC. Accessed on 30.11.2016 at http://ec.europa.eu/environment/air/quality/legislation/existing_leg.htm

⁸ A) Supreme Court Judgment in the Client Earth case, April 2015 and B) High Court judgement in the second Client Earth case, November 2016. Accessed on 30.11.2016 at http://ec.europa.eu/environment/air/quality/legislation/existing_leg.htm

2.4 Barriers and opportunities

Having established a theoretical and practical understanding of UA (2.1,2.2) and an overview of the benefits and critiques associated with the practice (2.3), this section will now contemplate the barriers faced when attempting to initiate or maintain a UA project. Existing literature on this subject - within a relevant socio-economic context – is limited. Nevertheless, noted barriers can be divided into three broad categories; land use conflicts, resources, skills and knowledge and institutional. The following section will outline this knowledge and note potential strategies for overcoming said barriers. It is important to note that success strategies incorporate action on a number of societal levels (LeJava and Goonan, 2012; Garnett, 1996; Armar-Klemesu, 2000).

2.4.1 Land acquisition

Many potential growers face difficulty in acquiring land (Garnett, 1996). Roughly 6.8% of UK land is classified as urban (UK NEA, 2011), and a majority of this land is privately owned (Cahill, 2001). As private land must only be registered by law with the Land Registry if it is sold (rather than inherited or given), a large proportion remains unregistered, and this increases the complexity and difficulty of locating land owners (Garnett, 1996). Developing national legislation to ensure all land is registered and ownership information is freely available to the public, combined with local authority support would help to overcome this barrier (Garnett, 1996). However, even after locating suitable land, farmers can face insecurity as they often lack long term site tenure or ownership (Kirschbaum, 2000).

Furthermore, inner-city landowners face pressure to sell to developers (Wiskerke and Van der Schans, 2010). Therefore, UA is often viewed as a temporary activity (Kaufman and Bailkey, 2000). Prioritising sustainable development to inform policy and practice on the local authority level would undoubtedly enable urban growers to compete with developers on a more even playing field (Garnett, 1996). Additionally, site contamination may limit the number of available, fertile sites (Kaufman and Bailkey, 2000; UK Gov, 1995). If the central government were to implement action on soil contamination, this limitation would be reduced (LeJava and Goonan, 2012). As a final point, as UA land is often publicly accessible, vandalism (stealing vegetables, rubbish, trampling plants, damaging/stealing signs) as been described as a common irritant (Kaufman and Bailkey, 2000).

2.4.2 Resources, skills and knowledge

High start-up costs are noted as a serious barrier for UA projects (Garnett, 2000; Hodgson, Caton-Campbell and Bailkey, 2011). Preparing the site, acquiring equipment, seeds and materials is costly, time-consuming and can be legally complicated (Kaufman and Bailkey, 2000).

If local businesses were to share useful waste such as wood chips, rotten produce or manure, this would reduce the overall start-up cost of site preparation and maintenance (Garnett, 1996). Specifically concerning water access, UA projects would benefit greatly from further research and modified legislation regarding grey water systems (Garnett, 1996). Such research could be commissioned by the national government, and grants could be issued to individuals installing such systems. Currently, available and adequate funding is sporadic and can be difficult to attain due to competition and a lack of clarity (Kaufman and Bailkey, 2000). Support from local authorities in terms of assistance locating and applying for external funding would mitigate this struggle (Garnett, 1996).

If private businesses were to consider providing financial assistance to community initiatives, this would ease financial pressure (Garnett, 1996). In the same vein, UA projects can overcome some financial barriers by focussing on the principles of sharing (knowledge and resources), recycling and re-using (Garnett, 1996). As it stands, UA producers often struggle to compete financially with cheap food produced at a conventional scale (Kaufman and Bailkey, 2000). Locating the correct individuals (employees or volunteers) with relevant skills and knowledge is noted as a barrier⁹ (Kaufman and Bailkey, 2000). Additionally, work in UA often constitutes long hours and hard work (Feenstra, 1997). Projects can be vulnerable if the operation is too heavily reliant on a single, skilled and motivated individual (Kaufman and Bailkey, 2000). Therefore, another hurdle is maintaining motivation for the project amongst the community to ensure long-term continuation (Garnett, 1996). Getting involved in local food festivals and events is likely to encourage community support, and such actions would be amplified by support from local press, radio and shops (Garnett, 1996).

Finally, UA can suffer from low prioritisation and/or disinterest from community development organisations who instead wish to prioritize affordable housing, create jobs and training, encourage youth programming and social services (Kaufman and Bailkey, 2000). Promotion of political will for and awareness of UA in local authorities would create greater support for such projects (Garnett, 1996), which can currently appear riskier choices than retail development (Kaufman and Bailkey, 2000).

2.4.3 Institutional

⁹ A diverse skills set is desirable including; horticultural experience, volunteer and project management skills, business management and development skills, knowledge of traditional agriculture, the ability to teach, knowledge of cookery and nutrition as well as social skills allowing for integration of the project into the community (Careers 2030, 2016) (BUFA, 2016)

Once operational, is it difficult to make a living off of UA alone under existing political and economic systems (Feenstra et al., 1999). Formal and informal UK institutions invariably pose a number of barriers to UA projects. Audit rules specify that any land sold by local authorities must be sold on the open market to the highest bidder (Garnett, 1996). In practice, this favours commercial bidders over those with social or environmental goals. Moreover, land is managed by multiple authorities, leading to a number of contradictory policies and logistical problems (Garnett, 1996). This could be mitigated by central government efforts to locate contradictory policies and amend policies with environmental sustainability in mind (Garnett, 1996).

On a European level, policies can act as obstacles in the field of physical planning, nuisance law, retailing and food safety (Wiskerke and Van der Schans, 2010). Despite being initially conceptualized to support family scale farming enterprise (Knudsen, 2005), the Common Agricultural Policy has not traditionally prioritized environmental concerns, and in practice favours the largest, richest farmers at the expense of small-scale production sites (Sertoz et al., 2014). However, recent amendments - such as the inclusion of an environmental and health related cross-compliance system - have illustrated improved policy making (European Commission, 2013).

Chapter 3: RESEARCH DESIGN

This chapter will explain the process by which this research was conducted (Figure 4). The research process began with a review of the literature which helped outline relevant sources and methods of data collection. Having carried out exploratory interviews, reflection on the data gathered was used to inform subsequent instances of data collection. The final element of the research process comprised a qualitative analysis of the data and identification of conclusions.

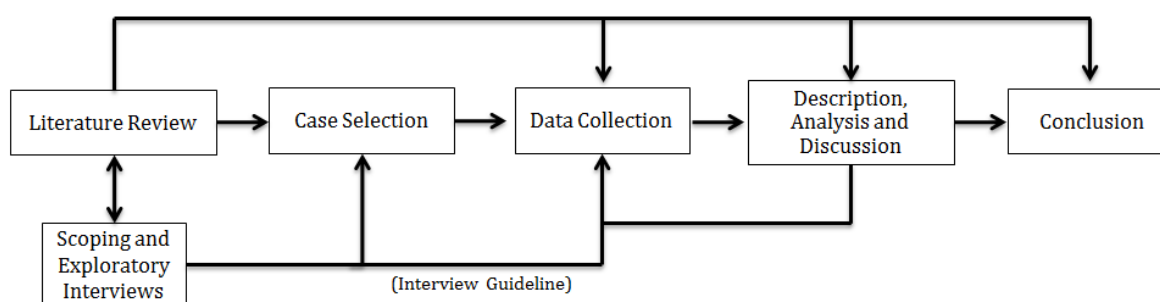


Figure 4: Research Process

3.1 Literature review

The primary stage of this research consisted of ‘a systematic and thorough search of all types of published literature in order to identify as many items as possible that are relevant to a particular topic’ (Gash, 2000). The outcome of this search is Chapter 2 and I achieved this via online searches¹⁰ using the terms ‘Urban Agriculture’, ‘Alternative Food Networks’, ‘Benefits/Critique/Concerns of Urban Agriculture’ and ‘Opportunities/Strategies for Urban Agriculture’. Having generated a sizeable amount of literature, I used the references in these articles to pinpoint further relevant material that had not arisen in my initial search. Finally, I used regular search engines¹¹ to locate non-academic material such as websites, media articles and official reports. I chose to do this as such sources of information capture public concerns and other relevant information in an up-to-date way that scientific articles may not have yet studied. This step was crucial to ensure a comprehensive understanding of existing work (Haywood and Wragg, 1982), provide insight into subsequent data collection methods and provide material with which to compare my own data- namely, the literature review and exploratory process aided with the establishment of guidelines for interviews and surveys.

3.2 Case study approach, case selection and data collection

¹⁰ I utilised a combination of scholar.google.nl and rug.on.worldcat.org.

¹¹ Primarily Google.com and Ecosia.com

This research takes on a case study approach. *'The case study researcher typically observes the characteristics of an individual unit. The purpose of such observation is to probe deeply and to analyse intensely the multifarious phenomena that constitute the life cycle of the unit'* (Cohen and Manion, 1995, p. 106). Considering the inherent diversity in UA, such an approach was deemed the most insightful compared with other approaches. For example, a nationwide survey may have answered sub-questions 1 and 2¹², but be blind to important contextual factors when answering sub-questions 3 and 4¹³. Likewise, experimental research would be inappropriate as this thesis lacks a hypothesis. Instead, a descriptive case study approach allows this thesis to zoom in on producing a full description of UA within its context (Yin, 2003). Indeed, general theoretical (context-independent) knowledge can be more valuable than concrete, practical (context-dependant) knowledge, depending on the topic in question (Flyvbjerg, 2006). I would argue that when examining the practicalities of UA, context-dependant knowledge is in broad terms more desirable and useful than contextually-independent conclusions.

3.2.1 Selecting Bristol

Bristol is the 10th largest city in the United Kingdom with around 449,300 inhabitants (bristol.gov.uk), and is located in the county of Somerset (Figure 5) and is currently home to a number of UA projects. Bristol is not unique from other cities in the environmental, economic, social, political and health issues it faces. However, it does stand apart from other cities in the fact that it has taken a number of steps to promote sustainable change, resulting in the receipt of the EU Green Capital Award in 2015.

An element of Bristol's sustainability efforts centred around food issues, and specific bodies such as the Bristol Food Policy Council (BFPC) launched in 2011 and Bristol Food Producers (BFPs) launched in 2015 were established to support and maintain continued action on this front. For these reasons, Bristol appears to be a good case-study as it has already taken a number of steps to support a transformation in food culture. Therefore, it will be interesting to see what has already worked and what more could be done to support UA. Additionally, Bristol provides an interesting case study in the context of a post-BREXIT Britain, as a number of food-related initiatives were initially reliant on funding made available by the EU Green Capital Award.

¹² Sub-question 1. 'Why does UA develop?', Sub-question 2. 'How does UA develop?'

¹³ Sub-question 3. 'What are the largest barriers to the development and long-term continuation of UA?', Sub-question 4. 'What opportunities exist for UA?'

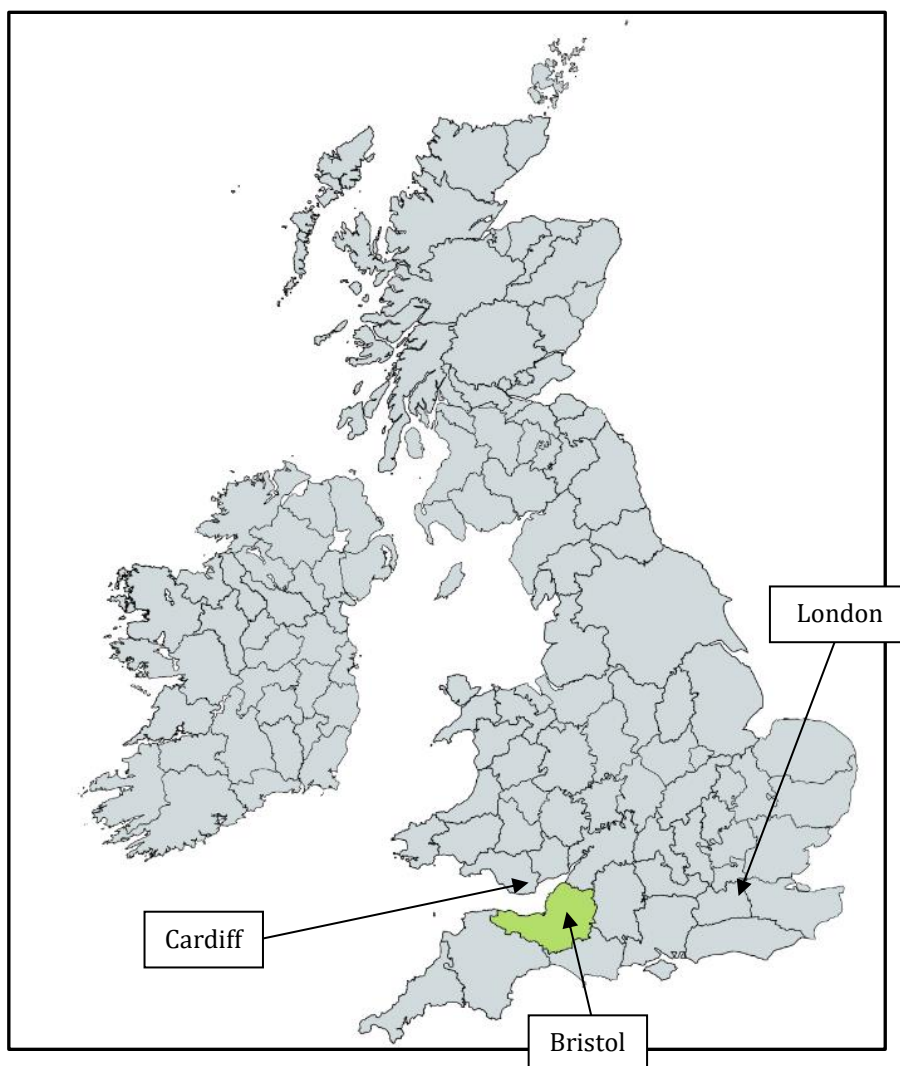


Figure 5: Location of Bristol in the United Kingdom.

3.2.2 Mixed methods

The data collected in this thesis originated from one-on-one guideline based interviews and surveys. Gathering data in this way allowed me to spend more time understanding each participant's perspective in detail (O'Leary, 2010). Based on initial scoping and literature review, an interview guideline (Appendix 2) was developed on a basis of grouped sub-topics including 1) setting the scene, 2) farm specifics, 3) the market, 4) potential barriers, 5) policy and regulations and 6) looking forward. This was done to ensure comparable data.

Interviews were audio recorded and conducted on-site, in person wherever possible. This facilitated first-hand experience of multiple sites, and allowed for direct observation to be included as an additional source of data. Observation of material conditions was important, as it provided understanding of the context within which to frame the meaning of social actions (Ritchie, 2013).

Guiding Sub-Question	Method
1. Why is UA developing in Bristol?	Semi-Structured Interview
2. How is UA developing in Bristol?	Semi-Structured Interview, Observation of Project Sites, Questionnaire
3. What are the largest barriers to the development and long-term continuation of UA in Bristol?	Semi-Structured Interview, Document Review
4. What opportunities exist for UA in Bristol?	Semi-Structured Interview

Table 2: Data Collection Methods

In addition, a two-part questionnaire was designed (Appendix 3) to enrich the interview data. The questionnaire recorded practical aspects of each UA project, and was useful in generating additional understanding of the diversity of project configurations. For this reason, the questionnaire was only issued to those directly involved with a UA project, such as growers, farm managers or project founders. Finally, document review was also utilised. Table 2 indicates which methods were employed for each sub-question.

3.2.3 Selection of cases

Data was sourced from individuals with first-hand experience of UA farms in Bristol; growers, farm managers, related NGOs and a council representative. Participant selection began with a scoping phase in order to get an idea of the overall variety of UA in Bristol. Having established a general idea, exploratory interviews were conducted. At this stage, I started in parallel to make notes, and compare and document the empiric cases to get an inclination of whether the information sources were sound. Having established satisfaction with the initial interview structure, the snowball system was used to contact further participants. I continued to conduct interviews with case participants whilst checking the empirics. After conducting interviews with representatives from different cases, it became clear that additional information was dropping significantly (Figure 6). This led to the assumption that I had reached a large enough sample size.

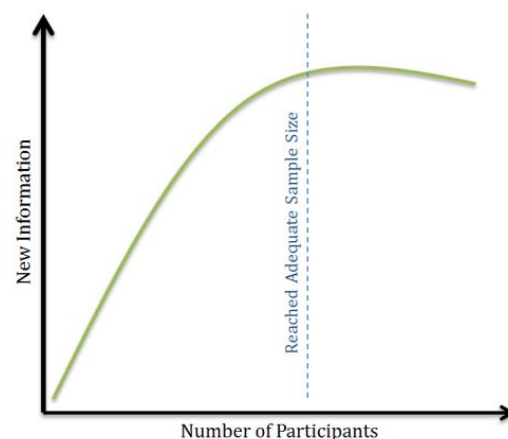


Figure 6: Point of information saturation

3.3 Data description and qualitative analysis

After each interview, recordings were transcribed and questionnaire answers were typed up into a single document directly after the interview. Having accomplished this, summaries were

made of each interview to give a clear overview of the data accumulating as data collection was still ongoing. Once data collection had been completed, all data was compiled into a single document (Appendix 5). Additionally, any material or web sources alluded to by participants during interviews was referenced on this single document to provide a compilation.

Qualitative analysis is in line with the research objective as it aims to explore a phenomenon that has not already been comprehensively described (Bless, Higson-Smith & Kagee, 2006; Rubin and Babbie, 2010). Interview responses were allocated individual codes, which were then divided into pre-established groups (interview sub-topics), in order to address each guiding sub-question. I was then able to compare and contrast my own data derived from recent, direct experience with information previously gathered from literature.

3.4 Ethical considerations




This research design incorporated a significant amount of interaction with individuals in the form of interviews and direct observation of their sites. Naturally, growers – and especially founders – had a significant emotional investment in their project. As such, this study carried a serious responsibility to apply principles of ethics and be considerate of the way in which data was collected and presented (Vanclay, Baines and Taylor, 2013). Participant's consent for interview participation and audio recording was established in writing (consent form available in Appendix 4). Inherent in this agreement was the right to suspend participation at any moment and remain anonymous in the final document. Moreover, the consent form set out in plain terms the intent of the research. The following chapter shall now state and expand upon the data gathered as a result of the above strategies.

CHAPTER 4: CASE STUDY INTRODUCTION

This chapter provides an introduction to the Bristol case study. The research concentrates on accounts derived from two groups of participants; growers involved in UA (Table 4), and those engaged in supporting UA activities (Table 3).

				
Organization	Bristol Food Policy Council	Bristol Food Producers	Land Workers Alliance	Bristol City Council
Interview	AR	CR	HL	SC
Position	Vice-Chair	Coordinator	Member	Parks Development Officer
Date of Interview	13.09.2016	08.09.2016	07.09.2016	11.10.2016
Aims	Bring together stakeholders from diverse food-related sectors to examine how the food system is operating and to develop recommendations on how to improve it.	To scale up local food production in order to contribute to a more resilient and sustainable city.	Campaign group and trade union with the aim of advancing political interests of small scale and sustainable growers and promotes sustainable agriculture.	Responsible for the provision of all local government services within the district.
Relationship to UA	UA operations have a part to play in providing 'Good Food' to the city. (tasty, healthy and affordable; good for nature, good for workers, good for local business and good for animal welfare).	Main source of support for new or existing UA operations to gain access to land, scale up and/or develop skills/knowledge.	Knowledge of wider political and economic context in the UK and how this impacts small-scale and sustainable growers.	Partially responsible for the approval of new UA sites. Can provide a degree of support in locating land.

Table 3: Non-UA Participant Organisations

			
Organisation	Grow Bristol	Elm Tree Farm	Sims Hill Shared Harvest
Interview	DO	KE	BW
Position	Director and Co-Founder	Project Co-ordinator	Grower
Date of Interview	02.09.2016	12.09.2016	12.09.2016
Project Aim	Produce fresh, local and sustainable food all year round; educate and engage with people to increase knowledge and wellbeing; and promote enterprise and develop employment opportunities.	Our goal is to set people free to live more fulfilled lives.	Use natural growing methods and permaculture principles to produce high quality veg for the people of Bristol.
Project Dimensions			
Location	Intra-urban 16 Feeder Road, Bristol, BS2 0SB	Peri-urban Park Road, Bristol, BS16 1AA	Peri-urban Frenchay Park Road, Bristol, BS16 1HB
Areas	Inside a shipping container located on previously vacant land. On a temporary (2 year) free lease from the Homes and Communities Agency.	Long established farm premises (over 100 years old). Rented from National Health Service (NHS).	Open space land leased from Bristol City Council. Premises shared with Feed Bristol and Edible Futures.
Scale	Micro Scale (shipping container)	Mid-Scale (19 hectares)	Small Scale (2.4 hectares)
Products	<u>Food Products:</u> Pea shoots, sunflower shoots, microgreens including leeks, radishes and coriander.	<u>Food products:</u> Beef, lamb, pork, eggs, organic fruit and vegetables. <u>Non-food products:</u> therapeutic support for adults with learning disabilities, ornamental plants and woodwork items.	<u>Food Products:</u> A variety of vegetables including staples (potatoes, onions, carrots).
Social Construction	Operation is a social enterprise and hosts interns, volunteers, school groups, consultants, and others.	The operation does not have regular volunteers but does rely on funded placements.	Operation founded on principles of community cooperation.
Destination	Produce is sold to local restaurants/chefs and green grocers as well as via online markets (Real Food Economy and Food Assembly).	Produce is sold at local market to regular customers. Also sell via their on-site farm shop.	Food is mainly shared between members, however some produce is sold locally to supplement income.

Why

How

			
	Purple Patch	Edible Futures	Golden Hill Community Garden
	MC	HL	LM
	Grower	Founder and Grower	Community Project Worker
	03.09.2016	07.09.2016	13.09.2016
Why	Grow things and be as productive and valuable as possible.	Be a tiny part of transforming the food system. Grow in sustainable ways that pay workers a sustainable wage and deliver good, fresh food through short supply chains to Bristol consumers.	'We believe that everyone benefits from being able to grow food, together, outdoors and we will try and make that possible for as many people as we can'.
Project Dimensions			
	Intra-urban Boiling Wells Lane, Bristol, BS2 9XY	Peri-urban Frenchay Park Road, Bristol, BS16 1HB	Intra-urban Longmead Avenue, Bristol, BS7 8QF
	Small part of a previously large estate on the Blue Finger. Small holding on a lifetime lease.	Open land informally sub-let from Feed Bristol contact Premises shared with Feed Bristol and Sims Hill Community Harvest.	Free lease of area within allotments from the council via the Horfield and District Allotment Association.
	Small Scale (1.6 hectares)	Small Scale (0.4 hectares)	Small Scale (0.2 hectares)
How	<u>Food Products:</u> Salad, Vegetables and Cattle.	<u>Food products:</u> Salad, vegetables and herbs. Open to growing anything that grows well and is high value.	<u>Food Products:</u> Standard vegetables, especially winter veg. Every year grow something weird. <u>Non-Food Products:</u> Days for adults and children with learning difficulties and afterschool kids club.
	No regular volunteers (yet- not enough time to organise).	No volunteers.	High involvement of community volunteers including families with children and individuals with learning disabilities.
	Produce is sold locally via Food Assembly, local markets, a veg box scheme, and occasional restaurants.	Produce is sold to restaurants/chefs and a membership scheme (Salad Drop).	Food is taken home by volunteers. Nothing is sold.

Table 4: Participating Urban Agriculture Projects

5.0 DESCRIPTION, ANALYSIS AND DISCUSSION

The following chapter will reveal the results of the Bristol case study. To do so, the research findings will be outlined under three topic clusters; 1. Project organisation, 2. Spatial considerations, and 3. Looking forward. Within each topic cluster, a description and discussion of the results will precede a discussion of related barriers and opportunities.

5.1 Topic Cluster 1: Project Organisation

The following cluster is concerned with the social configurations of each project, as well as each project's various outputs. Inherent with this is the project's attention to and interpretation of quality, as well as the routes to market employed and the presence of SFSCs in Bristol's UA network.

5.1.1 Social construction

Participants interviewed for this research came to UA from a variety of occupational backgrounds including environmental activism, therapy, horticulture, gardening, full-time parenting, art, environmental policy consulting and education. Of the six project participants, two found themselves involved with urban growing after applying for and landing a role in the project they are currently involved with. The remaining four participants founded or co-founded their own projects. Growers commonly stated that their involvement developed naturally; '*My role really evolved*' (KE, 2016). Half of the participants cited previous involvement with community growing projects as a stepping stone to the position they are now in. Two of the projects have been ongoing for over 100 years, whereas the remaining four projects began within the past 5 years.

	Purple Patch	Edible Futures	Grow Bristol	Elm Tree Farm	Sims Hill Shared Harvest	Golden Hill Community Garden
Full Time Employees	3	1	2	15	3	1
Part Time Employees	2	3				
Regular Volunteers			2	80	20	30

Table 5: Social Construction of Projects (no. of people)

Table 5 outlines the organisational structure of the researched projects. As illustrated, all projects hold at least one full time employee. All projects rely on either paid employees (table 5, red box) or unpaid volunteers (table 5, blue box). Noted professions of part time employees include gardening, music, nursing, and parenting. Notably, Elm Tree Farm has a greater amount of full time employees than the remaining projects. The staffing structure of this project contains one project coordinator, three woodwork staff, two market garden staff, four animal staff, two ornamental plant staff, one volunteer and school visit coordinator and two support workers. Of the six projects, five are members of larger clubs or initiatives including; The Land Workers Alliance, Bristol Food Producers, Federation of City Farms and Gardens, Care Farming UK, Thrive, Food Assembly and Real Economy.

As a primary observation, the prevalence of project founders in the data indicates that engagement with UA requires a degree of personal commitment. This was endorsed by the participants themselves who claimed; *'I think it's one of those things. Farming kind of gets under your skin. I couldn't imagine doing anything else'* (KE, 2016). The ways in which projects are organised and integrated with volunteers and part-time employees varies between projects. However, as every project has either a volunteer base or part-time employees, the results are in line with previous assertions (Mougeot, 2010; Harvest, 2010; Adam, 2006) that claim UA projects commonly rely on the local community for continuation. Because no two projects in this study share the same social construction, findings also support the claim that *'there is no formula... (and that each project must)...assess its own goals, skills and resources and proceed from that point'* (Groh and McFadden, 1990, p. 7). Volunteer involvement is more common than employment of part time staff, as illustrated by the red and blue boxes in Table 5. Specifically, the projects that do not prioritise commercial aspects of urban farming appear to have a greater number of regular volunteers (black box, table 5). This case study therefore illustrates that regular volunteerism is more common amongst socially-focused projects, compared with commercial projects that tend to rely more on part time labour.

However, this conclusion refers only to regular volunteers, as irregular and one-off opportunities for community involvement in commercially-focused projects have been observed. Specifically, Grow Bristol provides an example of a commercially-focused project with a strong emphasis on community involvement through its social enterprise approach; *'We have groups here, schools of the Princes Trust or the general public...we have volunteers, interns, consultants, collaborators and we are creating a really interesting environment for people to come and get work experience or develop their own business working with us'* (DO, 2016). Moreover, five out of six projects -including two with a commercial focus - spoke of an interest in scaling up or initiating their volunteer base. As one socially as well as commercially-focused project representative explained, *'I would really like to push forward on having more volunteers'* (KE, 2016), whereas a commercially-focused project participant clarified; *'(when referring to the project's current social enterprise activities)...the aim is to scale this up at least ten times'* (DO, 2016). Another commercially-focused participant spoke of the desire to initiate a volunteer day when time allowed; *'There is just so much do to at the moment we haven't had the chance to stop and say let's have a volunteer day'* (MC, 2016). This participant spoke of financial as well as time constraints. Therefore, from a commercial perspective, volunteer labour assists with manpower at peak labour times at no additional cost. Alternatively, while socially-focused projects shared the desire to gain assistance with overall labour, they also expressed a desire to integrate with the local community. As a result of this shared desire among participants to increase or initiate volunteerism, this case study advocates that UA projects in Bristol hope to increase volunteerism for a combination of commercial benefit and community integration. In general terms, this study provides further evidence to support the prevalence of volunteering, work shares and internships amongst UA (Mougeot, 2010; Harvest, 2010; Adam, 2006), as each practice was undertaken by at least one participating project.

5.1.2 Products and routes to market



Image 1: Visual overview of food products noted in the data including; livestock, vegetables, fruit and salad.

Table 6 illustrates each project’s produce. Noted products can be broadly divided into food (Image 1) and non-food products. With regards to food products specifically, vegetables were the most prevalent group of produce, with all projects producing some form of vegetable (black box, table 6).

	Grow Bristol	Purple Patch	Edible Futures	Sims Hill Shared Harvest	Elm Tree Farm	Golden Hill Community Garden
Vegetables	✓	✓	✓	✓	✓	✓
Salad	✓	✓	✓			
Livestock		✓			✓	
Fish	✓					
Eggs					✓	
Fruit					✓	
Ornamental Plants					✓	
Woodwork Items					✓	
Support for Adults with Learning Disabilities					✓	✓
Kids Club						✓

Table 6: Variety of products

Table 8 highlights various combinations of routes to market. Altogether, seven potential routes to market were identified in the data. Two novel routes to market were noted that had not been outlined in previous literature; a workshare and online initiatives. The former constitutes community members committing four hours a week over a six-month period, in return for a

share of vegetables throughout the year. Two online initiatives were noted; ‘Food Assembly’ and ‘Real Economy’. These routes to market are founded on the basis of ordering local produce online, and then either meeting up with producers in a bi-weekly, pre-ordered farmers market, or having produce delivered to a pick-up point in the city for collection. With the exception of Golden Hill Community Farm (table 7, black box), all other projects sent at least a portion of their produce to market. Notably, all projects employed multiple routes to market. All participating projects intended for their produce to be consumed by local residents.

	Grow Bristol	Purple Patch	Edible Futures	Sims Hill Shared Harvest	Elm Tree Farm	Golden Hill Community Garden
Restaurants/Chefs	✓	✓	✓			
Online Initiatives	✓	✓				
Instore Retailers	✓			✓		
Farmers Market					✓	
Onsite Farm Shop					✓	
Members Scheme		✓	✓	✓		
Workshare				✓		
No Sale						✓

Table 7: Routes to Market

All products in this study were intended for consumption by Bristol residents; *‘deliver good, fresh produce...to Bristol consumers’* (HL, 2016). Therefore, this study adds further evidence to the existing notion that food produced by means of UA is destined for local urban residents (Smit and Nasr, 1992; Tornaghi, 2014). Products noted by this study include food and non-food products, reiterating previous conclusions that UA need not be limited to food products alone (UAC of the CFSC, 2003). Specifically, this study agrees with the statement that non-food products can entail social outputs such as youth education or environmental therapy (Pearson et al., 2010; Sommers and Smit, 1994), as projects in this study exhibited evidence of support for adults with learning disabilities as well as a kids club (red box, table 6). Concerning food products, the data illustrated a relationship between the commercial nature of a project and the production of salad (blue box, table 6). Results suggested that this correlation was the result of the profit potential of salad compared with other produce; *‘Salad is the most economically productive crop you get per square more or less’* (HL, 2016). Interestingly, the three projects that grow salad were the same three projects that market their produce via direct relationships with chefs and restaurants (blue box, table 7). As a result, this recognition supports the notion that salad is not only the most economically profitable crop, but also the most marketable; *‘there will always be an increase in the salad and herb market’* (DO, 2016). As commercially-focussed projects in this study are less reliant on a volunteer base, it follows that such projects must exhibit a greater business sense in the selection of their produce.

Routes to market that enable a direct producer-consumer relationship certainly enable producers to align their produce selection with consumer preference. Participants confirmed this in the data, with one stating; *‘that’s the really good thing about the food assembly is that you’re there meeting all the customers and they come back and say oh I really like that leaf what is it and oh I’m not quite sure what to do with this vegetable, um and its really nice having a relationship’* (MC, 2016). The data illustrated how commercially-focussed projects were willing to adapt quickly to changing market demands; *‘demand might change...but our system is quite*

flexible...we can grow a load of different things' (DO, 2016). Another participant noted how he was open to growing any product that was well suited to the growing conditions and was high value.

Therefore, while commercial projects selected produce based on profitability and customer feedback, those that prioritise social goals exhibited a different set of factors in selecting produce. This includes how fun it will be to produce; *'every year we grow something weird'* (LM, 2016) and how popular it is with volunteers; *'what has been popular the year before with volunteers'* (LM, 2016), *'feedback from volunteers'* (BW, 2016). The conclusion therefore is that commercially-focussed projects prioritise the opinions of local restaurants and retail, whereas socially-focussed projects care most about the opinions of their volunteers. In the same vein, one could argue that commercially-focussed projects are producing vegetables and other physical outputs, whereas socially-focussed projects are producing a shared experience. To support this, the desire of one project to establish a petting area; *'we'd like to grow our shop to have a café and a petting area'* (KE, 2016), provides further evidence that socially-focussed projects primarily aim to produce experiences, with physical products becoming a secondary output.

Concerning routes to market more generally, this case study supports the literature elucidating the common occurrence of farmers markets, farm shops, box schemes and home deliveries in UA (Mougeot, 2000), as all practices were noted in the data. Membership schemes were the second most prevalent route to market (red box, table 7). A membership scheme consists generally of paying a membership fee in exchange for a regular portion of produce, rather than purchasing products individually. This therefore signifies a continued growth in the frequency 'non-traditional' routes to market.

Interestingly, two of the projects engaged in membership schemes expressed a wish to move away from the existing market structure; *'we do sell a bit of stuff, just to supplement income... (but) we would prefer not to do that at all. It's not what we're about'* (BW, 2016). These findings therefore disagree with previous assertions that UA is limited to trade (Smit and Nasr, 1992), as alternative routes to market such as workshares and memberships schemes have been popular amongst participants. In the same vein, this recognition simultaneously agrees with literature stating that UA projects can disperse produce in ways that do not fall into strict categories of self-consumption or market (Mougeot, 2000). One participant explained how it was *'important to have a mix'* (DO, 2016) of routes to market. This statement was confirmed by the data as all market-oriented projects in this study operated on a basis of at least two routes to market (table 8). The advantage of multiple routes to market is an increased certainty of a reliable consumer market. Conversely, multiple routes to market require additional labour. However, as one commercially-focussed participant explained, the project endeavours to produce *and sell*. Thus, ensuring both elements of the business are fulfilled takes precedence over workload.

5.1.3 Social embeddedness and SFSCs

All routes to market embody either face-to-face or spatially proximate SFSCs as links between producers and consumers are minimized when compared with conventional supermarket supply chains (Table 8). One project explicitly stated this in its aim; *'deliver...through short food supply chains'* (HL, 2016).

Route to Market	Type of SFSC
Restaurant/Chefs	Face-to-face
Online Initiative	Face-to-Face/ spatially proximate
Instore Retailers	Spatially proximate
Farmers Market	Face-to-face
Onsite Farm Shop	Face-to-face
Membership Scheme	Face-to-face/spatially proximate
Workshare	Face-to-face/ producer is consumer
No Sale	Producer is consumer

Table 8: Type of SFSC

The data exhibits a frequency of non-traditional routes to market that embody a closer relationship between the producer and the consumer, including workshares, personal relationships with chefs, farmers markets and an onsite farm shop (Table 8). Growers noted the importance of social relationships in establishing a market for their produce *'it's really about engaging with people'* (DO, 2016), *'a significant factor is the way it makes people feel and the way you feel connected to the person growing it'* (HL, 2016). In line with previous studies that have noted the importance of personal relationships (Ilbery and Maye, 2005), interviewees stated how the producer-consumer relationship either develops into friendship or originates from a friendship; *'We have that good relationship, direct relationship with the chef or the shop keeper'* (DO, 2016); *'all of them are friends of friends. And even if they aren't to begin with, I get to know them a bit, and they sort of feel in a way connected to a big sort of family thing'* (HL, 2016). However, this study recognises that smaller businesses, such as those studied in this case, will have less customers. Thus, maintaining a direct producer-consumer relationship is more achievable than it would be on a grander scale. So, the generalisation can be drawn that the producer-consumer relationship is correlated with the scale of production.

Previous studies have stressed the importance of these relationships for business viability (Ilbery and Maye, 2005). The results of this study wholeheartedly support this perspective as all participants explained in some form how reliant their business model is on a network of regular customers and supportive community members; *'I get the feeling that a café like the Workhouse who have been with us for ages, you know, even if like they don't really need the bag of salad that week, they just buy it off us. You know, because they know I sort of rely on them'* (HL, 2016), *'we have our regulars that come to us pretty much all the time. You know and that's a pretty solid basis'* (KE, 2016). As one participant summarized; *'It's at least as important as to why they stay as the commodity itself. So I personally think in terms of the selling stuff side, the kind of the social dimensions to it is massive'* (HL, 2016). In plain terms, the socially embedded nature of UA resonates very clearly in the findings of this research. This study therefore supports the perspective that AFNs are more socially embedded than conventional food systems (Ilbery and Maye, 2005) by contributing academic evidence of the socially embedded nature of UA specifically.

As the projects in this study embodied either face-to-face or spatially proximate SFSCs (table 9), this study can endorse previous papers that have linked SFSCs with AFNs (Ilbery and Maye, 2005; Renting et al., 2003). However, as this study did not highlight any examples of spatially extended SFSCs, this study would suggest that amongst UA in Bristol, spatially extended SFSCs are uncommon.

5.1.4 A turn to quality and organic principles

Table 9 illustrates the number of projects who utilize organic principles¹⁴, as well as the number of participants that specifically referenced ‘quality’ as an important factor in their production goals.

	Purple Patch	Edible Futures	Grow Bristol	Sims Hill Shared Harvest	Elm Tree Farm	Golden Hill Community Garden
Referenced Quality		✓	✓	✓		
Produce is Organic	✓	✓	✓	✓	✓	✓

Table 9: Prevalence of organic principles and reference to quality

Recalling the claim in Chapter 2 that AFNs embody a shift away from ‘economies of scale’ towards an ‘economy of quality’, the results of this study support this argument from the perspective of UA. However, as shown in figure 1, one must keep in mind that AFNs and UA are independently distinguishable entities, and as a result, conclusions drawn by this study with regards to ‘a turn to quality’ can only strictly refer to UA. To illustrate, no projects in this study exhibited an indication of an ‘economy of scale’¹⁵. However, this may well be as much to do with a lack of available space in the city as it could be to do with underlying production principles. Thus, it is important that the following observations be viewed within the context of UA alone, and not necessarily as a representation of AFNs more widely. With this in mind, the results indicated a fair degree of evidence to support the notion that ‘quality’ itself is important amongst UA producers in Bristol; ‘The most important thing is that the produce is top quality’ (DO, 2015), ‘(we want to)...produce high quality veg’ (BW, 2016). One participant specifically noted how quality was the only factor on which small scale producers could compete with larger suppliers; ‘We can normally do better on quality. But all the other factors we can’t really beat the supermarkets’ (HL, 2016), and that quality was an important factor in retaining customers; ‘if you actually analyse why people do buy foods like that, I think there is a certain amount of people who are really into gastronomy, so the difference in quality between beetroot A and beetroot B is a massive factor’ (HL, 2016). Yet, only three of the six projects referred explicitly to the term ‘quality’, indicating that of the four AFN values noted in Chapter 2, the desire to maintain high quality produce is a lesser priority than the desire to maintain a social network within the community.

However, as noted by Ilbery and Kneafsey (2000), the interpretation of ‘quality’ is self-regulated between the producer and the consumer, and guided by underlying shared values. As illustrated by table 9 (black box), all producers in this study employed organic principles. Therefore, not only does this study add further evidence to support the prevalence of organic produce amongst UA (Ilbery and Maye, 2005; Winter, 2003), but also suggests that organic principles have been conflated with the definition of ‘quality’ within the Bristol’s UA producer-consumer network. A core reason for making such a judgement is the fact that all participants noted the organic nature of their produce in a way that implied its compliance with a set of unspoken, culturally defined environmental and social standards. By doing so, the need to explicitly reference ‘quality’ was negated, offering possible explanation for lack of reference to ‘quality’ in three interviews.

¹⁴ Understood here as efforts to a) enhance or sustain soil health, b) work with existing ecological systems, c) ensure fairness within the common environment and d) produce responsibly to protect the interests of future generations.

¹⁵ Understood as proportionate saving in costs gained by an increased level of production.

Participants noted consumers to be *'mostly 'ethical' buyers'* (KE, 2016). The fact that the observational and interview data highlighted this conflation between 'quality' and organic principles supports previous claims that conceptualisation of quality is shaped by the different farming practices, consumer perceptions, cultural norms, organisational structures and institutional context they exist within (Renting et al., 2003). The fact that participants maintained a commitment to organic principles despite the additional effort required, indicated that producing in such a way was important for business viability; *'it's organic, so that is a huge amount of man power. We can't just spray it, we've got to go and literally pick off the slugs'* (KE, 2016). This suggests that consumers expect organic produce, and do so because of a socially established interpretation of quality that dictates that the two are conflated, despite a lack of scientific evidence to confirm organic goods to be any more nutritious than conventional counterparts (Smith-Spangler and Brandeau, 2012; Davidson, 2005). This observation therefore supports the idea that- concerning UA consumer networks in Bristol specifically- groups of individuals who share certain values may be more inclined to expect produce that maintains a narrative in line with those values (Stern et al., 1999).

The findings support previous literary conclusions that demand for specialist foods had risen since WW2 (Winter, 2003), as two participants recalled a demand for specialist and exclusive food items; *'another chef said I want something exclusive. I want something that no one else can have'* (DO, 2016). Interestingly however, such claims came only from commercially-focussed projects, adding to the previous conclusion that such projects are concerned with the desires of chefs and restaurants primarily. As one participant remarked *'what he wants really is exclusivity, for different reasons, I think at least for getting the kudos and the ratings from reviews or certifications'* (DO, 2016). The fact that chefs may want exclusive produce in order to establish 'kudos' indicates that this desire for exclusivity may also be shared by the Bristolian public, and further supports the idea that demand for specialist foods has risen over the past decades (Winter, 2003).

5.1.5 Organisational barriers and opportunities

Two participants referred to the fact that they were limited by man power; *'It's the man power that is comes down to...man power is a huge one and a huge barrier for us'* (KE, 2016). Interestingly, this barrier was not recognised by previous studies, and therefore this study has contributed evidence of a previously unrecognised barrier to UA. One participant suggested that this barrier maybe overcome by establishing regular 'volunteer days', whereas another project noted how their use of social media and local press to advertise volunteer positions had already had a positive impact on their ability to operate. Another barrier previously noted by Kaufman and Bailkey (2000) arose in the data; single person reliance. Two projects were heavily reliant on a single (or very few), committed individual; *'A weakness would be that this heavily relies on a few people'* (LM, 2016). The risk is, if these individuals move on, projects will suffer or collapse; *'The bad scenario is, without me, who is the founder and therefore has a sort of emotional engagement with it, when that goes the whole thing won't be sustainable anymore'* (HL, 2016). Therefore, one participant noted that it was important for her to work towards a situation in which the project was ran *'in such a way that it doesn't rely on me and (instead) having people that could take over'* (LM, 2016).

Two participants noted a lack of skills as a barrier; *'If you want to have a viable business often growers might not necessarily have the business development skills they need to really make it*

succeed' (CR, 2016). Here, this refers to individuals with excellent agricultural skills, yet a lack of knowledge in terms of marketing their product and business development. That is, one may produce a fantastic product, but if routes to market fail to be established, the project will fail to move beyond its infancy. However, this is an issue of contention as one participant disagreed, claiming; *'people talk a lot about lack of education and a lack of skills; I personally don't think that's such a factor. Like when there is a job for someone, when there is a market opportunity people generally respond to it. I think if there were something like jobs in sustainable horticulture in the city...people would skill up pretty quickly... so I don't think it's about skills and training and education so much'* (HL, 2016). Thus, this research would support the fact that a lack of skills can act as a mild barrier (Kaufman and Bailkey, 2000), but would add that the underlying reason for this may be a lack of market opportunity. No additional success strategies were noted beyond those previously outlined in the literature.

5.2 Topic Cluster 2: Spatial Considerations

The following cluster is concerned with spatial elements including; location, scale and areas of UA in Bristol. Closely related to this is the issue of securing land and whether or not this study indicated any evidence of the previously noted AFN value; territorial embeddedness.

5.2.1 Location, scale and area

Projects in this study were located in an array of urban locations (Figure 7). Technically, all participating projects were situated within the 'Bristol Built Up Area' (Office for National Statistics, 2011), meaning that by some standards (Brown and Jameton, 2000), all projects could be considered 'intra-urban'. However, by recognition of participants themselves; *'This is barely urban, this is peri-urban yeah?'*, three projects were deemed 'intra-urban' and three were deemed 'peri-urban'¹⁶. This decision was based on participant input and observation of urban infrastructure around the three peri-urban zones. Those deemed intra-urban were situated amongst dense residential and commercial areas, whereas the peri-urban projects were situated on the fringe of the city. In the later cases, almost no commercial activity was evident, and instead the area consisted of less dense residential housing, quieter roads and open space.

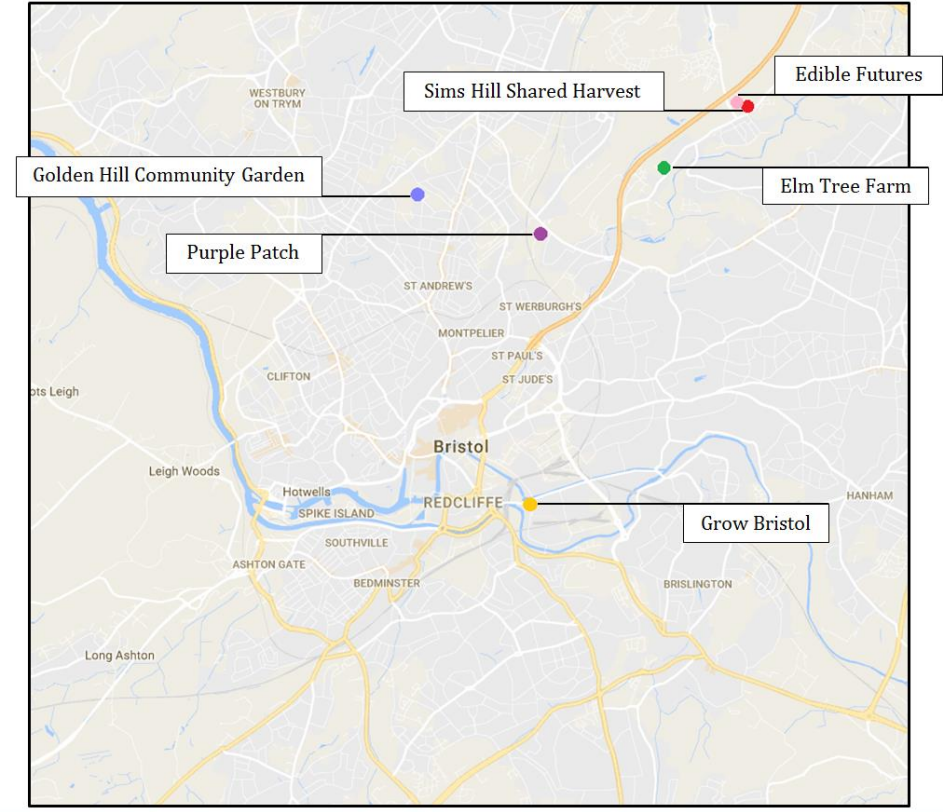


Figure 7: Location of Projects

The size of participating projects ranged from 47 acres to the inside of a shipping container (roughly 30 sq. m.). The comparative scale of each project is illustrated in Figure 8 below.

¹⁶ See Table 4 for classification.



Figure 8: Scale of Projects (hectares)

With regard to physical area, UA projects in this study exhibited a considerable degree of diversity. Project areas included open-space land, previously residential allotment space, poly tunnels, green house, small-holding, the Blue Finger¹⁷, a 100+ year old farm and a shipping container. Variety of areas used is illustrated by table 10. Signified by the black box in table 10, an open-space site with a polytunnel was the most prevalent choice of production area. The red box highlights the two projects based on previous allotment space. Images 2, 3 and 4 provide a visual snapshot of the areas used by UA projects in this study.

	Purple Patch	Golden Hill Community Garden	Edible Futures	Sims Hill Shared Harvest	Elm Tree Farm	Grow Bristol
Open-Space	✓	✓	✓	✓	✓	
Poly Tunnel	✓	✓	✓	✓	✓	
Allotment Space	✓	✓				
Small Holding	✓					
Vacant Land		✓				✓
Greenhouse				✓		
Shipping Container						✓
Farm					✓	
Aquaculture in tanks						✓

Table 10: Areas used by UA projects

¹⁷ The Blue Finger lies to the north of Bristol Centre and contains a strip of Grade 1 agricultural land, in the top 3% of soil for food growing in the country (Bristolnetworks.co.uk).



Image 2: Areas used by Edible Futures and Sims Hill Shared Harvest



Image 3: Areas used by Sims Hill Shared Harvest (top left), Golden Hill Community Garden (top right) and Purple Patch (bottom left and right)



Image 4: Areas used by Grow Bristol (top left and bottom left) and Elm Tree Farm (bottom left)

The ad-hoc classification of the projects in this study acts as further material to support the previous observation that peri-urban zones are hard to define (Mougeot, 2000). The fact that participants in this study specified their sites as peri-urban despite being technically within the Bristol Built Up Area adds to the assertion that peri-urban zones vary drastically depending on the contextual characteristics of the surrounding urban and rural area (Mougeot, 2000). Nonetheless, peri-urban zones were defined in this study based largely on a visual reduction of urban infrastructure indicated by participants. Therefore the experience of this study would support Stevenson et al. (1996) in stating that peri-urban zones can be defined based on the reach of urban influences. As both peri- and intra-urban sites were identified, this study supports the academic consensus stating that UA operations can exist either within or around cities (Mougeot, 2000).

Due to the variety of production scales documented this study would support the assertion made by Van Veehuizen (2006), that UA can comprise a variety of production systems. However, Van Veehuizen (2006) noted how this could range from household subsistence production to fully commercialized agriculture. While a strong representation of commercialized UA was evident, no household level subsistence production was recognized. Therefore, the findings of this study would suggest that in Bristol – and other contextually comparable Western European cities – subsistence UA is less common than commercial production.

As illustrated by the black and red boxes in table 10, the most popular areas to produce on were open-space sites with use of a polytunnel. The exception to this rule is Grow Bristol, who are not growing on open-space and instead self-regulating their growing conditions inside a controlled space. The unique character of this was noted; *'what we're doing is kind of unique. It's unique for Bristol, especially given that we are in a shipping container. There are a few other projects, there are two projects in London...apart from those there is only us really out there doing this'* (DO, 2016). Thus, based on the data of this study, the assertion can be made that open-space production far exceeds controlled environment agriculture in Bristol. Two projects were operating on vacant land, echoing previous literature that stated that such practice is common (Smit and Nasr, 1992). These two projects are also the smallest projects, indicating that available vacant land is often small scale. As a result, UA on vacant areas is likely to be smaller in scale compared with other potential production areas. Such a conclusion is supported by a Bristol Council representative who confirmed; *'most of the land available is relatively small scale'* (SC, 2016).

As none of the participating projects own the land on which they produce, this study supports the claim that farmers often lack site ownership (Kirschbaum, 2000); *'We've got two years and the lease is till June 22nd and it may get extended but we have to plan for moving land'* (DO, 2016). Lack of certainty over land can lead to further negative implications. For example, being sitting tenants removes rights to funding and raises questions over maintenance costs; *'there is also reluctance from the NHS to actually maintain any of the property, so there's a lot of question marks over who is responsible for what. And that's a bit of a hindrance...'* (KE, 2016). These findings support the claims that farmers often face uncertainty resulting from a lack of long-term site tenure (Kirschbaum, 2000).

Falling under the dimension of 'areas' is the issue of usufruct. Three projects lease their land off the council for a fee, one project has a free lease, one project has an informal sub-letting arrangement for a fee, and the final project is technically a sitting tenant on NHS owned land, having not renewed their lease over 15 years ago. Therefore, five out of six projects pay some form of rent to gain access to their site. None of the projects own the land on which they produce and only one project holds a lifetime lease. The remaining projects assume indefinite renewal of their lease, however do face uncertainty. All producers placed an emphasis on 'local' and did not supply their goods outside of the municipal area.

5.2.2 Securing land

According to the Parks Development Officer at Bristol City Council, *'The procedure to set up an urban farm in Bristol is to submit a proposal, usually to myself, for consideration, and then to fill in the questionnaire¹⁸ if the initial plan is accepted depending on the assessment of the suitability of the land concerned, and local support or opposition to such a project'* (SC, 2016). Two of the six participants gained access to their site through a friend. Three participants gained access to land through the council and the final participant was afforded a plot of land by the Homes and Communities Agency. Three of the six participants claimed that gaining access to the land was straightforward, one claimed there that *'there was a few ups and downs'* (BW, 2016), whereas the final participant noted a degree of difficulty.

¹⁸ The Land Seekers Survey is available to assess the suitability of land for UA and similar projects.

The prevalence of open-space production could indicate that access to this category of land is more straightforward than previously indicated in the literature (Garnett, 1996); *'my experience actually is that it's been really easy'* (HL, 2016). This is supported by reports from a council representative that suggested demand for land was low in Bristol; *'when we have advertised land for rent...the interest has been poor, suggesting that maybe there is not the high demand for land that is suggested in some quarters?'* (SC, 2016). Conversely, a representative of Bristol Food Producers argued otherwise; *'Land access...if you are starting off and you really want to start working on the land, especially if they want to grow in the city it can be difficult to find land'* (CR, 2016). Therefore, there was not a strong consensus between participants to confirm or deny the literature stating access to land as a barrier for UA (Garnett, 1996). However, the failure of all but a single producer to emphasize access to land as a barrier indicates that while land access may still act as a barrier to some, it should not be viewed as one of the 'greatest' barriers in the context of Bristol.

5.2.3 Territorial embeddedness

The data indicated a desire for re-localization of food in Bristol; *'(the council)...realize how important it is to get more food growing locally'* (CR, 2016), *'demand for locally grown food is higher than the production'* (CR, 2016). This, combined with the fact that all UA producers in Bristol supplied their produce to the local area supports the wider notion that AFNs – in this case UA specifically - aims to link product to place (Hinrichs, 2003). However, there was some diversion over the perspectives of territorial embeddedness. That is, one producer noted the infeasibility of producing Bristol's food requirements from within the city; *'people thought that we thought, that we could feed a city from within its boundaries...(but)...we know it's very much about the city region, because that's a myth and fallacy'* (AR, 2016). Whereas another remarked the difficulty of producing from within the country; *'if I want ginger it has to be imported'* (KE, 2016). This recognition that cities – and countries – are interdependent for their food requirements (Avery, 2011) refutes the presence of 'defensive localism' in Bristol (Winter, 2003). Nonetheless, attempts to amplify locally grown produce were clearly evident in BFPs plans to establish a local food brand. A representative stated; *'we are trying to develop a local food brand, because in Bristol there is a need to highlight food that is grown here. Obviously there is such a big interest here and if producers could have that stamp to say local to Bristol then people might be more likely to buy it'* (CR, 2016). Therefore, with respect to this AFN value, there is a strong demand for territorially embedded food in Bristol, despite a rational awareness that not all products can be gathered from the local region.

5.2.4 Spatial barriers and opportunities

Agreeing to an extent with the literature (Garnett, 1996), participants briefly noted that there can be difficulty in locating land when first starting out; *'I often say there is a political problem that there isn't access to land for young people who want to do growing in Britain'* (HL, 2016). However, as was previously discussed, growers remarked at the ease of their land acquisition and an apparent lack of interest in available land; *'If I was to leave Bristol or something, getting someone to take on an amazing piece of well-connected land with running water and access to a kitchen and other resources, a tool shed just 20 minutes right from Bristol with a business good to*

*go and clientele would be fucking hard*¹⁹ (HL, 2016). This led to the conclusion that while land access can become a barrier, it is not one of the greatest barriers to UA in Bristol.

Nonetheless, where access to land has been an issue, three factors have been noted as attributable to this difficulty; soil quality, site contamination and competition with developers. As one participant pointed out; *'Land that has soil on it that you can grow on is the major limiting factor of urban farms'* (DO, 2016), *'In a lot of places on this estate it has been abused by dumping rubble'* (MC, 2016). Reference to site contamination therefore supports previous literature noting this as a barrier for UA (Garnett, 1996). Elsewhere literature has recognised the conflict between UA and developers (Wiskerke and Van der Schans, 2010) and this was reflected in the findings; *'The other conflict is with the land in the city. So we have a very high conflict piece of land that is part of what's called the Blue Finger. So that was earmarked ages ago for a transport scheme. And everybody knew the conditions of being able to use the land but when it actually came to felling the trees and bringing the diggers in, it was soul destroying for people who really cared about the blue finger. That was a big problem.'* (AR, 2016).

The data supports the assertion that projects such as UA who often find themselves pursuing environmental or social outcomes can lose out to bidders with greater financial resources (Wiskerke and Van der Schans, 2010); *'They...(land owners)...may seek to maximise income, you know, if more people are bidding in for it...they may prefer the one with the money over the one that is actually going to help them meet their sustainability targets.'* (DO, 2016). This issue is exacerbated by existing audit rules that state that land must be sold on the open market to the highest bidder (Garnett, 1996). However, it was noted that in order for such strategies to be realized, interventions would be necessary, including a revocation or amendment of existing audit rules; *'If you're just pricing them out because of housing and flats then that's difficult, but if the interventions are right then it's not impossible. I can image in 20 years every city in Britain will have a big urban farm.'* (HL, 2016).

¹⁹ Further discussion of the underlying institutional factors leading to this outcome can be found in section 5.3.3.

5.3 Topic Cluster 3: Looking Forward

The following topic cluster is concerned with the aims of UA projects involved in this study. Additionally, this section will pay brief attention to the value and critiques of UA as well as participants’ hopes for the future.

5.3.1 Aims and value

Four broad central aims were referenced by the six growers taking part in this study. Table 11 provides an overview of which projects aspire to which combination of central aims.

	Edible Futures	Sims Hill Shared Harvest	Purple Patch	Grow Bristol	Golden Hill Community Garden	Elm Tree Farm
Transform the food system	✓	✓				
Deliver positive social outcomes				✓	✓	✓
Deliver positive environmental outcomes	✓	✓	✓	✓	✓	✓
Deliver positive economic outcomes			✓	✓		

Table 11: Central Aims of UA Projects

Two projects indicated a desire to transform the food system (black box, table 11). However, the majority of projects were concerned primarily with bringing about a certain combination of positive social, economic and environmental outcomes. These are signified by the blue, red and purple boxes in table 11, and elaborated upon in tables 12, 13 and 14. Notably, all projects were engaged with bringing about positive environmental outcomes in some form. The two most commercially-focussed projects; Purple Patch and Grow Bristol, understandably indicated their desire to improve the local economy. Likewise, the two most socially-focussed projects; Golden Hill Community Garden and Elm Tree Farm, were concerned with bringing about positive social outcomes. The single exception to expectation is the desire of Grow Bristol- an apparently commercial endeavour- to bring about social, economic and environmental outcomes. This signifies an increased awareness of the interlinking nature of all three traditionally separate factors. In many ways, this shift of perspective is tied together with the aim to transform the food system, as desired changes invariably embody a holistic perspective of environmental, social and economic considerations.

Positive Social Outcomes	Who?
For the local community in general;	
✓ Education of food system	Grow Bristol, Golden Hill Community Garden
✓ Skill development	Grow Bristol, Golden Hill Community Garden
✓ Community cohesion	Golden Hill Community Garden
For specific groups;	
✓ Support for individuals with learning difficulties	Elm Tree Farm, Golden Hill Community Garden
✓ After school clubs for children	Golden Hill Community Garden
✓ Work experience for students	Grow Bristol
✓ Business collaboration for entrepreneurs	Grow Bristol

Table 12: Overview of Social Outcomes

Positive Environmental Outcomes	Who?
Ecological services;	
✓ Improve/maintain soil quality	Edible Futures, Sims Hill Shared Harvest, Purple Patch, Golden Hill Community Garden, Elm Tree Farm
✓ Habitat creation	Elm Tree Farm
For sustainability;	
✓ Reduction of emissions associated with commercial production, processing and delivery of products to market	Edible Futures, Sims Hill Shared Harvest, Purple Patch, Golden Hill Community Garden, Elm Tree Farm, Grow Bristol
✓ Increased awareness of the relationship between environmental degradation and agriculture	Edible Futures, Sims Hill Shared Harvest, Purple Patch, Golden Hill Community Garden, Elm Tree Farm, Grow Bristol
For urban environment;	
✓ Increase/maintain urban green space	Edible Futures, Sims Hill Shared Harvest, Purple Patch, Golden Hill Community Garden, Elm Tree Farm,

Table 13: Overview of Environmental Outcomes

Positive Economic Outcomes	Who?
For the local community in general;	
✓ Contribute to a diverse local economy	Grow Bristol, Purple Patch
✓ Productive use of vacant land	Grow Bristol, Golden Hill Community Garden
For specific groups;	
✓ Business development collaboration for entrepreneurs	Grow Bristol

Table 14: Overview of Economic Outcomes

The value of UA was noted to cover environmental, social and economic spheres; *'We think we bring about really good social, environmental and economic outcomes'* (DO, 2016). More specifically, the ability of UA to make productive use of vacant land was recognised *'It is a good use of unused land'* (AR, 2016), as well as the potential for beauty *'They look beautiful'* (AR, 2016) and skill development *'we involve the people and teach them the skills as we go'* (KE, 2016). Above all, and heavily tied to 'transforming the food system', the most commonly cited value of UA was its ability to create awareness of the wider food system; *'It is very visible to people, and so they can see it. It engages people and it opens their eyes to that contrast between growing or being*

processed and made versus walking into a massive supermarket where everything is just in a box.’ (AR, 2016), ‘community food growing projects are key in building that relationship with the public about where their food comes from’ (CR, 2016).

Two critiques were noted. The first concern relates to the tendency of AFNs to discriminate across class; ‘Better Food Company²⁰, um, they have actually been really supportive to me and Simms Hill. And they get slagged off a lot, I used to slag them off a lot and I still sort of do, because it’s like so nauseatingly middle class and expensive. It’s a shop in food, it’s a very expensive health food store. Its nauseatingly middle class and does deserve to have the piss taken out of it a bit’ (HL, 2016). The second critique relates to health concerns over producing within the city; ‘I’ve been told by environmental health officers that you couldn’t possibly grow healthy food in the city, um, and I think people have concerns about the pollution from all the what comes out of the tail pipes of the vehicles.’ (AR, 2016). Table 16 highlights participant’s hopes for the future.

	Purple Patch	Elm Tree Farm	Sims Hill Shared Harvest	Golden Hill Community Garden	Edible Futures	Grow Bristol
Secure Funding	✓	✓	✓	✓	✓	✓
Become Financially Sustainable	✓		✓	✓	✓	✓
Diversification	✓	✓				
Develop helpful technology	✓					
Scale up ²¹	✓	✓				✓
More Equipment			✓			

Table 15: Hopes for the future

The most common hopes for the future are centred around funding (red box, table 15), with three participants stating a desire to become financially sustainable. Two participants referred to the need to have a second income. Participants therefore highlighted various strategies they hoped to achieve in the future with regards to increasing the efficiency and financial feasibility of their project (black box, table 15). One participant noted how it was especially difficult to fund social aspects of the project. Only two projects received anything close to a regular subsidy; 2 small grant bids from the council for one and free rent for another. Two projects were able to take advantage of independent funding opportunities such as Bristol EU Capital funding. However, competition is rife amongst multiple projects and limited funding opportunities. For this reason, two projects aim to establish funding from the public via crowdfunding or asking the local community to provide support.

One project specifically states that its aim is to ‘be a tiny part of transforming the food system’ (HL, 2016), while another noted how it wishes to stop selling produce all together and instead utilize a purely cooperative system²². The presence of this desire to transform the food system contributes to previous literature which suggests that interest in AFNs is linked to concerns

²⁰ Better Food Company is a limited company with three stores/cafes across Bristol. They are committed to organic, local and ethical produce and building a better, fairer food community (www.betterfood.co.uk, 2016).

²¹ Discussion of desires to scale up and take on more volunteers found in section 5.1.2.

²² Understood here as an autonomous association of people united voluntarily to meet their common needs and aspirations through a jointly owned and democratically controlled business.

associated with the global agri-food complex (Ilbery and Maye, 2005). Moreover, the desire to work hard with minimal financial benefit to provide positive outcomes suggests a mild relationship between interest in UA and a dissatisfaction with the current institutional context. As previously noted, the projects stating a desire to transform the food system (red box, table 11) make up two of the three projects engaged with membership schemes. The findings therefore suggest that future studies examining strategies that enable further mainstreaming of membership schemes may be a logical next step in transforming the food system.

Highlighted by the blue box in table 11, half of the projects aim to deliver social benefits. Therefore the assertion can be made that in Bristol, UA is as much about environmental goals as it is about social goals. Important to recognize however, there is considerable variation within what can be deemed a 'positive social outcome'. One project is a commercial facility; *'there is two core elements to it. One is the care element and one is the social enterprise element'* (KE, 2016), whereas another is a community based project; *'we believe that everyone benefits from being able to grow food, together, outdoors and we will try and make that possible for as many people as we can'* (LM, 2016). This is an important distinction as it has implications for the formality of desired social outcomes. The former project has pre-defined aims as an NHS owned healthcare facility and is funded by the NHS and placements for adults with learning difficulties, whereas the second project is funded by the local residents and therefore takes on a much more casual approach. The final project equally prioritises environmental, economic and social aims (black box, table 11); *'the second aim is our social enterprise approach which is engagement and education... and the third thing is creating opportunities'* (DO, 2016). This study therefore contributes further evidence to the assertion that UA can provide a multitude of diverse social benefits to the community (Brown and Jameton, 2000; Nugent, 1999; Perez-Vanquez et al., 2005; Mogk et al., 2010).

On the topic of benefits, the fact that participants noted UA as beautiful, a good use of vacant land and a platform for skill development endorses previous studies that have stated the same (Pearson et al., 2010; Deelstra and Giradet, 2000; Madaleno, 2000). Likewise, this study contributes additional accounts of concern over UA's vulnerability to contamination from urban pollution to existing literature (Van Veerhuzen, 2006; Jarosz, 2008; Guthman, 2011).

5.3.2 Policies

With regards to local and national policies, participants exhibited a lack of knowledge about whether or not any policies actually existed that applied to them. Having spoken with Bristol Council, this appears to be because the UK does not have any policies specifically applicable to UA. The exception to this was one participant's complaint over the council's small holding rules; specifically that one is not allowed to live on site; *'there is a lot of red tape for such a small business'* (MC, 2016). As a mother of small children, she explained that not being legally allowed to live on site caused difficulty for her; *'it was too much for me to do with the kids as well'* (MC, 2016). However, the same participant noted that the council had yet to question her on this matter. Moreover, when searching online, I was unable to locate a record of such a policy. Therefore, this general lack of awareness surrounding policies seems primarily to signify either a lack of attention on behalf of national and local government to UA affairs, or, more likely, poor communication of policies that broadly relate to UA by the national government to local councils, and thus the public. Viewed in the context of successive budget cuts to local councils (Hastings et al., 2015), the speculative conclusion drawn here is that council members lack the financial

resources and man power to deliver adequate attention to UA. The data supports this assertion with one council representative explaining *'the support that can be given to such projects by the City Council is limited, as resources are... minimal'* (SC, 2016).

In response to *'Are you aware of any local or national policies you have to comply with/do you feel restricted?'*, participants answered; *'Mm, nothing drastic no'* (BW, 2016), *'No, not really'* (KE, 2016), *'Uh, I don't know, If there is I haven't been told any?'* (LM, 2016), *'I don't know, I never even bothered to look it up. Ridiculous.'* (HL, 2016). These results suggest that involving growers more actively in policy making could create a situation where UA projects are more aware of the policies that apply to them. Therefore, despite contradicting the literature (Garnett, 1996), this study would not support the assertion that local or national red-tape is one of the greatest barriers to UA in Bristol. Indeed, one participant noted how the previous Mayor of Bristol, George Ferguson, had been especially supportive of local food initiatives, and this had been helpful in her work with the BFPs. Aside from public organizations, the creation of BFPs and BFPC has been instrumental in facilitating local production and reaching a wider audience through initiatives such as food festivals and school programs.

On the European scale, two participants referred to the unfair and uneven character of the Common Agricultural Policy (CAP). While Pillar 2 of the CAP may now have a number of environmental and social characteristics, no projects in this study qualified for agricultural subsidies under this policy. According to participants, this is primarily due to the size of projects and the necessity to have a formal lease or ownership of land in order to qualify, regardless of social and environmental elements in the CAP's pillar 2; *'Agricultural subsidies across Europe are only applicable in the UK to a farm if it is over 5 hectares. I believe 16000 farms in the UK that are under 5 hectares. And then generally they are the ones who offer slightly more sustainable agriculture because with scale comes environmental degradation generally'* (HL, 2016). The findings of this study therefore support previous assertions that the CAP favours larger producers over smaller producers (Sertoz et al., 2014). To overcome this, participants explained that the CAP should be reformed; *'It's a really unfair system and it needs support'* (CR, 2016). Interestingly, BREXIT was noted as a good opportunity to do so. As it stands however, as no participants currently receive subsidies, European subsidies are not an important factor from UA projects in Bristol. However, one participant did note that access to a free lease was of fundamental importance for the viability of the business. Equally, two other projects noted a reliance on community funding for continuation. Therefore, external funding from some source or another does seem to be a necessity (table 13).

5.3.3 Economic and political barriers and opportunities

As the most prevalent hopes for the future centred around financial sustainability, it is fair to state that UA in Bristol provides a minimal and unreliable income; *'its really hard for a grower to pay himself a living wage'* (HL, 2016). Therefore, no participants were able to make a living from their UA activities alone (table 15). The red box in table 16 signifies the combinations of additional incomes required to make the project economically feasible for full-time farmers. Likewise, the black box in the same table illustrates the two projects that require additional employment to make a living. This observation supports the existing literature stating money as a financial barrier to UA (Garnett, 2000; Kaufman and Bailkey, 2000). However, the results of this study provide deeper insight by claiming that a lack of reliable income is simply a symptom of the existing economic and political climate. This becomes the greatest barrier to UA as

society’s prodominant priorities ae not in line with those of UA; *‘What are the largest barriers to urban farming? Yeah, I would say essentially they are economic. I think it is the relationship between the price of food and the cost of living, with the main on being rent’* (HL, 2016); *‘the economic model we all work within which says the only thing that really matters is more money changing hands’* (AR, 2016).

	Purple Patch	Edible Futures	Elm Tree Farm	Sims Hill Shared Harvest	Golden Hill Community Garden	Grow Bristol
Additional employment	✓	✓				
Additional income besides product sales			✓			
Local community support				✓	✓	
Diversification			✓		✓	
Free lease						✓
Grants					✓	✓

Table 16: Additional income combinations

The status-quo of the global agro-food complex creates a situation where small scale agriculture cannot pay a living wage, despite the hard work involved; *‘working your butt off to produce tonnes of potatoes that you get virtually nothing for’* (KE, 2016), *‘the money is rubbish, the stress is huge and the hours are long’* (KE, 2016). Competition with supermarkets for consumers is a difficult task *‘people understandably compare prices and say I could get this cheaper at Lidl. We are competing against multinationals who can employ global negotiators who can employ slave labour work force costs and externalise all the damage they do’* (AR, 2016). As a representative of Land Worker’s Alliance explained, in the UK, the farmer receives 9% of the food pound, with the majority being captured by the supermarket monopoly, who control 94.5% of the food retail sector (HL, 2016). Essentially, supermarkets dictate market relationships for producers and consumers. An emphasis on economic factors above social and environmental factors creates an unfair and uneven situation for small-scale producers, including UA projects. This results in a lack of market opportunity, and inhibits the ability of growers to access basic equipment and necessary infrastructure. This ultimately results in a lack of new interest in UA; *‘I pay myself 10 pounds a week. You find me a skilled person who is prepared to work for 100 quid a week’* (HL, 2016). This, despite the fact that *‘there is probably a lot of people who would like to give it a go’* (HL, 2016). The findings of this study suggest that this is the main reason why individuals leave agriculture; *‘the main reason people leave agriculture is not a lifestyle thing...I think its more just an economic thing, a lot of the time you are just not able to offer yourself a living wage from it’* (HL, 2016). These findings add considerable evidence to the claim made by Feenstra et al. (1999) that it is difficult to make a living from UA in the current political and economic system.

However, participants suggested a number of strategies that would help to overcome this barrier. One participant suggested that the ability to establish contracts with retailers would reduce uncertainty within existing market constraints; *‘If we are talking about how do we replicate this stuff, within the current system that we have, having shops that are on board and actually get people through the door is a massive win in terms of being able to sell stuff and allows you to pay yourself.’* (HL, 2016). For this to occur in a manner alternative to the current status-quo, retailers would have to sacrifice a portion of their current profits in order to support produce that is more environmentally and socially sound. Importantly, for such a strategy to

have positive consequences, this additional cost would have to be taken on by the retailer, rather than passed on to the consumer. Otherwise, the price of food would rise and those at the bottom end of the economic spectrum would unfairly suffer, contributing to previous claims of class discrimination.

On a grander scale, participants suggested that more funds should be allocated on a national level to environmental and social initiatives such as UA. As one participant reasoned; *'what should be the desired outcomes of government in the next 20-30 years, in terms of the unemployment crisis, the climate crisis, you know there is already an acceptance and the government are putting a lot of money into electrifying the power sector. Electrifying the grid and greening the production of electricity. And the same thing should be done to our housing stock and agriculture really. So when you think about it like that, it's entirely reasonable, a lot of money should be directed towards making agriculture sustainable. One offshoot of that would be developing small scale urban horticulture. And livestock projects like goats and pigs that are basically designed to be in peoples back gardens and eat rubbish and produce meat that way. So if you have a government that took unemployment and climate stuff seriously, that's one of the things they'd do it think.'* (HL, 2016). Putting a price on social and environmental outcomes, and then allocating funding accordingly would allow local councils to facilitate programs with greater ease; *'if you could put a price on that, on that social impact and in some way help people out who are trying to actually have that social impact that would take the pressure off'* (MC, 2016). Such a strategy could allow for not only environmental but economic benefits; *'We did some fairly strict calculations about how much food can be produced within the city boundary and its significant cash value if you're doing stuff like that is expensive or fragile'* (AR, 2016).

The creation of BFPs and BFPC has provided assistance in scaling up local producers and lobbying on a high level. This strategy was previously unnoted in the literature, and therefore this study contributes evidence that independent food related organizations can have a significant impact in terms of getting local food on the city's agenda; *'We have really helped in the sense that, ten years ago, if I talked to my senior colleagues in the health service or local government or in big businesses, they just gave me the most blank look. They said, we just don't know what you're talking about and if you went for example, they had a lovely Green Capital gathering hosted at the brand-new building of the environment agency. State-of-the-art transport policy, state-of-the-art of energy efficiency building, state-of-the-art on cards and things that people look at, café, coca cola and mars bars and crisps- completely invisible to them as an issue. That has changed'* (AR, 2016). If further bodies could be created to assist small-scale producers with accessing funding then this would be beneficial to the growth of UA. Reference to the benefits associated with a supportive Mayor, suggest that political leadership in favour of environmental and social goals is a significant factor in achieving growth of UA.

On the farm scale, participants referred to diversification as a strategy for financial sustainability; *'increase the diversification to ensure our long-term viability so looking at things like spaces for welly weddings...the farm is looking a lot more that way and you are attracting a different type of clientele'* (KE, 2016). Whereas another participant explained her concept of an app that would streamline sales; *'we are thinking of making an app so we can put up what we have available each week and people can buy it in advance'* (MC, 2016). Thus, the findings contribute the observation that participants are resourceful in considering strategies for success even within a poorly suited institutional context.

5.4 Digression: BREXIT

As with all things BREXIT, participant responses were fundamentally shrouded in uncertainty; *'I don't know if I'm honest, im waiting to see'* (KE, 2016), *'I have no idea, it will be interesting to see'* (DO, 2016), *'I think nobody knows'* (CR, 2016). Nonetheless, one thing is for certain; there will be an impact; *'I'm sure it will...(have an impact)...but I'm not sure which way it will go'* (MC, 2016) and BREXIT will affect the CAP; *'I'm sure it's going to influence the Common Agricultural Policy in some way'* (HL, 2016). Despite the single farm payment being confirmed for the next five years (HL, 2016), beyond this point it is unknown whether changes will impact positively or negatively on small-scale producers. Two scenarios were discussed;

Scenario 1: BREXIT is good news for small-scale UK farmers

BREXIT could positively impact small-scale UK producers as the cost of importation rises; *'If anything it will be a benefit as it will push food prices up. Which will make the relative value, efficacy and usefulness of higher end more expensive food like the kind of thing I produce, it will make it more attractive'* (HL, 2016), *'there is people saying it's going to be a good thing for local farming because we won't be exporting so much so we will be eating more locally'* (CR, 2016). Moreover, as small-scale producers don't currently rely on subsidies like larger farms do; *'it actually might be a real good thing for us because we can continue to work'* (KE, 2016). *'In that scenario, the little guys, as in the guys under 5 hectares who don't get the single farm payment. That would be a massive boon to us wouldn't it? Because then we wouldn't be competing against subsidized food'* (HL, 2016).

One participant highlighted the interesting overlap between progressive, environmentalist, 'buy local' initiatives and the right-wing nationalist movement; *'you know, there's that weird sort of thing where 'buy local', which is generally a greeny hippy sort of thing and seen as a good thing, is actually sort of overlapping with, the nationalism of like 'British is Best'. There is this interesting area where they cross over. And it's possible that BREXIT will play in more through sort of buying local food because of sort of like, nationalist, British is better sort of thing.'* (HL, 2016).

Scenario 2: BREXIT is bad news for small-scale UK farmers

The flip side is that BREXIT provides the opportunity for competing markets to open up; *'would it mean that other markets would open up that are currently restricted by European tariffs?'* (DO, 2016). Moreover, establishing a free market could lead to further industrialisation of agriculture and drive down profitability; *'a totally free market is essentially a situation where people race to the bottom, and economies of scale, mechanisation, reducing agricultural labour become even more necessary to survive, yeah? So it actually might lead to a further industrialisation of agriculture'* (HL, 2016). There is a recognition that importation can't be avoided altogether, and the costs would likely rise; *'If I want ginger it has to be imported so there are elements where it could affect us'* (KE, 2016).

CHAPTER 6: CONCLUSIONS

This chapter will view the entire research process collectively. By doing so, the first section will collate literature, current and future aims and aforementioned success strategies to arrive at a comprehensive list of recommendations for enabling UA in Bristol and other contextually comparable cities. A brief discussion will then follow before final conclusions are drawn, and reflections are stated.

6.1 Opportunities for success

The following key outlines the origin of each success strategy in Table 17.

A	B	C	D
Literature	Participant	Author	Already successful

Level of Action	Success Strategy
National Scale	<ul style="list-style-type: none"> • Handle BREXIT with social and environmental goals in mind (B). • Put a price on social and environmental impact and allocate funding to local councils accordingly (B). • Land access interventions and revoke audit regulations (A, B). • Prioritize sustainable development and equalize social, environmental and economic outcomes (A, B). • Implement action on soil contamination and rubble dumping (A).
City Scale	<ul style="list-style-type: none"> • Increase council grants for environmental and social programs (B). • Financial support from local business and the public (A, D). • Reach a wider audience (food festivals, school programs) (B, D). • Establish a Food Policy Council to get food on the political agenda (D). • Establish a group to support scaling up of local production (D). • Establish an authority to assist UA projects and similar initiatives with accessing external funding (A, B). • Establish a survey to match land with growers (D). • Prioritize sustainable development to inform policy and practice (A, B). • Establish leadership that will promote political will for local, sustainable food (D). • Involve current growers more actively in re-designing UA related policies (C). • Provide free leases to projects delivering a good social, economic and environmental outcome (B, D).
Community Scale	<ul style="list-style-type: none"> • Establish contracts with retailers (B). • Work together (facilitating and sharing knowledge and materials) (A, B, D). • Use local press, radio, shops and restaurant menus to build a reputation (B, D). • Work with academic institutions to conflate student assignments with real world tasks (A). • Establish a platform for local businesses to list unwanted but useful waste for collection e.g. wood chips, rotten produce or manure (A).

Farm Scale

- Establish an equipment share amongst projects (C).
- Diversification (Café, Petting Zoo, Welly Weddings) (B, D).
- Recycling and re-using (A, B, D).
- Use social media to advertise for volunteers and customers (B, D).
- Gather man power by promoting work experience to local colleges (C).
- Gather man power by holding 'volunteer days' (A, B, D).

Table 17: Success strategies

On a national scale, suggested strategies can be generalised by a shift of strategic perspective. That is, an equalisation of social, economic and environmental factors. BREXIT specifically marks an extraordinary opportunity to emphasize this perspective shift. As decisions made at a national level set the tone for the subsequent downstream actions, more specific actions such as an amendment of audit rules and action on rubble dumping and soil contamination will be best achieved by command at this level. It is evident from Table 17 that majority of strategies are suggested for the city scale. However, this study has learnt that action at the city scale can often be inhibited by a lack of resources. For this reason, putting a price on social and environmental impacts at a national level and allocating funding to local councils accordingly is a crucial step. Without which, actions are likely to be shelved for an undefined date in the future that may never arrive. Fundamentally then, a principle observation is the necessity for action on all levels, in order for action on any single level to yield desired results; the growth of UA.

With a greater amount of funding, city councils would have greater flexibility in allocating funding to socially and environmentally beneficial projects and supporting groups, such as the BFPs. On the city level, integrating existing growers in council decision making and encouraging well-established businesses to financially support initiatives that are beneficial to the community would ease the pressure for those attempting to bring about such benefits. Likewise, local businesses such as retailers, academic institutions, press and restaurants have significant potential to encourage small-scale local urban producers with what they choose to report on and who they choose to work with or advertise for. By establishing leadership and supporting organisations such as the BFPC, a wider audience can be reached. In turn, local produce becomes desirable, leading to subsequent advantages for businesses associated with UA. Thus, working together to create a mutually beneficial relationship is far from unachievable, as the case study of Bristol signifies. At the farm scale, strategies embody efforts to become more financially sustainable by sharing, diversifying, and utilizing modern technology to advertise volunteer opportunities and market produce.

6.2 Conclusion

As the previous chapter goes into depth in answering the central questions of this thesis, this section will simply note any final remarks, conclusions and stand out themes. Primarily it is important to recognise that Bristol is in a great place with regards to UA and sustainable food more widely. A diverse range of individuals have developed a diverse range of projects, and as such, the city is reaping the diverse benefits. Planners and politicians who find themselves in contextually comparable cities would do well to learn from Bristol's experience.

The motivations and inspirations that underpin the development of UA in Bristol do embody the values of AFNs. However, the prevalence of such networks in Bristol begs the question of how truly alternative such values are, or will be in the future. Numerous groups and individuals are

each working in their own way to contribute towards a transformation of the food system. However, it is clear that even in Bristol, significant barriers exist to the development and continuation of such projects. Therefore the sheer number of UA projects in the city is a testament to the commitment and passion exhibited by those who took part in this study, and the community members that support them.

From a research perspective, this thesis contributes to an improved understanding of UA by outlining an up to date overview of UA in Bristol. As the most in depth review of barriers to UA in the UK was published in 1996, this update was well overdue. Mougeot's (2000) central claim that UA is diverse by character has been confirmed via exploration into the various ways in which UA has developed physically in the city. Moreover, this study has provided evidence to support the presence of SFSCs, a turn to quality and social and territorial embeddedness in UA, and thus in AFNs more widely.

The single largest lesson to be drawn from this study from a practical perspective is that the current economic and political climate is unsupportive of UA. In fact, I would argue that the current institutional context embodies the root of most other noted barriers. This recognition therefore leaves us with two options; transform the context or adapt to it. Certainly the responses in this study have included a combination of both strategies. Diversification, community funding, applying for external funding and campaigning for more environmental and social grants are all examples of strategies that adapt UA to Bristol's existing economic and political parameters.

Yet the responses exhibited here have strongly suggested that attempts to change the economic and political climate are not off the table. Indeed, they are already underway. Fundamentally, the greatest advantage of UA cited in this research has been its ability to engage average citizens with where their food comes from, in turn, sewing the seeds of an edible transformation. In order to stave off classist concerns and ensure a sincere rather than surface level transformation, this study has emphasized the importance of attracting as many people as possible to the cause. Therefore in addition to UA projects, Bristol has provided a sterling example with its various outreach initiatives; school programs, food festivals and environmental awards. Fundamentally, the strategy must be far reaching and embody inspiration rather than dictation. As one participant beautifully articulated;

'If you want somebody to build a boat, don't stand over them, shouting at them to saw the wood, instead instill in them the longing to sail the seas.' (AR, 2016)

Therefore, future studies examining the relationship between outreach initiatives and environmental behaviour, specifically relating to food consumption habits, would be a valuable addition to existing academic knowledge.

6.3 Limitations

As a final note, it is worth recognising the limitations of this study.

With regards to Chapter 2, I recognise that some of the literature cited is now fairly dated (Feenstra, 1999; Garnett, 1996; Lourenco-Lindell, 1995; Sherif, 1936; Tregar, Dent and McGregor, 1994). However, the information included in each of these studies – specifically concerning success strategies noted by Garnett (1996)- has been directly relevant to the topic at

hand, and research published in the 21st century has been unidentifiable. As it stood, any published information relating to UA barriers and success strategies in a Western European context was difficult to source. Thus, it was for this reason a study of UA barriers in 21st century Britain was necessary.

Although I wholeheartedly support the aforementioned reasons for selecting Bristol as a case study, it is worth noting the difficulties associated with conducting research between countries. Being based in the Netherlands, data collection was limited to a single UK visit. However, this did not infringe on the quality of information gathered, as the pre-defined interview guide allowed for thorough discussions in a short amount of time.

All in all, I believe that the methods employed in this study allowed for a fair representation of UA in Bristol. However, as with all qualitative research, the reflections and assertions of this thesis are somewhat tainted by my own subjectivity. Indeed, the subjective views of those involved throughout the course of this study have undoubtedly shaped the research findings. Looking forward, it would be interesting if future studies employed a similar research design to answer the same question in a different UK city for comparison. For example, one participant tied the socialist history of Manchester to modern day commitments in making sure workers – including farmers- are paid a sustainable wage. As Chapter 2 highlighted, contextual factors are central to the analysis of UA, and it is therefore entirely possible and probable that barriers and opportunities noted elsewhere would differ from those noted in this study.

6.4 Reflections on the research process

To reflect on the process of formulating and writing this thesis is to think back over a year's worth of experiences. Thus, as with any other long term goal, there were a variety of enjoyable, frustrating and challenging elements.

Starting from the beginning, I had difficulty in establishing a research question. Probably the most frustrating of all aspects of this process, I was overwhelmed by the endless possibilities and distracted by opportunities to conduct exotic research, which ultimately did not materialize. Jumping between topics and dragging my feet with regards to an internship that was, then wasn't happening, left me in limbo for a good few months. Once I had established a topic, the process began to move forward. While initially researching the topic, I dug up considerable amount of redundant, yet interesting, information. Therefore this process has significantly improved my skills in terms of pinpointing relevant literature, as well as the online search skills necessary to do so. Having originally had a minimal knowledge of UA, I can now profess a significant theoretical and practical understanding of the phenomenon.

The fact that this research allowed me to reach out to a number of growers across Bristol has afforded me a wonderful insight into the various growing projects and people in my home city. I enjoyed conducting the interviews and visiting sites, and would look forward to an opportunity to do this again in the professional world. Due to logistical issues of conducting research in my native country, whilst living in the Netherlands, I had not completed Chapter 2 and 3 fully before I conducted the interviews. Therefore, I conducted quite broad interviews and gathered a considerable amount of data to ensure I had covered all the bases. In future, allowing time to complete the research in a traditional order would assist with an easier analysis process as information gathered would be more selective.

On the topic of time, I would recommend that future studies on UA remain highly flexible and attempt to gather data 'out of season' (November-December), rather than in early September as was the case with this study. UA growers are pressed for time as it is, and therefore getting participants to agree to an interview on top of numerous additional responsibilities was a difficult task. Nonetheless, this study would have been impossible without their participation and generosity in inviting me to their homes and project sites. The inclusion of a questionnaire to ascertain practical elements of projects certainly streamlined the data collection process and resulted in a greater level of involvement.

The method by which participants were contacted (snowball) was extremely effective, due to the casual, interpersonal ties inherent in Bristol's UA network. However, having established names of potential participants, it became very clear very quickly that simply turning up to each site with a casual, friendly attitude would yield considerably greater results than relying on more formal methods of communication such as telephone or email.

I have been able to motivate myself well throughout this process, and have been fortunate to have a supervisor that has gone out of their way to work at weekends and over holidays to support my research. I have enjoyed writing throughout this process, and as such my ambitions to build a career utilising these skills has been solidified. One of the greatest learning curves has been getting to grips with structuring, and understanding the difference between a journalistic style of writing and an academic style. The suggestion to use AFNs as a context in which to study UA was excellent, as it allowed for this research to take on elements of theoretical and practical analysis. This process has shown me that I am naturally more alert to tangible problems and the pursuit of practical solutions, so support from my supervisor in illuminating relevant theoretical considerations has been eye opening. In general terms, discussions with my supervisor and the daily battle with complex and widely contested food debates; such as the issue of quality and organic principles, has improved my critical thinking abilities. I now feel more confident in my writing abilities and research skills. Therefore overall, I feel that this has been a valuable experience.

APPENDIX 1: REFERENCES

- Abawi. (2008). Qualitative and quantitative research. *World Health*.
- Adam, K. (2006). *Community supported agriculture*. Butte, MT: National Sustainable Agriculture Information Service.
- Armar-Klimesu, M. (2000). Urban agriculture and food security, nutrition and health. *Growing Cities, growing food: Urban Agriculture on the policy agenda.*, pp. 99-118.
- Ash. (2010). Feeding the Future. *Science*, pp. 797-797.
- Avery. (2011). Organic Farming Overrated for Real World Issues. *Hudson Institute*.
- Baker, Thompson and Engelken. (2004). Mapping values driving organic food choice. *European Journal of Marketing*, 995-1012.
- Bellows et al. (2003). Health benefits of urban agriculture. *Community Food*.
- Bless, Higson-Smith & Kagee. (2006). *Fundamentals of Social Research Methods, Volume 4*. Cape Town: Juta and Company Ltd. .
- Born and Purcell. (2006). Avoiding the local trap: Scale and food systems in planning research. *Journal of Planning Education and Research*, 26, 195-207.
- Brown and Jameton. (2000). Public health implications of urban agriculture. *Journal of public health policy* 21.1, 20-39.
- Bryld. (2003). Potentials, problems and policy implications for urban agriculture in developing countries. *Agriculture and human values* 20.1, 79-86.
- BUFA. (2016). *Beginning urban farmer apprenticeship. BUFA training details*. accessed at: <http://smallfarms.oregonstate.edu/beginning-famers/BUFA>.
- Cabinet Office. (2008). *Food Matters. Towards a strategy for the 21st Century*. UK Cabinet Office, The Strategy Unit.
- Cahill, K. (2001). *Who Owns Britain?* Canongate Books Ltd. .
- Careers 2030. (2016). 'Urban Farmer'. Accessed at: <http://careers2030.cst.org/jobs/urban-farmer/>.
- Carey, J. (2011). *Who Feeds Bristol? Towards a Resilient Food Plan*. Bristol: Bristol Partnership.
- Clifton, J. A. (1977). Competition and the Evolution of the Capitalist Mode of Production. . *Cambridge Journal of Economics* 1.2, 137-151.
- Cohen and Manion. (1995). *Research Methods in Education*. London: Routledge.
- Cone and Myhre. (2000). Community supported agriculture: a sustainable alternative to industrial agriculture. *Human Organisation* 59, 187-197.
- Crouch, P. (2012). Evolution or gentrification: Do urban farms lead to higher rents?

- Davidson, S. (2005). Going Organic. *Ecos*, 127, 8-12.
- De Zeeuw et al. (2011). The role of urban agriculture in building resilient cities in developing countries. *Journal of Agricultural Science- London* 149, 153.
- Deelstra and Giradet. (2000). Urban Agriculture and Sustainable Cities. In N. D.-K. Bakker, *Growing cities, growing food: Urban agriculture on the policy agenda*. (pp. 43-66). Feldafing, Germany: ZEL.
- DEFRA. (2015). *Food Statistics Pocket Book*.
https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/526395/foodpocketbook-2015update-26may16.pdf.
- DEFRA. (2016). *Single Departmental Plan: 2015-2020. Corporate Report*.
<https://www.gov.uk/government/publications/defra-single-departmental-plan-2015-to-2020/single-departmental-plan-2015-to-2020#a-world-leading-food-and-farming-industry>.
- Dziedzic and Zott. (2012). *Urban Agriculture*.
- EPA. (1990). *Environmental Protection Act*. legislation.gov.uk/ukpga/1990/43/contents: Act of Parliament of the United Kingdom.
- European Commission. (2013). *Cross-compliance*. Accessed at:
http://ec.europa.eu/agriculture/direct-support/cross-compliance_en.
- Feagan, R. (2007). The place of food: mapping out the 'local' in food systems. *Progress in Human Geography* 31 (1), 23-42.
- Feenstra et al. (1999). *Entrepreneurial Community Gardens: Growing food, Skills, Jobs and Communities*. University of California Agriculture and Natural Resources Publication 21587.
- Feenstra, W. (1997). Local food systems and sustainable communities. *American Journal of Alternative Agriculture*, 28-36.
- Flyvbjerg. (2006). Five Misunderstandings about case study research. *Qualitative Inquiry*, 219-245.
- Frediani. (2015). *Feeding Cities Urban Farming*.
- Garling, Satoshi, Garling and Jakobsson. (2003). Moderating effects of social value orientation on determinants of pro-environmental behaviour intention. *Journal of Economic Psychology*, 23, 1-9.
- Garnett. (1996). *Growing food in cities: A report to highlight and promote the benefits of urban agriculture in the UK*. National Food Alliance and SAFE Alliance working party on Growing Food in cities.
- Garnett. (2011). Where are the best opportunities for reducing greenhouse gas emissions in the food system (including the food chain)? *Food Policy*, S23-S32.

- Garnett, T. (2000). Urban agriculture in London: rethinking our food economy. In *Growing Cities, Growing Food* (pp. 477-500). Feldafing, Germany: German foundation for International Development.
- Gash, S. (2000). *Effective Literature Searching for Research, 2nd Edition*. Gower: Aldershot.
- Goodman and Goodman. (2009). Alternative food networks. *International Encyclopedia of Human Geography* 3, 208-220.
- Goodman et al. (2012). *Alternative food networks: Knowledge, practice and politics*. Routledge.
- Goodman, D. (2004). Rural Europe Redux? Reflections of Alternative Agro-Food Networks and Paradigm Change. *Sociologica Ruralis* 44 (1), 3-16.
- Groh and McFadden. (1990). *Farms of Tomorrow*. Kimberton, PA.: Biodynamic Farming and Gardening Association Inc.
- Guthman, J. (2011). If only they knew: The unbearable whiteness of alternative food. *Cultivating Food Justice: Race, Class and Sustainability*, pp. 263-283.
- Hanchion and McIntyre. (2000). Regional imagery and quality products: the Irish experience. *British Food Journal*, 630-644.
- Harvest, L. (2010). Community Supported Agriculture.
- Harvey et al. (2004). Introduction. Food and Quality. In M. M. Harvey, *Qualities of Food*. Manchester: Manchester University Press.
- Hastings, Annette, et al. "The cost of the cuts: the impact on local government and poorer communities." *York: Joseph Rowntree Foundation* (2015).
- Haywood and Wragg. (1982). *Evaluating the Literature, cited in Bell, J. (1993) Doing Your Research Project*. University of Nottingham School of Education.
- Hinrichs. (2003). The practice and politics of food system localization. *Journal of Rural Studies* 19, 33-45.
- Hodgson, Caton-Campbell and Bailkey. (2011). *Urban agriculture: Growing healthy, sustainable places*. Chicago Il.: American Planning Association.
- Holloway and Kneafsey. (2000). Reading the space of the farmers market: a preliminary investigation from the UK. *Sociologica Ruralis*, 285-299.
- Howe and Wheeler. (1999). Urban food growing: The experience of two UK cities. *Sustainable Development* 7.1, 13.
- Ilbery and Kneafsey. (2000). Producer constructions of quality in regional speciality food production: a case study from south west England. *Journal of Rural Studies* 167, 217-230.
- Ilbery and Maye. (2005). Alternative (shorter) food supply chains and specialist livestock products in the Scottish-English borders. *Environment and Planning A* 37.5, 823-844.

- Ilbery et al. (2004). Forecasting food supply chain developments in lagging rural regions: evidence from the UK. *Journal of Rural Studies* 20, 331-344.
- Jahn, Stampfer and Willett. (2015). Food, Health and the Environment: A Global Grand Challenge and Some SOLUTIONS. *Daedalus* 144.4, 31-44.
- Jarosz, L. (2008). The city in the country: Growing alternative food networks in Metropolitan areas. *Journal of Rural Studies* 24, 231-244.
- Kahl, Baars, Bugel and Busscher. (2011). Organic food quality: a framework for concept, definition and evaluation from the European perspective. *Journal of Science, Food and Agriculture*.
- Kaufman and Bailkey. (2000). *Farming inside cities: Entrepreneurial urban agriculture in the United States*. Working paper of the Lincoln Institute of Land Policy.
- Kirkup, J. (2014, January 5). George Osborne to cut taxes by extending austerity and creating smaller state. *The Telegraph*, p. 2014.
- Kirschbaum, P. (2000). Making policy in a crowded world: Steps beyond the physical garden. *Community Greening Review, American Community Gardening Association*. , 2-11.
- Knickel and Renting. (2000). Methodological and conceptual issues in the study of multifunctionality and rural development. *Sociologia Ruralis* 40, 512-528.
- Knudsen, A. (2005). Romanticising Europe? Rural images in European Union Policies. *Kontur, No.12*.
- Korcak, R. F. (1992). Early roots of the organic movement: a plant nutrition perspective. . *Horticultural Technology*, 2, 263-267.
- Kretschmer and Kollenberg. (2011). Can Urban Agriculture Feed a Hungry World. *Spiegel Online International* 1.
- Ladner, P. (2011). *The urban food revolution: changing the way we feed cities*. British Columbia: New Society Publishers.
- Lang. (2010). Crisis? What crisis? The normality of the current food crisis. *Journal of Agrarian Change* 10.1, 87-97.
- LeJava and Goonan. (2012). Cultivating urban agriculture- Addressing land use barriers to gardening and farming in cities. *Real Estate Law Journal* Vol. 41.
- Lourenco-Lindell, I. (1995). Food for the poor, food for the city: the role of urban agriculture in Bissau. *The Social and Environmental Implications of Urban Agriculture*. Harare: University of Zimbabwe.
- Lovett, G. (2016, February). Is urban farming only for rich hipsters? *The Guardian*.
- Madaleno, I. (2000). Urban agriculture in Belem, Brazil. *Cities* 17 (1), 73-77.

- Magkos, Arvaniti and Zampelas. (2003). Organic Food: Nutritious food or food for thought? A review of the evidence. *International Journal of Food, Science and Nutrition* %, 357-371.
- Mancebo, F. (2016). Urban Agriculture, Commons and Urban Policies: Scaling up Local Innovation. *Challenges in Sustainability* 4.1, 10-19.
- Mansfield. (2003). Fish, factory trawlers, and imitation crab: the nature of quality in the seafood industry. *Journal of Rural Studies* 19.1, 9-21.
- Marsden et al. (2000). *Consuming Interests: The Social Provision of Foods*. London: UCC Press.
- Maye and Kirwan. (2010). Alternative Food Networks . *Sociology of Agriculture and Food*.
- McClintock, N. (2010). Why farm the city? Theorizing urban agriculture through a lens of metabolic rift. *Cambridge Journal of Regions, Economy and Society*.
- McMichael. (2013). Globalization, climate change and human health. *New England Journal of Medicine*, 1335-1343.
- McMichael et al. (2007). Food, Livestock production, Energy, Climate Change and Health. *The Lancet* 370.9594, pp. 1253-1263.
- Merriam-Webster. (2016). www.merriam-webster.com/dictionary/opportunity.
- Miles, L. (2007). Physical activity and health. *Nutritional Bulletin* 32, pp. 314-363.
- Mogk et al. (2010). Promoting urban agriculture as an alternative land use for vacant properties in the city of Detroit: Benefits, problems and proposals for a regulatory framework for successful land use integration. *Wayne L. Rev.* 56, 1521.
- Morris and Buller. (2003). The local food sector: a preliminary assessment of its forms and impact in Gloucestershire. *British Food Journal* 105, 559-566.
- Mougeot. (2010). *Agropolis: The Social, Political and Environmental Dimensions of Urban Agriculture*. Routledge.
- Mougeot, L. (2000). Urban Agriculture: definition, presence, potentials and risks. *Growing Cities, growing food: Urban Agriculture on the policy agenda.*, pp. 1-42.
- Moustier, P. (1998). *La complémentarité entre agriculture urbaine et agriculture rurale*.
- Mudimu, G. (1996). Urban agricultural activities and women's strategies in sustainabing family livelihoods in Harare, Zimbabwe. *Singapore Journal of Tropical Geography* 17 (2), 179-194.
- Murdoch and Miele. (1999). 'Back to Nature': Chaning worlds of production in the food sector. *Sociologica Ruralis* 39 (4), 469-470.
- Mwamfupe, D. (1994). *Changes in agircultural land use in the peri-urban zone of Dar es Salaam, Tanzania. PhD Thesis*. University of Glasgow.
- Nugent, R. (1999). Measuring the sustainability of urban agriculture. *For hunger-proof cities. Sustainable urban food systems.*, pp. 95-99.

- Office for National Statistics. (2011). *Built-up Areas. Methodology and Guidance.*
- O'Leary. (2010). *The Essential Guide to Doing Your Research Project (3rd Edition).* London: SAGE.
- Pearson et al. (2010). Sustainable urban agriculture: stocktake and opportunities. *International Journal of Agricultural Sustainability* 8.1-2, 7-19.
- Perez-Vanquez et al. (2005). Assessing benefits from allotments as a component of urban agriculture in England. In L. Mougeot, *Agropolis: The social, political and environmental dimensions of urban agriculture.* (pp. 239-266).
- Reisman. (1998). *Capitalism: A treatise on economics.* IL: Jameson Books.
- Renting et al. (2003). Understanding alternative food networks: exploring the role of short food supply chains in rural development. *Environment and Planning*, 35, 393-411.
- Ritchie. (2013). *Qualitative Research Practice: A guide for social science students and researchers.* SAGE.
- Rosenbaum-Elliott et al. (2015). *Strategic Brand Management.* USA: Oxford University Press.
- Rubin and Babbie. (2010). *Essential Research Methods for Social Work.* Cengage Learning.
- Sage. (2003). Social Embeddedness and relations of regard: alternative 'good food' networks in south-west Ireland. *Journal of Rural Studies* 19, 47-60.
- Sertoz et al. (2014, December). The critique of Common Agricultural Policy of the European Union. *Law and Justice Review, Year 5, Issue 9,* pp. 217-232.
- Sherif, M. (1936). The psychology of social norms.
- Shwartz. (2012). An overview of the Schwartz theory of basic values. *Online readings in Psychology and Culture* 2.1, 11.
- Shwartz, S. (1997). Normative Influences on Altruism. *Advances in Experimental Social Psychology*, 221-279.
- Slater, R. (2001). Urban agriculture, gender and empowerment: an alternative view. . *Development Southern Africa* 18.5, 635-650.
- Smit and Nasr. (1992). Urban agriculture for sustainable cities: using wastes and idle land and water bodies as resources. *Environmental and urbanization* 4.2, 141-152.
- Smit et al. (1996). *Urban agriculture: an opportunity for environmentally sustainable development in sub-Saharan Africa.* Washington DC: The World Bank.
- Smith-Spangler and Brandeau. (2012). Are Organic Foods Safer or Healthier Than Conventional Alternatives? A Systematic Review. . *Annals of Internal Medicine*, 157, 348-366.
- Sommers and Smit. (1994). *Promoting urban agriculture: a strategy framework for planners in North America, Europe and Asia. Cities feeding people report series 9.* Vancouver: The Urban Agriculture Network.

- Stern et al. (1999). A value-belief-norm theory of support for social movements: The case of environmentalism. *Human Ecology Review*, 81-97.
- Stevenson et al. (1996). *Market production and vegetables in the peri-urban area of Dar es Salaam, Tanzania*. Dar es Salaam: UVPP, Ministry of Agriculture and Co-operatives.
- Tornaghi, C. (2014). Critical geography of urban agriculture. *Progress in Human Geography* 38.4, 551-567.
- Tovey. (2003). Contested regimes of value: exploring 'alternativity' in small food producers through their judgements of good food'. *European Society for Rural Sociology, Biennial Conference*. Sligo, Ireland.
- Tregar, Dent and McGregor. (1994). The demand for organically grown produce. *British Food Journal*, 21-25.
- UAC of the CFSC. (2003). Urban Agriculture Committee of the Community Food Security Coalition (CFSC). *Urban agriculture and community food security in the United States: Farming from the city centre to the urban fringe*.
- UK Gov. (1995). *Environment Act*. Accessed at <http://www.legislation.gov.uk/ukpga/1995/25/contents>.
- UK NEA. (2011). UK National Ecosystem Assessment; Synthesis of Key Findings. Accessed at: <http://uknea.unep-wcmc.org/Resources/tabid/82/Default.aspx>.
- Van Veerhuizen . (2006). Cities farming for the future: Urban Agriculture for green and productive cities. *IDRC*.
- Van Veerhuizen and Danso. (2007). *Profitability and Sustainability of Urban and Peri-Urban Agriculture*. Rome: FAO.
- Van Veerhuizen, R. (2006). Introduction: Cities, Farming for the Future. In R. Van Veerhuizen, *Cities Farming for the Future: Urban Agriculture for Green and Productive Cities*. (pp. 1-18). Philippines: RUAF Foundation, IDRC and HRR.
- Vanclay, Baines and Taylor. (2013). *Principles for ethical research involving humans: ethical professional practice in impact assessment. Part 1. Impact Assessment and Project Appraisal*. . Taylor and Francis.
- Vitiello and Wolf-Powers. (2015). Growing Food to Grow Cities? The Potential of Agriculture for Local Economic Development in the Urban United States. *Community Development Journal*.
- Wachter et al. (2010). *Redevelopment Authority of the City of Philadelphia: Land use and policy study*. Penn Institute for Urban Research and Econsult Corporation. .
- Watts et al. (2005). Making re-connections in agro-food geography: alternative systems of food provision. *Progress in Human Geography* 29, 22-40.
- Whatmore et al. (2003). What's alternative about alternative food networks? *Environment and Planning A* 35, 389-391.

Winter. (2003). Embeddedness, the new food economy and defensive localism. *Journal of Rural Studies*, 23-32.

Wiskerke and Van der Schans. (2010). AESOP 2nd European sustainable food planning conference. *Urban Performance Group*. University of Brighton.

Yin. (2003). *Case Study Research: Design and Methods, 3rd Edition, Volume 5*. Thousand Oaks, CA: Sage Publications.

Zanoli, R. (2003). *The European Consumer and Organic Food, Volume 4*. University of Wales, Aberyswyth: OMIARD.

APPENDIX 2: INTERVIEW GUIDE

Theme	Directed at:	Questions
Setting the Scene	Growers	<ul style="list-style-type: none"> • What was your initial occupation? • Why did you decide to move your profession towards urban farming/community gardening? • When and how did you become an urban farmer/community grower?
	NGORs and Council	<ul style="list-style-type: none"> • How would you define an urban farm in Bristol? • By what process were urban farms defined in Bristol? Who was involved in the process? • Who is involved with urban agriculture in Bristol? • What concerns does Bristol have about urban farming? • What benefits does Bristol receive from its urban farms?
Farm Specifics	Growers	<ul style="list-style-type: none"> • What was your motivation for creating this farm/community garden? • What makes your farm/garden unique or different from other urban farms? • What are the farm/garden's main aims?
	NGORs and Council	<ul style="list-style-type: none"> • Where do you consider as appropriate locations for urban farms in Bristol? • What is the process for getting farms up and running in Bristol?
The Market	Growers	<ul style="list-style-type: none"> • Do you sell what you produce? • How do you attract customers/participants? • What kind of relationships do you have with your customers? • What kind of relationships do you have with other producers?
Potential Barriers	Growers	<ul style="list-style-type: none"> • Where are you facing barriers or challenges in your work? • What are the biggest challenges for you in terms of maintaining a market for your produce? • Where do you see risks in your work practice and how do you perceive those risks? • How do you think BREXIT will impact your activities? • How did you find suitable land for your farm? • Did you face any difficulties and what made you choose this location in the end? • How is this operation funded/ was the purchase of this land a financial risk for you?
	NGORs and Council	<ul style="list-style-type: none"> • Describe the largest barriers for the establishment and continuation of urban farming operations in Bristol? • Do urban farms face competing interests in the city? • How do you think BREXIT will influence urban agriculture in Bristol?
Policy and Regulations	Growers	<ul style="list-style-type: none"> • What city policies do you know of that you are meant to comply with? • What do you think of these rules? • Where you involved in the establishment of any urban farming related policies in the city?

		<ul style="list-style-type: none"> • If you could change any rules imposed on you by the council, what would you change?
	NGORs and Council	<ul style="list-style-type: none"> • What policies, permits and/or procedures should urban farmers be aware of in Bristol? • How are land-use designations and locations decisions made with regards to urban agriculture in Bristol? • In what ways is the council supporting the development and continuation of urban agriculture? • Where are difficulties in implementing urban farming related policies?
Looking Forward	Growers	<ul style="list-style-type: none"> • Where could you use further support? • How do you envision the future of this farm? • Do you see yourself as being involved in the long-term future of the farm?
	NGORs and Council	<ul style="list-style-type: none"> • What more could be done to support urban agriculture in Bristol? • How do you envision the future of urban farming in Bristol?

APPENDIX 3: QUESTIONNAIRE

Questionnaire

This questionnaire consists of two parts. Part 1 will ask a number of practical questions related to the organisation's operation and existence. Part 2 will provide a number of statements to assess your goals, values and aspirations.

Details of the Organisation

Please write you answers in the spaces provided below each question.

1. What is your name and what is your role in the farm?

2. What is the name of your organisation?

3. How long has your farm been operational for?

4. How large is the farm premises? (if you are unsure precisely, an approximate answer will suffice)

5. What is the share of different land uses?

6. How many people are working on the farm as a whole?

7. Who does what on the farm and how is responsibility divided between workers?

8. Which products are you producing? How are you deciding what to produce and who is deciding?

9. Is the premises rented or owned? Why is this the case?

10. Does the farm receive any subsidies? If so, what are these subsidies and how important are they to the organisation?

11. Where and how are you selling your products? Which markets are important for you?

12. Who are your customers?

13. Are you members of any clubs or initiatives? If so, which ones?

APPENDIX 4: CONSENT FORM

Introduction and Purpose

My name is Emma Hetherington. I am a graduate student at the University of Groningen, The Netherlands and am working alongside my supervisor Dr.ir. Katharina Gugereit within the Faculty of Spatial Sciences.

Thank you for provisionally agreeing to take part in my research in order to help me learn about the experiences of urban farmers in Bristol. Your answers will contribute to the data set of my MSc thesis aiming to identify the barriers to and opportunities for urban farmers in Bristol.

Procedures

If you agree to take part in my research, I will conduct an interview with you lasting between 30 mins and 1 hr and will ask you to complete a questionnaire. This will involve questions about your experience as an urban farmer and your personal values and aspirations relating to your operation. With your permission, I will audiotape and take notes during the interview. The recording is to accurately record the information you provide, and will be used for transcription purposes only. If you chose not to be taped, I will take notes instead. If you agree to be audiotaped but feel uncomfortable at any time during the interview, I will turn off the recorder at your request. If you don't wish to continue, you can stop the interview at any time.

Benefits

There is no direct benefit to you in taking part in this study. However, it is hoped that the research will contribute towards greater policy clarity regarding urban farming in Bristol, and in turn provide recommendations that encourage the growth of urban farming operations in the UK as a whole.

Risks and Discomforts

It is possible that some of the research questions may make you uncomfortable. Feel free to decline to answer any questions you don't wish to, or stop the interview at any time. As with all research, there is a chance that confidentiality could be compromised. However, all precautions have and will be taken to minimise this risk.

Confidentiality

Your study data will be handled as confidentially as possible. If results of this study are publically presented, individual names and other personally identifiable information will not be used unless you give explicit permission for this below. To minimize risks to confidentiality, recordings and notes of all interviews will be kept solely on my personal laptop and protected with password access. Once the project is completed, I will destroy the recordings and notes gathered for this study.

Compensation

You will not be paid for taking time in this study. However, your participation is greatly appreciated.

Rights

Participation in this research is completely voluntary. You are free to decline to take part in the project. You can decline to answer any questions and are free to stop taking part in the project at any

time. Whether or not you choose to participate in the research and whether or not you choose to answer a question or continue participating in the project, there will be no penalty.

Questions

If you have any questions about this research, please feel free to contact me at any time. I can be reached on 07867977857 or eheth@hotmail.co.uk.

CONSENT

You will be given a copy of this consent form to keep for your own records. If you wish to participate in this study, please sign and date below.

Participant's Name (*please print*)

Participant's Signature

Date

Do you agree to the use of an audio recorder during the interview? (*please circle*)

Yes/No

If you agree to allow your name or other identifying information such as organisation name to be included in all final reports, publications, and/or presentations resulting from this research, please sign and date below.

Participant's Signature

Date

