Empowering Freetown’s Women Farmers

Source: Author’s fieldwork, 2014

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Glossary of Abbreviations

COOPI – Cooperazione Internazionale

EPA – Environmental Protection Agency

FCC – Freetown City Council

FUPAAP – Freetown Urban and Peri-urban Action Platform

IDPs – Internally Displaced Peoples

KRQ – Key Research Question

MAFFS – Ministry for Agriculture, Forestry and Food Security

MDG – Millennium Development Goals

MLCPE - Ministry of Lands, Country Planning and the Environment, also known as Ministry of Lands

NAFSL – National Farmers’ Association of Sierra Leone

NGO – Non-governmental organisation

RUAF – Resource Centres on Urban Agriculture and Food Security

SLYEO – Sierra Leone Youth Empowerment Organisation

UNDP – United Nations Development Programme

UOHEC – University of Otago Human Ethics Committee

UPA – Urban and Peri-urban Agriculture
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Dedication

For Isobel. Your arrival part way through this project has taught me first-hand what it means to be responsible for a household. I understand better both the weight and the joy of caring for a family because of your arrival. You have infused my research with a renewed sense of the importance of supporting women in this, most exciting of tasks.

Thank you.

I love you.
Abstract

In many of Africa’s cities, rapid urbanisation has led to an increased demand for food, along with a decreased ability for it to be grown in abandoned rural areas. In Freetown, Sierra Leone, this problem has been exacerbated by the civil war that occurred in the 1990’s, forcing large numbers of refugees into Freetown in search of safety, and destroying much of the infrastructure necessary for the generation and distribution of food. When there is an adequate supply of food in cities, cost remains a barrier for many families and food security remains low. Urban and peri-urban agriculture (UPA) have become key tools by which individuals and family units improve both their food security and their livelihoods through the production, consumption and selling of food within the urban environment. UPA has been prominent in areas surrounding Freetown for generations, but is now gaining traction in the city centre as recent arrivals, in particular women, use it to support their families. Despite comprising some 80% of Freetown’s UPA practitioners, there is little research to date focusing specifically on the experiences of women farmers in Freetown. This research explores the way in which women are using and contributing to UPA in Freetown. After establishing its significance as a livelihood strategy for those involved, this research identifies key barriers and struggles that exist, many of which are specific, or more significant, to women. Key relationships that can be utilised to support these women farmers are identified and critiqued, and opportunities to strengthen these relationships and enhance UPA as a sustainable livelihood strategy are suggested.
1 Introduction

1.1 Urban and Peri-Urban Agriculture

In many of Africa’s towns and cities, and elsewhere around the world, rapid urbanisation has led to an increased demand for food to be supplied to cities. At the same time as labour loss caused by this urban migration, environmental degradation, and, in some cases, conflict, are undermining the ability of rural areas to produce food and interrupting supply into cities. Additionally, even when food is available, poverty can act as a barrier for many families in achieving household food security, particularly in the rapidly growing cities of the Global South where the allure of jobs attracting people into urban areas seldom translates into meaningful employment. Urban and peri-urban agriculture (UPA) is the practice of growing food or raising animals in city spaces, or along the borders between urban and rural areas. While food has always been produced in cities to some degree, these pressures are forcing more people to consider UPA as an option for generating income and supporting their households. Recently, many governments have increased their support and begun to encourage and support UPA as a mechanism for feeding their urban population. Around the world around 800 million people are involved in a wide range of UPA activities (Lynch, Maconachie, Binns, Tengbe, & Bangura, 2013), and as urban populations continue to rise this number will likely increase.

Until recently, the assumption of both governments and academics has generally been that food production is an activity that occurs in rural spaces. The regulation of urban spaces through policy and legislation like the UK’s
Town and Country Planning Act 1947, which has now gone through several iterations, has discouraged, and in some cases banned food production within city limits. These attitudes have been passed on to developing nations through the process of colonisation and through the assimilation of the planning approaches of developed nations into aid and development decisions. Under this framework cultivation was framed as a rural activity that is inappropriate for the more sophisticated city-scape. Recent advances in understanding around the physical and psychological benefits of green spaces in cities have begun countering this notion. Global shifts in climate and disruption to the rural-urban food supply chain have also motivated changes in thinking, encouraging policy makers to value the fact that food grown in closer proximity to cities can provide food security in terms of both quantity and nutritional range. UPA is therefore gradually becoming accepted, and in many instances encouraged, as part of city life.

1.2 Freetown, Sierra Leone

Sierra Leone, a 72,000 sq km nation in Western Africa, is home to nearly 6.5 million people, around 1.2 million of whom live in the capital city of Freetown. Some 18 ethnic groups live in Sierra Leone including Temne (35%), Mende (31%), Limba (8%), Kono (5%) and Creole (2%), who are the direct descendants of freed Jamaican slaves who settled in Freetown during the late 18th century. Freetown is also home to a strong expatriate community whose presence is mainly related to the mineral extraction industry, or the aid and development sector. This means that Sierra Leone plays host to a wide range of languages and dialects. In the north-west portion of the country, Temne is the dominant dialect and Mende is common in the south and east. Sierra Leone
is a former British Colony and English remains the official language, but is limited in daily use to a literate and educated minority. While Krio is the first language of a minority of people in Sierra Leone, it is understood and spoken by nearly 95% of the population (Central Intelligence Agency, 2015). Most of the interviews for this research were conducted in either English or Krio.

Sierra Leone became independent from Britain in 1961. The country’s recent history has been dominated by the civil war of 1991 to 2002, and the Ebola epidemic of 2014. The civil war, which began as a power struggle over rural diamond resources, and escalated as an impoverished and dissatisfied population joined rebels to challenge the government, caused the deaths of tens of thousands of people and displaced nearly 2 million. The majority of those displaced fled to Freetown in an effort to escape the violence. Because the war was not fought along religious or ethnic divides, the return to peace has been relatively swift and fortunately devoid of ongoing persecution or tensions within the population. Focus instead has been on the reformation of government and the alleviation of poverty in order to address the concerns that fuelled the conflict. Despite this focus and the assistance of the international community, Sierra Leone still ranks 183rd out of 197 on the Human Development Index (United Nations Development Programme, 2015), and 119th out of 174 on the Corruption Perception Index (Transparency International, 2014). Extreme poverty and persistent institutional corruption are significant concerns for those living in Sierra Leone.
The city of Freetown, where this research takes place, is located at the end of a peninsula next to the deep-water harbour of Tagrin Bay that joins the large estuary at the outlet of the Sierra Leone River (see Figure 1). The deep water harbour allows for a prosperous shipping industry. Mountainous terrain extends nearly to the coast, and rises steeply to over 750 meters and Sierra Leone’s Peninsular Mountians are the highest point on the coast of West Africa West of Mount Cameroon. These mountains have long been home to village communities, separate from the main urban centre of Freetown, but rapid urban expansion is seeing these villages being absorbed into Freetown’s expanding boundaries.
Figure 1: Map of Sierra Leone, West Africa

Source: Lynch et al., 2013

Much of life in Freetown revolves around extreme seasonal rainfall patterns. During the dry season, from November to April rainfall can be as low as 3 or 4 mm per month. From May to October, however, rainfall can be as high as 790 mm in a month and Freetown can receive as much as 5,000 mm of rain annually. This is some of the highest recorded rainfall in the world. Across the year average monthly temperatures are usually between 26 and 29°C, making the climate warm and often humid (Climatemps, 2014). Infrastructure in
Freetown is very poor. There is limited running water and sanitation, a largely unplanned and inadequate roading network and only intermittent electricity. Cell-phone towers have increased the access of the population to both phone communication and wireless internet. Current planning projects are seeking to improve roads and other infrastructure, but the rapid immigration into the city, combined with low revenue levels, mean the government is struggling to meet the needs of the growing urban population. Despite these challenges, infrastructure in Freetown has been steadily improving since the end of the Civil War. Sadly, much of this momentum may have been lost as government resources in 2014 and 2015 have been diverted away from development and into managing the Ebola epidemic.

1.3 UPA as a livelihood strategy for women in Freetown

Without government support and with few employment opportunities, residents of Freetown are often forced to think creatively about how to etch out a living. This research focuses on those who have chosen to do so through UPA. UPA is occurring in both the central urban area of Freetown and in the peri-urban mountainous regions where it is part of traditional livelihoods and has been occurring for generations. Some 80% those farming in Freetown are women, according to the Ministry of Agriculture, Forestry and Food Security’s (MAFF) NGO Desk Officer and FUPAAP Facilitator, Pamela Konneh (Kl054). However, despite dominating the UPA community in terms of numbers, women are poorly represented in positions of authority relating to UPA, and little effort has been made to date to directly consider their views in the body of literature that exists on Freetown’s farmers.
As in many countries’, gender inequalities mean that women have less access to capital (human, natural, financial, physical and social) than their male counterparts. This adds to the context of vulnerability among women and their families that exists as part of life in Freetown. The often unstable, and always complicated, political conditions that exist in Freetown offer little continuity and support by way of government welfare or schemes, and the extreme seasonal climatic variation makes it difficult to earn a constant living from farming. This is compounded by the murky nature of the transforming structures and processes underway in Freetown, largely with respect to government processes. All of this means that there are significant barriers to women practising UPA in Freetown, but few alternatives are available to them.

This research focuses on gaining a clearer understanding of the role of UPA as a livelihood strategy for women in Freetown, and assessing ways in which it might be strengthened, both in terms of the outcomes it produces and how sustainable it is. It will focus on the experiences of women farmers, as distinct from those of their male counterparts. These experiences will inform a discussion of how their specific challenges can be addressed using the specialised skills and competencies they possess. These challenges are principally around land tenure, access to water, limited capital for labour and input purchases, and ineffective relationships with government and NGOs. Strengthening UPA as a livelihood option for women farmers will benefit not only them, but also their households and the wider Freetown community.
1.4 Thesis structure

This research focuses on the experiences of women farming in Freetown. This represents a significant departure from previous UPA research in the area, a fact that will be discussed more fully in the literature review section. The literature review will also identify challenges faced generally by urban and peri-urban farmers, land tenure, access to water, difficulty in obtaining capital for purchasing inputs, and inadequate extension services, as well as considering the practice of UPA in Freetown. This research draws on existing literature, and goes on to explore how these challenges affect women in particular, seeking to understand how their experiences differ from their male counterparts. To do this, three key research questions have been used. They are as follows;

1. How are women using and contributing to UPA in Freetown?

2. How do women in Freetown interact with and benefit from the state, FUPAAP, support services, NGOs and other associations and collaborations?

3. How can women in Freetown be strengthened in their ability to secure a sustainable livelihood for their households through UPA?

These questions are presented again at the end of the literature review, and are then answered in the following results, discussion and conclusion sections. The methodology section outlines the techniques which were used to gather information in the field, as well as ways in which the potential for bias was identified and mitigated. The methodology section also discusses ethical and health and safety considerations raised by this project.
Key research question one (KRQ1) is answered in depth in the results section, which describes the techniques used by women farming in Freetown, how UPA is contributing to them and their households and what challenges they are facing as they farm. The discussion chapter focuses on addressing the need for support for women farmers in meeting these challenges, and critiques the way in which current support services, principally provided by local and national government, as well as NGOs, are operating. This addresses KRQ2. The final research question, KRQ3, is answered in the conclusions and recommendations section, where recommendations concerning women’s ability to make meaningful decisions around their farming and household responsibilities are made. These recommendations will focus on the nature of the relationships between women farmers, the government, NGOs, and the wider community of Freetown, and will suggest how these relationships might be adjusted to focus more on women farmers as key stakeholders and expert practitioners, such that their input is more fully appreciated in the decision making process. Recommendations are also made around improving the ability of farming associations to successfully self-govern and access resources.

This research will show that the challenges faced by Freetown’s women farmers, while reflecting those faced globally by UPA practitioners, are unique to their geographical, social and political context. Critically, the research will highlight how women farmers experience UPA very differently to their male counterparts, and so require different support services. This gendered UPA experience has received only minimally attention in global UPA literature and is totally absent in a Freetown specific context. Given the fact that so many of Freetown’s farmers are women, and that these women are primarily
responsible for providing for their households, such attention is urgently needed. As such this research sheds valuable light on the multiple roles of women vegetable farmers in developing countries and, in the case of Freetown, provides much-needed information on the key producers of the city’s vegetables, about which nothing has thus far been written.
2 Literature Review

2.1 Introduction

UPA has been well documented globally in recent years as the significance and importance of farming in urban spaces has started to be understood. Since the conclusion of Sierra Leone’s civil war in 2002 there have also been several studies conducted looking at UPA in Freetown specifically. This research is situated in, and informed by, this existing body of literature which is reviewed in this chapter. This literature review comprises six major sections discussing the following:

- urban and peri-urban agriculture globally
- the benefits provided by UPA
- state attitudes towards UPA
- key issues facing UPA
- experiences of women in UPA
- the specific case of UPA in Sierra Leone.

At the conclusion of this review a gap in the understanding of the experiences of women in UPA in Freetown has been identified, suggesting that this should be the main focus of this research project.

2.2 Urban and peri-urban agriculture

2.2.1 Historical research

Historically, research around development, agriculture and food security has been focused largely in rural areas (Frayne, 2005). Researchers have often assumed that UPA comprises only a small part of urban life, and also occurs as a subsistence activity that contributes little to the overall economy of a city. As a result, UPA has been generally excluded from surveys on economic activities
and livelihood strategies, despite the fact that it fits comfortably within the informal sector framework and occurs widely (Memon & Lee-Smith, 1993). UPA is actually a significant part of food production globally and among participating households. There are an estimated 1 billion people living in extreme poverty worldwide, the majority of whom live in rural areas (United Nations Development Programme, 2013), but rapid global urbanisation is changing this dynamic. By 2011, in stark contrast to most of human history, the majority of the earth’s population, (52.1%), were living in cities and urban areas, rather than living rurally (United Nations Department of Economic and Social Affairs, 2012). Rural-urban migration is fuelled by perceptions of job opportunities, social advancement and security, and is particularly dramatic in the developing world where levels of urbanisation are currently lower than in more developed regions, 46.5% compared to 77% (United Nations Department of Economic and Social Affairs, 2012). This means there is greater capacity for the population to urbanise and, as a result, they are experiencing some of the fastest growth rates in the world. The estimated annual rate of change in urban population between 2010 and 2015 is only 0.67% in developed regions, but as high as 2.43% in less developed regions (United Nations Department of Economic and Social Affairs, 2012). If current trends continue, West Africa will be 60% urbanized by 2050 (Lynch et al., 2013). Many governments and city authorities are now struggling to provide basic services and infrastructure for their growing urban populations, leaving much of the urban population vulnerable to both poverty and food insecurity. In light of this, the issue of urban food insecurity is increasing in profile as a key developmental challenge for many states, leading to a need for greater understanding of the significance of UPA. This literature
review draws heavily on the work of several key authors in the field of UPA, including detailed case studies by Memon & Lee-Smith, 1993 and Flynn, 2001 in Kenya and Mwanza, Tanzania, respectively. The work of Hovorka, in addressing issues of gender dynamics is also used extensively, as is the collection of articles in Agropolis, edited by Mougeout (2005) and Women Feeding Cities: Mainstreaming gender in urban agriculture and food security, edited by Hovorka, de Zeeuw, & Njenga, (2009). In focusing on Sierra Leone, and in particular Freetown, this review relies heavily on the investigative work carried out in the city by Lynch et al. (2013). These articles have created a useful entry point into the literature on UPA, generating an understanding of UPA that is characterised by both its breadth, in that a wide range of contexts are examined, and also depth of discussion.

2.2.2 The significance of UPA globally
An estimated 800 million people worldwide are involved in UPA and the food produced in cities accounts for between 15 and 20% of total world food production (Lynch et al., 2013). Within the Southern African Development Community it is estimated that 22% of households are engaged in some form of UPA, generating a wide range of produce as highlighted in Table 1 (Crush, Hovorka, & Tevera, 2010).
Table 1: Household food production as a livelihood strategy

<table>
<thead>
<tr>
<th>City</th>
<th>Field Crops (% of HH)</th>
<th>Garden Crops (% of HH)</th>
<th>Tree Crops (% of HH)</th>
<th>Livestock (% of HH)</th>
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<td>4</td>
</tr>
</tbody>
</table>

Source: Crush, Hovorka and Tevera, 2010

As it becomes clear that the assumption that food shortage is merely a rural issue is incorrect, more research has become focused on the significance and nature of UPA (Battersby, 2012). It is from this growing body of research that this literature review is drawn.

2.2.3 Who is involved in UPA?
UPA attracts a wide range of individual and group participants from a range of household types and socio-economic groupings. Between 20% and 60% of Africa’s urban population is estimated to be involved in UPA, and in Lubumbashi, in the Democratic Republic of the Congo (DRC), the average number of children in participating households was six, while the presence of
extended family meant the smallest household was still ten members strong (Tambwe, Rudolph, & Greenstein, 2011). Households with larger numbers of active members were also described as being more likely to participate in UPA in the African cities of Kano (Nigeria), Bobo Dioulasso (Burkina Faso) and Sikasso (Mali), according to Dossa, Andreas and Schlecht’s 2011 research (Dossa, Buerkert, & Schlecht, 2011). In these cities, the education level of the household head played a major role in determining the success of the participation in UPA (Mkwambisi, Fraser, & Dougill, 2007). Some farmers considered UPA to be a permanent fixture of their livelihood strategies, while others farmed on a more temporary or seasonal basis (Tallaki, 2005). Farmers can also be broadly split between those who have traditionally farmed an area, which has been incorporated into the urban environment due to urban sprawl, and those who have migrated into cities and begun farming (Memon & Lee-Smith, 1993). There is, however, no difference in levels of participation in UPA based on migration status with similar proportions of each farming in many cities (Dossa et al., 2011).

The socio-economic status of a household does not generally impact upon the likelihood of that household being engaged in UPA (Dossa et al., 2011), but does seem to have a significant impact on the type of UPA undertaken and the yields which households experience. Lower income households are more likely to use public lands and smaller plots than their richer counterparts, who can afford to purchase better quality land, or who already own land privately that is large enough to facilitate UPA (Dossa et al., 2011; Memon & Lee-Smith, 1993). Lower socio-economic households are also more likely to grow crops rather than keep livestock, as the input costs are lower (Dossa et al., 2011). Figure 1
shows that Bobo Dioulasso (Burkina Faso), has both more households of lower economic status and also less livestock than Kano (Nigeria). In Kano, only 5% of the population report UPA as being their main occupation or source of income, as they have the capital to access other assets (Dossa et al., 2011).

Figure 2: Distribution of different UPA activities (values in %) among households (250,250 and 200 respectively) in the West African cities of Kano (Nigeria), Bobo Dioulasso (Burkina Faso) and Sikasso (Mali).

Source: Dossa, Buerkert and Schlecht, 2011.

Higher income households tend to become involved in what is described as ‘entrepreneurial’ UPA, as opposed to subsistence agriculture. As an example, in Lusaka, Zambia, many middle income and richer households used UPA as a business and income generating opportunity after the collapse of the copper industry (Simatele & Binns, 2008). Entrepreneurial farmers tend to hire more labourers and have greater levels of access to inputs, technical advice and credit (Tambwe et al., 2011). In 1993, almost one third of cultivators in Dar es Salaam were hired labourers and not members of farming households (Flynn,
2001). Due to their increased access to resources and favourable lands, higher income households tend to have bigger yields. In Malawi, households produce on average, 228 kg/capita (well above the recommended government level of 181 kg/capita for a food secure household), but there were large disparities along economic lines in the amount being produced (Mkwambisi et al., 2007). In Mwanza, Tanzania, 15% of the population listed forms of UPA as their main economic activity, with a slightly higher prevalence among vulnerable groups in society. There too, the market forces around UPA are expanding as the instances of entrepreneurial UPA increase (Flynn, 2001). It is important to note from this that participants in UPA are not all poor, and many are in fact using UPA for a range of reasons other than just food provision.

2.2.4 Where does UPA occur and what is produced?

UPA occurs in a wide range of countries, not just, as is the common perception, in developing nations. Despite this diversity of place, UPA is practised almost uniformly in marginal lands and spaces, which are shaped by different political and physical factors. In the United States, UPA generates a total of US$38 million annually, and often occurs in lots left vacant after the demolition of a failed business or house (Brown & Jameton, 2000). In Harare, Zimbabwe, the original plans for the city included a strong separation between low density housing for the white population and more densely populated areas for the black population. This separation included the construction of buffer zones that have today become occupied by urban farmers (Mbiba, 2000). In Mwanza, Tanzania, urban agriculturalists occupy low lying areas which drain into Lake Victoria, as well as areas left undeveloped due to the presence of large rocks which prevent construction. Farmers also use spaces in private property,
compounds, and along roadsides. Farmers in Mwanza produce a wide range of crops including; Sweet potatoes, cassava, spinach, tomatoes, chilli peppers and onions, and also keep chickens, goats and cows inside the city limits (Flynn, 2001). In the Democratic Republic of the Congo, crops include local staples like groundnuts and maize, which are key dietary components and sell well at market, as well as a variety of vegetables for household use (Tambwe et al., 2011). Often farmers use land which is not considered fit for building, commonly due to poor drainage, for example, the wetland soils in Harare (Zimbabwe) swell every year with the rains and then dry up and crack. This makes them an unsuitable location for construction, but allows farmers to achieve two harvests per year (Mbiba, 2000).

In East Kolkata, India, wetland spaces that are unsuitable for building are used as locations for aquaculture. In these spaces recycled solid and liquid waste is used as a nutrient rich support for fish ponds. City plans in Hanoi (Vietnam) also included areas where waste water can be used to feed fish and rice cultivation, but the increasing pressure of urbanisation has reduced the land available. In Dhaka, Bangladesh, urban growth has also limited the space available for aquaculture, but duckweed grown in the city is used to feed poultry and fish elsewhere (Gupta & Gangopadhyay, 2006).

It is very common for woman farmers not to own the land they are cultivating. In Lomé, Togo, up to 97% of the land being cultivated is owned, not by the farmers, but by the government (Tallaki, 2005). Because of this, much of the land utilised by farmers is often ‘left over’, as it is considered too dangerous or undesirable for other purposes. The consequences for farmers of squatting on
marginal land are discussed further in the land tenure section of this literature review.

2.3 Benefits of UPA
2.3.1 The generation of sustainable livelihoods from UPA

A sustainable livelihood can be described as the “sum of the capabilities, assets (stores, resources, claims and access) and activities required to make a living” (Warren, Batterbury, & Osbahr, 2001. pg. 326). Figure 2, developed by the UK’s Department for International Development, (DfID), shows how sustainable livelihoods are currently conceptualised in development literature.

Figure 3: Sustainable Livelihoods Framework, based on work by DFID


Having multiple food and income strategies, being creative and resourceful, maintaining links with rural areas and receiving international remittances, all
help to generate sustainable livelihoods (Tawodzera, 2012). Increasing proportions of the urban population in developing countries lack access to rural resources and, as such, need to find ways to create sustainable livelihoods from within cities (Mougeot, 2005). Agricultural intensification and diversification are key strategies for many households to supplement food and generate income (Scoones, 1998; Tawodzera, 2012). The following sections will discuss how UPA plays a significant role in the generation of livelihoods for households.

2.3.2 Food security

As discussed above, urban food security is increasingly being recognised as a key development issue for many states. The urban poor in many instances are the most vulnerable to malnutrition or under nutrition, in particular young children, pregnant women and households who have been impacted by HIV/AIDS (Crush & Frayne, 2010; Memon & Lee-Smith, 1993). In Lumbumbashi (DRC), for example, 71% of the population suffer from inadequate food security and 57% have no access to clean water. This high level of insecurity was created after the collapse of the city’s largest mining company, GECAMINES, and a sudden loss of employment opportunities in the city (Tambwe et al., 2011). Table 2 shows the state of food insecurity in selected southern African cities and indicates that food insecurity is a serious issue (Crush, Frayne, & Pendleton, 2012).
The production of food is particularly important for urban households as food in the city might be financially affordable, but spatially inaccessible, depending on the location of markets relative to households, or it may be too expensive for purchase as income in cities can be unpredictable. In a recent (2008), survey of southern African cities only 53% of households were receiving regular income from formal employment, while 25% reported receiving income from highly variable casual labour (Crush & Fayne, 2010). Often it is purchasing power or proximity to markets that affects the access of households to food rather than absolute shortages (Crush et al., 2012). A steep rise in global food prices from 2007-2008, and an increasing dominance of private sector food provision as privately owned businesses increase in number, have exacerbated the vulnerability of global urban populations to food insecurity (Crush & Frayne, 2010; Hospes & Hadiprayitno, 2010). In fact, private supermarkets now account for 50-60% of food purchased in South Africa, and up to 20% of food purchased in urban Kenya, but remain inaccessible to parts of the population, due largely
to the cost of the goods (Mehra & Rojas, 2008). Situations like this continue to ensure that food security is one of the primary drivers behind households engaging in UPA (Frayne, 2005). In Harare (Zimbabwe) over 60% of the maize and vegetables produced in on-plot agriculture are consumed within the household (Mbiba, 2000). In Kenya, 77% of households engaged in UPA are producing food only for their household consumption (Memon & Lee-Smith, 1993). As highlighted above, a range of goods are produced by UPA that can act as both staples and to provide nutritional variation for the households involved in their production. This improved quality and quantity of food can improve household health, reducing infant and child mortality. This directly addresses two Millennium Development Goals (MDG). Goal 1, “eradicate extreme poverty and hunger”, and goal 4, “reduce childhood mortality” (MDG Gap Task Force, 2014). MDGs have been formulated buy the United Nations Development Programme (UNDP) as a way to move towards poverty eradication globally.

2.3.3 Income generation
UPA is also a strategy for increasing income generation. In low-income households, where UPA serves mainly to enhance food security, the savings created in food bills, particularly for large households, act as a significant, but often invisible, source of income (Maxwell, 1995). Households also engage in entrepreneurial behaviour on a range of scales. Memon and Lee-Smith report that a common income generating technique in Kenya is the growth and sale of crop seedlings (Memon & Lee-Smith, 1993). Flynn reports that in Mwanza, households grow grain for the dual purposes of household consumption and fermentation into saleable beer and liquor (Flynn, 2001). Open air and informal
markets still maintain a dominant position in most developing countries and create a space for the sale of UPA produced goods (Pottier, 1999). Additionally, UPA is used to generate income for households through the creation of employment (Flynn, 2001).

2.3.4 Employment
For many households and individuals UPA is also a source of employment. In Malawi, 17% of the households surveyed indicated that they had worked for a wage in a UPA plot. Additionally, 42.5% of low income households, and 55.2% of female-headed households said UPA was a source of employment for them (Mkwambisi et al., 2007). Tallaki reports that in Lomé, (Togo), students are hired over holiday periods to complete specific UPA tasks (Tallaki, 2005). This sort of employment is useful as youth make up 41% of global unemployment (Mougeot, 2005). On average, men invest more in UPA and hire more labourers (Hovorka, 2005), and men make up 82% of hired labour on urban farms (Memon & Lee-Smith, 1993). Employment, even when seasonal and casual, can bring important financial capital into a household.

2.3.5 Health and ecosystem benefits of UPA
UPA can also generate numerous health benefits for households. In developed countries, UPA provides exercise, opportunities for recreation, and the development of fine motor skills through tasks like pruning (Brown & Jameton, 2000). In developing countries, access to better nutrition and strengthened livelihood outcomes create significant health benefits for urban populations. There are also significant benefits obtained from the improvements which UPA can generate in city spaces. These benefits can be both physical, like the removal of heavy metals from soils by plants (Brown & Jameton, 2000), a
A reduction in waste dumping on unused sites (Mougeot, 2005), and an improvement in air quality (Flynn, 2001). Each of these outcomes have the potential to improve the health of not just UPA practitioners, but also those living in areas surrounding plots. UPA can also provide social benefits, like the strengthening of social capital through opportunities for leadership and relationship, in the community (Brown & Jameton, 2000), and the creation of more appealing and bio-diverse spaces. There are, however, health risks associated with UPA, wherein the available inputs, notably water, soil and fertilisers and pesticides, are not safe. This will be discussed further in the health concerns section below.

2.3.6 Supporting the Millennium Development Goals

The benefits of UPA identified above, as well as the role it can play in empowering women, (as discussed below at 2.6), means it has the potential to support the achievement of several MDGs. In particular UPA has the capacity to make a significant contribution towards achieving goals one, three, four and five, as well as others in a less direct manner (see Figure 4).

**Figure 4: The eight United Nations Millennium Development Goals**
The provision of food, as well as income, helps to dramatically reduce the risk of extreme poverty and hunger for those involved in UPA, while stable access to a range of nutrition improves household health and can support the reduction of child mortality and improve maternal health. By generating employment and income for women UPA places them in control of financial decisions regarding their gardens and families, empowering them to make decisions as they see fit (see 2.6), in line with MDG Three. Healthier children and more income in the household may also boost school attendance, improving education levels. This is the focus of MDG Two.

2.4  State attitudes towards UPA

In many countries, UPA remains marginalised as a policy issue, despite the very real contribution it makes to participating urban populations (Simatele & Binns, 2008). Often state attitudes and policies towards UPA have been less than favourable as a result of the legacy of colonial thinking. Western urban thinking is based on the presumption that agriculture is an activity which happens outside of cities and is not appropriate for a civilised and developed urban space (Crush et al., 2012; Flynn, 2001; Memon & Lee-Smith, 1993). This view is often transferred into developing countries through the legacy of the UK Town and Country Planning Act, or similar legislation. Developed as an early attempt to plan urban spaces the Town and Country Planning Act established ideals of what was acceptable and expected in an urban environment. In the UK the focus was on modern urban spaces that were separate in both aesthetics and function from rural areas. Food production was viewed as a rural activity and as such was not an appropriate activity for cities. This view was
enforced through the Town and Country Planning Act and subsequent legislation and became standard planning theory not only in developed nations where it originated but also in their colonies. As a result governments, like that in the Democratic Republic of the Congo, have gone as far as to make UPA illegal, as it runs against their inherited ideological ideas of development (Tambwe et al., 2011). Often, however, these laws are not widely enforced, or are enforced for some crops and not others. This can be dictated by the attitudes of local authorities towards UPA, or to particular practising farmers. For example, in Mwanza (Tanzania), crops under one meter high are allowed to grow, and livestock may be kept if it is not a nuisance or danger to health, a highly subjective standard (Flynn, 2001). Governments also continue to focus food production policy and support on rural areas and ignore the significance of UPA in terms of its capacity to strengthen livelihoods (Mbiba, 2000). Developers wanting to build in a particular area, or use a particular resource, are almost always prioritised above UPA practitioners (Tambwe et al., 2011). The lack of consistent and favourable government policy means that many UPA practitioners are farming illegally out of necessity (Gabel, 2005). Women in Zimbabwe, frustrated by a lack of organisation from the state, have formed their own working groups and collectives in order to increase purchasing power by buying in bulk and sharing the burden of labour. These women report an increased engagement with NGOs after forming these groups, but claim that overall NGO involvement in UPA is limited (Gabel, 2005).

2.4.1 Influences of socialist thinking
A notable exception to these negative government attitudes is the government of Cuba which, during the revolution of the 1960’s, widely encouraged UPA as
a way of strengthening the urban population against food insecurity caused by US-led trade embargoes. In 1987, Vice President Raúl Castro ordered the army to ensure their own food supplies by creating urban gardens (Premat, 2012). Eventually, concern grew that individual gardeners were becoming a new bourgeoisie, and the type of UPA sanctioned by the state shifted away from individual plots and towards community ventures (Premat, 2012). Socialist influences also impacted on post-independence Tanzania, where food retailers and wholesalers were blamed for the continuing economic crisis, and individual cultivation was encouraged (Flynn, 2001).

2.4.2 Health concerns
National and city governments often express concern around the health and safety implications of UPA. Crops grown in marginal areas, for example next to roads or in industrial areas, are often exposed to high levels of runoff, exhaust and industrial pollutants (Flynn, 2001). The use of chemical pest control can also be a health concern, not just for growers, but for those exposed through water runoff or wind carry (Boncodin et al., 2009; Brown & Jameton, 2000; Tallaki, 2005). In cases where waste water is used as a key input, there are severe health risks associated with inadequate treatment prior to use (Gupta & Gangopadhyay, 2006). Use of waste water as a nutrient source is widespread, (see Table 3), and urbanisation means that this water is increasingly contaminated with runoff from other chemicals, in particular diesel and petrol. Urban population growth also places pressure on community sewage collection and treatment, thus increasing the health risks associated with its use (Gupta & Gangopadhyay, 2006).
For some time there was widespread concern that UPA increased standing water within the urban environment and so increased breeding opportunities for malaria carrying mosquitos. In Lusaka (Zambia), fears that maize collected water in its stalks and so increased the spread of malaria lead to the government banning it from being grown. Any link between UPA and an increase in mosquitos has since been disproved (Simatele & Binns, 2008).

Table 3: Waste water reuse in irrigation - some examples

<table>
<thead>
<tr>
<th>Region</th>
<th>Crop/Usage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Africa</td>
<td></td>
</tr>
<tr>
<td>Tunisia</td>
<td>Citrus, fodder</td>
</tr>
<tr>
<td>Morocco</td>
<td>Vegetables, fodder</td>
</tr>
<tr>
<td>America (North and South)</td>
<td></td>
</tr>
<tr>
<td>US (California)</td>
<td>Vegetables, cereals, fodder, green belts/golf courses</td>
</tr>
<tr>
<td>Mexico</td>
<td>Vegetables, fodder, cotton, parks/green belt</td>
</tr>
<tr>
<td>Chile</td>
<td>Vegetables, grapes</td>
</tr>
<tr>
<td>Argentina</td>
<td>Vegetables, fodder</td>
</tr>
<tr>
<td>Peru</td>
<td>Vegetables, fodder, cotton</td>
</tr>
<tr>
<td>Asia</td>
<td></td>
</tr>
<tr>
<td>Kuwait</td>
<td>Vegetables, orchard, fodder</td>
</tr>
<tr>
<td>Israel</td>
<td>Cotton</td>
</tr>
<tr>
<td>Saudi Arabia</td>
<td>Cereals, fodder, green</td>
</tr>
<tr>
<td>India</td>
<td>Cereals, vegetables</td>
</tr>
</tbody>
</table>

Source: Gupta & Gangopadhyay, 2006

Some states ban livestock in urban areas but allow gardening in an attempt to limit the ‘health risks’ created by having animals in urban spaces (Mbiba, 2000). Other states ban maize, but allow low standing crops as fully mature maize can be over a metre high, disrupting the urban environment and potentially hiding dangerous thieves (Flynn, 2001).
2.5 Key Issues Facing UPA

The literature identifies several key issues faced by UPA practitioners, namely land tenure, access to quality water, support and extension services and inputs, as displayed in Figure 5. Each of these key issues significantly impact upon either the yields of urban farmers or their experiences of UPA. They are also highly gendered issues which affect men and women differently. The experiences of women in UPA, highlighted here, will be discussed in-depth in the next section.

Figure 5: Constraints and problems in agricultural activities

Source: Lynch et al. 2013

2.5.1 Land Tenure

Land tenure remains a key issue for many UPA practitioners (Lynch et al., 2013; Maconachie, Binns, & Tengbe, 2012). Farmers are often unable to purchase land, and so are forced to squat in unused or undesirable open spaces and marginal areas (Flynn, 2001). Sometimes this land is owned by the state, but often it is owned by industry or private developers, any of whom can reclaim their land at any time. Often farmers are evicted with very little notice and no compensation (Mbiba, 2000; Mougeot, 2005; Tambwe et al., 2011). This lack of secure tenure discourages farmers from making productive investments in a particular plot (Mbiba, 2000). While the use of a certain area
usually engenders a respect that prevents other farmers from staging takeovers (Tambwe et al., 2011), a lack of secure long-term tenure causes great concern for many urban farmers (Gabel, 2005).

While most farmers express a desire to own their own land (Flynn, 2001), it is hardest for the poorest to afford desirable plots with good soil and water access (Hovorka, 2005). This means they must occupy such sites illegally, settle for sub-standard land, negotiate a different way to access the plots or utilise plots in more rural spaces. Often farmers will end up leasing land for a season from owners instead of purchasing outright due to the prohibitive costs. Problematically, the physical space available is decreasing as urban population swells, thus increasing rent prices. In response to this, more farmers are attempting to access rural land at the edge of the cities. In Lumumbashi (DRC), this land is allocated by a local chief in exchange for payment or a proportion of what is produced (Tambwe et al., 2011). Some farmers also claim to have a traditional ownership of their land (Hovorka, 2005). Sometimes conflict may be involved in the procurement of land if disagreements over ownership persist. The involvement of men may increase the likelihood of violence as women are more reluctant to engage in physical confrontation (Gabel, 2005).

2.5.2 Inputs; water, soil and labour

In order to achieve maximum yields, farmers need to have access to the key inputs of good quality water, soils and labour (Flynn, 2001). In southern African cities only 28% of farmers are able to water their crops using piped water, which they often have to carry to the site, particularly if they cannot afford to rent or buy land close to a water source (Memon & Lee-Smith, 1993). Due to
the lack of readily available clean water, farmers often have to rely on less healthy water sources. As discussed above (see Table 3), the use of waste water is common, particularly in Asia. It should, however, be noted that fish grown in waste water environments have recently been declared fit for consumption in both Cairo and Lima (Gupta & Gangopadhyay, 2006). The use of waste water is often illegal, and while the benefits of cheap access and nutritional content are considerable, without proper treatment the use of waste water in UPA can pose serious health risks (Gupta & Gangopadhyay, 2006). Industrial pollution also has a significant effect on water quality. In Kano, (Nigeria), residents can describe three different colours that their local, polluted, water source can run, each of which has different effects on their crops, soils and skin. The different colourations are representative of changes in water quality caused by industrial activity upstream (Binns, Maconachie, & Tanko, 2003). Better monitoring and regulation of industry, as well as better treatment and delivery infrastructure would greatly benefit urban farmers.

As discussed in the land tenure section above, access to land with good quality soils is an important advantage in terms of crop yield, but is not always possible, particularly for less financially secure farmers (Flynn, 2001). Even when farmers are able to access good quality soil, it is often not able to support intensive agriculture without the addition of fertilisers (Warren et al., 2001). Farmers often choose to use natural fertilisers, like manure, as they may be able to access them more easily, and for a lower cost, than their chemical counterparts. Farmers who choose to keep livestock are able to use the waste from their own animals. Farmers who don't keep livestock may be able to barter for manure, a process which is easier for farmers living in pastoralist areas.
Farmers also use pesticides to increase crop yields. Cost and availability is a barrier to the purchasing of both fertilisers and pesticides, and many farmers have to purchase in small amounts which are often insufficient. This means making multiple trips into markets and prevents farmers from securing bulk pricing advantages. This affects women more, as they often have less access to finance and credit (Gabel, 2005). It has been suggested that greater involvement of NGOs in the provision of these inputs would lower costs and enhance agricultural yield (Gabel, 2005).

Access to labour can present a serious barrier to participation in UPA, which involves large amounts of time intensive work (Maconachie et al., 2012). There are more landless labourers for hire in Asia than in Africa, where larger cultural groupings have traditionally been used to generate labour for household projects. Labour in Africa is also generated through networks of obligation, where gifts, such as coffee or cocoa, are given in exchange for labour at a later date (Pottier, 1999). This sort of network is particularly strong among women. As more women involved in UPA are moving away from labour and towards marketing and trade in an effort to generate extra household income, there is a reduction in the amount of labour available for households to access (Pottier, 1999). Households with more free capital are more able to afford to hire labour.

2.5.3 Support services
The literature also identifies a lack of extension services as a key issue for farmers (Lynch et al., 2013). This is manifested in a range of different ways. Some farmers felt that a greater level of organisational support would help them purchase inputs collectively, and also generate and share new techniques (Gabel, 2005). Others suggested that access to greater levels of training and
newer technologies would help improve their yields (Tallaki, 2005). Services aimed at increasing access to markets were also highlighted as being helpful in Freetown (Sierra Leone), (Maconachie et al., 2012). Women in Zimbabwe expressed a desire for more extension services that helped them to develop efficient practices, to organise and access credit and loans (Gabel, 2005). Another key service that farmers desire, but seldom have access to, is veterinary care for their livestock. There are around 1.4 million head of livestock currently in Kenya and every year about 20% die, due, in part, to lack of veterinary care. This represents a serious loss of investment and opportunity for these households (Memon & Lee-Smith, 1993). Overall, few extension services appear to be provided, by either the state or other agencies. Where services are provided they are accessed predominantly by middle income earners, usually men, while lower income households tend to rely on the help and knowledge of friends and family (Hovorka, 2005; Memon & Lee-Smith, 1993). Increased training, technical and organisational support, and access to micro credit would almost certainly help to improve the outputs of UPA for all involved.

2.6 Women in UPA

2.6.1 Importance of women in UPA

UPA is a deeply gendered process with women and men experiencing it in very different ways (see Table 4). Rural women produce more than half of the world’s food and between 60 and 80% of crops in developing countries, yet they receive only 7% of the total aid directed towards forestry, fishing and agriculture (Mehra & Rojas, 2008).
Women’s role in urban agriculture is also increasing and, as more women migrate from rural areas, UPA increases (Flynn, 2001; Pottier, 1999). Women also provide a crucial link between UPA and the benefits it can bring to their households, such as income, employment opportunities, and food. The security of women is heavily linked to the wellbeing of children in a given household (Pottier, 1999). This is largely because women remain in charge of household food and healthcare provision and are more likely to spend money on their families, including children’s nutrition and schooling (Mhiba, 2000; Mehra & Rojas, 2008). Despite this, current literature does not adequately address the

*Table 4: Gender based differences in agriculture*

<table>
<thead>
<tr>
<th>Gender Based Difference</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Land</td>
<td>Land tenure tend to be vested in men, either by legal condition or by socio-cultural norms. Land reform and resettlement have tended to reinforce this bias against tenure for women. Land shortage is common among women. Women farm smaller and more dispersed plots than men and are less likely to hold title, secure tenure, or the same rights to use, improve, or dispose of land.</td>
</tr>
<tr>
<td>Extension</td>
<td>Women farmers have less contact with extension services than men, especially where male-female contact is culturally restricted. Extension is often provided by men agents to men farmers on the erroneous assumption that the message will trickle “across” to women. In fact, agricultural knowledge is transferred inefficiently or not at all from husband to wife. Also, the message tends to ignore the unique workload, responsibilities, and constraints facing women farmers.</td>
</tr>
<tr>
<td>Technology</td>
<td>Women generally use lower levels of technology because of difficulties in access, cultural restrictions on use, or regard for women’s crops and livestock as low research priorities. (There are often also cultural constraints to women’s using animal traction (Salio et al. 1994).)</td>
</tr>
<tr>
<td>Finance</td>
<td>Women have less access to formal financial services because of high transaction costs, limited education and mobility, social and cultural barriers, the nature of their businesses, and collateral requirements, such as land title, they can’t meet.</td>
</tr>
<tr>
<td>Time</td>
<td>Women face far greater time constraints than men. They may spend less time on farm work but work longer total hours on productive and household work and paid and unpaid work, due to gender-based division of labor in child care and household responsibilities.</td>
</tr>
<tr>
<td>Mobility</td>
<td>Women are less mobile than men, both because of their child care and household responsibilities and because of sociocultural norms that limit their mobility.</td>
</tr>
<tr>
<td>Education and training</td>
<td>Women are less educated in parts of Africa, Asia, and the Middle East. Illiteracy hampers their access to and ability to understand technical information. Worldwide, women have less access to education and training in agriculture.</td>
</tr>
</tbody>
</table>

*Source: Mehra and Rojas, 2008*
role of women in urban agriculture, and planners and policy makers are continually failing to acknowledge and accommodate the role and needs of women in UPA (Hovorka, 2005). Strengthening opportunities for women within UPA, where they play an already critical role, will aid in addressing MDG 3, “promote gender equality and empower women” (MDG Gap Task Force, 2014). The following discussion identifies some of the issues that women face in UPA.

2.6.2 Labour and agricultural practices
Agriculture, and the labour associated with it, is a highly gendered process with distinct roles for men and women (Pottier, 1999). These roles can be very different across different physical, political and cultural spaces, but a common theme emerging in the literature is the dominance of women in the marketing of goods. In Lomé (Togo), the men prepare and plant the plots, while women are in charge of weeding, harvest and sales (Tallaki, 2005). In Harare (Zimbabwe), women also control the bulk of marketing, being responsible for up to 70% of marketing, but they also provide the majority of farming labour, with 80% of women involved in UPA farming their own plots (Mbiba, 2000). Often children share the labour with women (Boncodin et al., 2009; Mbiba, 2000). In some cases, particular forms of labour attract specific risks, for example, during the *sampaguita* bud harvesting process, which is part of the creation of jasmine flower-garlands in Manila, women and children are the first to enter the field after seasonal spraying, exposing them to increased health risks (Boncodin et al., 2009). In the Eastern Horn of Africa social taboos prevent men from controlling or producing food, so women control most of the agriculture (Kipuri & Ridgewell, 2008). By contrast, in the Philippines men control all the productive assets, land, livestock, water, equipment etc., but women control
both the market information and the cash income (Boncodin et al., 2009). Situations like this allow women to resist patriarchal control both inside and outside the household (Gabel, 2005). Because women need cash for household expenditure they also tend to own more intensive and profitable practices like broiler production which provides an instant financial return through the sale of eggs (Hovorka, 2005).

2.6.3 Relationship of women farmers with authorities
The gendered nature of agriculture affects the ways in which women farm and interact with their communities. As women look to diversify household livelihoods through UPA, they often end up working ‘double days’ by both completing household tasks, collecting water and firewood, rearing children and preparing meals etc., as well as engaging in UPA related work such as weeding, harvesting and marketing. The end result of this is that they often do not have time to participate in political or planning events in their communities (Pottier, 1999). Women are also less likely to register as a company and invest less money in UPA than men (Hovorka, 2005). Women have also expressed not feeling understood or valued by urban authorities, who are predominantly male, even when the women have independently organised themselves into collectives (Gabel, 2005). Women also struggle to access credit and extension services that are typically not developed with their needs in mind (Devi & Buechler, 2009).

2.6.4 Women’s access to land
Women struggle to access desirable land in comparison to men. Aside from different purchasing power, traditional rules around land ownership are the
main cause of this disparity. In the Eastern Horn, a woman's access to land often depends on marital status, as land is traditionally inherited by males (Kipuri & Ridgewell, 2008). This system creates significant vulnerability for unmarried women and widows, as well as any members of the household for whom they are responsible (Pottier, 1999). In Lomé (Togo), women have smaller plots than men, and many young women, instead of cultivating their own plots, work for their husbands (Tallaki, 2005). In Botswana, the average plot size for a male farmer is 9.7 ha, but only 2.4 ha for women. The plots are also usually different types of land, with men holding freehold land, while women are more dependent on access to traditional tribal land (Hovorka, 2005). This disparity in access to quality land significantly disadvantages women.

2.7 The case of Sierra Leone
Little research has been done on UPA in Sierra Leone in comparison to other parts of the developing world. This is potentially due to difficulties in accessing the country during the civil war which took place between 1991 and 2002. During this time an estimated 50,000 people lost their lives, and Sierra Leone is still struggling to return to a stable political and economic environment (Lynch et al., 2013). This conflict has had a profound effect on both the need for and the practice of UPA in Sierra Leone, and in particular in the capital city, Freetown. More recently the Ebola epidemic, which reached its peak in 2014, has had a significant impact on Sierra Leone, both nationally and in particular in Freetown. After enjoying steady economic growth since the end of the Civil War, the necessity of diverting large amounts of government resources into managing Ebola is likely to have had a serious detrimental effect on other areas of
spending such as education, non-Ebola healthcare, and the improvement of infrastructure. As travel between rural areas and Freetown became limited to avoid spreading the disease, the ability of produce to travel into the city would also be limited, heightening the importance of UPA as a food source. Mandatory quarantines are likely to have had a negative impact on the ability of farmers to go to markets and sell their crops, limiting the effect of UPA as an income source. However, as many workplaces closed and economic activity in Freetown reduced during the epidemic the ability of farmers to supply their households with food represents an advantage that may have mitigated some of the shock to their livelihoods. The fieldwork for this research concluded in March 2014, just as the first cases of Ebola were being reported in the North of Sierra Leone, across the border from Guinea. As a result the impacts of Ebola of women farming in Freetown fall largely beyond the scope of the research and there remains a significant amount of research to be done to understand how this recent epidemic has impacted UPA practitioners in Freetown (see 6.2).

2.7.1 The impacts of conflict in Sierra Leone

As the Revolutionary United Front (RUF), swept through rural Sierra Leone residents began a forced migration into Freetown in search of security, resulting in the arrival of significant numbers of refugees or internally displaced peoples (IDPs), into the city. One of the key effects of this migration was the dramatic interruption of food production, which by 2001 led to only 20% of the annual amount of rice required to feed the population being grown (Lynch et al., 2013; Maconachie et al., 2012). Food production issues have been exacerbated by the damage done to previously fertile land by mining and diamond extraction.
(Richards, 2002). In the face of this particularly rapid urbanisation and alarming drop in food production, the government of Sierra Leone and Freetown city authorities are struggling to keep up with the provision of adequate basic services in Freetown. Current investments in infrastructure appear unable to meet demand (Lynch et al., 2013). There is a lack of a functioning welfare system in Sierra Leone that also contributes to the vulnerability context and food insecurity of citizens in Freetown (Maconachie et al., 2012). In light of this, many residents are now using UPA as a means of enhancing their livelihood by increasing their food security, income generating capabilities and employment prospects (Lynch et al., 2013).

2.7.2 Corruption concerns in Sierra Leone
As with many post-conflict societies, Sierra Leone is also vulnerable to increases in corruption and related issues as its population seeks to re-establish trust in damaged relationships, manage large sums of money targeted towards the rebuild and re-organise power in a way that will prevent future conflict (Lindberg & Orjuela, 2014). Since the civil war, reforms aiming to eliminate corruption have occurred within the police force, yet corruption of police and government remains a significant concern for many Sierra Leoneans, as well as the international community (Charley & M’Cormack, 2012; Economist, 2009). In 2014, Sierra Leone ranked joint 119th out of 174 countries on the Corruption Perception Index scoring just 31 points out of a possible 100 (Transparency International, 2014). In 2013, Sierra Leone ranked the highest in the world for reported bribery with 84% of the population admitting to having paid a bribe to an official (Transparency International, 2013). That same survey reported that globally, political parties and police are seen to be the most highly
corrupt institutions (Transparency International, 2013), a statistic which is sadly reflective of the Sierra Leonean experience.

2.7.3 UPA in Freetown

There has been a long history of vegetable garden production in and around Freetown, but this accelerated and intensified as a result of the civil war. The recent survey conducted by Lynch et al. (2013), identified 59 sites where UPA is occurring within Freetown (see Figure 6). Participating households are nearly all low income and use UPA for both subsistence and income generation. 64.6% of participating households reported that UPA is their main income, while 24.5% said it is for extra income, and 8.5% said that its primary role is food supplementation. Only 19% of participants were employed in other activities and almost 90% of those were employed in the informal sector where work availability is unpredictable (Lynch et al., 2013). Employment opportunities for young people are particularly important in Sierra Leone, as the dissatisfaction of young people with high unemployment rates was one of the factors that exacerbated the conflict (Richards, 2002; Zack-Williams, Frost, & Thomson, 2002). Currently, 33% of Sierra Leone’s population is aged between 15 and 35, and nearly 70% of people in this age bracket are unemployed (Maconachie et al., 2012). Significant NGO involvement in recent years has raised the profile of UPA within Freetown and assisted in the creation of the Freetown Urban and Peri-urban Action Platform (FUPAAP), a forum which has greatly improved communication across the UPA community (Maconachie et al., 2012).
Most of Freetown's farmers have access to only small plots of land, with less than 5% having access to a plot of greater than 1 acre (Lynch et al., 2013). Many of these plots are on low lying wetland areas around the coastline and...
along streams that are highly prized for their seasonally high water and fertile, nutrient rich soils. Security of tenure for farmers using these wetland spaces is a source of contention between them and city authorities who own the wetlands. While official State policy allows for agriculture in these spaces this does not equate with secure tenure. Often people claiming to own the land are charging rent to farmers or threatening them with eviction. The recently established Freetown Urban and Peri-urban Action Platform (FUPAAP), is attempting to address issues around the use of wetlands by marking the sites used for UPA with concrete pillars and assisting in the negotiation of tenure agreements (Lynch et al., 2013). Farmers expressed a range of reasons for joining associations like FUPAAP, or for forming their own collective or association (see Table 5).

Overall, there is little literature on the experience of women farmers in Freetown. A recent survey revealed that 51% of farmers in Freetown are women, and they control most of the marketing of vegetables, and appear to control the income generated through UPA, while men provide heavy labour (Maconachie et al., 2012). The ability of women in Freetown to access good quality land and other inputs is being enhanced by the involvement of associations like FUPAAP, but more research is needed to fully understand how women are both operating in, and affected by, the UPA framework in Freetown, and how their involvement can be made more sustainable.
### Table 5: Freetown respondents' reasons for forming cultivation associations

<table>
<thead>
<tr>
<th>Reason for forming association</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pooling labour makes it easier to generate income (employment through vegetable sales)</td>
<td>71</td>
</tr>
<tr>
<td>With weekly contributions in the association we have been able to start a standing fund</td>
<td>66</td>
</tr>
<tr>
<td>The association has opened up opportunities to solicit financial support from donors/government</td>
<td>62</td>
</tr>
<tr>
<td>As a group it is easier to deal with labour constraints</td>
<td>57</td>
</tr>
<tr>
<td>As an association, land access/tenure is more secure</td>
<td>52</td>
</tr>
<tr>
<td>The association serves as an umbrella for other social activities, which are important for re-socialising youths</td>
<td>48</td>
</tr>
<tr>
<td>The association helps us to access tools/inputs from agricultural extension agents</td>
<td>43</td>
</tr>
<tr>
<td>As a group we can more effectively deal with marketing and transportation constraints</td>
<td>38</td>
</tr>
<tr>
<td>Association serves as a good mechanism to diversify our income generating activities</td>
<td>38</td>
</tr>
<tr>
<td>As a group we can produce more food for household consumption</td>
<td>33</td>
</tr>
<tr>
<td>As an association we have more bargaining power with local authorities</td>
<td>33</td>
</tr>
<tr>
<td>The association helps us to access knowledge transfer from extension agents</td>
<td>29</td>
</tr>
<tr>
<td>We can work together to address environmental issues</td>
<td>24</td>
</tr>
</tbody>
</table>

*Source: Lynch et al., 2013*
2.8 Conclusion

It is clear from the growing body of literature around UPA that its significance as a livelihood strategy for urban households is increasing in both scale and recognition. Farmers employ a wide range of strategies to enhance the outputs of their UPA, and are incredibly creative in their use of UPA to meet a variety of needs. In developing nations, where the urban population is particularly vulnerable to food insecurity, UPA is proving to be critical for enhancing household security. Despite the benefits of UPA, states and policy makers remain generally unsupportive or openly hostile towards it. Agriculture is not considered to be a significant or appropriate feature for urban spaces, and food insecurity is widely considered to be a problem that occurs only in rural areas. Women play an extensive role in UPA, and the gendered nature of the system leads to vastly different experiences for men and women engaging in UPA. The importance of women in UPA continues to be overlooked by policy makers and, until relatively recently, by researchers. Many households in Freetown are dependent on UPA, as prolonged civil war has severely disrupted food production and social conditions within Sierra Leone, yet there has been relatively little research into the operation of UPA in Freetown. Even less is known about the role and experiences of women in the city. The dominant purpose of this research will be to understand the experiences of women participating in UPA in Freetown, and in doing so to both fill this gap in the literature and to extend our understanding of the gender specific support needed to promote the sustainable livelihoods of women farmers in Freetown.
2.9 Key research questions;

Based on the needs identified above this research focuses on the specific experiences of female UPA practitioners in Freetown. In order to achieve this it was important to understand exactly how women were farming. While UPA in a Freetown has been well documented in a general sense, little attention has been given to understanding the techniques used by women farmers to grow and market their produce. In addition to this the role of women in and their contribution to UPA has not been well documented. The first key research question used in this research addresses this information gap and seeks to understand the nature of UPA in Freetown from a women’s perspective. The second key research question focuses on the interactions that farming women are having with other members of the UPA community in Freetown, evaluating the strengths and weaknesses of these relationships from the perspective of the women farmers who are seeking to use them to enhance their livelihoods. Based on the information compiled in answer to these two questions the third research question asks what needs to happen in order for women to have access to a more sustainable and secure livelihood through their practicing of UPA in Freetown. The three key research questions used in this research are as follows:

1. How are women using and contributing to UPA in Freetown?

2. How do women in Freetown interact with and benefit from the state, FUPAAP, support services, NGOs and other associations and collaborations?
3. How can women in Freetown be strengthened in their ability to secure a sustainable livelihood for their households through UPA?
3 Methodology

3.1 Introduction
The goal of this research project is twofold, first, to investigate the ways in which women in Freetown, Sierra Leone use urban and peri-urban agriculture (UPA) to enhance their livelihoods. Secondly, this research aims to empower women UPA practitioners in Freetown by understanding their specific needs and enhancing their capacity to access relevant inputs and support services. The key research questions in order to achieve this, have been established above in the literature review (see 2.9). The fieldwork for this project was carried out in Freetown, Sierra Leone, over a four week period from the 26th February to the 26th March 2014. During this time Freetown was nearing the start of the rainy season, but still predominantly dry. This allowed research to occur at a time when farmers were in their fields and a wide range of produce was being grown. As the results section of this thesis will explain in depth many farmers are forced to abandon their fields during the rainy season (May to October) due to flooding. Those who are able to remain are forced to grow the staple crop rice almost exclusively. Visiting and conducting fieldwork during the dry season also alleviated transport difficulties that can occur when the streets are flooded during the rains. Being present only in the dry season does however raise the possibility of the research containing a ‘dry season bias’ (Chambers, 1994b). Without being in the field for several months over both wet and dry season the results gathered may be subject to a seasonal bias. This was not a viable option at the time given the scale of the research project. Therefore, in order to mitigate the bias of collecting information in only one season as much as possible, participants were asked to consider questions in
the context of both and dry season and to respond with information about both seasons. Additionally, site visits included discussions about how the physical characteristics of the space would alter throughout the year.

The fieldwork component of this research was conducted using a participatory methodology. This decision was informed by an extensive body of literature relying on participatory practices and delivering what was judged to be both legitimate and ethically obtained results. In dealing with female farmers in Freetown, the research interacts with a group of particularly vulnerable individuals and as such generates a strong ethical duty towards them. Participatory research allowed the research to be conducted in a way that enhances their own knowledge and power, rather than just extracting information for the researcher’s benefit. Because these participatory methodologies required so much dialogue, research was carried out with the support of a translator from the Geography Department at Fourah Bay College (University of Sierra Leone) in Freetown. Over the course of the four-week fieldwork period, a number of interviews, key informant interviews, focus groups, site visits and transect walks were carried out as outlined below in Table 6.
Table 6: Research methods summary

<table>
<thead>
<tr>
<th>Method</th>
<th>Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>Interviews with farmers</td>
<td>8</td>
</tr>
<tr>
<td>Interviews with government officials and extension workers</td>
<td>5</td>
</tr>
<tr>
<td>Interviews with other members of UPA community</td>
<td>6</td>
</tr>
<tr>
<td>Focus groups</td>
<td>5 focus groups with between 4 and 18 participants</td>
</tr>
<tr>
<td>Site visits</td>
<td>8</td>
</tr>
<tr>
<td>Guided transect walks</td>
<td>5</td>
</tr>
<tr>
<td><strong>Total number of participants:</strong></td>
<td><strong>57</strong></td>
</tr>
</tbody>
</table>

*Source: Author’s fieldwork, 2014*

This methodology chapter will first discuss the theoretical underpinning of participatory research. It will then go on to outline the ethics applications made in order to undertake this research, and highlight how an awareness of researcher positionality decreases the risk of participants unintentionally being disadvantaged, or treated unethically. One of the advantages of an awareness of researcher positionality is that it can highlight possibilities for bias. Several ways that bias may have arisen in this research, as well as how this risk was minimised, are discussed, before the chapter concludes by detailing the site selection and research process in the field.
3.2 Fieldwork Methodology

3.2.1 Theoretical framework of participatory research

Research for this project will be carried out using a participatory approach. In the 1980s, perceived deficits in the “rapid rural appraisal” (RRA) strategy that was the dominant tool of inquiry during the 1970s, lead to the development of “participatory rural appraisal” (PRA) (Chambers, 1994a; Narayanasamy, 2009). Under RRA, information collection tended to be highly extractive, and the development interventions informed by this approach were often top-down, used more technology than required, and focused on the deliverance of supplies and infrastructure, rather than capacity building and empowering communities. PRA focuses instead on allowing participants to do most of the investigation, analysis, sharing and decision-making, facilitated by outside investigators. This ensures that research leads to appropriate and sustainable development projects that are community driven and able to continue to grow in the absence of outside investigators (Chambers, 1994a; Narayanasamy, 2009). PRA is built on a wider set of participatory research principles that are equally relevant, if somewhat less well documented, to research in urban spaces. The core ideal of this method can be summarized as:

“Poor people are creative and capable, and can and should do much of their own investigation, analysis and planning: that outsiders have roles as convenors, catalysts and facilitators: that the weak and marginalised can and should be empowered.”

- Source: Chambers, 1994b: 954

Participatory research also encourages the return of information to the communities involved in a form that is meaningful to them (Momsen, 2006).
The overall approach of PRA is to use a series of semi-structured interviews, focus groups, facilitative exercises and direct observations as appropriate, to enable the maximum flow of information both within the communities in question, and also to and from the observer. Under this framework the goal is to empower communities and enhance their knowledge, competence and ability to create and sustain action, rather than to simply extract information using pre-prepared questionnaires and interview structures (Narayanasamy, 2008). Because of the necessarily flexible and intuitive nature of conducting participatory research, it is not possible to construct an exact research schedule or “experimental design” to be undertaken during fieldwork. Instead, a series of tools and exercises need to be prepared and practised, to be used as required during fieldwork. This is often described in the literature as a ‘menu of methods’ (Chambers, 1994b). Listed below are the key participatory techniques which this research project has relied on, which were utilised where appropriate throughout several rounds of information gathering (see Figure 7). The methodologies described below have been derived and adapted from the works of Chambers, 1994a; Desai & Potter, 2006; Narayanasamy, 2009; and Rennie & Singh, 1996.
Figure 7: Building understanding and accumulating knowledge through sequencing of information collection

Source: Narayanasamy, 2009
3.2.2 Ethics and positionality

Participatory methodologies have a strong focus on ethical research. Additionally the University of Otago has a robust ethics approval process for all research interacting with people. The system is especially concerned with ethical standards when research is being done in conjunction with people groups or individuals who may be considered to be vulnerable in relation to the researcher. In these instances, researcher positionality may create a power imbalance, enhancing the likelihood of those participating in the research being mistreated or having their interests harmed. While this harm may well be unintentional, accidentally disadvantaging research participants through a lack of awareness of their needs is a serious ethical issue. As with all relationships, the positionality of a researcher in relation to others participating in a research project, can be generated by a mixture of race, ethnicity, gender, wealth, and education, among other things. In the case of field research in Sierra Leone, comparative advantages in education, wealth and access to authority figures, meant that there was often a significant disparity between the agency of the researcher and those participating in the research. The ethics application process completed through the University of Otago helped to highlight this vulnerability and put in place strategies to enhance an awareness of positionality and reduce the likelihood of participants being treated in an unethical manner, either intentionally or through a lack of proper consideration.

The ethics application for this research was submitted to and approved by the University of Otago Human Ethics Committee (UOHEC) in 2013 (See 8.1 to 8.4). Due to the fact that the research was being conducted overseas, with a potentially vulnerable community, and in an area where the researcher’s safety
could be at risk, the project required an “Ethics A” application. This involved making a full submission of the research proposal to the UOHEC, which included; an information sheet outlining the nature and purpose of the research, a copy of the consent form that would be used with participants, details around how participants would become involved and share information during the research, examples of the questions that would be asked of participants, information on the processing, storing and sharing of information and a detailed health and safety plan to ensure the wellbeing of the researcher while overseas. Once submitted to the ethics committee the application subsequently received feedback and was approved after a series of exchanges. In particular, it was important to clarify how consent would be gained in situations where farmers were illiterate. It was determined that having the consent form and information form explained to respondents by a translator would be an acceptable alternative to reading. This would enable participants to understand the nature of the research, what their involvement would be, and what the outcomes of the research would include. It would also highlight to them their ability to withdraw from the research at any time. In particular it was important that participants understood that the research would not lead directly to any projects or NGO involvement with their association. Where farmers were unable to sign a consent form or in instances where formal documentation created an intimidating atmosphere, stressing the power imbalance between researcher and participants and generating a feeling of distrust, a thumb print or verbal consent would suffice.

In addition to the UOHEC ethics application, a Health and Safety plan was completed and submitted to the Geography Department Health and Safety
Committee (see 8.5 and 8.6). The plan built on the ethics application and provided an in-depth discussion of a range of potential health and safety issues that could be encountered in Sierra Leone. As well as identifying potential issues, the plan outlined a range of ways in which the potential for harm could be minimised, together with a range of responses should an emergency arrive. One strategy adopted to enhance personal safety was the decision for the researcher to be accompanied by her husband, who has undergone some first aid training. Traveling with a spouse almost certainly altered the researcher’s positionality through adjusting her social standing, but provided an extra level of safety. Additionally, regular contact was made with designated family members, and contact details were updated with the Health and Safety representative as they became available. The ethics application, acceptance of the ethics application and the Health and Safety Plan can all be found in the Appendix.

3.2.3 Identifying, avoiding and mitigating bias and inaccuracy

3.2.3.1 Participant selection and involvement

One key way in which bias often enters into development research is through the failure of researchers to recognise the diverse range of experiences created by gender. Men and women experience and perceive development very differently, and research that fails to engage with women cannot help but be biased towards a male perspective. Engaging with women usually allows for a greater depth of information and access to more varied spaces than speaking only to men (Momsen, 2006). The normal recourse for balancing this bias is ensuring the adequate participation of both genders in interviews, focus groups, exercises and subsequent decision making. As this research is focused on the experiences of women, a lack of participation from women in comparison to men is unlikely to be a problem. Instead, it may be important to note that there
are factors other than gender that impact on UPA experiences, for example, ethnicity, health, age and socio-economic status. Research should therefore be carried out in a way that is sensitive to the diverse nature of the women involved, and a genuine effort should be made to identify and involve marginalised women. Setting an appropriate tone during exercises that allows everybody to participate fully, is a challenging, but important, part of the facilitator role that has a large impact on the outcomes of the exercise (Webber & Ison, 1995). Participants were selected using a snowball sampling method whereby key gatekeepers of the UPA community identified individuals, groups or organisations who would be relevant to the study. These parties were then approached and invited to participate. Often during the interview they would then indicate further potential participants, either explicitly, i.e. saying “you should meet with X”, or implicitly, i.e. saying “I have had dealings with X regarding UPA”.

3.2.3.2 Data interpretation

Another key source of bias and inaccuracy in participatory research is the processing and interpretation of data (Webber & Ison, 1995). Researchers from different cultures can often interpret the information provided by participants in a manner that is different from what was intended at the time (Apentiik & Parpart, 2006). There are several ways in which this can be avoided. The first is through encouraging participants to summarise and analyse the information they have presented for themselves. This step is built into the methodologies of all the menu of methods discussed above. The goal is that, by limiting the extent to which the researcher is responsible for this processing of information, the risk of misinterpretation or cultural bias is limited. Another method for
confirming the validity and accuracy of information is triangulation. Triangulation involves the collection of similar data from multiple sources to cross check the information that has been collected. Through the use of triangulation, researchers are able to confirm that they are interpreting information correctly as they are being told what it means from several sources. It also helps researchers confirm data as being factually correct (Harrison, 2006). An awareness of individual positionality will also help researchers to navigate the channels of gender, culture and power relations in a more sensitive manner. This awareness may help limit misinterpretation in some instances, as well as helping to inform the way in which interviews and exercises are conducted (Mercer, 2006).

3.2.3.3 NGO legacy

Of particular significance for this fieldwork was that understanding of the economic and power disparity existing between researcher and research participants was crucial. For many participants their previous experience of westerners had been through NGOs supporting them through training and funding. This has established the idea of many respondents that working with a Western researcher will have the end result of bringing support to their association. While it was made very clear to all participants that this research was not going to lead directly to any money or NGO involvement before they consented to participate, this atmosphere of expectation nevertheless lingered, as participants would often misrepresent the extent of their poverty or hardship in an effort to prioritise their own associations, should funding arise. This required an adaption of the questioning approach, asking less direct questions to work out how much existing capital or funding associations or individual
farmers had available. Observational data about the tools and infrastructure being used by the associations, as well as observations about the personal dress and health of farmers, became an important tool in understanding the success of farmers relative to those on other sites. For example, watering cans were present at some sites and not others, indicating a difference in purchasing power or external support between those who had access to this vital tool and those who did not.

3.2.3.4 Using a translator

English is the official language of Sierra Leone, but is spoken almost exclusively by the county’s educated population. Many of the farmers participating in the research do not speak English, and instead use Mende or Temne as their mother tongue, while also being fluent in Krio. One advantage of Krio is that it is a language largely derived from English. This meant that it was possible to discern, to some extent, the content of the conversation taking place between farmers and the translator. Because the translator was a lecturer at Fourah Bay College who had done work around UPA previously, there was a risk that his own opinions would colour the interviews. Being aware of this, and listening carefully to what was being discussed, where possible, helped to minimise this bias, as did repeating similar questions at different points of an interview to establish the fact that responses reflected a well-rounded and accurate account of the interviewee’s opinions.

3.2.3.5 Site selection

Five key farming sites were selected to act as case studies throughout this research. The sites were located at Regent, Gloucester/Leicester, New England, Lumley and Poto Levuma (see Figure 8 and Figure 9). The sites were
selected to represent a range of farming locations and experiences. The
mountainous sites of Regent and Gloucester/Leicester are distinct, to some
extent, from the urban setting of Freetown, and so are most accurately labelled
peri-urban sites, while the New England and Lumley sites are situated in very
dense urban areas within Freetown. The Poto Levuma site lies closer to the city
centre than the mountain sites, but is more rural than the other two coastal
sites. The sites also represent a wide spectrum of farming styles, as different
locations force farmers to develop different techniques for crop selection,
growing, harvesting and marketing. In addition to this, while the mountain sites
have been farmed for generations, the more urban sites have only been in use
since the civil war which began in 1991 and ended in 2002. Farming began on
these sites both during the conflict, as migrants fled to Freetown to escape rural
violence. Many of these refugees chose to stay and continue farming in
Freetown after the conclusion of the Civil War. Urban migration has continued
into Freetown since the end of the War increasing the uptake of UPA.
Figure 8: Five key UPA research sites in Freetown, Sierra Leone.

Main UPA research sites in Freetown, Sierra Leone, from left to right and top to bottom: Poto Levuma, Lumley, New England, Leicester/Gloucester and Regent. Pictures taken in dry season, March 2014.

Source: Author’s fieldwork, 2014.
The process of site selection was informed partially by a recent (2013) survey undertaken of UPA in Freetown (Lynch et al., 2013). It was further driven by the snowball sampling methodology used to select participants. Key individuals within the UPA community (including farmers, government workers and academics) identified sites where UPA was occurring. From this information a range of sites that included urban and peri-urban characteristics were selected. Sites were also selected for the range of farming experiences they provided. A range of associations in terms of size, gender ratio and functionality were selected, as well as individual farmers. Selecting sites based on both their physical location in relation to Freetown, and the social makeup of the farmers using the site, ensured that a range of farmer experiences were included in the research.
Figure 9: Map of research sites

Source: Author’s fieldwork, 2014.
3.2.4 Menu of methods

3.2.4.1 Interviewing, focus groups and dialogue

All the other techniques and exercises used in participatory research rely on solid interview techniques, and the ability to facilitate a meaningful exchange of information through dialogue. Interviews can range from completely structured, where a set of pre-prepared questions are asked with no room for deviation, to completely unstructured, where there is no use of pre-prepared questions or themes. The participatory research techniques used during this research focused on semi-structured interviews, as well as focus groups and direct observations. The goal of these semi-structured interviews was to address a set of pre-prepared topics, or themes, while at the same time promoting flexibility in the order of discussion, and promoting dialogue and a flow of information between participants. Some questions were pre-prepared for the interviews, but these were able to be set aside and new questions added as became appropriate. The interviews covered a range of topics and yielded both qualitative and quantitative data. Participants included both key informants with specialised information, and individuals who contributed representative information.

It was important that during interviews and focus groups, as in all the techniques discussed here, the researcher was sensitive to tensions and conflicts that might have occurred in order to avoid pitting participants against one another, or raising issues that would not be able to be resolved. This is particularly true during focus groups, where individuals could feel uncomfortable contributing due to feeling vulnerable, or association relationships could be damaged if the conversation was hostile. Given the limited time-frame over which the fieldwork was able to take place in
Freetown, it was also necessary to consider the fact that each focus group would only be able to meet once. This generated an ethical obligation to try and avoid generating problems or creating tensions that could not be resolved during one session.

*Figure 10: Focus group participants from the New England Vegetable Growers Association.*

While carrying out a conversation based methodology may seem the most intuitive of the methods described here, it is important to think critically about how the interview or focus group will be conducted. Failure to do so risks pertinent information not being brought up, or misinterpreted due either to biases or interviewer error, for example forgetting about a section of information required, or a question that needs to be answered.
Procedure:

- Prepare for the interview by thinking carefully about what topics might be relevant, making notes on the sort of questions that might prove relevant. Familiarise yourself, where possible with the interviewee, in order to be able to shape conversation to what is relevant to them, while remaining open minded and receptive to the fact that they may have different opinions or information to what was expected.

- Check that the recording device has appropriate battery levels and enough space for the interview to be recorded.

- Begin the interview with an appropriate greeting and ice breaking conversation. Seek permission, usually verbal, to record the interview.

- Make sure the interviewee/group is comfortable participating and is aware of their ability to withdraw from the interview at any stage.

- Begin the questions by referring to something visual or something previously discussed as an easy introduction to the themes of the interview. As the interview progresses try to establish trust, rapport and empathy to make participants feel comfortable.

- Ask questions in a logical order trying to weave them into conversation rather than stopping and starting. Encourage participants to share their knowledge and experiences in a format that is comfortable and natural for them.

- Take notes in an appropriate manner, noting down any hand gestures and body language where they are helpful in understanding the participant’s responses, while maintaining appropriate eye contact and engagement.

- Ask sensitive questions only after participants are comfortable and rapport has been established, remembering that what is considered sensitive may differ between cultures.

- Look for inconsistencies in answers, and try to tease out the thinking behind them.

- Keep an eye on the time of an interview. Interviews should not normally take more than 45 minutes as it risks imposing
significantly on the interviewee. In the event that they have more time available make sure to clarify with them how long is appropriate for them.

- At the conclusion of the interview, ask participants if there is anything else they would like to add or say before asking them to summarise the information to ensure clarity of communication.
- Thank participants for their time and input.
- Check the interview has been recorded appropriately.

3.2.4.2 Transect walks

Transect walks are leisurely and accompanied walks through a space to see, at first hand, the resources being discussed and to meet people. Direct observation is a key part of the process of understanding a community. While mapping creates a bird’s eye view of a space, a transect walk generates a cross-section focusing on different zones. Transect walks focus on the geography of a space and its natural resources, changes overtime and social elements like infrastructure. There are a range of techniques that can be used depending on the situation. Transects can be done in straight lines, zigzags, single loops, multiple loops (where multiple groups are available), sweeping transects (which are generally used for more detailed planning) or by moving up or down a watercourse (Narayanasamy, 2009). Transect walks for this research were usually conducted in straight lines or along a water course as these were the available paths. To venture off these paths would result in the trampling of farmers’ crops or walking in stagnant water which was problematic for health and safety reasons. Transect walks in Freetown usually occurred within farming areas and gardens (see Figure 11). Table 7 (below) shows the final results of a
transect walk presented in a table format. Tables like this were used to record information during fieldwork to be integrated into the results and discussion chapters of this thesis.

*Figure 11: Community members gather and contribute to a transect walk near a demarcation pillar in Lumley, Freetown, Sierra Leone*

*Source: Author's fieldwork, 2014.*
Table 7: Transect walk of New England Vegetable Growers Association
garden, Freetown, Sierra Leone

<table>
<thead>
<tr>
<th>Site (not to scale)</th>
<th>Length and slope</th>
<th>Characteristics at time of visit</th>
<th>Land Use</th>
<th>Vegetation</th>
<th>Buildings</th>
</tr>
</thead>
<tbody>
<tr>
<td>elevation ~50m</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Continues past boundaries of walk. 7.5m included. Slope ~0.5:2</td>
<td>Dusty soil. Heavy rubbish burden. Relatively flat.</td>
<td>Mostly residential, some agriculture occurring.</td>
<td>Sparse, occasional tree and some leafy greens.</td>
<td>Dense. Mostly houses. Dense buildings.</td>
</tr>
<tr>
<td></td>
<td>5.5m Slope ~1:2</td>
<td>Damper soil near the bottom of the hill.</td>
<td>Terraced gardens used in the wet season. Not in use at time of visit.</td>
<td>Mostly trees, some leafy greens, most gardens are empty until wet season.</td>
<td>Few buildings, some beginning to encroach further down the hill. Terraced garden structures.</td>
</tr>
<tr>
<td></td>
<td>12.5m Slope 0:1</td>
<td>Wetland/swamp. Some standing water visible among garden beds. Some rubbish burden, reduced by regular clearing.</td>
<td>Wetland farming. A range of traditional leafy greens and salad vegetables were visible and being farmed in beds. Women transport water from the wells and standing pools to the crops using bowls.</td>
<td>Dense. Wide variety of leafy greens and salad vegetables being grown. Predominantly traditional leafy greens in low gardens. Few trees.</td>
<td>Few buildings. Wetland is free of buildings except on the boundaries. Ministry for the Environment Building encroaching heavily on rear right hand end of the plot (looking from the bridge).</td>
</tr>
<tr>
<td></td>
<td>3m Slope ~2:1</td>
<td>Damper soil near the bottom of the hill.</td>
<td>Terraced gardens used in the wet season. Not in use at time of visit.</td>
<td>Mostly trees, some leafy greens, most gardens are empty until wet season.</td>
<td>Medium building density. Relatively high encroachment levels. Terraced garden structures.</td>
</tr>
<tr>
<td>Challenges</td>
<td>Little farming occurs here. Many farmers live in this area and encounter issues accessing electricity and sanitation. High population density.</td>
<td>Slope of the hill causes rubbish to flow into wetland farms. Area can only be farmed intensely in wet season due to water shortages.</td>
<td>Encroachment of the wetlands is concerning farmers. Fields become blocked with rubbish from neighbouring residential areas. Cannot be farmed during the rainy season as field becomes waterlogged. Farmers move to terraced gardens instead of growing rice.</td>
<td>Building density increasing in this area, and encroachment is becoming more of an issue. Rubbish runoff occurs.</td>
<td>High density residential area, places pressure on families and businesses to build onto the wetlands.</td>
</tr>
</tbody>
</table>

Source: Author's fieldwork, 2014

The procedure used for conducting transect walks in Freetown is described below.

Procedure:

- Identify participants who are knowledgeable about the area and set a route for the transect walk with their guidance. Ideally, the route will begin at a key landmark and move either uphill or downhill from there.

- Walk along the route with the participants observing physical, biomass and social features. Encourage participants to talk about how the features they are describing affect them and how they has changed over time. It is important to avoid walking too fast so that you have time for all the features to be described and discussed by the group.

- Use chance encounters with community members as a way to greet and get to know people. Where appropriate invite them to provide more detail on your transect walk. For example, stop and talk to a local farmer if they are in their fields as you go past. They may wish to add to the conversation you are having, or may wish to continue working and contribute at a later date (or not at all). Meeting community members in this way also increases familiarity and helps build rapport.

- Thank the participants and ask if there is anything further they would like to add.

- Where possible, make a record of the walk by taking pictures and having one of the participants transfer it to supplied paper. Remember to include a key describing any symbols used on the
map. Where it is not possible to have participants map the walk, the researcher may do so as a form of note-keeping.

3.2.4.3 Seasonal calendar

Seasonal calendars are used as a tool for depicting the effects of seasonality on UPA activities. An excellent description of the impacts of seasonality on farming in Sierra Leone can be found in *Africa: Diversity and Development* (Binns, Dixon, & Nel, 2012. p14). Seasonal calendars are particularly useful, as they can display a range of information including data on rainfall, crops, periods during which specific labour occurs, seasonal fluctuations in the prices of goods, food availability, etc. While the data collected in seasonal calendars may not be highly scientific, for example rainfall measurements may be accurately contrasted between seasons, but often will not be described in a specific quantity, calendars can provide a very useful and meaningful insight into the experiences of UPA practitioners throughout the year. Local knowledge is often very detailed and can go back a significant number of years. Seasonal calendars generated by this research are the work of the author in interpreting information from groups, as opposed to calendars generated by the groups themselves as a result of time constraints. Ideally, participants construct seasonal calendars themselves using either supplied paper or other resources available in the surrounding environment. During the course of this fieldwork this was often not possible due primarily to time limitations. Participants had limited time available during which they could be away from their fields, and researchers had little time for repeated site visits. As a result seasonal calendars were constructed at a later time from notes taken during interviews and focus groups. The procedure for this is described below.
Procedure for researcher devised seasonal calendar:

- Gather participants who are knowledgeable on the themes in question and allow them to select a place to meet. It should be a public space in which all participants feel comfortable. If participants are drawing the calendar then the space will need to be of a suitable size and layout so everyone can participate.

- Information for the seasonal calendars is collected during focus groups and interviews. Participants are asked to describe their year in farming, including information about rainfall, crops, profit and labour.

- Calendars are carefully constructed by the researcher to represent this information. Special care is given to not misrepresent the values, proportion or amounts of the factor in question, or to try and assign specific values where none were given by participants.

*Figure 12: Example of a seasonal calendar, comparing rainfall and profits from two garden sites in Freetown, Sierra Leone*

Source, Author's fieldwork, 2014
3.2.4.4 Site visits and observational notes

As indicated in Table 6 above, site visits formed a crucial part of this research. Sites visited included a range of farming locations, as well as several local markets where produce from UPA was being sold. These visits were made both with a translator and also independently. A translator was always present when interviews were being conducted, and these were recorded with notes taken. In addition to interview notes, a series of observational notes were taken at each site. These notes outlined, among other things, apparent infrastructure, water availability and quality, the size and organisation of garden plots, visible equipment, quality of farmers clothing, gender of farmers, presence of children or hired labour, types of crops or produce available and the methods being used to farm or sell.

These site observations were combined with daily journaling of experiences in Freetown, to help build up a more in-depth understanding of what women farming in Freetown actually experience. When examined together with the interviews, these notes were able to provide valuable context for some comments allowing the researcher to understand the significance of what was being said. For example, if a farmer reported having to travel into the city to sell crops or buy seeds, observations about travel times, congestion of footpaths and extreme heat provide useful information on how this journey is likely to affect that farmer.

Notes made during site visits and interviews were hand written, and then organised and transferred to computer during the evenings where they were backed up to a hard drive. This was reflective of a deliberate decision not to take too much technology into the field due to the way it emphasises the
researcher's position of relative wealth and importance, and can create a barrier during interviews. Using a laptop during interviews can also create a physical barrier as the researcher sits behind a screen and is less able to get up and move around the site.

3.3 Conclusion

The participatory methodologies described in this chapter rely heavily on relationship building and mutual benefit between researcher and participant. Because of the relational nature of the research, positionality and bias have to be closely monitored to avoid, reduce or mitigate the impacts they might have on both research quality and the participants. Special care must be given to avoid inadvertently disadvantaging participants through the research process. The methods described in this chapter were used as appropriate to collect and process the information presented in the results chapter below. These findings were then linked to wider literature to inform the discussion that makes up the core of this thesis.
4 Results

This chapter will outline the results of the fieldwork in Freetown. In doing so, it will focus on answering key research question 1: “How are women using and contributing to UPA in Freetown?”. Some discussion of key research question 2, “How do women in Freetown interact with and benefit from the state, FUPAAP, support services, NGOs and other associations and collaborations?” will also be included. This chapter will identify participants in UPA in Freetown, outline how farming and marketing of produce are occurring, draw attention to the benefits received and challenges faced by women farmers in Freetown, as well as the support services available to them. It will also seek to situate UPA in terms of the contrasting experiences of farmers in the coastal urban sites (Lumley and New England) as opposed to the mountainous peri-urban sites (Regent and Gloucester/Leicester). The fifth site, Poto Levuma, displayed characteristics of both urban and peri-urban agriculture that were found in the other four sites (see Figure 6).

4.1 Who is involved in UPA in Freetown?
There is a wide range of participants, both individuals and organisations, involved in UPA in Freetown. While the levels and nature of the participation vary across these stakeholders, UPA is of growing significance for them all. The relationships between stakeholders will be examined closely in the discussion chapter of this thesis. This section will identify who these participants are, and briefly outline what roles they play in UPA.
4.1.1 Farmers and their families

The farmers themselves are the most obvious UPA participants in Freetown. The majority of these farmers, who often refer to themselves as ‘gardeners’, are women. This is acknowledged by the farmers themselves, the government and many NGOs. According to the Ministry of Agriculture, Forestry and Food Security (MAFFS), approximately 80% of Freetown’s farmers are women (KI054 and KI007). This figure is cited by both members of the Ministry, and Ministry-hired extension workers who are embedded in the field. While there has been no formal government survey of urban farmers, this estimate has been confirmed through this research.

However, the ratio of female to male farmers was not uniform across the study sites. The two most urban sites, Lumley and New England, had the highest concentration of women. Of the 42 farmers in New England, only three were men (KI011). In Lumley, a similar ratio of men to women existed (KI007, see Table 8). In contrast, the peri-urban mountainous sites of Regent and Leicester/Gloucester had a higher ratio of men participating in farming when compared to women. For example, 6 out of 13 farmers in the Regent Vegetable Growers Association are men (see Table 8). Famers in the coastal-urban environment also tended to be first generation farmers. They usually began cultivating in Lumley and New England during the civil war, while farmers in the peri-urban area reported inheriting the lease for their sites from their parents or grandparents. In these mountain communities farming is a traditional occupation, recognised as important by the community and used by many heads of households as a key livelihood.
strategy. This is not the case in the coastal-urban environment, where farming on a significant scale is a relatively recent occurrence.

Almost all of the women involved in UPA have either children, or other dependant family members, for whom they are the primary caregiver. Members of the New England Vegetable Growers Association are almost exclusively widows living in densely populated central Freetown. They reported that their gardening work is critical to their ability to perform their roles as caretakers within their households.

“The benefits of this work are enormous. Most of us are widows, everything we use to run our homes, feed our children, pay for their education, pay our rent, everything, we get from our garden work”  

This ability to support dependants is crucial, given that in Sierra Leone the care of children and vulnerable family members, as well as the upkeep of the household is still largely the responsibility of women. Women often find their extended families move from rural areas to join them in Freetown, with the expectation that they will be better off in the urban setting (KI001). These expectations are a key motivating factor for women to engage in UPA. Farmers in the mountain villages of peri-urban Freetown tend to be from families who have been established in the area for generations. Many members of these communities are land owning Creoles but are not necessarily farming the land themselves. In central Freetown families
engaged in UPA are mostly non-Creole migrants from up-country rural villages.

While men are the minority of urban agriculturalists in Freetown they are still engaged with the field, farm mostly in more peri-urban sites, in the mountains and at Poto Levuma, where other opportunities such as labouring, car washing and petty trading are scarcer due to the distance from the CBD. Many of the men farming in Freetown are doing so on land that has traditionally been used for farming by previous generations. They are usually from farming backgrounds, as opposed to many of the more urban centred women who began farming only recently during the civil war after they migrated into the city. In contrast to their female counterparts, male farmers do not market and sell their own crops. Selling of food remains the sole domain of women. Groups with male members tended to have more equipment (watering cans, etc.) available to them. They were also, in some instances, able to create terraced gardens themselves without having to hire extra labour.

Many of the farmers indicated that their families assisted in the fields during the year. It was common for children to participate in farm work such as watering and weeding after school hours. Several women reported that this was how the family ensured there was enough food to eat (KI011). Some farmers were also able to hire family members at particularly busy times of the year, although the ability to pay family for their labour varied greatly between sites, associations and individuals. In Gloucester and Leicester, Mr and Mrs Kano were able to hire two of their siblings to assist with the
weeding of the spring onion beds before new fertiliser was added. Hiring family members was cheaper than hiring other labour as they could be paid partially in food or a promise of future assistance. In Lumley, Mrs K\(^1\) had no family, other than her children, to assist her, and did not have the capital to pay extra labour (see Vignette One). The same was true for the members of the New England Vegetable Growers Association who lacked both financial and family capital. For these women, the Association was a critical provider of support.

Despite some of the hardships of farming, women who were engaged in UPA in Freetown consistently reported that they found it to be a generally beneficial livelihood strategy. Some of the benefits discussed include; the provision of a source of income, food generated to feed their families, a source of employment for themselves and their families, a sense of independence and empowerment for the women, and a feeling of community in areas where associations functioned well. The benefits of productive employment and income generation gave many of the farmers a sense of security and peace in their households. Those who had husbands described the way in which the income from farming eased tensions in the family unit by paying essential bills. It also provided an opportunity for productive employment for other household members when alternative work was unavailable. This made their husbands feel both more secure and more empowered. The women also valued the independence they gained from farming. Both married and single women indicated that being able to provide food and money for their children, without necessarily having to rely on

\(^{1}\) Full name omitted on request to preserve participant anonymity.
anyone else gave them a sense of satisfaction, security and empowerment. For women who were members of successful farming associations, their sense of security was enhanced by the knowledge that the association would support them. This provided an added sense of community without eroding individual feelings of independence. Women who were not members of associations, or who were members of poorly functioning associations, were less likely to feel connected to or supported by a community, as is the case for Madame Farmer of Regent\(^2\) (see Vignette Three).

### Vignette One

**Case Study – Mrs K**

Mrs K is a woman farmer in Lumley, Freetown. She has eight children, five of whom are biologically hers, and three of whom she adopted after their parents died in the civil war. In early 2014 her husband died and she is now the sole member of her household providing for her children. All eight of her children are currently enrolled in school at various levels. Mrs K started farming during the civil war and sees it as a viable means for providing for her family into the future.

\(^2\) Full name omitted on request to preserve participant anonymity.
Mrs K farms as part of the Lumley Vegetable Growers Association. She has an individual plot of land and participates in cultivation of the community plots on Wednesdays. Both plots are seeded with traditional leafy vegetables such as sweet potato leaf, cassava leaf, Okra and krin-krin. Mrs K chooses to farm these instead of salad vegetables for several reasons. First, she believes the local markets have a constant demand for them so she can always sell them. Additionally, she chooses to grow traditional crops, as she uses her produce to feed her family and this is what her family eats. As she and her children do not eat 'salad vegetables’, she could not use any leftover from the market within her household and so chose not to grow them. She is pleased to be able to provide her family with what she considers to be good, healthy food. She boasts of never having had to visit
the doctors with high blood pressure, or other diet-related issues, and attributes this to her high quality vegetables.

Mrs K chooses to farm in an association because she receives the benefit of secure income as well as community support. By watering the community plot daily and dedicating part of her working time to weeding, planting, harvesting and other work on the plot, she gains access to the association saving scheme and regular association pay. As well as giving her labour Mrs K, contributes part of her weekly individual earnings to the association’s saving scheme. The savings scheme collects payment from each member at an agreed rate. These savings are then spent on necessary gardening inputs for both the community and individual plots throughout the year. The association pays Mrs K 20,000 Leones a day (approximately $6NZD at the time of study). This is enough for her to cover all her weekly household expenses, including rent and school fees for all her children. The money the association pays out to farmers comes primarily from sales of the crops grown on the community plot, and partially from the money paid in by members to the savings scheme, as needed. At the end of the year the association divides any money remaining in the savings scheme equally among the farmers. This provides Mrs K with a cash boost around Christmas and the start of the new school year. Aside from receiving the money, Mrs K appreciates the community support she gets from the association. If a member of the association, or their family, is sick, the other members will look after their plot while they cannot work. For Mrs K this network of support provides a sense of security and confidence.
Mrs K’s garden plot is part of the wetland area at Lumley. It is surrounded by urban Freetown, so encroachment of neighbouring residences and businesses onto the limited arable land is a big concern for Mrs K. The Ministry of Lands and Freetown City Council are working together with farmers and their surrounding communities to define the boundaries of wetland areas used for farmers. As boundaries are established they are marked out using concrete pillars. Despite this, encroachment is ongoing, and Mrs K has seen the land available for both her and her association steadily reduce. Mrs K also struggles with the rubbish that builds up in her garden. The rubbish is washed down from the surrounding hills and streets into her garden where it smothers her plants. The small plastic bags used in the packaging of drinking water are particularly numerous and account for a large proportion of the rubbish. Mrs K has to spend hours every week picking rubbish out of her garden and piling it up for burning. This is time-consuming and labour intensive. Additionally, there are often sharp objects, and sometimes even medical waste in the rubbish which Mrs K has to pick up. She would like a wall to be built around the wetland that stops rubbish from entering. She would also like to be able to purchase gloves and boots to make her job safer.

As well as encroachment and rubbish, water is a key concern for Mrs K. During the dry season she has to water her garden from a series of boreholes. As the dry season progresses these yield less water and fill up with sediment, rubbish and other pollutants. Mrs K is concerned about the
quality of the water which she has available to irrigate her plants. It is also very heavy labour, using bowls to carry the water from the boreholes or standing wet areas to her garden and distributing it on her beds. She thinks a watering can would improve this process. During the rainy season there is too much water in the garden and Mrs K cannot grow anything except rice. During this season she supplements her income with petty trading whenever possible.

4.1.2 Labourers, marketers and sellers

In addition to the regular farmers and their families, UPA in Freetown also involves some hired labourers, marketers and sellers. Labour gangs are common in Freetown, where unemployed men, particularly young men, organise themselves into groups and hire out their labour. These groups, or ‘labour gangs’ work primarily as construction workers, but also as car washers, petty traders, barbers or labourers in UPA. In a UPA context they are usually hired to complete physically demanding jobs which the female or elderly farmers are unable to undertake, for example the raising of garden beds, or the building of terraces. This sort of undertaking is, however, limited by the fact that few farmers in Freetown, particularly in the central urban plots, have the necessary capital to hire extra assistance for their work.

Other individuals participating in UPA in Freetown include women who act as marketers and sellers. As described above (see 4.1.1), the selling and marketing of crops is exclusively women’s work. Selling usually occurs in
one of two locations; either in established marketplaces, or outside supermarkets. The selling of produce outside supermarkets is a practice established during the civil war. During this time supermarkets were unable to make a profit from produce, as few people were able to buy it due to the stagnant economic conditions. It was also extremely difficult for fresh produce from troubled rural areas to make its way into the city, increasing the costs of stocking it. In response, supermarkets granted permission for women to market their own produce outside the premises. By doing so, supermarkets were able to ensure that fresh produce was available to those customers who could afford it, without bearing any risk of loss themselves. The practice has continued (KI001, KI003 and KI006).

Some associations delegate the tasks of marketing and selling to members on either a rotating roster or permanent basis, and some individual farmers market and sell their own crops. Other associations and individuals outsource this part of the process to women who act exclusively as marketers or sellers, rather than growing crops themselves. These sellers either purchase produce directly from the farmers, often (but not always) at a discounted rate, selling it for a profit at markets or taking produce to market on behalf of the farmers (who retain ownership) and split the profits. Increasingly, independent sellers are buying produce in bulk directly from vegetable importers and competing with local farmers and sellers. This trend is a growing concern for Freetown’s farming community who cannot compete with the scale of production occurring across the border in Guinea, and therefore struggle to offer competitive prices in the marketplace (KI038).
4.1.3 Associations

Farming associations play an important role in the landscape of Freetown’s UPA activities. Both the Government and independent NGOs have encouraged farmers to form themselves into associations (KI054). In theory, this enables farmers to gain better access to funding, resources and advocacy, as it is easier for large organisations or bodies to identify and interact with associations than individual farmers (KI054 and KI029). Associations are formed entirely according to geography, where farmers working in the same area form an association. This research involved focus group discussions with three associations and interviews with members from three more. The associations studied differed greatly from one another in terms of size, gender and age profiles, organisational structure, farming techniques, and overall success as summarised in Table 8.
**Table 8: Make-up of 6 UPA associations in Freetown, Sierra Leone**

<table>
<thead>
<tr>
<th>Association</th>
<th>Size</th>
<th>Gender Profile</th>
<th>Organisational Structure</th>
<th>Overall Success</th>
</tr>
</thead>
<tbody>
<tr>
<td>Poto Levuma Association</td>
<td>65</td>
<td>Mixed but mostly women.</td>
<td>Split into 3 sub-groups (23 in group one, 22 in group two and 20 in group 3) each with an elected executive of President, Secretary and Treasurer.</td>
<td>Association provides access to community labour and some access to Government and NGO support. Some division within group as feelings of support being shared unequally are common. Members complain of corruption and information being hidden.</td>
</tr>
<tr>
<td>Lumley Farmer’s Association</td>
<td>~60</td>
<td>Mixed but mostly women</td>
<td>Split into two sub-groups. Mix of individual and group plots. Members contribute labour to community plots and assist in marketing. Association pays members 20,000Le a day. Money raised invested back into community plots and divided equally at end of each year.</td>
<td>Farmers express a sense of community and support. Division of labour allows community plots to be farmed and money to be made. Individuals still experience frustrations in communicating with Governments and NGOs.</td>
</tr>
<tr>
<td>New England Vegetable Growers</td>
<td>~20</td>
<td>All women</td>
<td>42 Farmers in New England (39 F and 3 M) are split into 4 associations, of which NEVGA is one. Farmers in the NEVGA have elected President, Secretary and Treasurer. Members farm individual and joint plots. Members pay 6,000Le per week into joint fund. 1,000Le allocated to contingency fund to help members in need. 5,000Le allocated to savings scheme to buy seeds, tools and fertiliser for the group. Unspent savings distributed amongst group in December.</td>
<td>Members report feeling highly empowered by the association. Many attribute this to the proactive leadership of Madam Nana. Members are satisfied with the level of attention from Govt. and NGOs while still expressing some concern over the transparency of NGO processes and the effectiveness of their consultation practices. Savings scheme provided by the association enhances capacity of farmers and provides a safety net for use during personal hardship.</td>
</tr>
<tr>
<td>Association</td>
<td>Membership</td>
<td>Gender</td>
<td>Characteristics</td>
<td>Comments</td>
</tr>
<tr>
<td>-------------------------------------</td>
<td>------------</td>
<td>--------</td>
<td>---------------------------------------------------------------------------------</td>
<td>------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Leicester/Gloucester Association</td>
<td>Unclear</td>
<td>Mixed</td>
<td>Group formed towards the end of the war in 1989 (farming individually prior to this). Farmers mainly work on individual plots and use association to access training and seminars.</td>
<td>Members feel that the association is under supported by government and NGOs. Still farm primarily as individuals.</td>
</tr>
<tr>
<td>Regent Vegetable Growers Association</td>
<td>13</td>
<td>7 F 6 M</td>
<td>Registered association with a functional bank account. Farmers spend Monday and Wednesday working on group plots but water each day. 4 members responsible for selling. All profits from group plot go to association. Members also contribute part of their individual earnings to the association which buys tools, seedlings, fertilisers and chemicals. End of year meeting distributes remainder of money (around 100,000Le).</td>
<td>Members feel that the association enhances their access to capital, training and support. Still express some concern about the usefulness and relevance of some NGO programs. Association provides a supportive platform for entrepreneurial ideas to develop (see Vignette 2).</td>
</tr>
<tr>
<td>Evergreen Association (also in Regent)</td>
<td>24</td>
<td>20 F 4 M</td>
<td>Association had elected executive and sales representatives. Financial Secretary and Treasurer responsible for bank account at Ecobank. Group raised money internally from members as well as seeking external funding.</td>
<td>Association has now ceased to function and members have scattered. Issues causing separation related largely to transparency in finances and reporting. Illiterate members felt literate members (who had access to the bank account) were acting dishonestly.</td>
</tr>
</tbody>
</table>

Source: Author's fieldwork, KI007-KI053, 2014.

While some associations appear to be very strong and provide many benefits to their members (e.g. the Lumley Farmer’s Association, New England Vegetable Growers Association and Regent Vegetable Growers Association), others appeared to be struggling or had dissolved altogether (the Poto Levuma Association and Evergreen Association respectively). Some farmers perceive associations to be a waste of their time, or have left...
associations after becoming disaffected with the group. As an example, there are approximately 150 farmers in the wider Regent area (around 100 female and 50 male), and many of them have elected to farm independently, or in conjunction with their families rather than join an association (KI30). The discussion chapter of this thesis will analyse how the makeup of associations may affect their overall success, and will explore the assumption present within government and NGO policy that creating an association is automatically of benefit to farmers (see 5.3.3.1).

Vignette Two:

Case Study – Regent Vegetable Growers Association

*Figure 14: Members of the Regent Vegetable Growers Association gather in their fields in Freetown, Sierra Leone*

(Source: Author’s fieldwork, 2014).
The Regent Vegetable Growers Association is a small association, currently with 13 members, although the numbers tend to fluctuate as people move in and out of the area, or are forced to stop farming due to illness and sometimes death. Of these, 7 are women and 6 are men. The Association farms a small area of land in the mountain village of Regent. This village used to be clearly distinct from Freetown, but population pressure and urban sprawl mean this is no longer the case. The site does, however, remain essentially peri-urban, in the sense that it interacts with and depends on the city market, while maintaining a position on Freetown’s fringe.

The Regent Vegetable Growers Association grow a range of produce, mostly salad vegetables, including; lettuce, onions, spring onions, tomatoes, capsicum, local hot peppers, carrots, runner beans and cabbage. The cooler microclimate of the mountains helps these vegetables to grow well. They also grow some traditional leafy greens. Many of these farmers inherited their land, or right to farm a particular piece of land, and farming knowledge from their parents and grandparents. The well-established and traditional role of agriculture in the Regent community goes some way towards deterring encroachers, but it is increasingly common for buildings to extend onto farming land. Due to this land pressure, many of the farmers are also experiencing increases in rent, as landlords pit potential tenants against each other in a bid to increase their rent intakes.

The clearing of neighbouring mountains for housing, combined with the development of new roads, has increased erosion and sediment deposits in a local stream. This stream used to flow through the Association’s farming
area. Now less water flows, and what remains regularly floods its diminished bed, such that water lies stagnant in the fields. The Association is not sure how they can continue farming in the event that the stream fills up entirely with sediment.

As farming has been an important part of the Regent community for generations, the farmers, including those in the Regent Vegetable Growers Association, have access to traditional terraced gardens. They are able to use these gardens in the rainy season when their wetland gardens are flooded. This means that they can continue cultivating salad vegetables during this time and have them ready for the peak sales period at Christmas when families eat salad instead of traditional meals. Farmers do not use their terraces during the dry season, as it takes too much time to transfer water from the valley bottom wetland up into the hills. The men in the association are able to provide the labour necessary for maintaining the terraces, saving the association from the costs of hiring labour.

Each day the Association must harvest crops that are ready and sell them at the markets down in Freetown. Because of the distance between Regent and Freetown’s markets, returning for additional produce comes at a significant cost in terms of both time and money, so it is poor planning, with adverse consequences to under supply their seller. On the other hand, any produce which is left over will wilt overnight and during the commute home and to the market the next day and so become un-sellable. Over supplying the seller therefore also leads to significant losses. The Association would like an Agricultural Business Centre (ABC) to be built in Regent. An ABC,
similar to the centre already in Lumley (see Figure 15), would provide a place to store produce in refrigerators overnight and minimise loses. They are also saving towards buying a laptop and camera with the intention of photographing and publishing online a list of the produce ready to be harvested each day. By doing so they would allow bulk buyers (for example those responsible for catering in NGO compounds) to order in advance, thus again reducing waste.

Figure 15: The Urban Agriculture Resource Centre in Lumley, Freetown, provides a space for training workshops and meetings. Some equipment is dispersed through the centre. It does not currently have cool storage capacity.

(Source: Author's fieldwork, 2014)

The farmers of the Regent Vegetable Growers Association all feel that farming is a good job for them. They value the fact that they can provide food for their children as well as money for their education. Despite this,
they feel it is hard work. Many of them have bad backs or knees as a result of the labour in the fields. They lack basic technology such as pumps and irrigators that could replace much of their manual labour. As a result, many are not sure if their children will carry on the family tradition of farming. While some think their children will stay and work the plots as a stable job, others think they will be attracted to the perceived opportunities of Freetown with its less labour intensive jobs. Such a shift would significantly alter the dynamics of farming in Regent.

4.1.4 The government, Ministry of Lands, MAFFS and the police force

The government of Sierra Leone is also involved in UPA in Freetown, in particular the Ministry for Agriculture, Forestry and Food Security (MAFFS) and the Ministry of Lands, Country Planning and the Environment (MLCPE or Ministry of Lands). Both of these Ministries are involved in various ways in supervising national agricultural activities, and so participate in UPA as an extension of their agricultural portfolios, as opposed to having a particular focus on women. The two Ministries work together with the Freetown City Council to provide a range of services and support to urban agriculturalists in the West Freetown area.

The Ministry of Lands is responsible for the allocation of land, as well as for keeping records of the sale and ownership of lands. They are the department who are most active in enforcing the 1970 Wetland Policy, which applies on a national level but is only implemented to any significant degree in Freetown. This policy reserves all wetland areas, which are owned by the Crown, for the exclusive use of farmers within Freetown.
However, the policy was not well understood or enforced until recent years, when renewed effort from the government has resulted in both community education and the demarcation of some wetland spaces (see below). As a result, much of the previously available wetland space has been encroached on by residential and business development. Often those developing the land believe they have a legitimate claim, either through traditional family ownership or through deeds of sale which they have acquired. In some cases the deeds appear to be legitimate claims, where the Ministry of Lands has, in the past, erroneously allowed the sale of the wetlands. Many of these claims refer to land adjacent to, but not including the wetlands, whilst others are simply false documents presented by individuals seeking to take advantage of a confused system. Traditional inheritance claims are difficult to trace and substantiate, and are very problematic for both the Ministry of Lands and the farmers attempting to use the land. The Ministry of Lands does not pay compensation to individuals who appear to have been dispossessed of land for the sake of UA. To do so would potentially open up an avenue for individuals to lodge dishonest claims, seeking to use the compensation as a way of making money. The fear is that this would use up valuable Ministry time and funding by laying false claims (K1055).

One of the key roles of the Ministry of Lands over recent years has been to initiate the demarcation of the wetland areas in conjunction with MAFFS and the Freetown City Council (FCC). The demarcation is done using labelled concrete pillars which are placed around the borders of wetland areas (see Figure 16). These pillars, installed after often lengthy consultations with
local communities, seek to establish, and mark publically, the boundaries of the wetland areas in Freetown. Unfortunately, the demarcation process has been drawn out and contentious with the pillars that have been placed being often ignored or even removed (KI007, KI008, KI01). Funding has currently run out for the demarcation project, leaving remaining pillars uninstalled (see Figure 16). Despite the advent of demarcation, the Ministry of Lands regularly has to remove illegal buildings from wetland and mangrove areas (KI056). Worthy of note has been the comparative success experienced by the neighbouring Waterloo Council in their efforts to preserve wetlands. Their programme has included demarcation, but also crucially a widespread public education programme. The Council has employed public meetings, posters, television and radio advertising as tools to communicate their expectations around who is able to use wetland areas. As a result, farmers have felt more secure in their right to be growing crops in the wetlands, and communities have been more respectful of the boundaries, often supporting farmers in instances where disputes have arisen (KI054, KI055 and KI056). The FCC has a much larger population and area over which to disseminate information, as well as a very limited budget to do so, which acts as a significant barrier to providing better public education around the Wetland Policy.
Beginning in 2013, the Ministry of Lands has been engaged in a significant Urban Planning Project with the support of the European Union. As part of this project a detailed map of land use within Freetown was generated (see Figure 17). This map recognises UPA as occurring in Freetown and marks out several significant UPA sites. The project, a major rethink of Freetown’s urban planning strategy (which has been distinctly lacking until now), is projected to run until 2028. Strengthening the ability of UPA to occur within Freetown is one goal of the project, sitting in the context of other land needs as explained by Alphajoh Cham, the Urban Planning Project Coordinator. At the time of the interview, March 2014, Mr Cham, was positive and supportive in his attitude towards UPA. He recognised many of its benefits for the city, including the establishment of green spaces, generation of employment and income opportunities for vulnerable community members,
and the provision of fresh produce for local markets. Despite this, he highlighted the incredible pressure for land within Freetown to be used for housing and infrastructure, for the rapidly expanding and overcrowded population. In addition to this pressure, which will affect decisions at a planning level, the Ministry of Lands’ large portfolio of duties requires monitoring and enforcement of policy and decisions in a range of settings outside of UPA. For example, the continued deforestation of Freetown’s surrounding hills for fuel and land for housing is rapidly increasing the sediment flow into Freetown. Time spent by the Ministry of Lands, monitoring and stopping this deforestation is time away from monitoring encroachment on UA sites. The Ministry claims to have insufficient resources to meet all its obligations and so must prioritise. Unfortunately, UA appears not to be a high priority within the Freetown environment when compared with other land use issues (KI055 and KI056).
Figure 17: Freetown Municipality Urban Structure Plan 2013-2028

While farmers do benefit to some extent from decreased erosion and sediment deposits in their gardens, the Ministry of Lands’ focusing on forestry preservation rather than policing the wetland areas is particularly problematic for them, as they report feeling disempowered to stop encroachers themselves. This is particularly true of women farmers who do not have the physical capacity to remove squatters. Many of the farmers reported instances of violence arising among members of the community who refuse to acknowledge the rights of farmers. The police sometimes intervene in these matters and support farmers, but even they are not always effective. In at least one instance a police officer was killed by a group of community members who refused to recognise the land in question as being designated for UA (KI007). The man who organised the group still occupies the land, and farmers and police are afraid to have further interactions with him. In many cases the police have insufficient information about entitlements to and boundaries of wetland areas, and are consequently unable to identify who has a legitimate claim to the land. Farmers also reported a reluctance to engage with the police, because they felt they would be ineffective in helping with their encroachment issues and may require some form of bribe before treating the complaint seriously. Many farmers did not feel this was an accessible system to them as they had nothing of value to offer the police or were not confident about the process of starting a case (KI006, KI011-KI053). This is problematic when viewed in the light of government expectations that police will play a significant part in upholding the Wetland Policy and its associated land allocations (KI054, KI055 and KI056).
In an effort to promote UPA and increase food security, MAFFS has run two Freetown based pilot programmes in recent years, one in Poto Levuma and one in Bottom Oku in the Urban East. These pilot programmes, funded and supported by international NGOs, including the Resource Centre on Urban Agriculture and Food Security (RUAF) and the Cooperazione Internazionale (COOPI), aimed to increase agricultural production through provision of some infrastructure, notably wells, and training through extension workers (KI054 and KI007). The extension workers covered more than just these pilot areas, and most of the sites in the urban area have benefitted from them. Mr F³ has been the extension worker in the Urban West, from the Cotton Tree (near Choithram’s Supermarket) to south of Poto Levuma (see Figure 6 and Figure 9), and had recently retired after four years in the position at the time of interviewing. His replacement declined to be interviewed, as he felt he was too new to the job to have a valid perspective. During his appointment, Mr F ran a range of educational seminars both in local centres and out in the fields. The topics covered in these seminars included plant hygiene, crop rotation, business planning, composting and fertilising, women’s rights to land ownership, pest control, disease identification and treatment and watering practices (KI007, KI008, KI011, KI029). The seminars were often run in conjunction with NGOs, as described below (see 4.1.5). Mr F’s counterpart in New England, Mr I⁴, has run similar seminars. Both Mr F and Mr I. claim that the seminars have helped to improve the livelihoods of farmers, although they indicate that some farmers choose not to attend or not to adjust their practices, meaning that change has in some cases been slow. Mr I. notes that the farmers

³ Full name removed on request to protect participant anonymity
⁴ Full name removed on request to protect participant anonymity
are the ones doing the work and so should be considered key stakeholders by MAFFS as they work to strengthen UPA in Freetown. He indicates that if they can be empowered to make decisions for themselves and purchases for themselves (rather than having goods purchased for them by NGOs), they are more likely to be sustainable and able to continue on their own. Mr F echo's his desire for farmers to be self-sustaining, as he notes that;

"Most of the farmers cannot leave and go to another area, they are wholly and solely dependent on the land, it has become their own office, that is their living and they are there"
- Source: Retired MAFFS extension worker Mr F, 2014.

It is interesting to note that, despite MAFFS recognising the high proportion of women involved in UPA in Freetown, “80% of the farmers are women...this is women’s work” (KI054 Pamela Konneh, 2014), all the extension workers hired by the Ministry at the time of this study were male. When questioned about this, Ministry officials assumed that the only potential problem this could generate was that inappropriate sexual relationships could be formed. However, since most of the female farmers are older widows this was judged to be unlikely. Closer questioning about whether male extension workers understood the needs of female farmers proved not to be fruitful. The underlying assumption within the Ministry appears to be that, due to the prevalence of female farmers engaged in UPA in Freetown, any time that policy was developed to help farmers it was implicitly targeted towards helping women. Farming is after all, “women’s work” (KI054).
NGOs

NGO participation in Sierra Leone has been a significant feature of the country’s makeup for some time. Since the rise of UPA seen in Freetown as a result of the civil war several NGOs have become involved with farmers in the city to enhance their prospects. Most notable among these groups are the Resource Centre on Urban Agriculture and Food Security (RUAF), a Dutch registered non-profit who act as an umbrella organisation specialising in urban food strategies, and the Cooperazione Internazionale (COOPI), an Italian organisation focusing on poverty alleviation in the global south. Working with other NGOs, groups and Local and National Government, these two NGOs have had a significant impact on UPA in Freetown. Supported by funding from the European Union, they have undertaken the four-year project described as “Enhancing food security and development opportunities for disadvantaged groups in Freetown, Sierra Leone” (RUAF, 2014). While this project, which concluded in early 2014, focused on youth engagement in UPA as a form of employment and livelihood generation, it also had significant impacts on women in Freetown. At the conclusion of the project, some 400 households headed by single women were using food production in Freetown to meet at least part of their livelihood needs (RUAF, 2014). Farmers and extension workers interviewed tended to have a generally favourable view of both COOPI and RUAF, while maintaining some concerns about NGOs as a whole due to negative past experiences of consultation or working with them (see 5.3.2).

Importantly for Freetown farmers this combined project generated two bodies for whom UPA was a central consideration. The first, the ‘Freetown Multi-Stakeholder Forum on Urban Agriculture and Food Security’, had a
membership including MAFFS, FCC, Ministry of Lands, Ministry of Health and Sanitation, National Association of Farmers in Sierra Leone (NAFSL), Sierra Leone Youth Empowerment Organisation (SLYEO), Njala University and other stakeholders. This was the main policy body established by the project and worked in conjunction with COOPI and RUAF to formulate strategies to engage with and empower practitioners of UPA in Freetown, in particular young people. Additionally, the Freetown Urban and Peri-urban Agriculture Action Platform (FUPAAP) was established as a means of improving communication both with and between key stakeholders. Women farmers in Freetown, especially those involved in successful associations, felt that FUPAAP empowered them to access NGO and government resources, as well as to bring their concerns and needs to the attention of a number of people. FUPAAP operated as an open platform where stakeholders, including government (both local and national), NGOs, Universities (including Fourah Bay College and Njala University) and farmers, could meet together and discuss projects, training, concerns and successes. Farmers reported feeling empowered by this, as it gave them a voice and a platform through which they could access services (KI011-KI037, KI008 and KI030-KI037). Unfortunately, since the winding down of the major COOPI/RUAF project the impetus to maintain FUPAAP has lowered. Despite the projects significantly raising the profile of UPA in Freetown, MAFFS do not feel they have the resources or time to facilitate the platform (KI054), and there is no-one else immediately available or obvious to take over its running. As a result, FUPAAP has not meet since late 2013, and has no plans to meet again. Many farmers expressed their concern over this (KI009, KI010, KI011, KI039-KI053).
In addition to these platforms, NGOs have provided support in the form of infrastructure, advocacy and information for urban farmers. As part of the “Enhancing food security and development opportunities for disadvantaged groups in Freetown, Sierra Leone” project, COOPI and RUAF negotiated an agreement with the Ministry of Lands, MAFFS and the FCC which recognised the importance of UPA in Freetown and committed these bodies to mapping, allocating and maintaining land for the specific use of farmers. This agreement, completed in 2010, was a driving factor behind the demarcation of the wetland areas in line with the Wetland Policy, as described above. Additionally, COOPI and RUAF have supported the pilot programme undertaken by MAFFS, by assisting with training and infrastructure. Mr F noted that through their assistance, and in conjunction with Njala University, many helpful resources such as journals and articles on farming techniques were made available to extension workers. The information from these was in turn disseminated to local farmers through training programs and seminars, again supported by NGOs, in conjunction with MAFFS (KI007). Some NGOs also run training sessions for farmers outside of the MAFFS pilot programs. In two of the pilot areas (Poto Levuma and New England), COOPI have assisted with the building of wells, five in Poto Levuma and two in New England. Four of the wells in Poto Levuma have been deliberately broken or damaged by the local community during disagreements with the farmers and are now unusable (KI39-KI53). Both wells in New England are still in use, but the association there is saving to buy concrete to create a barrier or lip around the opening to prevent sediment from the farmers’ feet from washing into the wells as they draw up the water. Figure
18 shows one well with a small concrete lip. The association wishes to increase this lip to further protect their water supply from sediment and add one to their other well.

*Figure 18: One of the wells installed at the New England UPA site in Freetown, Sierra Leone. Water is drawn up using a bucket on a rope.*

While many of the impacts that NGOs have had on UPA in Freetown were viewed as being positive, farmers and extension workers in particular were still critical of what they described as the “top-down” approach of many NGOs. Farmers in New England commented that NGOs would give money ‘to people’ (usually local implementing partners hired by the NGOs) to help farmers. These people would then pay rent on a compound, buy a car, print t-shirts, eat well at meetings and then come to show them all the things the project has obtained.

Source: Author’s fieldwork, 2014.
so far. Because of this, the New England Vegetable Growers Association felt that often very little of the funding that was meant to help them, is actually spent on them (KI011). Other farmers raised similar concerns. For example, the Regent Vegetable Growers Association spoke of the training sessions they had attended. Often these sessions are scheduled to run for several days and farmers lose a considerable time from their farm work. Because only some of the sessions were helpful, farmers often felt that they would have been better off devoting time to tending their crops. As a result, many of them no longer attend training seminars and rely instead on the feedback from those who do attend (KI37-KI37). Farmers who are farming without the support of an association, struggle to contact and engage with NGOs, and are very rarely able to take time away from their fields. Both extension workers interviewed expressed concerns about the level of consultation between farmers and NGOs before seminar topics were selected, or goods were purchased. As an example, they claimed that NGOs would often purchase seeds for farmers, but since these seeds came from a different climatic region within Freetown, they would often fail to germinate or return a low yield at harvest. In response to these shortcomings, both extension workers emphasised the importance of recognising farmers as the key stakeholders in Freetown’s UPA (KI007 and KI029). Discussion around how to improve the effectiveness of NGOs in enhancing UPA livelihoods will feature in the discussion chapter of this thesis, and will draw upon relevant development literature.
4.2 How is farming in Freetown happening?

Farming practice in Freetown varies seasonally and across different kinds of urban and peri-urban spaces. Most notable is the variation in farming practices between the wet and dry seasons, and between the lowland/coastal “urban” sites (Poto Levuma, Lumley, New England) and their mountainous “peri-urban” counterparts (Gloucester/Leicester and Regent). In reality, farmers shift from dry season techniques to wet season techniques gradually, and at slightly different rates depending on the space they are farming. Despite this, farmers describe their yearly farming cycle in very binary terms, with distinct language and ideas about what is done during the dry season and what is done in the wet season. There is little discussion of times when characteristics from both seasons are in play as the seasons change. This binary way of describing the farming year is reflected largely in the real world, as practice shifts dramatically to allow for the extreme seasonal variations in weather that do occur. This is true even in instances where farming is unable to take place during some parts of the year, for example in Lumley, and farmers seek employment through petty trading as a way of generating household income. Indeed, seasonal variation affects coastal-urban and peri-urban farmers in very different ways (see Table 9).

4.2.1 Climate and crops

Freetown is situated only 8°37’ north of the equator, and as a result receives high sunlight hours throughout the year. Average monthly temperatures in Freetown range between 26 and 29°C (Climatemps, 2014). Without strong seasonal temperature changes, it is accurate to say that most of the climatic variation experienced in Freetown comes from its seasonal rainfall patterns.
Rainfall in Freetown varies from as little as 3 or 4mm per month in the dry season (November to April) (Climatemps, 2014) to as much as 790mm in August during the middle of the rains (May to October). This extreme fluctuation in precipitation generates a unique set of challenges for Freetown’s farmers. The heavy rains result in surface flooding of some areas. This has been exacerbated by the rapid urban growth of Freetown in two key ways. First, the increase in non-permeable surfaces (roads and buildings) results in less of the rain being absorbed and more rainfall washing into low-lying areas. Secondly, the deforestation occurring on Freetown’s mountains to make room for building expansion has a destabilising effect on the soil. Heavy erosion allows sediment to build up, again in low lying areas, increasing the risk and rate of flooding. Unfortunately, as indicated in the literature review, many farmers have no choice but to establish themselves in these low lying areas as the seasonal flooding makes them inappropriate sites for building. These are also often the only places where standing fresh water can be accessed during the dry season. The extreme variation in water levels means farmers have to adapt their practices to suit the seasons. Table 9 outlines the ways in which farmers select crops to match the season and location and indicates ways in which farming practice is adapted between the rains and the dry season.

It is important to note that climate conditions are not uniform across the Freetown conurbation. In particular, there is a sharp contrast between the climate in the coastal-urban and mountainous areas of the city. This variation means that different crops are grown in different areas (Table 9). The difference in climate also leads to variations in farming practices, even between sites that are relatively close geographically.
### Table 9: Seasonal and spatial farming patterns in Freetown, Sierra Leone - Climate and Crops

<table>
<thead>
<tr>
<th>Seasonal and Spatial Farming Patterns in Freetown, Sierra Leone - Climate and Crops</th>
<th>Dry Season (November-April)</th>
<th>Wet Season (May-October)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Coastal or Urban: (Poto Levuma, Lumley and New England)</td>
<td><strong>Climate</strong>: During dry season, rainfall in the urban area is very limited, approximately 80mm total (Climatemps, 2014). Water for the gardens is sourced from wells, either natural or artificial, and carried in bowls or buckets. Temperatures are high and crops need to be watered daily. <strong>Crops</strong>: Crops are dominated by traditional leafy greens including; potato leaf, cassava leaf, krin-krin, “greens”, and okra. Limited “salad vegetables”.</td>
<td><strong>Climate</strong>: Heavy rainfall from May-November, approximately 2900mm total (Climatemps, 2014) gradually fills many of the coastal wetlands used for farming. Often this results in the total flooding of established gardens rendering them inaccessible for farmers. <strong>Crops</strong>: In some instances, for example in Poto Levuma, rice is able to be grown in the standing water. In other gardens no crops can be grown and farmers seek other seasonal employment.</td>
</tr>
<tr>
<td>Mountainous or Peri-Urban: (Gloucester/Leicester and Regent)</td>
<td><strong>Climate</strong>: Temperatures in the mountains are often slightly cooler than at the coast. Denser foliage cover absorbs less heat than the more urbanised environment making it slightly cooler. It also restricts erosion of soil. During the dry season, mountain wetlands usually retain some standing water, although by the end of the season this may be restricted to a few natural springs. <strong>Crops</strong>: The cooler micro-climate of the mountains allows salad vegetables to grow well. Crops include; lettuce, tomatoes, cabbage, spring onions, onions, carrot, sweet peppers (capsicums), hot peppers, runner beans, cauliflower, mint, parsley, and in some cases a selection of traditional leafy greens. Some entrepreneurial farmers are experimenting with Asian crops such as bok choy with the intention of marketing to the growing Chinese community in Freetown.</td>
<td><strong>Climate</strong>: Heavy rainfall in the mountains floods low-lying wetland areas and fills streams and waterways. Some soil is washed down the hills into gardens. This is more nutrient rich than the soil accumulating in coastal areas due to the higher plant content. <strong>Crops</strong>: As wetlands fill with water the ability of farmers to plant a variety of crops decreases. Rice can be planted during this time. Many mountain farmers choose to plant salad vegetables in uphill, terraced gardens as opposed to rice during this time as it generates higher profits in the markets at Christmas. Crops in the ‘upland’ gardens tend to be salad vegetables like lettuce and tomatoes, aimed at the Christmas salad market.</td>
</tr>
</tbody>
</table>

*Source: Author’s fieldwork, 2014.*
4.2.2 Farming techniques and practice

Farming techniques vary widely within Freetown as participants seek to use the differing environmental factors around them to greatest effect. The most marked contrast in practice occurs between coastal-urban and mountainous peri-urban sites. While individuals and associations within these areas show variation in technique, practices are broadly similar. A summary of key farming techniques is available below in Table 10.
<table>
<thead>
<tr>
<th>Seasonal and Spatial Farming Patterns in Freetown, Sierra Leone – Farming Techniques and Practice</th>
<th>Dry Season (November-April)</th>
<th>Wet Season (May-October)</th>
</tr>
</thead>
</table>
| **Coastal or Urban (Poto Levuma, Lumley and New England)** | Techniques:  
- Crops selected where possible for regenerative properties, i.e. potato leaf and cassava leaf can be picked and the stump will regenerate without the need to replant.  
- Where possible, seeds are “saved” and collected to lower costs and avoid poor quality seeds from stores.  
- Where labour is available, low beds are created for crops, allowing better access through pathways and avoiding trampling (improves both food hygiene and yield).  
- Watering is carried out using bowls to transport it from natural or man-made wells.  
- Ashes are used as an alternative to expensive chemicals to deter pests and cure some diseases. | Techniques:  
- Where possible, farmers divert water away from their land to extend the period of time that crops may be grown before flooding occurs. Farmers in Lumley are currently petitioning the government to build a low wall around their wetland to limit seasonal flooding.  
- Increased groundwater is initially used as a water source for the garden beds. Water pools in the channels around the beds, enabling farmers to water their crops without having to travel far to collect and transport water.  
- As the wet season progresses and flooding increases rice is planted in flooded areas where other crops may not be able to grow. |
| **Mountainous or Peri-Urban (Gloucester/Leicester and Regent)** | Techniques:  
- Because farming in the mountains is a traditional occupation, mountain gardens are often more organised than their more urban counterparts. Beds are usually raised and organised by crop type.  
- Most mountain farmers have access to terraced gardens on hillsides that do not flood during the wet season. These are sometimes left empty during the dry season, as it is too difficult to transport water from the limited springs in the wetland areas to the slopes. | Techniques:  
- During the wet season mountain farmers move uphill and use their terraced gardens as the lower lying wetland areas flood. The ready availability of water limits the labour of carrying water uphill during this time.  
- Some farmers plant rice in the flooded wetlands, but most prefer to focus their efforts on the salad crops in their terraced gardens which offer higher returns.  
- Sales are limited during the peak of the rainy season, as markets are nearly empty so farmers focus on having a crop ready for harvest at Christmas when sales boom. |

*Source: Author's fieldwork, 2014*
4.2.2.1 Terraced gardening and seasonal planting

Farming in the mountainous areas surrounding Freetown has been occurring for generations. As a result, garden beds are well established and laid out, and a series of terraced gardens has been created. These ‘upland gardens’ (KI009) enable farmers to continue cultivating salad vegetables throughout the rainy season when their lower valley bottom gardens are flooded.

Figure 19: Gardens under cultivation in Gloucester/Leicester. Foreground shows swamp gardens and background shows upland terraced gardens

Source: Author’s fieldwork, 2014.

The ability to continue growing through the rainy season means that mountain farmers can plant salad vegetables that will ripen in time for Christmas. Having a salad crop ready for the Christmas period is enormously important to farmers, as it is the highpoint of their sales year (see Figure 20). During this time families
celebrate by eating fresh salads as opposed to other staple foods, such as rice.

As one farmer commented:

“Everyone, I do not care who they are or how poor they are, on Christmas day everybody is eating a salad!”

- Source: KI003, 2014

Farmers in coastal urban sites may only be able to grow rice during the rains, or may be forced to abandon their fields altogether. Either way, they are not able to have a crop of salad vegetables ready for the beginning of the Christmas season which limits their income (see Figure 20).

**Figure 20: Seasonal calendar comparing rainfall to profits in two UPA sites in Freetown, Sierra Leone.** Note due to participant reluctance to share details of income numerical profit values are unavailable and the graph represents times when farmers have expressed profit as being “high”, “low”, “best” or “worst”.

Source: Author’s fieldwork, 2014
4.2.2.2 Seed banking

Farmers also use a wide variety of techniques to enhance their ability to grow and harvest seeds. Due to the poor quality and relatively high cost of seeds in Freetown markets, many farmers prefer, wherever possible, to create local seed banks. This also ensures that crop varieties which grow well in a certain area are able to be preserved locally. This harvesting of seeds is often referred to as “rescuing” seeds (KI008). A section of a crop or crops (typically one raised bed) is left to go to seed at the end of each planting cycle (see Figure 21). The seeds are then harvested in a variety of ways, such as by picking the plant, allowing it to dry out, and then shaking the seeds free, or by covering the seed head of the plant in a cloth bag and letting the seeds fall into it. Once the seeds are harvested they are typically dried for about three days and then stored. Seeds may be stored for 1-2 months without problems, but longer storage periods increase the risk of seeds perishing either due to natural expiry or mould and pests if there is inadequate storage (KI009).

Figure 21: Okra seeds growing in New England (left) and lettuce seeds growing in Gloucester/Leicester (right).

Source: Author's fieldwork, 2014.
Some crops, like potato and cassava leaf can support multiple harvests from one planting. Once the leaves are harvested the stump will regenerate multiple times. Farmers growing these crops often stagger their planting and harvesting so that one portion of the crop is always ready to be harvested and sold. This staggered planting stabilises income and reduces labour inputs by minimising soil tilling and new planting. Selecting this method means that seeds only need to be gathered at the end of each season for use the following season. It also reduces the number of times that the ground needs to be tilled saving time and energy (KI008 and KI007).

4.2.2.3 Pest control
Pests, in particular winged insects like grasshoppers and butterflies, pose a significant challenge to farmers as they regularly damage or destroy valuable crops. Many farmers express a desire to have access to chemical pesticides which they perceive as being the most effective way of eliminating pests. Unfortunately, these chemicals are often expensive, even for associations and often unavailable. Instead, a range of other methods are employed to combat pests. Most prominent is the use of ash as a natural pesticide and the use of “bug sticks” as traps. In the first instance, rubbish that washes into fields, as well as some vegetation waste, is collected together and burned. The ash is then spread on the fields and sprinkled on the plants where it kills some insects (KI008, KI010). The bug sticks, typically painted white, are left out overnight, and insects are attracted to them and settle on them as the temperature drops. Next morning, farmers are able to crush the insects as they rest on the sticks.
Some sticks have sacks on the top which insects crawl under, enabling easier crushing (KI009). While these methods eliminate some of the pest problems, farmers often feel they are not sufficient to meet all their pest-related needs (KI007).

4.2.2.4 Seedling care and bed management

Poor soil quality, high sunshine hours and water access issues make much of Freetown a challenging environment for growing many crops. As a result, particular care is necessary to ensure that seedlings survive and reach maturity. This is often done through the creation of seedling beds, which are sheltered either naturally or artificially from the direct sun (see Figure 22).

Figure 22: A shelter protects seedlings in Regent, Freetown, Sierra Leone.

(Source: Author’s fieldwork, 2014).
Seedlings are typically left in these nursery beds for a number of weeks until they mature to a point where they will survive in the field (KI010 and KI038). During this time they are subject to extra watering and weeding and may be given fertilisers (where available) to promote growth. Farmers prefer to use chemical fertilisers where they can afford them as they consider them to be more effective than their organic counterparts. In some places, cabbages are planted among the seedlings to attract pests away from the seedlings and also help to stabilise the soil. In more mature beds, cabbages are often planted around other crops to hold together the edges of the raised beds (see Figure 23).

Figure 23: Cabbages share a shelter with seedlings, drawing away pests and stabilising soil (right foreground), while cabbages dispersed among beds perform similar functions for the mature crops (left foreground and background).

Source: Author’s fieldwork, 2014
4.2.3 Challenges for women farming

While many of the challenges experienced by UPA practitioners in Freetown are essentially ‘gender blind’, the effects of these challenges are often more significant for women farmers. As an example, both male and female farmers report that rubbish build-up in fields is an issue for them (see Figure 24). Because of the heavy labour involved in regularly clearing fields, it is more difficult for women, particularly older women, to meet this challenge. In a similar way, whilst both male and female farmers report that water quality is an issue, the carrying of large amounts of water is significantly more problematic for women (KI008, KI011 and KI26). A summary of challenges faced by women farmers in Freetown is presented below in Table 11.
Figure 24: Urban Agricultural site at Lumley, Freetown. Traditional leafy greens are grown in raised beds and rubbish is collected and burned. Housing around the edges of the site occupies what was once farming space.

Source: Author’s fieldwork, 2014.

Table 11: Seasonal and spatial farming patterns in Freetown, Sierra Leone - Challenges for women farming

<table>
<thead>
<tr>
<th>Seasonal and Spatial Farming Patterns in Freetown, Sierra Leone – Challenges for Women Farming</th>
<th>Dry Season (November-April)</th>
<th>Wet Season (May-October)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Coastal or Urban (Poto Levuma, Lumley and New England)</td>
<td>Challenges:</td>
<td>Challenges:</td>
</tr>
<tr>
<td></td>
<td>• Little equipment (watering cans, shovels, protective shoes, gloves etc) is available, exacerbating the necessity for hard labour. This is particularly difficult for older women or widows without access to family labour.</td>
<td>• Some land becomes completely uncultivable during the wet season and farmers are forced to abandon their fields and seek an alternative livelihood source. In preparation, many farmers put aside money in the dry season to enable them to buy and sell fish in the</td>
</tr>
</tbody>
</table>
burnt. The clearing may have to be done as frequently as twice a month in some areas. Clearing this rubbish without safety equipment can lead to cuts and infections.

- Rocks washed into the gardens during the rainy season must be removed or they heat up and may damage plant roots.
- Encroachment onto wetlands from nearby communities for housing and business limits the availability of land for farming.
- Water quality is poor due to a combination of pollution and the drying out and gradual stagnation of natural wells.

markets or engage in other forms of petty trading.
- For farmers who are still able to cultivate, access to markets is very limited in the wet season as heavy rainfall restricts movement in the city. With fewer customers income drops.
- Children are home from school during the wet season. For mothers who are farming, this means they must adopt additional childcare responsibilities. For those with older families this is less of a burden than for those with younger families and no support.

Challenges:
- Terraced gardens on the slopes surrounding wetland areas need to be cleared and made ready for use. Beds may need to be rebuilt or raised which requires extensive labour or the ability to pay for the labour.
- Despite the gardens being historically well established, growing land pressures from urban sprawl see terraced gardens diminishing in availability.
- Income is low during the pre-Christmas wet season as markets slow.

Source: Author’s fieldwork, 2014

Among this array of challenges, land tenure, together with access to inputs and capital, remain the two factors that affect women farmers most disproportionally to their male counterparts. Land tenure is well established in the literature as an issue for UPA practitioners around the world (see 2.5.1). In Freetown, it is a
particular challenge for women. In the coastal urban environment many of the women farmers have only recently begun to work in this area and have no traditional family claim to the land and no capital with which to purchase their own plots. They rely instead on the government's Wetland Policy to allocate land for their use. When land disputes arise between farmers and the local community the women report feeling frightened and intimidated by encroachers (KI008, KI011-KI028 and KI27). Police corruption, or the perception of corruption, acts as a barrier for women who would seek police help in sorting these land issues. There is a perception in Freetown that the police will only take a matter seriously if the individual wanting help can make it ‘worth their while’ (KI006 and KI007). For poor women this is a significant barrier. Sadly, due to the speed with which the bureaucratic body operates, the government often fails to adequately support women farmers in this dispute resolution.

Alarmingly in New England, farmland is being encroached on by an office development for the Environmental Protection Agency (see Figure 25). When approached about this, the EPA asked why the association didn’t make its claim known to the surveyors when they were starting the project. After the Sierra Leone Broadcasting Corporation featured the story on the local news channel, the EPA agreed not to expand any further, but the current construction has still damaged many crops and encroached upon valuable land. The women of the New England Vegetable Growers Association have received no compensation for this, and they feel there is nowhere for them to voice their concerns and be heard (KI011 and KI29).
Even in the mountain areas where farmland has been, until recently, less contested due to traditional family ownership, women are facing increasing pressure around land tenure. In many instances, the pressure is created by Creole landlords increasing rent on plots as rapid urbanisation of the area increases their value as construction sites (KI038). The Creoles own much of the land, having inherited it from their ancestors who settled in the Western Urban area from 1787 onwards, but do not traditionally farm it themselves, preferring instead to it out (KI002 and KI004). Many of the women farming in these areas inherited the lease from their parents or grandparents. Those who do not have husbands, in particular, report feeling vulnerable when dealing with landlords. One farmer in Regent, who was recently widowed, has noticed a significant difference in her ability to access land at a fair price without her late husband’s connections and influence (KI038, see Vignette Three).
Access to inputs like fertilisers, chemicals, seeds and tools largely depends on an individual or association’s ability to finance a purchase. Some inputs are provided by NGOs, but these are often intermittent and sometimes not what is actually required (KI008, KI011, KI09 and KI041). Women continue to struggle to access capital to make these purchases. Associations in some instances alleviate this, but do not remedy it entirely. Women without collateral, who are the majority of the farmers, are unable to secure loans from banks. Women farmers in Freetown frequently report on having to spend large proportions of their income supporting children and extended families, thus making it difficult for them to build up capital assets. This burden of providing household support
was not reported by male farmers to anywhere near the same extent (KI008, KI011, KI012-KI028, KI30-KI53). Additionally, banks will not allow individuals to open or access accounts if they are illiterate. Given that only 31% of the adult female population in Sierra Leone is literate, as opposed to 54% of the male population, this places considerable restrictions on female farmers (Index Mundi, 2014).
5 Discussion

“Most of the farmers cannot leave and go to another area, they are wholly and solely dependent on the land, it has become their own office. That is their living and they are there.”

- Mr F, Freetown UPA extension worker, 2014

“Our present dream is of food security. If encroachment continues to take away our land we will have no room to grow and so no livelihoods. The wetlands are our living”.

- New England Vegetable Growers Association member, 2014
5.1 Introduction

Given the enormous importance of UPA to women in Freetown, it is vital that their access to this as a livelihood opportunity is not only preserved, but enhanced. As evidenced by the results section, women who are farming in Freetown are enormously resilient and competent, managing to provide for their households using a wide range of techniques and strategies. Despite this, there remain significant barriers to their ability to enhance farming as a livelihood option and to protect themselves and their households from vulnerability. This section will discuss four key barriers to farming established in the results chapter, namely, land tenure, access to water and labour resources and the availability of capital. In doing so, the case will be made that structural issues around government and NGO processes, as well as infrastructural constraints, prevent women from being able to resolve their problems individually. The fact that these barriers are so persistent for women in Freetown, despite being relatively well documented is, in itself, evidence of this. Although the women have identified these barriers in a clear manner, to date they have been unable to diminish or remove them. Because of this, most of these women will struggle to significantly improve their ability to farm without support. In fact, as shown in the results, many women are concerned about their capacity to continue at all without significant support. As a result, the relationships formed by farmers with one another, with the government, NGOs and the communities around them become critical in enhancing their ability to produce. The second part of this chapter will focus on understanding and evaluating these relationships, as reflected by Key Research Question Two, “How do women in Freetown interact with the state, FUPAAP, support services, NGOs and other associations and
collaborations? Do they benefit from these interactions?”. The way in which these relationships currently operate will be analysed and their strengths and weaknesses in enhancing women’s capacity to farm will be evaluated.

5.2 The ability of farmers to meet key challenges without support

Literature supports the idea that farmers engaged in UPA globally are often forced by adverse conditions to be incredibly adaptable and entrepreneurial, producing a wide range of products in diverse spaces (Brown & Jameton, 2000; Flynn, 2001; Gupta & Gangopadhyay, 2006; Tambwe et al., 2011). This is certainly true of the women farming in Freetown who regularly meet and overcome a wide range of challenges (Lynch et al., 2013; Maconachie et al., 2012). Despite this sophisticated capacity for problem solving, there remain several key challenges, which are common to almost all of the women farming in Freetown, and that are difficult for these women to resolve. These challenges are land tenure and access to safe water, labour, and capital. This section of the discussion chapter will outline the nature of these challenges and identify reasons why individuals may struggle to resolve them without assistance or support from wider networks.

5.2.1 Land tenure

As indicated in the results chapter of this thesis (see 4.2.3), issues surrounding land tenure represent a significant challenge for women farming in Freetown. This is consistent with the findings of the literature review (see 2.5.1), conforming to earlier studies undertaken in Freetown (Lynch et al., 2013; Maconachie et al., 2012) and in a host of other locations around the world (Mbiba, 2000; Mougeot, 2005; Tallaki, 2005; Tambwe et al., 2011). The marginal nature of much of the land being farmed has until recently acted as a
significant deterrent to building as seasonal flooding presents a significant barrier to construction. Recently, however, even the previously undesirable wetland areas have become subject to increasing pressure as a result of urbanisation. This pressure manifests itself in two key ways. First, individuals looking for spaces to build for residential or business purposes encroach directly on farming land. This happens despite the demarcation in place in some areas and usually occurs in small increments as each new building intrudes slightly further than the last. This may make it harder for farmers and officials to confront encroachers, as they point to this precedent as a mechanism for establishing the legitimacy of their actions. According to officials at the Ministry of Lands, most individuals who are guilty of direct encroachment are aware that they are not permitted to build in these areas, but are desperate enough to “take a chance” (KI055, 2014), and are hoping that they are not removed. Sadly for farmers, poor Ministry resourcing and inconsistent policing means that this chance often pays off. The second way the pressure of urbanisation manifests itself is through increasing rents. This occurs particularly in the peri-urban mountain gardens where land is historically owned by the Creole people who prefer to rent it out rather than farming themselves. As pressure for land in these communities increases landlords are incentivised to dramatically increase rent. This is of particular concern for farmers as the demands for increased rent often come multiple times a year (KI038 and KI018-025, 2014). Without written leases, and with no other options available to rent, farmers have no choice but to pay the increased rent in any way possible. Farmers in these areas are aware of the wetland policy, but it seems that little consultation has occurred between the government and traditional Creole
landlords, and as a result these landlords remain effectively in control of the areas and able to demand rent.

Figure 26: Urban expansion into the previously forested mountainous area of Regent Village on the outskirts of Freetown.

Source: Author’s fieldwork, 2014.

For women farmers this land encroachment is particularly devastating as they rely so heavily (and exclusively) on their access to the land for gardening and are seldom in a financial position to purchase it for themselves (see 4.2.3 ). Madam Farmer in Regent comments that “my garden is everything” but also expresses her concerns around her ability to continue on the land due to pressure for space and rent increases (See Vignette Three) Women farming in the mountains often inherit leases from their parents or grandparents (KI021

5 Real name omitted on request to protect farmer anonymity
and KI022, 2014), but are not themselves owners. Women farming in the coastal-urban environment are relative newcomers, often they reported having arrived in Freetown during the Civil War. After migrating from more rural areas, they were unable to initially purchase land to farm. Very few of the women farming, particularly those without spouses or other close family networks to support them, are realistically able to save enough money to purchase land. Some work has been done by NGOs around women’s rights with regard to land ownership, but farmers report that ideas have been received positively, but have resulted in little practical impact (KI018-025, 2014). It is also unclear whether farmers owning land in place of renting it would prevent the encroachment of farming space. To date knowledge of the illegality of building has not deterred encroachers (KI055, 2014), and the pressure around space in the urban environment would not decrease if farmers owned wetland areas instead of the government. Additionally, as discussed below (see 5.3.1.4), even when the women know that they are in the legally correct position, concerns around physical danger and a lack of connection with authorities limit the extent to which they will take action against encroachers. Formal ownership may go some way towards addressing the issue of land tenure, but it is certainly not the whole solution.

As outlined in the results chapter, women often feel intimidated by those encroaching on their gardens. In the mountains, women report feeling disempowered by the unpredictable demands of their landlords (KI38, KI23 and KI009, 2014). Without the agency to act for themselves, they are reliant on their relationships with government, the Police, NGOs and the surrounding community to ensure their continued access to spaces in which to farm. Even
strong associations, such as those in New England, Regent and Lumley, lack the access to significant capital that is required to purchase land and they struggle with issues of encroachment, highlighting the crucial need for third party support.

5.2.2 Access to water
The ability to access a regular supply of safe water is an important cornerstone of any agricultural business (Flynn, 2001). Sadly, one of the great ironies of life in Freetown is that while in the rainy season there is too much water, forcing farmers to abandon flooded fields, in the dry season many UPA sites have very limited supplies of safe, usable water. Indeed the entire city of Freetown struggles with water shortages from February through to the start of the rains as the Guma Valley Reservoir, built in the 1960s, is unable to meet the needs of Freetown’s increased population. As identified in the results (see 4.2.3), many farmers express concern either over the quality or quantity of water available to them, or over the amount of labour it requires to move what water is available to their crops. In Lumley, Gloucester/Leicester and Regent, farmers rely largely on standing pools of water or springs during the dry season. As the dry season progresses, these pools become smaller and the water quality decreases.
Figure 27: A water spring in Lumley, Freetown, Sierra Leone is surrounded by rubbish. The spring deteriorates in quality as it dries up annually during the dry season.

Source: Author's fieldwork, 2014.

In Regent this is supplemented by the stream running through the area, but this stream is filling up with sediment, presenting concerns about its long-term sustainability as a water source (see Vignette Three). In the coastal site of Poto Levuma, water quality is challenged by extreme storm or tidal events bringing salt water into the fresh water supplies. This saltwater inundation damages crops and reduces soil fertility. Both Poto Levuma and New England have received wells from NGO projects. In Poto Levuma, four of the five wells have been rendered unusable through conflict with or interference from the surrounding community. In New England, both the wells which were installed
remain operational, but the flat surface at their top allows for sediment to be washed into the water as the women draw water. The implications of these examples of poor consultation practices from NGOs will be discussed below at 5.3.2.4. Training from MAFFS extension workers around crop hygiene and the importance of clean water has helped farmers change their practices to some extent, but as the ability to access clean water remains limited so too does their ability to ensure the safety of their crops. Rosali Kano, a farmer in Leicester/Gloucester felt that the water they have access to is “OK for washing, not always OK for drinking”, and worries about the safety of growing and washing crops in it (KI009, 2014). This inability to access clean water in the urban and peri-urban environment is highly reflective of the literature (Hovorka, 2005; Memon & Lee-Smith, 1993). Of notable difference to other UPA situations is the fact that the use of waste water is not an option due to Freetown’s lack of connected wastewater infrastructure (Gupta & Gangopadhyay, 2006). Even when clean water is available, dispersing it amongst crops is a laborious task, in particular for those farmers who lack access to basic tools like watering cans (KI008, KI013 and KI024, 2014).

Methods discussed in the literature for accessing clean water include renting or buying land close to a reliable water source, or carrying water from piped sources to garden sites (Memon & Lee-Smith, 1993). Neither of these options are likely to be viable in the context of Freetown’s UPA practitioners, as the city’s infrastructure is so poor that it presents few opportunities for the collection of clean water. The city’s main water source, the Guma Valley reservoir, located on the road to Regent, is used primarily for electricity generation, while some of the water is trucked into Freetown for use as drinking water. The fact
that the water is transported from the mountains into the urban centre is indicative of the fact that more fresh water is available in the mountains, while the urban centre of Freetown lacks infrastructure to distribute safe water widely. Even when clean water is available, farmers, particularly women who lack capital, are unable to purchase or rent land near these sources. Their alternative option is to carry water over considerable distances each day. This would be highly labour intensive and time-consuming and is not a viable option for many. Instead, they rely on the changeable natural water supplies available to them as indicated above.

With little safe water available, and virtually no ability for farmers to influence its distribution on their own (lacking both the capital for purchase of water or infrastructure and the political influence to have water prioritised to UPA sites), farmers are again reliant on their relationships with outside agencies to strengthen their access to clean water. Those who have worked with NGOs around water issues (in New England and Poto Levuma) have been at least partially successful in shoring up their access to this critical resource. Partnership with the Ministry of Lands as they undergo their Urban Planning Project may also help farmers (see 5.3.1). These outside relationships are likely to remain critical in bringing safe, clean water to women farming in Freetown without requiring them to spend large portions of their day involved in transporting water.
Avoiding the need to travel in order to procure safe water is important, but not because the women are unwilling to engage in manual labour, indeed they do so on a daily basis. Rather, it is problematic as it consumes valuable time that could be spent in the field, caring for crops or preparing for markets, while simultaneously adding significantly to the physical stress on their bodies. The existing process of transporting water from standing reserves up onto crop beds, usually using bowls, causes leg, hip and back problems for many of the women (KI008, KI021 and KI022, 2014), a problem that would be further exacerbated by water hauling.

Source: Author's fieldwork, 2014.
5.2.3 Access to labour

As we saw in the results chapter of this thesis, women generally struggle to access third party labour to assist them in heavy manual labour. While some women have their families available to them (see Figure 29), elderly relatives and children are not always able to fulfil intense labour requirements. Realistically, for those women without husbands, or other male family members, labour must be hired, a prospect that is for the most part unaffordable. In some instances association savings could possibly provide for the hiring of one-off labour, but this would likely come instead of purchasing other inputs. This labour deficit, caused by and combined with a lack of access to capital, also prevents urban farmers from being able to build a wall to keep rubbish and rocks out of their fields (see Vignette One). Additionally, it limits the speed and effectiveness with which they can clear fields of this build up, plough the ground for new crops, weed and build up the garden beds when they require maintenance. As a result, their outputs are often limited. Even in the mountainous peri-urban communities, where more men are involved both as vocational farmers and as family labourers, limits still apply to the amount of work which can be accomplished. The default position of many men is still to seek work, often as petty traders in central Freetown, rather than work in the gardens. For those who choose to farm, or assist female family members farming, limits on what they can physically accomplish still remain. These include a lack of basic equipment for ground breaking, weeding, watering, etc., as well as limitations on physical activity caused by poor health and nutrition.
Difficulties in sourcing workers leave farmers unable to invest the time and labour into the difficult task of clearing virgin land further up the slopes from their existing terraced gardens, despite paying increasing rent on existing plots (KI009, KI010 and KI038, 2014). This deficit of human capital (see Figure 3) also leads to farmers being dependent on external bodies to provide them with infrastructure upgrades (wells, walls, pipes, new spaces to farm, etc.), as they do not have the necessary time or workers required to install them on their own. In addition to this, the daily labour required to manage the farms, including; watering, weeding, ploughing, sowing, fertilising and more, places a heavy burden on the women who may be forced to give up farming as they get older. Many of those who were interviewed can already identify farming related injuries to their backs, legs and hips in particular (KI008, KI033 and KI034,
2014). Some respondents speculated that the nature of the hard, physical work will be a significant deterrent to their children when considering whether they should take over their parents’ leases (KI032, KI033 and KI036, 2014). In the meantime, productivity in the field is reduced, and the women, together with their available family members, are forced to work very long hours.

5.2.4 Access to capital

Clearly, individuals with access to significant financial capital are better able to alleviate the burden of land tenure, as well as labour shortage, through the payment of rent and hiring of workers. Access to even simple equipment like watering cans and irrigation would alleviate the manual burden of watering and allow water to be transported to the gardens more easily. Additionally, inputs such as fertiliser, quality seeds, and the use of pest and disease control products would dramatically improve garden productivity (KI007, KI008, KI009, KI011, KI039, KI046 and KI052, 2014). Nearly every farmer and association group interviewed during this research was able to cite two or three things that they would buy immediately and which would greatly improve their productivity and the quality of their farming experience. However, as outlined in the results, access to capital for making these purchases remains limited, in particular among women (see 4.2.3). In many ways the act of balancing financial expenditure over gardens and households is like a ‘see-saw’. When the income available matches expenditure the ‘see-saw’ is balanced. When there is less money available, then expenditure needs to decrease, either to avoid going into debt, or simply because there is no more money available to spend.
Figure 30: The See-Saw of balancing garden and household income and expenditure for women practitioners of UPA in Freetown, Sierra Leone.

The ‘see-saw’ of balancing garden and household income and expenditure for women practitioners of UPA in Freetown, Sierra Leone.

Source: Author’s fieldwork, 2014.
The above figure demonstrates the complex balancing act carried out by women farmers as they manage their income for the benefit of both their households and their garden. The see-saw often tips in the direction of more money being spent, or required than is available. Without adequate funds available farmers are unable to purchase many of the inputs they need to generate further opportunities for income through sales or savings (see Figure 30). Thus, it is difficult to generate extra profit and tip the see-saw in favour of more capital. Most women are therefore trying to simply balance incoming and outgoing money. Without savings or a welfare system to rely on, they cannot afford for their outgoing money to be greater than their incoming for even a short period of time. As expenditure fluctuates around the school and farming calendar, income must be generated accordingly, or necessary gardening and school supplies, as well as tuition fees, may not be able to be purchased. This highlights the importance of having capital available for a range of purchases throughout the farming year in order to maximise profit and household security. In some instances, association savings schemes assist in smoothing out the flow of capital by providing a buffer during times of heavy expenditure. The ability of government and NGOs to assist in capital provision, either directly, or through enhancing farmers’ access to loans via Freetown’s banks, is discussed below (5.3.1).

For those in the coastal urban environment this is often due to the fact that they arrived in Freetown relatively recently, during or immediately following the civil war, bringing little with them from their rural settings as they fled violence. Since then, UPA has provided a reasonable livelihood for them, but does not currently
return enough profit for the build-up of cash assets (KI007, KI008, and KI029 2014). In the mountain regions, farmers often have access to slightly more capital as they are more established in the region and can draw on family resources. Their ability to grow salad crops in the cooler mountain climate, as well as growing in terraced gardens, primarily during the wet season, enhances their earning potential. The literature outlines the idea that farmers in possession of more capital, usually men, are able to be more entrepreneurial as they are insulated to some extent against shock (Simatele & Binns, 2008). This is reflected in Freetown’s mountain environment, where some associations are branching out into new types of vegetables targeting the growing Chinese labour force (see Table 9). Other associations are planning online ventures that allow them to sell directly to NGO bulk buyers (see Vignette Two). In both instances slightly more capital is already available to begin with. Additionally, the involvement of men, who do not share the burden of provision for the household equally with women, may encourage more business risk-taking. For women, who have the responsibility of providing for the children, and in many cases an extended family, it is less feasible to risk money investing in new crops or technology. They are more vulnerable to shocks, as more people depend on them. Overall, women interviewed spoke of farming as a mechanism for meeting household needs, by contrast male farmers were more likely to see it as an opportunity to make money or improve their own lives.

MAFFS argues that the formation of associations has improved women’s access to capital. While in some instances it has improved their access to resources through interactions with NGOs and government bodies, it has not markedly improved their access to money, except in instances where farmers
chose to save as an association. Association saving schemes are limited by the small pool of capital they are drawing from, as well as the internal political structure of the associations (see 5.3.3.2). The reason the creation of associations has not greatly increased access to external capital is twofold. First, NGOs and government bodies, for accountability reasons, prefer to give association’s goods rather than money, as discussed below (see 5.3.2). Secondly, banks, who were supposed to be more open to lending to associations, still require collateral against which to secure loans (KI007 and KI011, 2014). Most women farmers do not have access to this, and are therefore unable to borrow from banks. The temporary user rights around wetlands granted to famers by the government are supposed to act as collateral for the purposes of obtaining loans (KI054, 2014). In reality, this has not been embraced by banks in Sierra Leone (RUAF, 2015), perhaps due in part to poor documentation, and women still report that collateral remains as a significant barrier.

5.3 Third parties and their relationships with women farming in Freetown; Opportunities to overcome challenges

The above challenges are experienced broadly across the UPA community. While the specific challenges vary across locations, nearly all farmers struggle with security of land tenure, access to clean water, labour and capital. As discussed, women are often more vulnerable to these challenges and face significant extra barriers to resolving them. Despite being highly capable problem solvers and industrious workers, these challenges are ongoing remain unresolved. Given that farmers face this series of challenges, and are unlikely to be able to resolve them on their own, the nature of the relationships that exist
between farmers, as well as with third parties, is incredibly important. This section of the discussion will focus on identifying key relationships, outlining their nature and content, and evaluating the effectiveness with which they are, and potentially could be utilised to assist women farming in Freetown.

5.3.1 Local and national government
The relationship between the government and farmers in Freetown is critical to the success of UPA as a sustainable and thriving livelihood. This is equally true of the national government and of local authorities. As indicated above, the government has the capacity to be involved in generating meaningful solutions to the key challenges of land tenure, access to water, labour, and capital, which are confronting women farming in the city.

5.3.1.1 The Wetland Policy
Both local and national government is already directly involved in the issue of clarifying and solidifying land tenure for farmers in Freetown. The main vehicle for this involvement, as established in the results chapter, is the ‘Wetland Policy’, which places all wetland areas in Freetown under government ownership and reserves them for the exclusive use of farmers. While this policy was established in 1970, it has only begun to be enforced in a post-war context, where space in Freetown is increasingly limited and farming is more widespread. Recent attempts to demarcate wetland areas and inform the public of their status as farming areas have varied in their success. For example, farmers in Poto Levuma, Lumley and New England all experienced hostility from their surrounding communities as a result of the demarcation process (KI039-041, KI007, KI008, KI023 and KI055, 2014). In New England, encroachment continues despite the erection of pillars. In addition to this, in
Lumley, pillars are also being removed or destroyed (KI007 and KI008, 2014). In Poto Levuma pillars are not the only thing being targeted. The surrounding community, angry at being told by the government that they do not have control of the wetlands, have destroyed a series of buildings constructed to house and breed pigs, as well as several wells built for the use of farmers (KI044 and KI050, 2014). In Poto Levuma in particular, the use of violence by the surrounding community against farmers is a cause of significant concern. In the mountain regions demarcation has not taken place, and farmers report feeling that they have been left alone, or ignored altogether by the government.

Both the Ministry of Lands and MAFFS report significant amounts of time and effort having gone into the land surveying and erection of the pillars (Lynch et al., 2013). Farmers to describe a significant amount of time as having been invested in the demarcation process by the government and local authorities, however, they also express frustration with the government around their current handling of land issues. While they acknowledge the good intent of the demarcation process, they report that the actual consultation that occurred in the placement of the pillars was often ineffective, in that it failed to satisfy surrounding communities of the legitimacy of the pillars (KI041 and KI046, 2014). This is likely to have contributed to the removal of pillars in several areas. Despite this initial effort, the demarcation process has not produced the desired result in most instances, making the ongoing relationship between farmers and the government crucial in order for any outstanding issues to be resolved. An ongoing relationship with, and commitment to, farmers is also vital to the development of infrastructure and systems that improve their access to water, as well as policy that meaningfully improves their access to capital, and
therefore labour and other inputs. It is in the development of this ongoing relationship that many farmers appear to be most disappointed.

5.3.1.2 Women’s expectations of government impacted by gender

Most of the respondents interviewed had high expectations for both local and national government involvement. They wish for both levels of government to be involved in supporting farming in a variety of instances and to a significant level. They view the government as being responsible for land tenure, water access and infrastructure such as agricultural business centres. They also hope for the government to be involved in helping them increase their access to inputs like labour, capital, fertilisers, tools and pesticides (KI017, 2014). They often feel that they are unable to communicate these needs effectively to the relevant authorities, or that when communication does occur, responses are inadequate and/or take too long to occur.
Interestingly, despite recognising that the overwhelming majority of farmers in Freetown are women, government extension workers to date have been exclusively male (Kl054, 2014). As discussed earlier, when asked about this, MAFFS representatives did not believe it was an issue. From their perspective the only way this could cause problems was if an inappropriate sexual relationship developed. As most of the women are older widows, and therefore unlikely to enter into such a relationship, this issue was dismissed (Kl054, 2014). This fails to recognise the possibility that male extension workers have a
different experience of farming than the women they are supporting. Without the responsibilities of childcare, and with greater access to capital and alternative off-season work, as well as different capacities for labour, there may well be a significant difference in understanding what farming for a livelihood entails. Without specific acknowledgement and understanding of these differences in experience the training provided by extension workers may not accurately fit the needs of the women. This is partially seen in the way that training is sometimes scheduled in such a manner that women report either being unable to attend, or feeling disadvantaged economically if they do, largely because of the time spent away from their fields and families (KI030 and KI033, 2014). Policy development around UPA also lacks special consideration of women’s needs. The current assumption in policy building processes is that farming is “women’s work” (KI054, 2014). This means that any time you discuss farming you are inherently addressing the needs of women. This view is particularly problematic if the people informing the creation of government policy, the hired extension workers in the field, are men. While these workers have an incentive to improve the livelihood of female farmers to satisfy their job requirements, it may well be that they lack an understanding of the ways in which being a women affects farming. Subtleties around how the burden of household duties interact with the ability to farm and trade may not be understood by, or communicated between all parties. The problem of a gender mismatch between farmers and those supporting them is not exclusive to the farmer-government relationship, it also often exists in relation to NGO extension workers or implementing partners. The farmer, government and NGO forum FUPAAP gave women a valuable opportunity to speak directly to the
government and NGOs without a middleman. This was of significant benefit to them as they felt they had an effective voice (KI011, 2014). It was also of benefit to the government, as they were able to collect everybody together and hear from them (KI054, 2014). This crucial forum has not met since 2013, due to the withdrawal of key sources of funding and facilitation. This is of significant concern to farmers as well as government, in particular MAFFS FUPAAP Facilitator Pamela Konneh (KI054, 2014).

5.3.1.3 **Disorganisation and corruption impacting the farmer/government relationship**

When women do interact directly with the government they often find the process very frustrating. Women farmers report a lack of clarity, long unexplained delays and being given conflicting advice and information when dealing with government processes (KI011, KI045 and KI052, 2014). It appears that lines of responsibility within and between government departments are often blurred, and farmers, as well as government officials, are unclear as to who is responsible for what. An extreme example of this disorganisation is the Environmental Protection Agency encroachment into New England as discussed above (see 4.1.4), where one government body is undermining the goals and decisions of another. This poor communication between ministries and government bodies, at both a national and local level, limits the extent to which effective infrastructure and policy planning can occur (KI055, 2014).

In addition to this complex bureaucratic process and, as highlighted by the literature review (see 2.7.2), corruption in Sierra Leone and its government is a massive problem. This has a huge impact on women, many of whom already
feel disempowered by their lack of connections, family support, money or assets. Corruption in the government results in the diversion of significant funds (The Economist, 2011), some of which may have been allocated to UPA. It also clouds the decision-making process and restricts farmers from engaging with government bodies due to the fear that they will be dealt with unfairly if they have nothing to offer those who they are working with. In this context of corruption occurrences like the EPA encroachment of New England, which may be an innocent case of mistaken boundaries, are perceived by farmers as examples of rules and policies being subverted to serve those in power to the detriment of those who need protecting. The New England Vegetable Growers Association have tried talking to several branches of government and have reached out to local news media in an effort to resolve the problem. To date no solution has been found and the EPA offices under construction continue to expand into the wetland areas without compensation to the farmers (KI011, 2014). The Association is unsure what more they can do to have their problem resolved, when a mixture of disorganisation and corruption appears to have barred them from accessing the benefits of land security promised by the government in the Wetland Policy. This disempowers farmers, and means that few farmers have faith in government systems to deliver services efficiently and in an unbiased manner.

5.3.1.4 Corruption and policing

Issues of disorganisation and corruption also impact on the ability of farmers to engage with the police. Given that the government is relying largely on the police force to monitor and enforce the Wetland Policy, it is particularly problematic that the women involved do not feel they can work with police. This
stems largely from a widely held perception that in order for the police to become involved in a matter they must see something of value in it for them (K1006, 2014), usually in the form of some sort of bribe. It does not matter if this is the case for only a very few police officers, as even the perception of corruption concerns women who perceive themselves as unimportant and having little to offer the police in terms of capital. If women farmers fear the police are corrupt then they will continue to avoid interactions with them. Making a claim and filing reports may also be intimidating for those who are unfamiliar with the process, particularly if they are illiterate. Taking time away from their fields or marketing in order to make a report is also a significant barrier, particularly when it is difficult to know how long the process will take. Additionally, the prospect of continuing to live and work in an area while engaged in legal action against some of its community members is highly intimidating. Given the history of community violence against police in some areas (see 4.1.4), combined with the general ineffectiveness of policing around wetland issues, there is no guarantee that the situation will be resolved successfully, meaning that women may well feel that they are better off not starting the process and risking significant upheaval to their livelihoods and physical security. These barriers to engaging with police affect women disproportionately to men, as they have less access to capital and often feel less secure in their standing in communities, particularly in the case of widows. It is lamentable that in a situation where women are relatively well empowered to participate in formal politics as a result of their participation during the war (Abdullah, Ibrahim, & King, 2010), they remain excluded by the fact that
informal politics, and surrounding corruption issues, are so significant in decision making.

5.3.2 NGOS, stories of success and opportunities for improvement

NGOs have to date, played a crucial role in the development of UPA as a livelihood, yet much remains to be improved about the way they engage with farmers. Of particular significance to the farming community has been the input of RUAF and COOPI. These two organisations have made a substantial contribution to the advancement of UPA in Freetown through their programmes (See 4.1.5). They are not alone in this, with research participants listing numerous NGOs who have been involved in UPA in Freetown at one stage or another. Despite the wide range of organisations participating in this sphere, general themes about the relationship between NGOs and farmers were clearly identifiable. The most significant of these was the way in which NGOs enhance, or fail to enhance, the capacity of associations and individuals to be self-governing and sustaining.

5.3.2.1 FUPAAP; establishments and benefits

The most significant positive impact of NGOs to the UPA community has been the establishment of the FUPAAP forum (see 4.1.5). As outlined earlier this platform has bought together NGOs, farmers, universities and government departments to focus on issues relating to UPA in Freetown. This has been particularly significant for women in well organised associations who are able to send a representative to FUPAAP meetings. This gives them a way in which they can report their experiences and concerns to other farmers and support bodies, and also a way in which information can be reported back to them. While women in Sierra Leone have an active political and social voice
(Abdullah et al., 2010) the time commitment of caring for children and limitations on where it is safe for them to travel alone in the evenings, can act to limit or exclude their participation in public fora. By being able to send a group-appointed representative to FUPAAP, the women are able to ensure that their views are accurately represented without having to take time away from their family or fields. This is a significant advantage, as a woman speaking on behalf of other members of her association, is likely to represent their views, struggles, concerns and body of knowledge better than an extension worker, or government or NGO officer (who is often male as discussed above at 5.3.1.2). This in turn generates enormous benefit to the women themselves, who are more likely to get their concerns accurately addressed, but also to the wider UPA community who are potentially able to adjust their practices and increase efficacy with the input of higher quality information. Farmers, universities and government departments have all expressed their pleasure at the ability of FUPAAP to enhance communication among those interested or involved in UPA (KI001, KI007, KI011, KI030, KI039 and KI054, 2014).

FUPAAP does, however, have limitations as a communication platform, principally around the way it engages with solo farmers and farmers from poorly functioning associations. In comparison to members of the New England, Lumley and Regent farmers associations, those in Poto Levuma, Gloucester/Leicester, and those farming on their own, talked about FUPAAP less often and less favourably (KI009, KI049 and KI038). Without strong and open communication channels within an association the ability to elect a suitable representative and for that representative to accurately put forward the views of the group is severely compromised. As discussed below (see Vignette
Three), in some instances distrust and unease become pervasive in an association, making it difficult for members to feel that their views and needs have been taken into account. This problem exists at an association level and even more so at the FUPAAP level, where members are reliant on others from their association as they are not attending to speak for themselves. Additionally, farmers who chose to farm individually, or in small family units, may have trouble accessing FUPAAP. This occurs for two main reasons; first the information about meeting times and locations is circulated through associations, in order to reach the most farmers possible using available advertising allowances. Solo farmers may not receive this information in a timely fashion and, when they do, may not feel welcome as a result of the focus resting largely on groups. Secondly, the traditional barriers to attending public meetings (see 2.6.1) still exist for individual farmers. Time spent in meetings is time away from their gardens and businesses. When farming on your own, even small inconveniences like this can become highly significant. It is unclear how many farmers chose to farm as individuals, as those keeping records tend to talk mostly with associations who are easier to access. In this research solo farmer involvement was limited by this, and so their perspective is under represented in comparison to those farmers working in associations. If this is also true of NGO information on farming, which seems highly likely, then this is certainly an opportunity for future research and service provision by NGOs, albeit a difficult one to fulfil.

5.3.2.2 Sustainability of FUPAAP
Overall, from most farmers’ point of view, the impact of FUPAAP has been very positive (KI011 and KI054, 2014). Problematically however, the withdrawal of
NGO funding and facilitation at the conclusion of the RUAF and COOPI joint project, FUPAAP has ceased to operate and has not met since 2013 (KI054, 2014). Farmers’ enthusiasm for the forum has not changed. Many express regret at its cessation and wish to attend more meetings in future. Likewise, MAFFS worker Pamela Konneh, wishes to see the platform reignited as she believes it has had and can continue to have a positive effect on the UPA community (KI054, 2014). She is formally the ‘MAFFS FUPAAP Facilitator’, but does not have access to sufficient funding and support from within MAFFS to run FUPAAP without the input and assistance of NGOs. From an NGO perspective the establishment of a community forum is a desirable goal and a relatively easy example of positive change and impact. The ongoing running of that same forum is less desirable, as it continues to use time and resources without necessarily providing new measurable outcomes, which may be less appealing to the donors which NGOs are accountable to and audited by (Townsend & Townsend, 2004). If Freetown’s UPA community is to become self-sustaining they cannot feasibly rely only on NGOs and so need to take over management of FUPAAP for themselves. As we saw in the results section sustainability of UPA in Freetown is a key goal of MAFFS, a goal which is shared by farmers who wish to enhance their autonomy and ability to farm into the future. While it is in the best interests of farmers to eventually take over the management of FUPAAP (or a similar forum) for themselves, it appears they have not been supported to do this. Likewise, no training appears to have been given to the FCC and MAFFS. Rather, the withdrawal of NGOs at the conclusion of their projects appears to have been done rapidly and with little succession planning or hand over time. As a result, the forum has essentially
ceased to exist. This highlights the importance of NGOs having in place effective strategies for disengaging from communities at the conclusion of projects (Binns, 2009). As Mr I expresses the issue:

“The main objective is to get [the farmers] sustainable (sic) because programmes and people come and go but they have to leave farmers alone to do things for themselves. When they are gone we are focused that they are for themselves now, what are they going to do? That’s why we allow them to take their own decisions so that they can carry on and on after people have left them.”

- Mr I, MAFFS extension worker, 2014

Complicating the arrangement of public meetings and forums at present is the additional concern of the Ebola outbreak. Containing the spread of the virus and treating those infected is placing a significant strain on government resources, as well as causing the withdrawal of staff from many non-health related NGOs. It also generates a level of fear around gathering in public spaces where the likelihood of transmission is increased, limiting the number of people who may be willing to attend a meeting should one be established.

5.3.2.3 NGOs as providers of external inputs

In addition to running FUPAAP, NGOs have also engaged in a significant service provision role. This role has included purchasing seeds and other inputs, the construction of wells in several sites, and the provision of educational seminars and courses. All of these have been reported as being valuable to the farming community, but this value is often limited by the inappropriate timing, placement or selection of goods (KI009, KI023, KI030 and
KI032, 2014). As an example, seeds bought for farmers often differ from those they would self-select (see 4.2.2.2) and as a result fail to flourish in the particular environment where they are planted. Seeds harvested from the mountainous peri-urban environment often do not do well in a coastal urban setting where soil quality and water levels differ significantly. Additionally, much of the seed crop available in local markets is of poor quality, having been harvested or stored incorrectly. NGO workers are often unable to judge the quality of seeds they are purchasing, and as a result farmers have to purchase additional seeds to get enough crop. Increased consultation around the placement and construction of infrastructure would also increase the value of NGO investment in this area.
Figure 32: Crops are allowed to go to seed by farmers in Lumley, Freetown, Sierra Leone. The collected seeds are of high quality and well suited to local conditions, but are not always available in adequate supplies.

Source: Author’s fieldwork, 2014.

Many of the wells built by NGOs have become unusable due to community intervention, like the damaged wells in Poto Levuma. In other cases, the wells work at a sub-optimum level as a result of design features that do not fit in with the local environment, for example the wells in New England. Here sediment is being tracked into wells by farmers’ feet, meaning additional concrete walls need to be built by the association. At the time of the interview the association had managed to place a lip on one well in their area but not the other (see Figure 18). Extra work created by poor design can cause farmers to feel burdened by the new tasks which the wells create, thus minimising their benefit.
Farmers value wells and access to clean water enormously (KI009, KI029, KI025 and KI043, 2014). Those who do not have it list it frequently as a key mechanism through which they could enhance their capacity (KI008, KI012, KI031 and KI038, 2014).

*Figure 33: A woman washes clothes using water drawn by hand from a well in Poto Levuma, Freetown, Sierra Leone. The well is the last remaining in working order in the community.*

While farmers feel that they have benefitted overall from training and education programmes (KI008, 2014), they also report that these come at a significant cost due to their timing and ‘hit and miss’ content (KI025 and KI033, 2014). Time spent in the seminars is time away from fields. For women, evening seminars can present additional barriers around childcare arrangements. Some associations nominate members to attend seminars and feed back to the group, but this relies on the selected members understanding and accurately
conveying all the content to be successful. As a result, education programmes have been only partially successful in effecting change and strengthening the livelihoods of women farmers in Freetown. MAFFS extension worker Mr I says of the education programmes that;

“Some farmers are doing better. You venture out with something and see some changes, but some change gradually and some don’t change at all. On the average about fifty-fifty or forty-sixty, maybe about 45% change for good, 25 are satisfied with what they are doing and some won’t change at all. Change is gradual”
- Mr I, 2014

This indicates a range of responses to the education programmes from farmers. While some farmers embrace them fully, others attend and weigh the new information up against their current practice with mixed outcomes, still others are reluctant to change any of what they are doing even after attending the programmes.

5.3.2.4 NGO consultation and decision making

One of the key factors behind the limited long term impact of NGO provided services is the nature of the consultation undertaken in determining what services are selected and provided. Farmers report that often NGOs approach them with already well established plans, budgets and timetables and seek to apply these to farmers rather than to involve them in their creation (KI011, KI021, KI036 and KI048, 2014). This shows a lack of community-based development. As highlighted by the above quote, farmers also find that a significant portion of the money dedicated to a particular program has often been spent on staffing and overheads before a project ever makes contact with them. This sort of top-down development often means that those who could
provide the most information about such things as seeds and well placement, namely the farmers, are left until last to consult, significantly limiting the impact of a project. Under this model farmers also miss out on receiving benefits which they feel NGOs are promising. Instead of consulting farmers NGOs rely heavily on local implementing partners for information and support. This leads to large proportions of the available funding being spent on implementing partners and not farmers (KI029, KI001 and KI019). Frustration with this system was expressed by the New England Vegetable Growers Association when they commented that;

“You need to start at the grassroots level but they are starting at the top. This is not well with some of us on the ground, we are frontline and we never see these benefits.”
- Female farmer and member of the New England Vegetable Growers Association, 2014

Perhaps more problematically for long-term sustainability it also fails to generate an increase in the decision-making capacity or autonomy of farmers. Even if the services being provided were accurate, timely and useful, when a project stops providing them farmers who have had little to no involvement in the decision-making process are unlikely to be able to begin providing those services for themselves. This is demonstrated by the fact that broken wells have remained unrepaired in Poto Levuma, where farmers had very little input in their placement and design and are now unable to service them.

Aside from the difficulty and expense of consultation there are more subtle reasons for this approach from NGOs. First, genuine consultation early in a project requires the project to be, at that stage, relatively undefined. It may well
be more difficult for NGOs to attract funding to less defined projects, limiting the practicality of this model. Additionally, while NGOs are serving Freetown’s farmers, they remain accountable not to them, but instead, to their donors. NGO’s may often need to “acquiesce” to donor demands in order to maintain funding and support (Townsend & Townsend, 2004, pg276). When reporting back to donors some expenditure may be easier to quantify and justify. For example, “purchased $100 worth of seeds for a farmer” may be considered a more concrete outcome than “gifted $100 to a farmer to buy seeds with”, despite the fact that the latter would likely have resulted in higher quality seeds, and more empowerment for the farmers involved. The desire to purchase measurable goods rather than empower farmers to purchase them for themselves is worsened in the context of Sierra Leone where corruption is a major concern. As a result, controlling as much of the purchasing process as possible is highly desirable in order to avoid the risk that funds get diverted away from their intended purposes by corrupt practice. Problematically, this may reduce the ability of women to access the goods they need, even when funding is available to support them. If an NGO has a mandate to buy seeds and fertiliser and this is what they will be assessed against, they are unable to then buy shoes, gloves or watering cans for farmers, despite the fact that in some instances these will be more useful. Once basic needs are met, something NGOs are contributing positively towards, farmers readily share information about how they would like to expand and grow their farms, what equipment they would purchase next and what techniques they would like to be able to employ. Examples range from low technology watering cans and safety gloves (KI008, KI011, KI030 and KI044) to high technology online sales
schemes (KI035). Many farmers have plans around how to enhance the value of their produce through processing, if they could only gain access to an Agricultural Business Centre (ABC) with basic kitchen and refrigeration facilities (KI030, KI038).

Without giving more decision-making power and control of spending to the women they are working with, NGOs are likely to continue making helpful short-term contributions, while providing little scaffolding for long-term changes in the lives of Freetown’s farmers. As the experts in the field, the farmers are well placed to make accurate decisions about the needs of their farms, and families, and should be given the opportunity to do so. Ways in which NGOs might improve on their consultation and service delivery practices are outlined in the recommendations section of this thesis. The importance of doing so is highlighted by Mr I who believes;

“Farmers should be seen as stakeholders, they are doing the work. They should be involved in any decision making and now they are not – decisions are being made in (sic) the top and to get farmers involved in those decisions there is zero effort. I am speaking for the whole of the country. They should be key stakeholders who make the decisions because they are involved”

- Mr I, MAFFS extension worker, 2014

5.3.3 Associations
According to the results, many women farming in Freetown are opting to become members of farming associations, while others chose to farm on their own or in family based groups. There is little information available about how many women chose to farm outside of associations, as opposed to within them,
as government and NGOs work almost exclusively with groups of farmers. This section of the discussion will examine why this is the case and what impacts it has on those farming on their own. It will also critique the underlying assumption that associations are uniformly good for farmers, by drawing on the very mixed experiences reported by women in Freetown.

5.3.3.1 Associations as an inherently positive tool for government and NGOs

NGOs and development focused branches of government from around the world often use the formation of associations or groups as a mechanism for furthering their goals or plans, and this is certainly evident in the context of farmers in Freetown. In 2007, 67% of sites involved in a RUAF study had an association present (RUAF, 2007). MAFFS reports that helping farmers to form associations is a key step in their capacity building projects (KI054). A 2007 RUAF policy narrative states that “Farmer associations…are expected to give farmers a united front, and increase their capacity to advocate, manage and or negotiate with stakeholders”(RUAF, 2007, pg12). When associations are formed this is considered to be a positive outcome, seemingly in isolation from any evidence that the association has improved the livelihood of the farmers involved. While associations have had significant positive impacts on the lives of many of Freetown’s female farmers, this experience is far from universal. Policy and planning seems to be reflect the assumption that associations are always good. This appears, however, to not be the case.

There are several likely reasons for the existence of this underlying assumption. First, it seems intuitive to assume that a group of people can help and support each other where an individual may struggle. Indeed, many women
report benefiting from a feeling of community and security created by knowing they are part of a group (KI008, 2014). This was particularly evident in the cases of the Lumley Vegetable Growers Association, New England Vegetable Growers Association and Regent Vegetable Growers Association. The assumption that groups inherently foster a sense of community that encourages individuals to invest physical and emotional capital into each other, appears particularly sound in cultures where there is already a strong emphasis on community or family groups above individuals. If people are already working in groups or families, it seems natural to formalise associations and shore-up these benefits. Certainly in Freetown’s market places an informal system exists to control who sells what crops, so that the market avoids becoming over saturated with one thing while suffering a shortage of another. “The fruit person brings the fruit and the vegetable person brings the vegetables” (KI036, 2014). There are no formal rules or sanctions in place to govern this system, rather individuals appear to adhere to their roles out of deference for the community in which they have found themselves. Even if it means possibly lower personal profits, the stability and profitability of the overall market community is highly valued and appears to be seldom questioned. In addition to this sense of process and community, it is likely that soft social sanctions such as isolation from, or critique by, peers is a large motivating factor in individuals toeing the line and choosing to continue in bringing their usual crops. It is also likely that when women are describing this system, their statements around who brings what are reflective of the norm, rather than every case. The norm is that the market community works together, but some women may act outside of this. Likewise, while the norm may be that farmers working closely together, in
formal associations or otherwise, tend to develop community ties and thus support one another, this will not always be the case.

The second set of reasons as to why associations are such a popular tool for government and NGOs relates to the ways in which they are perceived to open and sustain communication channels between themselves and farmers, while meeting internal structural requirements. It is far easier for outside bodies to identify, contact, and consult with a representative of a group than with each individual member of the same group. From an administrative perspective this reduces the time that has to be invested in these processes and allows some tasks, like surveying farmers’ opinions, numbers, or practices, to be at least partially delegated out to these representatives. Setting up associations is also work that can be done by staff with little or no experience specifically in UPA. This means that staff who have general management skills may be able to transfer into UPA projects and assist associations without needing to be re-trained, a fact that helps reduce time and costs even further. Additionally, as discussed above, the establishment of associations is a clear way in which project leaders can report something as having been accomplished. This is particularly relevant where further project funding is dependent on establishing positive outcomes to date. Organising associations may improve administrative efficiency, an outcome which should also generate benefits for farmers. One farmer in New England suggested that a list of associations held by the government could be used by NGOs to identify who is actually a farmer and so distribute funds appropriately. She states that “if you need to go to the right farmers you ask the Ministry, they have a list, the farmers are registered, you will get the right farmers” and she goes on to say that when this does not
happen “the benefits don’t go to farmers”, as NGO workers would “give to their own people” (KI028, 2014). New England and Regent Association members reported that it was easier to send one representative to NGO training days than to all take time away from the fields. Members of these associations also reported feeling that they had more access to government and NGOs through the streamlined process of association representation. Critically, however, this model only enhances access and communication for those in functioning associations. For individuals who are farming in groups where they do not feel understood, supported and listened to (i.e. Evergreen and Poto Levuma), the benefits of this streamlined communication do not occur as they do not feel connected with government or NGOs by their association. They may feel that their needs or ideas have not been heard or understood by the group as differences in gender, opinion, education level etc. create barriers between members (see 5.3.3.2). As a result farmers in dysfunctional associations do not trust that their association representatives are effectively advocating for them in forums like FUPAAP. This means they do not have their position communicated well to third parties and do not receive the target benefits that members in more communicative associations may. Likewise, farmers who chose not to join an association may be shut out of the communication loop altogether, as aid and support is directed towards the more visible and vocal associations. While associations may help government and NGOs to reach their targets, it is clear that they provide at best a mixed experience for those working in them.

5.3.3.2 Weaknesses in associations and subsequent harms to participants

Unfortunately, in many instances simply establishing an association, based primarily on the fact that everybody is farming in a geographically contiguous
area, is not enough to generate the benefits of community and support. Barriers to a sense of community include different cultural or gender perspectives, varying access to resources and land, or disparity in the levels of education and engagement within groups. In Poto Levuma the large farmers’ association was split into three branches, each with around twenty members. All three branches appeared to be experiencing problems, with members reporting that they felt things were being run unfairly, or with a lack of transparency (KI039, 2014). In some cases allegations were made that members had used farmland to build their houses, thus depriving the group of cultivation space (KI050). There was also concern that the treasurer of one group was siphoning group money for his private use (KI039, 2014). Often a small number of people seemed to be at the core of these disputes, which appeared largely personal in nature, preventing other members of the association from achieving their objectives in the process. Poto Levuma had a high proportion of male farmers, and many of the issues appeared to be between men and women. During focus group interviews men and women would seek to respond to questions in different ways. While the men wanted to answer very precisely, the women often wanted to give more background context in their answers. These different approaches lead to significant tension and arguments. It is important to note, however, that other groups with mixed gender members, for example in Regent, appeared to be functioning well. As with Poto Levuma a lack of transparency in the governance of the Evergreen Vegetable Growers Association caused significant issues for those in the group and resulted in its eventual collapse (see Vignette Three). In the case of Evergreen, the barrier to community and co-operation proved to be education levels rather than explicitly gender, with
illiterate members of the group unable to access bank account details and feeling as though they were being kept uninformed of group activities. The end result of this breach of trust between members was that “everyone acted for their own benefit” (KI038, 2014) and the association collapsed. For those involved in dysfunctional associations, where they do not experience an enhanced sense of community and support, the process can in fact be draining on their emotional and physical resources. It may do them and their farming more harm than good to be tied to a group of people who do not act with care and consideration towards each other. Unfortunately, association membership is almost always necessary to ensure engagement with government and NGOs, which leaves many farmers reluctant to leave associations, even when they appear to be hurting their livelihoods and are not benefiting from membership.

Vignette Three

Case Study - Madam Farmer in Regent

Madam Farmer has been farming in the Regent area for over 20 years. For much of this time her husband was unemployed leaving her as the sole provider for the household. Her experience with UPA began when she started buying crops from local farmers and selling them in the markets. She spent a substantial amount of her profits in investing back into farmers, loaning them money or buying them inputs like fertiliser, in an effort to encourage a supportive business relationship. Over time she became aware that, despite her extensive support, farmers were still charging her the same prices for
produce as paid to other sellers. As a result, she chose to begin farming for herself. She has been farming for 21 years on two plots, one in Regent and one closer to central Freetown, each about 15 by 23 metres.

*Figure 34: Madam Farmer collects hot peppers in her Regent vegetable plot, February 2014.*

In 2006, she joined the newly created Evergreen farming association which, at its peak, had 24 members (20 female and 4 male). When she initially joined the focus of the group was around the provision of external support for farmers. This focus gradually shifted to include internal fundraising, and a bank account for the group was established at the Fourah Bay College Eco Bank. The Financial Secretary and Treasurer would take weekly contributions from the group to the bank. Despite being an elected member of the executive (she was the leader of
the sales team), she was unable to be a signatory to the bank account due to her illiteracy.

Over the 5 years she was a member of the association she felt as though the group was divided along the lines of literacy. Those who were literate and could access the bank account occupied most of the executive positions and regularly collected money from other members. Problematically, they were poor at providing reports back to the group as to how the money was being spent or saved. As a result, many illiterate members of the group were unsure what benefits they were receiving and became distrustful of the literate members. This discord and accusations of corruption stopped members from feeling as though they were part of a supportive community as was described in other associations. Madam Farmer eventually left the association, as she felt she was giving up income and autonomy and not receiving any benefits (financial or emotional) in return. She describes the group as being “mere promises”, claiming that no one was motivated to be committed to the group. Shortly after she left the Association it collapsed entirely and no longer functions.

Since striking out on her own, Madam Farmer has found an increase in her income and a strengthened feeling of autonomy. Her family often help her in the fields alleviating some of the labour burden. She currently has two garden plots, one in Regent and one closer to the city, and so manages to farm all year round between the two of them. Rising rent in Regent in response to land pressure is a significant concern for her. Her husband was a member of the local church which owns the land she rents, which made it easier to negotiate a rental agreement. Sadly, she is recently bereaved and is struggling to hold onto
her land without her late husband’s community connections. Adding to her worries is the fact that the stream which has flowed through her land is slowly filling up with sediment. The sediment is the result of rapid deforestation on the surrounding hills to make room for new buildings. The removal of trees destabilises the soil which then runs into the stream. As the stream fills up the water spills over and floods garden beds. If it fills up entirely and shifts its course Madam Farmer is worried that she will lose access to it as a water source altogether. Despite the difficulties of farming and selling on her own, Madam Farmer has no intention of joining another association based on her past experiences.

Even in associations that are functioning relatively well there are still costs to individuals to be involved in them. Associations where members are happy tend to be those where the governance and processes are transparent and the elected executive is held to account by members, as in Lumley, New England and Regent. This takes significant time investment from all the farmers to attend meetings and ask questions. In particular, it places a heavy burden on those in the executive who have additional tasks appointed to them. If, ultimately, association membership saves time by allowing delegates to be sent to meetings and seminars etc., then this sacrifice is worth it. Given that mixed feedback on training opportunities and the effectiveness of consultation is given by farmers this is not necessarily always the case. As well as investing time into running the association, members also contribute to the group through labour on shared plots and, in most instances, some form of financial contribution. Again, if these contributions enhance their overall productivity and buying power through access to group savings, this will be of benefit to farmers. Less
obviously though, these contributions (time, labour, and money) bind individuals to a group in a way that forces them to delegate some of their authority to others. Once farmers have invested in a group they are generally reluctant to leave, even when they feel they are not benefiting (See Vignette Three). As a result, they have to allow the group to make decisions, which they may or may not agree with. While in many cases this erosion of independence is balanced out by the benefits of being supported in a community, as is the case for Mrs K, for others the harm to their ability to act autonomously in a way that benefits their own households may bring significant hardship, like it did for Regent's Madam Farmer. To elaborate further, a woman in a group contemplating entrepreneurial actions must rely to some extent on the support of the group. If she wants, for example, to attempt growing a new crop, the necessity of paying her fees, and contributing labour to the association may lower her capacity to do so, as she has less capital (both financial and human) available to invest. Growing the crop on group land, or using the group savings would of course require group consensus. In many instances the security provided by being an association member may be viewed as a safety net and so embolden women to act entrepreneurially, but at the same time an extra set of obligations to those around them may negatively impact upon their ability to do so. Notably, the association where entrepreneurial ideas were most freely discussed was the Regent Vegetable Growers Association, where members were both mixed in gender and reported feeling a sense of community and security from the association. It may be that men are encouraged in this environment to think creatively as they do not generally hold the responsibility for household provision, therefore a larger proportion of their earnings is available for new
investment. For women, on the other hand, an extra layer of obligation places extra pressure on their already scarce resources.

Functioning associations almost certainly protect women, and their dependants from shock by providing them with access to a concerned community support network. Associations may also limit women from adopting creative new business approaches when they would otherwise desire to do so, due to their decisions both affecting and being affected by the group. For many this sacrifice of autonomy, coupled with time, labour, financial, and emotional investments into the group, is rewarded by increased stability, assistance in time of need, and access to government and NGO resources. In the event that a group is functioning poorly due to corruption, a lack of transparency, or a mismatch between the attitudes of members (perhaps created by cultural or gender differences, or perhaps simply as a result of personality differences) these benefits are far less evident. Women in these settings are less assured that their views are being accurately put forward in meetings. They also benefit less from training seminars as poor lines of communication prevent information being effectively returned to the association. Even in groups that are functioning well internally there are concerns around the effectiveness of government and NGO engagement and consultation (KI011). This casts significant doubt on the assumption that associations are, in and of themselves, an idea that should be universally encouraged and sought after in a UPA context. Associations appear to have the capacity to do both tremendous good and, as was the case with Madame Farmer significant harm, something that does not appear to be taken into account in current government and NGO policy.
A summary of the potential benefits and harms of choosing to farm in an association is provided below in Table 12.
Table 12: Summary of the potential benefits and harms for farmers choosing to farm in associations.

<table>
<thead>
<tr>
<th>Potential Benefits of Associations</th>
<th>Potential Harms of Associations</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Increased sense of community and support</td>
<td>• Difficult and stressful social relationships</td>
</tr>
<tr>
<td>• Access to group savings schemes</td>
<td>• Inadequate representation at meetings and training</td>
</tr>
<tr>
<td>• Income from group plots</td>
<td>• Inaccurate or incomplete communication with government and NGOs</td>
</tr>
<tr>
<td>• Shared marketing labour</td>
<td>• Loss of income in instances where accountability from leadership does not occur</td>
</tr>
<tr>
<td>• Representation at training and meetings</td>
<td>• Limited capacity for entrepreneurial action without group consent</td>
</tr>
<tr>
<td>• Enhanced connectivity with government and NGOs</td>
<td></td>
</tr>
<tr>
<td>• Enhanced bulk purchasing powers</td>
<td></td>
</tr>
</tbody>
</table>

(Source: Author’s fieldwork, 2014)

5.4 Conclusion

This chapter has considered some of the key challenges facing women farmers engaged in UPA in Freetown, Sierra Leone. These challenges, while associated closely with those identified in the literature review, manifest themselves in a way that is particularly unique to Freetown’s demographic, topographic, infrastructural and political context. Key challenges include land tenure, access to water, access to labour and the availability of capital for running households and purchasing inputs for farms. These challenges exist for many engaged in UPA across the globe, but in this case require solutions
specific to Freetown. Both the results and discussion chapters of this thesis have indicated that women farming in Freetown are not only incredibly hardworking, but are also highly skilled, knowledgeable and adaptable. Despite this, in many instances, they seem to be unable to overcome the barriers in place for UPA without external support. Many different bodies working in Freetown seek to address this, and this chapter identifies several key sources of possible support – local and national government, NGOs, and associations – that can be used to assist farmers in their efforts to enhance their UPA livelihood options. Throughout the discussion of how these third parties are operating in Freetown, current limitations, as well as opportunities for enhancement, have been identified. Crucially, these parties play a vital role in connecting farmers to wider Freetown, including service providers like banks and police, as well as new markets for their produce.

The conclusions and recommendations chapter of this thesis will summarise how the barriers identified here, as well as the actions of the third parties discussed, enhance or detract from UPA as a sustainable livelihood option for women farmers in Freetown. Recommendations will be made around how current challenges can be met, minimised or overcome using the resources available in the Freetown context, with a view to enhancing the security of women farming and making UPA a more sustainable and stable livelihood strategy for them and their households.
6 Conclusion and Recommendations

6.1 Key Research Questions Answered

This research has focused on the role of UPA as a livelihood mechanism for women in and around Freetown, Sierra Leone. In doing so, it has built on an existing body of literature around UPA, both globally and specifically focusing on Sierra Leone and Freetown. As identified in the literature review, the academic discourse around UPA in Freetown, while relatively well established, has to date lacked a focus specifically on the experiences of women. As a result, their specific struggles and concerns have not been well recognised both in literature and also in practice when dealing with government and NGO policy. It has also led to an underestimation of the skills which these women possess, in terms of farming and decision making. They have been at times overlooked in the consultation process that seeks to support them. This research breaks new ground by focusing specifically on Freetown’s female farming community. It shows that women farmers are impressively resilient and competent in providing for their households, despite facing significant barriers. Networks around them should therefore recognise them as the key stakeholders, expert practitioners, thoughtful decision makers and visionary planners that they are. They should then seek to facilitate and empower these women in these roles, in order to increase the capacity of UPA as their livelihood mechanism of choice.

This research has focused on three key questions;

1. How are women using and contributing to UPA in Freetown?
2. How do women in Freetown interact with and benefit from the state, FUPAAP, support services, NGOs and other associations and collaborations?

3. How can women in Freetown be strengthened in their ability to secure a sustainable livelihood for their households through UPA?

The outcome of each question, as well as recommendations for enhancing UPA as a livelihood option for women in Freetown, are discussed below.

6.1.1 Key Research Question One: How are women using and contributing to UPA in Freetown?

6.1.1.1 How are women using UPA?

The results section of this thesis focused primarily on answering this key research question. It found that women were using UPA as a key livelihood strategy to support their households. Many of the women interviewed felt that their gardens were their only option for generating both food and an income for themselves and their families. Any threat to their ability to farm was considered extremely serious. While some male farmers use the money made from UPA to support their families, this was a much stronger focus for the women interviewed than has been reported in existing literature. Women were less likely to be entrepreneurial than their male counterparts if they felt it would risk harming their capacity to provide for their dependants. Most of the women interviewed use their gardens to provide a range of food for their families. They felt their households benefited from both the steady supply and nutritional variation of this food. They also use UPA as a source of income, by selling crops, and providing employment for family members who are able to work. In some cases women could employ their husbands or other relatives in their
fields. This income source means women are able to become more independent and self-sufficient, meaning they are using UPA as a method to enhance their ability to self-actualise. Simultaneously, many women use UPA as a source of community and friendship as they work closely with other women in their gardens.

6.1.1.2 How are women contributing to UPA?

Women in Freetown contribute an enormous amount to UPA. Around 80% of UPA practitioners in Freetown are women, and they enrich the practice with their knowledge and hard work. Women in the peri-urban areas have learned farming techniques from their parents and grandparents which they have then adapted and enhanced. In the more central urban areas women who learned to farm more recently are also creating a body of specialised knowledge. The methods used to farm in Freetown are specific to the climate, pests and diseases present, and also to prevailing market conditions. Women also contribute a specialised knowledge of the space in which they are farming. They know which seeds will grow well in their specific soils, and which crops will flourish in particular places and at particular times. This knowledge is an invaluable contribution to UPA as a whole in Freetown. Furthermore, the women are enormous contributors of labour, both in the fields, and in the processing, marketing and selling process. As discussed in the literature review, UPA has considerable potential to impact upon Freetown’s food supply, water and air quality and aesthetics. Women, as the principal drivers of much of Freetown’s UPA activity, are making an enormous contribution to the city as a whole. Having a source of fresh and varied produce that does not rely on
mobility and connectivity with rural areas is of great benefit to Freetown’s overall food security.

A summary of how UPA is operating as a livelihood strategy, including its strengths and weaknesses, is presented below in Figure 35. It shows the progression of crops from the farm to the market and eventually into the household, either directly, when unsold crops are bought home to eat, or by being converted into income through sales. Challenges to this flow, as well as opportunities to enhance it, are noted.
### Figure 35: UPA operating as a livelihood strategy for women farmers in Freetown, Sierra Leone.

<table>
<thead>
<tr>
<th>Coastal-Urban Farms</th>
<th>Mountainous Peri-Urban Farms</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Growing</strong></td>
<td></td>
</tr>
<tr>
<td>Traditional leafy</td>
<td>Rice or, when legs are</td>
</tr>
<tr>
<td>greens</td>
<td>flooded, nothing</td>
</tr>
<tr>
<td>Traditional leafy</td>
<td>Traditional leafy greens,</td>
</tr>
<tr>
<td>greens, salad</td>
<td>salad vegetables and</td>
</tr>
<tr>
<td>vegetables</td>
<td>some Chinese vegetables</td>
</tr>
<tr>
<td>Some rice in the</td>
<td></td>
</tr>
<tr>
<td>wetlands, other</td>
<td></td>
</tr>
<tr>
<td>vegetables in the</td>
<td></td>
</tr>
<tr>
<td>terraced uphill</td>
<td>gardens</td>
</tr>
<tr>
<td><strong>Doing</strong></td>
<td></td>
</tr>
<tr>
<td>Watering</td>
<td>No tools, poor water</td>
</tr>
<tr>
<td>Weeding</td>
<td>quality, limited access</td>
</tr>
<tr>
<td>Fertilising</td>
<td>to water</td>
</tr>
<tr>
<td>Clearing sediment</td>
<td>Limited access to capital</td>
</tr>
<tr>
<td>Marketing</td>
<td>for purchasing chemicals</td>
</tr>
<tr>
<td>Rubbish collection</td>
<td>Heavy, ongoing, manual</td>
</tr>
<tr>
<td>and burnoff</td>
<td>labour</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Limited capacity for</td>
</tr>
<tr>
<td></td>
<td>personal labour or</td>
</tr>
<tr>
<td></td>
<td>capital for purchase of</td>
</tr>
<tr>
<td></td>
<td>labour</td>
</tr>
<tr>
<td><strong>Land related issues:</strong></td>
<td></td>
</tr>
<tr>
<td>- High and changeable rent</td>
<td></td>
</tr>
<tr>
<td>- Poor enforcement of wetland policy</td>
<td></td>
</tr>
<tr>
<td>- Encroachment</td>
<td></td>
</tr>
<tr>
<td>- Sediment and rubbish deposit increasing due to erosion caused by urbanisation and deforestation</td>
<td></td>
</tr>
</tbody>
</table>

#### Coastal-Urban and Mountainous Peri-Urban Grown Crops

- Money can be reinvested into gardens and association fees
- Low prices undercut UPA vegetables

#### MARKET

- Crops are marketed by:
  - Individual farmers selling their own produce
  - Assigned association members selling group produce
  - Sellers who have wholesale or consignee purchased produce
- Each person sells certain types of produce based on an informal allocation system.

#### HOUSEHOLD

- No capacity for storage, unsold crops spoil quickly. ABC processing centres required.
- Crops are not sold
  - Can be eaten in household
  - Improving health and reducing food bills
  - Can be composted or used as animal feed
- Wasted produce and investment

#### Income is generated for household and can be spent on:
- Rent
- Food
- Education
- Medical Care

Better health care and nutrition mean members of the household can perform better at work and school. For women, healthy children mean less disruption to their working schedules. The employment generated by farming reduces household tensions.

#### How UPA operates as a livelihood strategy for women farmers in Freetown, Sierra Leone.

**Source:** Author's fieldwork, 2014.
Key Research Question Two: How do women in Freetown interact with and benefit from the state, FUPAAP, support services, NGOs and other associations and collaborations?

The results and discussion chapters of this thesis have established that, despite their sophisticated use of UPA, women in Freetown still face significant challenges, particularly around land tenure, access to safe water and availability of capital for purchasing labour, tools and farming supplies. More supportive relationships with government, NGO's and other institutions within Freetown including banks, police and associations, are required to help overcome these challenges, since current relationships are of variable effectiveness.

6.1.2.1 Relationship with government

Since the increase of UPA that occurred during the civil war, both the government and NGOs have placed more emphasis on supporting it. MAFFS and the Ministry of Lands have begun enforcing the wetland policy through the demarcation of wetland areas, have hired several extension workers to provide support and training to farmers, and are increasing their consideration towards UPA in city planning projects. While these things are positive, the relationship between government and women farmers remains somewhat distant, and farmers feel isolated from UPA decision-making processes by complex bureaucracy and endemic corruption. Additionally, without female extension workers, or a mandate to specifically address the concerns of farming women, government policy risks being misinformed about their needs, aptitudes and ambitions.
6.1.2.2  Relationship with NGOs

NGOs, in particular RUAF and COOPI, have, in the past, provided some excellent support for government extension workers in the form of training and physical resource provision. The combined efforts of NGOs and government have seen the formation of many associations which have enhanced farmer access to services and information, principally through the FUPAAPP forum. The fact that this forum has not met since the withdrawal of RUAF and COOPI in 2013, is of significant concern to farmers. The relationship with NGOs has also resulted in some goods such as tools, wells and seeds, being provided to farmers. These are, however, often not what the farmers would select for themselves if given the opportunity. Overall, farmers describe their relationships with NGO’s as being rather mixed. While they appreciate the assistance which NGOs have provided, they feel that inadequate consultation reduces the applicability of the goods and services provided. They also express concerns that funding allocated to UPA is often spent on facilitating an NGOs implementing partners to pay staff, hire office spaces, buy cars, etc., rather than being given directly to farmers. Most of the focus for government and NGO programmes has been in the urban centre of Freetown, whilst farmers in the peri-urban mountain areas of Regent and Gloucester/Leicester reported that they received less support.

6.1.2.3  Relationship with banks and police

Women farmers also find that their relationship with other services, such as banks and police, is often frustrated by barriers of corruption, poverty and illiteracy. Banks will not give loans to farmers who cannot provide assets as security, and since few of Freetown’s women own the land they farm, or any
other significant asset, this is a serious impediment to their ability to access capital. Corruption within the police force often leads women to feel that without money to pay bribes they will be unable to progress any claims which they bring forward. Literacy is also a significant barrier to engagement. Some banks will not allow an illiterate person to be a signatory on a bank account, and the complex process of making a claim with police is further compounded by an inability to read and write. Women, who generally have a lower literacy rate, are disproportionately affected by this.

6.1.2.4  Relationships within and between associations

Relationships within associations can be of enormous benefit to farmers who feel a sense of community and support from those they work with. Such networks can also facilitate joint savings schemes that allow farmers to purchase inputs which they may not be able to otherwise afford. In functioning associations women also report benefiting from the fact that the group will assist them in their farming should they become ill or unable to work, a practice which helps to insulate farmers from shock. Some associations, however, fail to provide this sense of security. Differences in personality, gender, and literacy levels have all been shown in this research to contribute to an atmosphere of both discord and stress within associations. In some instances, farmers report losing money to an association, significantly harming their livelihood. Since the demise of FUPAAP, associations have little direct contact with each other and their ability to share resources or information across groups is limited.

6.1.2.5  Relationship with the wider Freetown community

Freetown’s women farmers obviously benefit from their relationships with the wider community of Freetown who buy their crops in the markets. However, this
relationship risks being undermined by the importation of mass produced vegetables from Guinea, or from the Kabala region of northern Sierra Leone, which can undercut the prices of locally grown food in the markets. Women farmers have a mixed relationship with the communities surrounding their fields. In the peri-urban areas farming is a traditional livelihood and generally well-established. As a result, more of the community is involved in the farming and those who are not involved are generally supportive of it. Recently increased urbanisation of these spaces has placed considerable pressure on landlords to build and has resulted in steep rent increases. Farmers who have relationships with the landlords are able to negotiate better deals for themselves, but as few women own their land they remain vulnerable. In the more urban spaces, the use of wetland areas for farming often remains contentious, despite the government’s wetland policy. Many members of the surrounding communities dispute the government’s claim to own the land, believing it to be theirs. Others feel that an inability of government and police to maintain wetland boundaries means that they are able to build in farming areas. The encroachment that results reduces farming space and has led to violence against farmers and police on a number of occasions.

6.1.2.6 Key Research Question Two: Conclusion

Most relationships between farmers and other UPA stakeholders provide at least some benefit. Unfortunately, nearly all of them operate with women farmers in a position of relatively less power and authority due to their lower social status, education level, access to capital, or ability to influence policy. Strengthening these relationships, and empowering women within them will increase the benefits which they yield for UPA. Some methods for doing this
and the results that may follow, are suggested below in the conclusion to Key Research Question Three.

6.1.3 Key Research Question Three: How can women in Freetown be strengthened in their ability to secure a sustainable livelihood for their households through UPA?

This research has established that land tenure, access to safe water and access to capital for purchasing labour, pesticides, fertilisers, tools and seeds, as well as for household expenditure, are key challenges facing women farming in Freetown. In order to address these challenges, relationships with government, NGOs, police, banks, within and between associations, and with the wider Freetown community, need to be reconfigured to be both stronger and more focused on empowering women to make decisions and carry out plans. By doing this, UPA will likely generate more income and opportunities for these women as their current constraints are alleviated. It will also make their farming more sustainable, as they are the ones in control, organising and making decisions rather than relying on what other people might decide is required and appropriate. Some ways that this strengthening of relationships might be achieved, as well as several other opportunities to empower women to make decisions and drive processes, are recommended below. Each of these recommendations seeks to reduce the vulnerability of farmers to shock, such as civil war, the recent Ebola epidemic or the loss of a household member. This is achieved by increasing the capital (human, natural, financial, physical and social) available to farmers and improving their ability to access, utilise and shape the various structures and processes engaging with UPA. If this can be
achieved, then UPA can be strengthened as a livelihood strategy and provide sustainable and positive livelihood outcomes (See Figure 3). The six key recommendations made at the conclusion of this research are as follows:

1. More careful structuring and support for urban farming associations
2. The reinvigoration of FUPAAP
3. Extending the mandate of FUPAAP
4. Early and genuine consultation
5. Better enforcement of the wetland policy
6. Addressing issues of corruption and complicated bureaucracy in government, the police and NGO implementing partners

These recommendations are discussed in greater detail below.

6.1.3.1  Recommendation One: more careful structuring and support for associations.

More care should be taken in the structuring of farming associations. This research has indicated that associations with higher ratios of women are generally more stable and less combative, increasing the emotional and practical benefits of community support for the women who belong to them. Individual personalities and education levels have also been shown to have an effect. This should also be taken into account when associations are formed. Multiple small, but close knit, associations in an area may produce more benefits than one larger, but less cooperative association, particularly for women who value the sense of security and companionship provided.

Because geography will continue to be a key factor in forming an association (i.e. farmers must be close to each other to help with communal work), more
support and training should be given to help associations run themselves. Programmes which are focused on governance and decision-making models would allow women to choose how their associations were run and thus improve accountability. Literacy programmes would also enhance the ability of members to conduct their own business (with banks and police, etc.) in a more self-reliant manner, as well as minimise power imbalances within associations. The establishment of an independent group, which can advise associations on different management strategies, and assist in mediating disagreements at an early stage, would also be of benefit. This group could be drawn from existing farmers and specialist mediators and be tied to the FUPAAP forum.

6.1.3.2 Recommendation two: the reinvigoration of FUPAAP

Farmers, extension workers, government, and NGOs have all expressed pleasure at the results which were achieved by the FUPAAP forum. It provided an excellent link between farmers and those who wish to support or invest in UPA in Freetown. This forum should be reinvigorated and resume its meetings as soon as possible. The forum should be convened by a small elected committee comprised mostly, or entirely, of well-respected farmers, rather than by NGO employees. The focus of this committee would be setting meeting times and places, facilitating the running of the forum through formulating agendas and chairing meetings, and assisting correspondence between parties. Associations and individuals could pay a small registration fee, based on the size and prosperity of their organisation, to help support the running of FUPAAP. This would give them a greater investment in the forum, and help to ensure that it is run in the best interests of farmers. Funding from government and NGOs would also be well spent in supporting the forum.
Recommendation three: extending the mandate of FUPAAP

As has happened in the past, farmers, academics, NGOs and government should all be invited to participate in the forum. In addition to this, police or bank representatives could be invited as required to discuss the specific needs of farmers. Other community members, for example women who sell in the markets, supermarket owners, neighbours of the farmers, or those who sell farming supplies, could all be invited to participate in meetings to discuss how they can strengthen their relationship with the UPA community to benefit both the farmers and themselves. Strengthening the ties between women farmers and the Freetown community will leave the farmers feeling less isolated, and possibly give them more support when their farming capacity is constrained by land tenure issues. If more people are benefiting from UPA then there is likely to be a stronger community incentive to reduce issues like building encroachment onto wetland areas.

Members of the mediation and training team should regularly report to FUPAAP, and be directed by FUPAAP as to what training would be useful for members, and where their mediation services might be required. This will increase the likelihood that help will be made available to associations who are struggling before relationships within them become too badly damaged.

FUPAAP should continue to be a key point of contact for government and NGOs who are seeking to establish who is farming and what their needs are, although these bodies should still seek to engage with farmers who are not members of FUPAAP wherever possible. If FUPAAP is run and facilitated by farmers, the majority of whom should be women to reflect the farming
population, then requests for training and support made by FUPAAP are likely to more accurately match farmer needs. FUPAAP may also be involved in the generation of policy around UPA.

6.1.3.4 Recommendation four: early and genuine consultation

Regular and effective consultation from both the government and NGOs needs to occur with farmers at an earlier stage of project or policy planning, and with more genuine intentions for projects and policy to be shaped by this consultation. By making farmers key informants and involving them in planning, as opposed to just expecting them to implement a pre-conceived idea, or use resources selected for them, it is likely that the positive impact of the assistance will increase. This will happen in two ways. First, the training and resources provided will be more targeted and useful to farmers, addressing their specific needs. Secondly, it will empower farmers to think about long-term strategies and select or request services that support them. If women in Freetown are able to exert more influence on the way in which UPA funding is used, then they are likely to become more self-governing. By being able to direct resources themselves, the women will be able to utilise them on what most benefits them. This may involve issues such as scholarships for their children to attend school, which alleviates a considerable pressure on them and allows them to take more entrepreneurial risks. This sort of spending may not be an option currently, as it does not necessarily conform to pre-conceived ideas about what farmers need. Having a more direct influence on the money allocated to supporting UPA will also empower women by encouraging their independence and recognising their ability to plan and farm well. The women involved in this research have a clear idea of what will benefit them, and are
able to make sensible decisions about how funding should be allocated. FUPAAP could provide an excellent platform for this consultation to occur more effectively.

6.1.3.5  Recommendation five: better enforcement of the Wetland Policy
The Wetland Policy is an important part of preventing encroachment onto wetland farms. More time should be spent in educating communities on the boundaries of wetlands and demarcating these boundaries. The successful media campaign strategies used in Waterloo, including radio programs, television advertising, and a range of print media, should be adopted and used more widely in the Western Urban area as a way of educating the public about farming in wetland areas. This would require a greater level of input form the Freetown City Council than appears to be occurring currently. Police and associations should also be equipped with proper documentation, primarily maps, outlining the boundaries and ownership of wetland areas. This will prevent farmers from having to request such documentation from MAFFS and the Ministry of Lands on an individual basis, and should simplify the process of lodging a complaint with police. An increased public understanding of the importance of preserving wetland areas for farming may also help to reduce tensions between farmers and their surrounding communities.

6.1.3.6  Recommendation six: addressing issues of corruption and complicated bureaucracy in government, the police and NGO implementing partners
Corruption and overly complex bureaucratic processes isolate women farmers from government, the police and, at times, NGOs. This proves to be a significant barrier in farmers’ access to the services that may be available to them. Using FUPAAP as a mechanism for improved consultation with NGOs
should reduce the dependence of these NGOs on implementing partners and large staff numbers, as they are able to work more directly with the women. This will result in a clearer allocation of funding, and more of the funding being available for use by farmers, as opposed to paying for expensive staff costs. This should improve the relationship between farmers and NGOs and reduce the scepticism that currently exists. Corruption in the government and police is a much harder issue to address. Reform of this nature is already high on the political agenda, and should be continued to improve the access of women farmers to the resources and services which these bodies should be providing to them.

6.2 Conclusion, recommendations and suggested opportunities for future research
This research has shown that UPA has the potential to be enormously beneficial to Freetown as a city, both by providing a livelihood for households living in it, and by improving the city environment, as well as increasing the amount of fresh food available in the urban space. As well as improving the lives of farmers and Freetown’s residents, UPA also supports the achievement of several Millennium Development Goals. As these will be superseded by the United Nations’ new Sustainable Development Goals from late 2015, UPA is likely to continue its contributions (United Nations: Sustainable Development Knowledge Platform, 2015). Strengthening women farmers, who comprise 80% of the city’s UPA practitioners, in their ability to use UPA as a key livelihood strategy is therefore incredibly important. Building better relationships between these farmers and their support networks, as described above, will increase the effectiveness of resource and training provision, as well as placing women in a
position of authority over their own decisions and livelihoods. By doing this, these women, their associations and their families will be able to engage in long-term planning and manage their resources accordingly, making them less vulnerable to shocks such as the withdrawal of NGOs, or fluctuations in the vegetable market. This will improve UPA as a livelihood strategy for them, and make it more sustainable in the long term.

Further research that would benefit Freetown’s UPA community, and in particular its women farmers, could be undertaken in relation to;

- How to most effectively organise and run associations, as well as FUPAAP.

- Opportunities for an expanded role for FUPAAP, including the provision of mediation or conflict resolution services, and the bringing together of farmers and the wider Freetown community.

- Research should also be conducted to investigate the effects of Sierra Leone’s 2014-2015 Ebola crisis on UPA. The ability of UPA to provide a worthwhile livelihood even during this crisis, as well as the way in which it might enhance food and employment availability within the city, should be considered. Lessons from this time may well benefit Freetown’s female farmers and the wider Freetown community into the future.

- Ways in which the Freetown City Council can become more involved in and supportive of UPA in Freetown. In particular, enhancing the value of UPA as an aid to food security in the city.
- Understanding what planning policies are currently being put into place to support UPA as part of the Ministry of Lands urban planning process, and seeking opportunities for this to be enhanced and, ultimately, enforced.

At the conclusion of this research it is clear that women farming in Freetown are enormously resilient and competent, despite facing significant barriers to providing for their households. Networks around them need to recognise women as key stakeholders, expert practitioners, thoughtful decision makers and visionary planners, and so seek to facilitate and empower them in these roles in order to increase the capacity of UPA as a livelihood strategy. By focusing specifically on the experiences and contributions of women farmers within Freetown, this research sheds new light on the gender specific challenges which they are facing, as well as the myriad ways in which they are contributing to and supporting their households, UPA generally and Freetown as a whole. This research has provided valuable new evidence to the body of literature surrounding UPA in Freetown, which has thus far failed to focus adequately on the experiences of women. Future research that pursues this women specific focus, in UPA research in Freetown, as well as globally, may dramatically enhance the capacity of women to use UPA as a powerful livelihood strategy for supporting themselves and their households. The flow-on benefits, in terms of urban food security and poverty alleviation, should be of interest to all governments and urban planners, as well as to a significant number of NGOs. Women already contribute enormously to urban environments and food supply globally through their farming, but it is now time for this to be seriously recognised and valued.


8 Appendix

8.1 Appendix 1: Human Ethics Application

UNIVERSITY OF OTAGO HUMAN ETHICS COMMITTEE
APPLICATION FORM: CATEGORY A

Form updated: June 2013

Please ensure you are using the latest application form template available from: http://www.otago.ac.nz/administration/committees/otago000864.html and read the instruction documents provided (Guidelines for Ethical Practices in Teaching and Research and Filling Out Your Human Ethics Application).

1. University of Otago staff member responsible for project:
   Surname    First Name    Title (Mr/Ms/Mrs/Dr/Assoc. Prof./Prof.)
   Binns      Tony           Prof.

2. Department/School:
   Geography

3. Contact details of staff member responsible (always include your email address):
   Professor J A (Tony) Binns
   Ron Lister Chair of Geography
   Department of Geography
   University of Otago
   PO Box 56
   Dunedin 9001
   New Zealand
   Room 4C19
   Richardson Building
   Email jab@geography.otago.ac.nz
   Tel 64 3 479 5356
   Fax 64 3 479 9037

4. Title of project:
   Understanding and Empowering Women Practitioners of Urban and Peri-urban Agriculture in Freetown, Sierra Leone

5. Indicate project type and names of other investigators and students:
   N   NA


Staff Co-investigators

Names:

Student Researchers

Names:

Level of Study (PhD, Masters, Honours):

Y

Masters

External Researchers

Names:

Institute/Company:

N

NA

6. Is this a repeated class teaching activity?

NO

If YES and this application is to continue a previously approved repeated class teaching activity, provide Reference Number:

NA

7. Fast-Track procedure (Delete answer that does not apply)

Do you request fast-track consideration? (See ‘Filling Out Your Human Ethics Application’)

NO

8. When will recruitment and data collection commence?

Early March 2014 (exact travel dates still to be confirmed)

When will data collection be completed?

Early April 2014 (exact travel dates still to be confirmed)

9. Funding of project

Is the project to be funded by an external grant?

NO

If YES, specify who is funding the project:

If commercial use will be made of the data, will potential participants be made aware of this before they agree to participate? If not, explain:

No commercial use will be made of data collected by this project.

10. Brief description in lay terms of the purpose of the project (approx. 75 words):

Urban and peri-urban agriculture is a significant livelihood strategy for many individuals and households in Freetown, Sierra Leone. Growing food and raising livestock in urban spaces increases food security and income. Women in urban agriculture often struggle to gain secure land tenure as well as access to key inputs such as quality water, safe fertilisers and pesticides, extension services, training, credit and labour, when compared to male farmers. The purpose of this research is to understand the role that women agriculturalists are playing in Freetown, the limitations that they experience and the ways in which they might be empowered to enhance their provision for themselves, and their households.
11. **Aim and description of project** *(include the research questions the project intends to answer, and the overall implications and benefits of the research):*

In many of Africa’s key towns and cities, and around the world, rapid urbanisation has led to an increased demand for food to be supplied to cities, while simultaneously limiting the ability of rural areas to produce it, due largely to labour loss and, in cases of conflict, disruption to production processes. In Freetown, Sierra Leone, this problem has been exacerbated by the civil conflict that occurred between 1991 and 2002, forcing large numbers of the population to migrate to the city in search of safety, and destroying much of the infrastructure necessary for the generation and distribution of food in both rural areas and the urban spaces they support (Binns, Dixon and Nel, 2012).

Additionally, even when food is available, poverty acts as a barrier for many families to achieving household food security. Urban and peri-urban agriculture (UPA) is the practice of growing food or raising animals in city spaces or in the borders between urban and rural areas. It has become a key tool by which individuals and family units in Freetown improve both their food security and livelihoods through the production, consumption and selling of food within the urban setting. (Lynch *et al.*, 2013). This research explores the way in which urban agriculture is operating firstly in a global context, with a particular focus on developing regions and then within Freetown, Sierra Leone. Discussion will critically examine the impacts of gender, land tenure, environmental factors and access to extension services on individuals and households participating in UPA. UPA, like agriculture in rural settings, is a deeply gendered process (Hovorka, de Zeeuw and Njenga, 2009), yet an understanding of the experiences of women engaged in UPA in Freetown is largely missing from the literature.

The dominant purpose of this research will be to understand the experiences of women participating in UPA in Freetown and, in doing so, both fill this gap in the literature and extend understanding of the gender specific support needed to promote the sustainable livelihoods of women farmers in Freetown. In order to do this the following questions will be used:

**Key Research Questions**

1) How are women using and contributing to UPA in Freetown?
2) How do women in Freetown interact with and benefit from the state, FUPAP, support services, NGOs and other associations and collaborations?
3) How can women in Freetown be strengthened in their ability to secure a livelihood for their households through UPA?

This project will use a methodology that draws heavily on general participatory practise and participatory rural appraisal. Participatory research methods focus on allowing participants to do most of the investigation, analysis, sharing and decision making, facilitated by outside investigators. This ensures that research leads to appropriate and sustainable development projects that are community
driven and able to continue to grow in the absence of outside investigators (Narayanasamy, 2008; Chambers, 1994). The field research will be carried out using a mixture of semi-structured interviews and key information sharing exercises. A list of interview topics can be found in appendix 1 of this application. The information sharing exercises will include participatory mapping and modelling, transect walks, Venn or chapatti diagrams, seasonal calendar construction and matrix rankings. A description of the uses and procedure of each exercise can be found in appendix 2 of this application. These selected tools, and the methodologies described have been drawn and adapted from the works of Narayanasamy, (2008), Rennie and Singh (1995) and Chambers (1994).
References


12. **Researcher/instructor experience and qualifications in this research area** *(include information regarding the principal investigator (or supervisor), co-investigators and students (if relevant) involved with the project):*

Professor Tony Binns has a 40 year history of research in Sierra Leone, the wider West African region and many other developing countries. He has published extensively on the subjects of development, sustainable livelihoods and urban agriculture. During his travels he has built up a wide range of contacts within Sierra Leone, both at the Fourah Bay College in Freetown and within the wider community.

Student researcher Hana Cadzow has completed both a BA in Geography and an LLB at the University of Otago. She has also undertaken research projects that involved interviewing sensitive communities as part of her Geography qualification. In 2008–2009 Hana also travelled in Eastern Africa and Susan (now South Sudan). This gives her relevant experience in the challenges of traveling in developing countries and adjusting to different cultures. The effects of civil conflict were very much in evidence in South Sudan and Northern Uganda and experience working in this setting is highly relevant to post-conflict Freetown.

13. **Participants**

13(a) **Population from which participants are drawn:** The majority of participants for this project will be women drawn from the urban and peri-urban agricultural community in Freetown, Sierra Leone. Involvement from community leaders and relevant service providers will also be sought.

13(b) **Inclusion and exclusion criteria:** The research focuses on women’s experiences of urban and peri-urban agriculture in Freetown so most participants will be women. Some men will however be involved to provide a contrast and range of experiences. Participants will be asked to participate in voluntary exercises and interviews. One identified participants will be able to decline to participate at any stage of the activity or interview.

13(c) **Estimated number of participants:**

The exact number of key informants is not yet known but it is anticipated that at least 20 interviews will be conducted. These will primarily involve key knowledge holders or actors within the community. In addition to this many more community members, in particular women, will be invited to participate in a range of activities designed to stimulate a sharing and processing of information. These activities are described in the methodology and appendices of this application. An estimated 100 participants will be sought for these exercises and participants may withdraw at any time.

13(d) **Age range of participants:**

All participants will be over 18 years of age.

13(e) **Method of recruitment:**

Contacts made by Tony Binns will be used to identify key informants within the Freetown community and service providers. Snowball sampling will be used to expand the number of key participants and community members will be invited and encouraged to contribute, to whatever extend they feel comfortable, to the public activities.
13(f) **Specify and justify any payment or reward to be offered:**
There will be no payment or reward offered.

14. **Methods and Procedures:** *(Describe the design of the study and detail what participants will be asked to do. Provide the Committee with a copy of the interview questions to be asked of participants, or a general outline if the questions are not yet available.)*

This research design will include a combination of semi-structured interviews with key informants, a range of participatory activities and direct observation. Appendix 1 contains a list of key topics that will be covered in the interviews. The participatory activities used will include: participatory mapping and modelling transect walks, Venn or chapatti diagrams, seasonal calendars and matrix rankings. Appendix 2 contains an outline of each technique and its procedure drawn from the works of Narayanasamy, (2008), Rennie and Singh (1995) and Chambers (1994).

Where permission has been granted, interviews will be audio-recorded. Transcripts from the interviews will be analysed thematically through description, coding, classification and the categorisation of responses. The results of the participatory activities, as well as notes taken during them, will be recorded and processed in a similar way.

It may at times be necessary to use field assistants to help conduct interviews and run activities through the translation and interpretation of responses. In these instances the selection and compensation of such assistants will be undertaken in consultation with the geography department at Fourah Bay College in Freetown.

15. **Compliance with The Privacy Act 1993 and the Health Information Privacy Code 1994 imposes strict requirements concerning the collection, use and disclosure of personal information. The questions below allow the Committee to assess compliance.**

15(a) **Are you collecting and storing personal information (e.g. name, contact details, designation, position etc) directly from the individual concerned that could identify the individual?** *(Delete the answer that does not apply.)*

YES. In specific instances and with participant permission the role or position of key informants in service provision bodies such as local government or NGOs may be recorded.

15(b) **Are you collecting information about individuals from another source?**

NO

15(c) **Collecting Personal Information** *(Delete the answer that does not apply):*

- **Will you be collecting personal information (e.g. name, contact details, position, company, anything that could identify the individual)?**
  YES. See above.
- **Will you inform participants of the purpose for which you are collecting the information and the uses you propose to make of it?**
  YES
- **Will you inform participants of who will receive the information?**
  YES
- **Will you inform participants of the consequences, if any, of not supplying the information?**
  YES
- **Will you inform participants of their rights of access to and correction of personal information?**
  YES

Where the answer is YES, make sure the information is included in the Information Sheet for Participants.
If you are NOT informing them of the points above, please explain why:

15(d) Outline your data storage, security procedures and length of time data will be kept:
The data will be stored on the researcher’s university computer login profile. This has a secure, password protected log in. Hardcopy data will be stored in a locked cabinet in Prof. Binns’ office at the University of Otago. This information will be kept for five years then destroyed by the researcher as per University requirements.

15(e) Who will have access to personal information, under what conditions, and subject to what safeguards? If you are obtaining information from another source, include details of how this will be accessed and include written permission if appropriate. Will participants have access to the information they have provided? Participants will be informed of their ability to request a copy of the completed research project prior to consent. Outside of this access to the information will be limited to Hana Cadzow and Tony Binns. The information will only be accessible via a secure log in or the locked cabinet as outlined above.

15(f) Do you intend to publish any personal information they have provided? NO

15(g) Do you propose to collect demographic information to describe your sample? For example: gender, age, ethnicity, education level, etc.
Yes. Gender is relevant to this study but the information collected about gender will not allow the responses of individual participants to be identified.

15(h) Have you, or will you, undertake Māori consultation? Choose one of the options below, and delete the option that does not apply:
No: This research is being undertaken overseas.

16. Does the research or teaching project involve any form of deception? NO

17. Disclose and discuss any potential problems:
It is not expected that any conflicts or issues will arise out of this research project. Participants will be provided with the researcher’s contact details should they wish to discuss any issues raised in the process of participating in the research. Although there may be some sensitive issues raised by participants during discussion of the challenges facing them as women the methods selected for this project are specifically designed to be non-confrontational and to avoid raising issues that can’t be resolved. The civil conflict in Sierra Leone ended in 2002. Since then, two national elections have taken place without trouble, the latest of which was held in 2012. Professor Tony Binns has visited Sierra Leone six times since the end of the war, and is extremely confident that it is once again a safe and stable place to visit and work.

There is currently no travel advisory provided by www.safetravel.govt.nz for Sierra Leone other than to say that New Zealanders travelling or living in Sierra Leone should have comprehensive medical and travel insurance policies in place. All researchers will comply with these recommendations.

The SOS ratings for Sierra Leone are attached to this application in appendix 3. Sierra Leone is identified as an ‘extreme risk’ in medical terms. As such, all of the recommended vaccinations will be taken, anti-malarial medication will be carried, and all food and water advice will be
adhered to in order to mitigate this risk. All field work will be carried out in and around Freetown which has a number of high quality medical institutions, including Fourah Bay College Hospital, and Connaught Hospital. Professor Tony Binns is confident that, given the above precautions are in place, there is no undue medical risk conducting fieldwork in Sierra Leone. This opinion is built on his 40 years of experience working in Sierra Leone.

In terms of security, there are currently no travel restrictions in place for Sierra Leone. Petty crime is a potential issue in some areas of Freetown. Researchers will seek the advice of local people, avoid unnecessary movement and night time and avoid overt displays of wealth that could identify them as targets. Student researcher Hana Cadzow is a woman and will be conducting research in Freetown. The SOS ratings identify no specific risks for women travellers in Sierra Leone but encourage modest dress and caution when selecting modes of transportation and accommodation locations. Hana has had experience traveling in other African Countries and is familiar with a range of safety protocol which will be sued to ensure her personal safety. Hana will be in constant contact with local mentors from Fourah Bay College in Freetown, as well as Professor Tony Binns. She will have a communication device on her at all times. All researchers involved in the project will be staying in secure accommodation in Sierra Leone.

18. *Applicant’s Signature:  .................................................................
   Name (please print): .................................................................
   Date: .............................
   *The signatory should be the staff member detailed at Question 1.

19. Departmental approval:  I have read this application and believe it to be valid research and ethically sound. I approve the research design. The Research proposed in this application is compatible with the University of Otago policies and I give my consent for the application to be forwarded to the University of Otago Human Ethics Committee with my recommendation that it be approved.
   Signature of **Head of Department:  .................................................................
   Name of HOD (please print):  .................................................................
   Date: .............................
   **Where the Head of Department is also the Applicant, then an appropriate senior staff member must sign on behalf of the Department or School.

Attach copies of the Information Sheet for Participants, Consent Form, and Advertisement to your application

Send the signed original plus 17 double-sided and stapled copies of the application to:
Academic Committees, Room G22, G23 or G24, Ground Floor, Clocktower Building,
University of Otago, Dunedin
Understanding and Empowering Woman Practitioners of Urban and Peri-urban Agriculture in Freetown, Sierra Leone

INFORMATION SHEET FOR PARTICIPANTS

Thank you for showing an interest in this project. Please read this information sheet carefully before deciding whether or not to participate. If you decide to participate we thank you. If you decide not to take part there will be no disadvantage to you and we thank you for considering our request.

What is the Aim of the Project?
This Project is being undertaken as part of the requirements for a Masters of Geography at the University of Otago. The main aim of this project is to explore the ways in which women in Freetown, Sierra Leone use urban agriculture as well as to understand how they interact with other members of the urban agriculture community and what struggles they might face.

What Type of Participants are being sought?
The participants being sought for this project are mainly local women who are engaged in urban or peri-urban agriculture in Freetown. Other participants may include officials from the national or provincial governments as well as NGOs and community groups.

What will Participants be Asked to Do?
Should you agree to take part in this project, you will be asked to either:

- answer a series of questions about your involvement in and experiences of urban and peri-urban agriculture in Freetown. These may include questions about your household, the type and quantity of crops you grow, what benefits you get from urban agriculture, what barriers exist for you and what would help you. There may also be other questions of a similar theme. You may choose not to answer any question for any reason.

or

- participate in a community exercise to generate information around a particular theme of urban and peri-urban agriculture. This exercise may include mapping or modelling and area, accompanying the researcher on a transect walk, constructing a seasonal calendar of your agricultural activities, constructing a Venn or Chapatti
You may contribute as much or as little information as you wish to these exercises.

The amount of time involved may vary but discussions may last up to one hour and exercises may last up to two hours.

Please be aware that you may decide not to take part in the project without any disadvantage to yourself of any kind.

**What Data or Information will be Collected and What Use will be Made of it?**

Data about the contributions of urban and peri-urban agriculture to the livelihoods of women in Freetown as well as their experiences of urban or peri-urban agriculture will be collected during this project. If participants agree interviews will be audio-taped to allow the researcher to listen to the interview again and interpret information accurately. The tapes will be destroyed at the completion of the project. A digital or physical copy will be taken of the diagrams produced by the community exercises.

The data collected will be securely stored in such a way that only those mentioned below will be able to gain access to it. Data obtained as a result of the research will be retained for at least 5 years in secure storage. Any personal information held on the participants such as contact details, audio or video tapes, after they have been transcribed etc, may be destroyed at the completion of the research even though the data derived from the research will, in most cases, be kept for much longer or possibly indefinitely.

The results of the project may be published and will be available in the University of Otago Library (Dunedin, New Zealand) but every attempt will be made to preserve your anonymity. The results of this study will be made available to you should you wish.

This project involves an open-questioning technique. The general line of questioning includes your experiences of urban and peri-urban agriculture. The precise nature of the questions which will be asked have not been determined in advance, but will depend on the way in which the interview develops. Consequently, although the University of Otago Human Ethics Committee is aware of the general areas to be explored in the interview, the Committee has not been able to review the precise questions to be used.

In the event that the line of questioning does develop in such a way that you feel hesitant or uncomfortable you are reminded of your right to decline to answer any particular question(s) and also that you may withdraw from the project at any stage without any disadvantage to yourself of any kind.

**Can Participants Change their Mind and Withdraw from the Project?**

You may withdraw from participation in the project at any time and without any disadvantage to yourself of any kind.
What if Participants have any Questions?
If you have any questions about our project, either now or in the future, please feel free to contact either:

Hana Cadzow or Tony Binns
Department of Geography
Department of Geography
University Telephone Number:
+64 3 479 5356

Email Address:
nyhha359@student.otago.ac.nz
jab@geography.otago.ac.nz

This study has been approved by the University of Otago Human Ethics Committee. If you have any concerns about the ethical conduct of the research you may contact the Committee through the Human Ethics Committee Administrator (ph 03 479 8256 or email gary.witte@otago.ac.nz). Any issues you raise will be treated in confidence and investigated and you will be informed of the outcome.
Understanding and Empowering Women Practitioners of Urban and Peri-urban Agriculture in Freetown, Sierra Leone

CONSENT FORM FOR PARTICIPANTS

I have read the Information Sheet concerning this project and understand what it is about. All my questions have been answered to my satisfaction. I understand that I am free to request further information at any stage.

I know that:

1. My participation in the project is entirely voluntary;

2. I am free to withdraw from the project at any time without any disadvantage;

3. Personal identifying information, both written or audio recordings, will be destroyed at the conclusion of the project but any raw data on which the results of the project depend will be retained in secure storage for at least five years;

4. This project involves an open-questioning technique. The general line of questioning includes your experiences of urban and peri-urban agriculture. The precise nature of the questions which will be asked have not been determined in advance, but will depend on the way in which the interview develops. Consequently, although the University of Otago Human Ethics Committee is aware of the general areas to be explored in the interview, the Committee has not been able to review the precise questions to be used.

5. The results of the project may be published and will be available in the University of Otago Library (Dunedin, New Zealand). Unless my specific consent is given every attempt will be made to preserve my anonymity should I choose to remain anonymous

6. I, as the participant: a) agree to being named in the research, __ OR;

   b) would rather remain anonymous __
I agree to take part in this project.

................................................................. ........................................
(Signature of participant) (Date)

.................................................................
(Printed Name)

This study has been approved by the University of Otago Human Ethics Committee. If you have any concerns about the ethical conduct of the research you may contact the Committee through the Human Ethics Committee Administrator (ph 03 479 8256 or email gary.witte@otago.ac.nz). Any issues you raise will be treated in confidence and investigated and you will be informed of the outcome.
Dear Professor Binns,

I am writing to let you know that, at its recent meeting, the Ethics Committee considered your proposal entitled “Understanding and empowering women practitioners of urban and peri-urban agriculture in Freetown, Sierra Leone”.

As a result of that consideration, the current status of your proposal is: Conditional Approval

For your future reference, the Ethics Committee’s reference code for this project is: 13/274.

The comments and views expressed by the Ethics Committee concerning your proposal are as follows:

Please address the following comments before proceeding with the research:

The Committee were of the view that the Information Sheet was very brief, and that more information should be provided to explain what participants will be doing and the types of questions or topics that will be discussed. What are the “exercises”?

The Committee would like to hear your plans on how informed consent will be handled should the participants have no English or no written literacy. Will translations in the local language be offered? Will there be local translators working with the researchers?

The Committee noted that some of the template prompts in italics remained in the Consent Form. Please ensure these are tidied up before finalising.

Before approval of the research to proceed can be granted, a response must be received addressing the issues raised above. The Committee expects that these comments will be addressed before recruitment of participants begins. Please note that the Committee is always willing to enter into dialogue with applicants over the points made. There may be information that has not been made available to the Committee, or aspects of the research
may not have been fully understood. Please provide the Committee with copies of the updated documents, if changes have been necessary.

Yours sincerely,

[Signature]

Mr Gary Witte
Manager, Academic Committees
Tel: 479 8256
Email: gary.witte@otago.ac.nz

c.c. Professor S J Fitzsimons  Head  Department of Geography

From: Jane Hinkley
Sent: Thursday, November 28, 2013 3:12 PM
To: Tony Binns; Gary Witte
Cc: Hana Cadzow
Subject: RE: Human Ethics Application 13/274

Dear Tony

Thank you for this information. Sending this by email is perfectly fine.

We will attach your email to the record of your application. This response answers the Committee’s question.

Kind regards
Jane

Jane Hinkley
Academic Committees Administrator

Academic Committees Office
Te Tari kā Komiti Mātauraka
Academic Services
University of Otago
PO Box 56, Dunedin 9054

Tel 64 3 479 6531
Email jane.hinkley@otago.ac.nz

-----Original Message-----
From: Tony Binns
Sent: Thursday, 28 November 2013 2:14 p.m.
To: Jane Hinkley; Gary Witte
Cc: Tony Binns; Hana Cadzow
Subject: RE: Human Ethics Application 13/274

Dear Gary and Jane
Thank you very much for giving our research proposal 'Full Ethical Approval' following our submission of additional information.

I hope it is OK to send you an email rather than writing a formal letter.

I just want to respond to the point you make about 'how consent will be obtained and recorded from participants with no written literacy'.

I have encountered this problem several times during my fieldwork in different parts of Africa. The usual procedure, which I have used successfully is;

1. First, to ask our translator/research assistant to explain to participants in the local language exactly what is involved in the survey, and to check that they fully understand.
2. Then, the usual procedure is for the participant to indicate their understanding and agreement re. their involvement by putting their thumb-print on the Consent Form. We would carry an ink pad to facilitate this.

This method is used in many elections and censuses in African countries.

I hope this provides you with a satisfactory explanation.

Best wishes
Tony

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8.5 Appendix 5: Health and Safety Cover Sheet

Department of Geography
University of Otago

Cover Sheet

Field Leader (name): Hana Cadzow

Field contact (if possible): Professor Paul Tengbe
HoD Department of Geography
Fourah Bay College
Freetown
Sierra Leone
dr.tengbe@yahoo.com (email)
+232-76-622-335 (cell phone)

Home/travelling contact: Richard Nyhof (Father)
12 Arthur St
North East Valley
Dunedin
New Zealand
r.nyhof@gmail.com
+64-27-3250268

Trip contact (the person you will contact when you have returned from the field, if not Dave)

Name: Dave Howarth Phone: +64-03-479-8769

Destination(s): Sierra Leone (Freetown), Uganda (Kampala)

Trip itinerary (include all travel dates/times; transport providers):

Departing: Monday 24th February
Returning: Monday 14th April

See attached for Full Details
Trip participants (names, student ID, next of kin (relationship, home town, phone numbers):

<table>
<thead>
<tr>
<th>Name</th>
<th>Next of kin/relationship</th>
<th>Town/phone</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Hana Cadzow</td>
<td>Richard Nyhof/Father Dunedin/+64-27-3250268 (7258947)</td>
<td></td>
</tr>
<tr>
<td>2. Murray Cadzow</td>
<td>Ewen Cadzow/Father Dunedin/+64-3-4667557</td>
<td></td>
</tr>
</tbody>
</table>

Feedback (to be completed by H&S Officer), upon receipt of Field Leader’s post-trip report:

Please attach your health & safety plan. Your plan should anticipate all the risks and hazards associated with your fieldwork, including transport to and from the site, and identify how you plan to eliminate, isolate or minimise each risk or hazard. Refer to the University of Otago ‘Guidelines to Field Activities’ (Sept 2008) for guidance and discuss your plan with the Department’s H&S Officer. Send a draft plan to Mr Howarth 14 days before the intended field trip in the case of new field work. In the case of ongoing fieldwork, that does not involve new participants or methods or locations, please provide only the cover sheet. Send an email to Mr Howarth, on your return from EVERY trip, noting any events that relate to the health and safety of the participants.
Timeframe and participants
This fieldwork trip is part of my Masters research work looking into women practising urban agriculture in Freetown. The trip also includes a personal side excursion to Uganda for. I will be traveling with my husband (Murray Cadzow) for the duration of this trip.

Place of Fieldwork
All of the fieldwork will be conducted in Freetown and its immediate surroundings. Freetown is the capital city of Sierra Leone.

Contact Details
I will purchase a local sim card for my phone shortly after arriving in Freetown (as will Murray). I will email my local contact number, as well as my accommodation details to my friends and family, my supervisor, Tony Binns, as well as to Etienne Nel who I will be remaining in contact with in addition to Tony. I will also email a copy of this phone number and my accommodation details to Dave Howarth.

On the night of the 26th of February, and for the initial portion of the trip, I will be staying at:
Roy’s Guest House 54 Lumley Beach Road Freetown +232 79 655 677 or +232 33 522 221 royguesthouserestaurant@gmail.com

After this I will be staying in a secure apartment in Wilberforce, Freetown. I have been in contact with Amadu Barrie of VSL Travel who is arranging the apartment. We will view the apartment and if we are satisfied with its security and facilities we will confirm our rental of it. At this time we will provide those listed above with the address. There are several rental options available to us in the Wilberforce area. This is a relatively affluent and safe area within Freetown and is nearby to the British High Commission.

This fieldwork will involve collaboration with staff of the Geography Department at Fourah Bay College in Freetown. The following two staff members are key contacts within the Geography Department of Fourah Bay College, University of Sierra Leone:

Prof. Paul B. Tengbe
Head of Department of Geography
Fourah Bay College, University of Sierra Leone, Freetown
Telephone: (w)+232-22-229326; (m) +232-22-(0)766-22335
Email: dr.paultengbe@yahoo.com
Dr. Kabba Bangura  
Lecturer Department of Geography  
Fourah Bay College, University of Sierra Leone, Freetown  
Email: ksbangura@yahoo.com

I will also be in close proximity to the British Council throughout my stay in Sierra Leone:  
20 A.J. Momoh St  
Tower Hill  
PO Box 124  
Freetown, Sierra Leone  
Telephone  +232-22-224683

I will follow the same protocol around phone numbers in Uganda. Our accommodation in Uganda is on the secure compound of NGO YWAM Arua where I have stayed before. We will be on the base for the majority of our trip to Uganda. Several members of my family have regular email contact with people working on the base as an additional form of contact to my cell phone. Throughout the trip I will be contactable via email at hana.cadzow@gmail.com and Murray will be contactable via murray.cadzow@gmail.com. We will make regular contact with our families as well as Tony Binns and Etienne Nel to advise them of our location and plans. In particular we will advise them of any plans to be out of Freetown (for example a day trip to a point of research interest) contacting them both before and after the trip. This means that they can raise the alarm in the unlikely event that we fail to return to our regular accommodation. A copy of our itinerary and hotel bookings will also be left at home with our parents to provide a broad guide for where we should be.

Health Hazards

A number of health hazards exist in both Sierra Leone and Uganda. In order to mitigate these Murray and I have consulted with the team of specialist travel doctors at Student Health. On their recommendation, we have each received the appropriate vaccinations, or boosters for previous vaccinations, including Yellow Fever, Hepatitis A and B, Typhoid, Meningitis, Pertussis, Polio, Rabies and Tetanus. In addition, we have each received a prescription for malaria prophylaxis tablets (Doxycycline), as well as medication for traveller’s diarrhoea, topical skin creams, electrolytes and broad spectrum antibiotics.

Despite being vaccinated for a number of diseases, I am fully aware that great care is still required to avoid illness while traveling, and as such will adopt the following precautions;

Mosquitoes are a particular risk in Sierra Leone and Uganda, in particular as they carry malaria. Because if this we should avoid contact with them if at all possible.
As such, we have purchased a mosquito net which will be used while sleeping, and high grade insect repellent containing DEET will be used at all times.

As my fieldwork will predominantly be in urban areas contact with animals will be limited. I will make a special effort to avoid physical contact with animals and appropriate sanitation (hand washing etc) will be undertaken in instances where this is not possible. Should any animal blood or saliva come in contact with open skin I have been advised to consult a medical professional immediately to address the possibility of rabies and begin a course of booster shoots.

The urban environment also presents health risks in the form of polluted water and waste, exposure to which can cause disease so appropriate footwear/clothing will be worn at all times, and extreme care will be taken.

Food and water are also a significant source of illness in Sierra Leone and Uganda, and so great care is required. Only bottled or boiled water will be used for the purposes of drinking, preparing food and brushing teeth. When preparing food, only fresh food will be used, and it will be thoroughly cleaned and cooked before eating. When eating out, uncooked food, food that may have been washed in unclean water and street food will be avoided. In order to minimise our risk of exposure to food related illness most food will be prepared in our own facilities.

Doxycycline, can increase the sensitivity of skin to the sun and therefore overexposure to the sun is also a real risk, and can lead to sunburn and/or heat stroke. Applying sun block regularly, wearing a hat and drinking plenty of water daily, will minimise the potential risk of suffering from sun (overexposure).

Despite the precautions outlined above, illness and/or injury may still occur. Should this eventuate, a comprehensive first aid kit, and basic medications such as paracetamol and anti-inflammatory medications, will be carried at all times. For more major ailments, a comprehensive list of health providers in the vicinity of each field site will be carried at all times, and a transport plan to the nearest and/or most reliable health providers in the area will also be in place. Freetown has several reliable hospitals as does Kampala. In addition Murray is a medic in the territorials and so has a sound knowledge of first aid should an emergency arise.

In addition to the above strategies, full Travel Insurance has been arranged with the University of Otago with an International SOS assistance card. This SOS card will be carried at all times and a copy will be left with our family members.

Safety Hazards

Despite the fact that Sierra Leone was afflicted by war as recently as 2001, it is now considered a relatively stable country to visit. My supervisor, Professor Tony Binns, has visited the country four times since the end of the civil war, and has
encountered no safety problems. There have also been two peaceful elections in Sierra Leone since the end of the war, highlighting its relative safety. Uganda is similarly stable although there have been recent civil conflicts of various scales in neighbouring countries. I have visited Uganda previously and formed several close contacts across the country who all report no internal disturbances in Uganda as a result of this. I will continue to closely monitor this in the lead up to my time there by consulting both local contacts and international travel advisories.

Despite the relative safety of both countries, precautions need to be taken against crime. Petty crime, pickpocketing and mugging are the most common occurrences of crime, and are more prevalent in Freetown and Kampala than other parts of the country, but are still relatively rare. In order to reduce the chances of being a victim of such crime I will only stay in secure accommodation, and ensure all valuables are locked away. When away from the accommodation I will make sure I do not carry anything of great value, and I will avoid going out alone after dark. I will also travel predominantly with a local guide in order to help avoid confrontation. To further protect against theft I will carry several different options for accessing funds, some cash and a variety of bank and travel cards to ensure I will retain access to money should one get stolen. I will also leave several copies of my passport and other important documents at home as well as carrying a copy with me to ensure that in the event of my passport being stolen I can prove my identity and country of origin.

The other major threat to safety in Africa is road transport, with most roads in poor condition, and poor vehicle maintenance standards. As such, I will not drive during my trip. While in Freetown I will travel with taxi drivers whom Tony has contacts with from previous visits. While in Uganda I will travel either by private vehicle with local friends or by the Gaga bus company who I have travelled with previously.

Other strategies I will use to stay safe while in Sierra Leone will include always observing local protocols, customs and culture, in particular by asking permission to take photos, removing myself as quickly as possible from the vicinity of any accidents or arguments and maintaining a modest level of dress. I will also avoid certain areas, particularly at night; and keep in regular contact with people in Sierra Leone, and at home, regarding my expected movements.
8.7 Appendix 7: Key themes for questions during interviews

Key themes/ideas for questions during interviews

Key Research Questions

4) How are women using and contributing to UPA in Freetown?
5) How do women in Freetown interact with and benefit from the state, FUPAP, support services, NGOs and other associations and collaborations?
6) How can women in Freetown be strengthened in their ability to secure a livelihood for their households through UPA?

Local people/women engaged in urban or peri-urban agriculture
- Demographic information
- Level of education
- Makeup of household
  - Number of members
  - Age of members
  - Head of household
  - Education level of household members
  - Occupation of household members
  - Household income
- Involvement in UPA
  - Type of UPA undertaken
  - Types of crops
  - Types of animals
  - Entrepreneurial benefits
  - Yields / outputs
  - Description of working year
- Contribution of UPA to livelihood
  - Food security
  - Income
  - Employment
- Access to inputs
  - Land tenure
  - Quality water
  - Labour
  - Education/training
  - Services
  - Credit and capital
  - Fertilisers and pesticides
- Experience of government
- Experience of NGOs
- Experience of other service providers
- Changes over time
- General UPA experiences
Government/NGO officials
- Policies in place re. UPA
- Policies in place re. women in UPA
- Interaction with UPA practitioners
- Services available and their uptake
8.8 Appendix 8: Table of key informants and allocated reference numbers

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<th>KI Number</th>
<th>Name /role</th>
<th>Position</th>
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<tr>
<td>001</td>
<td>Dr Kabba Bangura</td>
<td>FBC Lecturer and FUPAAP Representative</td>
</tr>
<tr>
<td>002</td>
<td>Dr Paul Tengbe</td>
<td>FBC Head of Geography Department</td>
</tr>
<tr>
<td>003</td>
<td>Dr Uzebba Kanu</td>
<td>FBC Lecturer</td>
</tr>
<tr>
<td>004</td>
<td>Dr Jinnah Momoh</td>
<td>FBC Lecturer</td>
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<tr>
<td>005</td>
<td>Local taxi driver</td>
<td>Local Taxi Driver</td>
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<tr>
<td>006</td>
<td>Local landlord</td>
<td>Local Landlord and business owner</td>
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<td>007</td>
<td>Mr FI</td>
<td>Extension Services Worker – Urban West</td>
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<td>008</td>
<td>Mrs K</td>
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<tr>
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<td>Farmer – Leister/ Gloucester</td>
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<td>Leader New England Vegetable Growers Association</td>
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<td>029</td>
<td>Mr I</td>
<td>Extension Worker – Western Rural</td>
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<tr>
<td>030</td>
<td>Farmer 18</td>
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<td>Farmer 41</td>
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<tr>
<td>Mrs Pamela Konneh</td>
<td>NGO Desk Officer/FUPAAP Facilitator, Ministry of Agriculture, Forestry and Food Security</td>
<td></td>
</tr>
<tr>
<td>Mr Alphajoh Cham</td>
<td>Urban Planning Project Coordinator, Ministry of Lands, Country Planning and Environment</td>
<td></td>
</tr>
<tr>
<td>Mr A.F. Kai-Banya</td>
<td>Director of Planning, Ministry of Lands, Country Planning and Environment</td>
<td></td>
</tr>
<tr>
<td>Tony Binns</td>
<td>UO Lecturer, Freetown UPA expert</td>
<td></td>
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</tbody>
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