

Intra-household gender relations and urban agriculture: The case of vegetable cultivation in Morogoro Municipality, Tanzania

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Dedication

To my beloved parents, David and Lydia Ng'wang'ondi Mntambo with thanks for their love, prayers and emotional support during the entire PhD process. They showed me that achieving my PhD will be the greatest achievement in their lives.

Abstract

Unemployment, poverty and environmental degradation are among the challenges facing urban Tanzania. Currently, research on urban agriculture (UA) is gaining importance for its potential to reduce poverty, food insecurity and environmental stress. While research in rural areas has shown gender to be a key factor mediating agricultural performance, little is known about the dynamics of gender in UA, how they are sustained, and how UA shapes gender relations. This thesis fills this gap by examining how gardening activities and gender relations mutually shape each other in Morogoro Municipality, Tanzania.

Drawing on both bargaining and the separate spheres model of the household (Sen 1990; Lundberg and Pollak 1993) Schroeder (1996, 1999), and on Ribot and Peluso's (2003) access theory, this study focuses on how the allocation of labour in gardening and domestic activities, decision-making about gardening income, and access to productive resources affect gender relations and gardening itself. The research was conducted for ten months in two open spaces where leafy vegetables were cultivated. Both qualitative and quantitative data collection methods were used.

A significant finding is the centrality of access to other household members for female gardeners to undertake gardening while meeting their gendered domestic responsibilities. Their access to household members for gardening varies with their life cycle, female-headed households, for women whose spouses are non-gardeners, and for women with young children. Secondly, strategies for accessing resources are dynamic, but vary across households according to gardening season, gender, type of resource, amount of capital, and availability of household members for gardening. Finally, different ways for negotiating the utilisation of gardening income were visible, most spouses not pooling their income but cooperating in family investments. Women's bargaining power depends both on their earnings and other sociocultural influences. An analysis of gender relations in UA shows that women's approaches and strategies are shaped by their position, are different from those of men, and need to be considered in urban development planning.

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Abbreviations

BRAC	Bangladesh Rural Advancement Committee
FAO	Food and Agriculture Organization
FGDs	Focus Group Discussions
FINCA	Foundation for International Community Assistance
FOC	Fungafunga Orphanage Centre
HHWG	Households in which both Husband and Wife garden
IGAs	Income-generating Activities
MD	Municipal Director
MRS	Mazimbu Research Site
MAO	Municipal Agricultural Officer
NBS	National Bureau of Statistics
NGOs	Non-governmental Organisation
OHM	Other Household Members
PRIDE	Promotion of Rural Initiative and Development Enterprises Limited
SACCOS	Savings and Credits Cooperative Society
SMEs	Small and Medium Scale Enterprises
SPSS	Statistical Package for Social Science
SSIs	Semi-Structured Interviews
SUA	Sokoine University of Agriculture
TAHA	Tanzania Horticultural Association
TZS	Tanzanian shillings
UA	Urban Agriculture
UEA	University of East Anglia
URT	United Republic of Tanzania
VICOBA	Village Community Bank
WAO	Ward Agricultural Officer

Chapter 1: Introduction

1.1 Justification and rationale

This thesis is motivated by my previous work and research interest in gender in agriculture. Previous research work (Mntambo et al. 2010; Mntambo, 2012) has focused on women; leaving out the interactions of men. Therefore when I was writing my research paper on women in UA there were many unanswered questions about intra-household gender relations in UA. For example, I found out that labour, the utilisation of income and access to resources was the major challenges among women. However, I could not establish how these challenges related to male farmers, and the current study addresses some of the questions arising from my previous studies.

Given the contribution of UA to people's food, employment and livelihoods, its practice has become increasingly important globally. It is indicated that urbanisation, declining household economies and lack of formal employment are some of the factors behind people's participation in UA. Globally, fewer people live in rural than in urban areas: 54 per cent currently live in urban areas (United Nations 2014), and it is estimated that by 2050, 66 per cent of the population will be urban. Africa is also urbanising rapidly, with 56 per cent of the population projected to be urban by 2050. Tanzania is facing urbanisation. For example, from 1967 to 2012 the proportion of people living in urban areas increased from 5.7 per cent to 29 per cent, absorbing 12 million people into urban areas (Wenban-Smith, 2014). In Morogoro Municipality the population increased from 117,760 (1988) to 227,921 (2002) (URT, 2012). The municipality is not free of socio-economic challenges such as poverty, unemployment, lack of basic services, environmental degradation (*ibid*) and food insecurity. For instance, UN HABITAT (2009) states that 65 per cent of the Morogoro municipality population live in unplanned settlements, and have limited and basic social services such as water and insecure tenure. Fewer than 20 per cent of the population have security of tenure (*ibid*). Unemployment is another challenge in Morogoro Municipality, with 67 per cent of the population employed in informal-sector activities, of which 35.3 per cent engage in UA (URT, 2012).

In the 1980s and 1990s, urban people in African countries were affected by Structural Adjustment Policies (SAPs) and declining household income (Rakodi, 2002). Life in urban areas was affected by the retrenchment of people in the formal sector, declining real wages and rising food prices. Tacoli (2012) argues that urban people use cash income as the major means of meeting their basic household needs. In the context of the livelihood approach, people are not passive but rather diversify into different economic activities to survive and improve their living standards (Ellis, 1998). Consequently in urban areas the low formal employment rate forces people to engage in informal-sector activities. In Tanzania, UA falls within the informal sector and comprises unregistered, small-scale and informally organised activities. Not only men's but also women's informal-sector activities have historically been underreported (Flynn, 2001) because they include activities which are not recorded in government economic statistics (Tundui, 2002). As a result, urban farmers rely on indigenous resources, small-scale operations, intensive labour and limited agricultural knowledge (Howorth et al. 2000).

UA is regarded as a survival strategy (Rakodi 1988; Foeken et al. 2004) that subsidises poor people's income (Ngome and Foeken, 2012). However, Mlozi (2004) and Simiyu (2012) note that it is not only a strategy for poor people: different categories of people engage in it. There are various studies on UA livelihoods and resources in Tanzania (Jacobi et al., 2000; Foeken et al., 2004; McLees, 2011). The key issue from the above studies is access to UA resources, although it is useful to look at UA in the context of a livelihood approach, in this study access to resources and assets are gendered. Thus exploring the multiple strategies people use to meet their basic needs, the present study focuses on a specific type of UA, vegetable cultivation, to explore gardeners' specific strategies and experiences in sustaining their household income through gardening activities.

The supply of food from rural areas does not meet the demands of increasing urban populations, and urban food prices and the cost of supplying and distributing food are also increasing (World Bank, 2013). The participation of urban people in informal-sector activities, including UA, is viewed as a coping strategy. For example, FAO (2010) indicates that among 15 developing countries such as Malawi, Ghana and Nigeria, about 70 per cent of urban people engage in UA to provide their food needs, with the majority of urban farmers consuming large quantities of the food they produce

including vegetables, meat and fruits. In this way they include variety in their diets and enhance household members' nutritional status. In Dar es Salaam, Tanzania the population has increased from 2.1 million in 2000 to 3.6 million in 2011, while the area for UA expanded to 650 hectares (FAO, 2012). In Morogoro Municipality, the area under agricultural cultivation increased from 428.9 hectares in 2005/06 to 641.9 hectares in 2009/2010 (URT, 2012). This suggests that urban dwellers are engaging in UA in increasing numbers.

Studies on UA in sub-Saharan Africa (SSA) have documented the economic, food security and nutritional benefits, and environmental effects of UA. For example, in Kampala, Uganda, Maxwell (1994) examined the nutritional importance of UA. He demonstrates that UA is associated with urban dwellers' improved food security and children's nutritional status. Dennery's (1996) study in Kibera, Nairobi, found that food production is important in the households of Kibera. Her participants elaborated that UA reduces their food expenditure, supporting the household economy. These studies show that UA contributes food to the household.

Despite the positive contribution of UA, there is some misinterpretation and lack of clarity about its contribution. Other studies that have examined the role of UA argue that it has detrimental effects on the physical environment (Mlozi, 1999; Foeken et al. 2004; Dongus 2009). These include maize cultivation as a breeding ground for mosquitoes carrying malaria, the increasing incidence of theft through maize cultivation providing hiding places for thieves, and accidents caused by livestock on the roads, among other factors. Dongus (2009) proved the absence of the relationship between UA and malaria disease. However, the negative conception of UA has resulted in many governments and local authorities downplaying its contribution to the urban economy, seeing it as a marginal activity and passing by-laws restricting its practice. As a result, UA is often omitted from consideration in urban development policies. This is consistent with FAO (2012), which states that in Africa urban gardening receives limited government support. It is perceived as a marginal, rural and illegal activity that contradicts urban development processes such as the building of schools, houses and offices, and the use of urban resources, and affects the mainstreaming of UA into municipal and government policy. For example Flynn (2001) notes that policymakers in Mwanza Region, Tanzania claimed that UA contributes to the pollution of Lake

Victoria because farmers use insecticides and fertilisers that drain into the lake. As a result, municipal officials banned crop cultivation, but farmers contested this and continued their activities unsupported by the municipal authorities. Slater (2001) argues that scholars are preoccupied with this negative policy perception and with justifying the economic benefits of UA. This partly explains why the focus of most UA studies has been on its economic contribution and food security. It also explains why UA is framed as an illegal activity on the part of the urban poor and uneducated. McLees (2011: 609) states that framing UA ‘as an activity of distress [...] makes it easier to ignore the practice as a valid activity in the city, an exception to the city rather than a part of the city’. The implication of this is that urban farmers working on their own without government support increases the tension and complexity of access to resources. The lack of policy on UA affects both female and male farmers. For instance, urban farmers receive limited support from the government and are thus exposed to insecure land tenure and limited access to agricultural inputs (Foeken et al. 2004; Halloran and Magid 2013), affecting their ability to increase their agricultural production for food and income.

There are three UA production systems. Home gardening and production in open spaces is carried out within urban areas, while peri-urban cultivation is practiced on town outskirts (Mougeout, 2000). First, home gardening is practiced in houses’ back yards. Jacobi et al. (2000); Foeken et al. (2004); McLees, (2011) elaborate that home garden plots are very small and access to land is linked to house tenure. Women form the majority of home gardeners and their traditional role is to provide food for household consumption. Second, both women and men cultivate vegetables in the open spaces, mainly for cash income and consumption. Jacobi et al. (2000) find that the women are very few in open space cultivation and their production is marginal compared to that of men. However, the current study finds that the number of women farming in open spaces is increasing: for example before 2000 there were fewer than 10 female gardeners at Fungafunga Orphanage Centre (FOC), while currently there are 25. Jacobi et al. (ibid) state that home gardening differs from open space cultivation in that the former is individual- based production while the latter involves different plots owned by different farmers. Land in open spaces is either accessed through institutional areas such as university or in public land such as road or railway reserves, near the river and other unused spaces (Jacobi et al. 2000) and is rented, purchased or borrowed. Third, peri-

urban cultivation has the characteristics of rural farming as it involves large-scale cultivation (Howorth et al., 2001). Jacobi et al. (2000) state that peri-urban production is for commercial purposes and that about 80 per cent of the labour is male. Peri-urban plots are large compared to those in the other locations, and farmers access them through inheritance, purchase or rent.

Most UA studies explore both livestock and crop production together. Some focus on crop cultivation in intra-urban and peri-urban areas (Flynn 2001, Foeken et al. 2004), others on intra-urban livestock and crop production (Foeken et al. 2004; Simiyu 2012). Different types of crop production are grouped as one production system by Dennery (1996) and Foeken et al. (2004) without focusing on specific crops. The present study argues that specific types of crop and location present specific challenges and experiences, and have different strategies and process in accessing resources. Each crop is different in terms of the quantity of agricultural inputs and type of resources (labour, water) required and crop life cycle and seasonality; these factors impact the practice and outcome of UA. This grouping tends to mask and overlook urban farmers' challenges, experiences and strategies in specific production systems and locales and how they shape and sustain agricultural activities and risks, and overlooks the role of gender in UA. This thesis fills the gap, focusing on vegetable cultivation in open spaces at Fungafunga Orphanage Centre (FOC) and Mazimbu Research Site (MRS), within the social-economic and political context of UA.

Given my interest in gender relations in the household and the garden, and in how the two spaces mutually shape each other, I located my study in cultivated open urban spaces for three reasons. First, peri-urban farms areas are located outside the town, requiring the farmer to allocate more time and money to transport, which women in low-income households cannot afford; previous studies have reported that the majority of such farmers are men. Second, home crop cultivation is mainly intended for consumption rather than income, and this study aimed to understand whether income from UA strengthens women's bargaining position in the household. From this angle, focusing on vegetable cultivation in home gardening will miss out economic contribution of UA. Third, my focus on open spaces highlights different aspects of gender relations between men and women, since they garden in the same spaces. I explore their interactions in the garden to highlight how gendered networks and access mechanisms shape bargaining outcomes.

Gender has been addressed in policy papers and poverty reduction strategies with limited attention to the position of urban female farmers in Tanzania. The Women and Gender Development 2000 policy in Tanzania emphasises that women's empowerment requires access to resources such as land and the ability to make decisions on the utilisation of resources, given their significant labour contribution (URT, 2000). Research on gender in agriculture focusing on rural areas, for example Mwaipopo (2000); Lyimo-Macha (2002); FAO (2014) and others, has identified various gender issues in agriculture. Despite women's significant labour contribution to rural agriculture, they face challenges such as limited access to land, which is determined by the patriarchal system; low technology; and husbands making decision about their wives' labour, among others. Despite women in urban areas drawing on UA as a strategy to meet their household needs, little is known about the contribution of their labour in UA, their challenges and experiences, and how their reproductive role affects their participation, all of which this study addresses.

1.1.2. Gender in UA

Women play a significant role in UA (Flynn, 2001; Hovorka, 2005; Hovorka et al. 2009; Ngome and Foeken, 2012; Simiyu, 2012), with many factors motivating them to engage in it and their participation increasing. Freeman (1993) argues that the gender-segregated labour force has pushed women out of formal employment due to social, economic and political inequalities. FAO (2012) indicates that 90 per cent of urban farmers in Bissau and 70 per cent in Brazzaville and Bujumbura are women gardeners. Mubvami et al. (2004) note that in Zimbabwe women are in the majority. More male than female farmers in UA are involved in commercial agricultural activities, with women engaging in UA for home consumption (Flynn, 2001; Hovorka, 2005; McLees, 2011). In other words, the women in UA are involved in small-scale production such as home gardening while the men work in peri-urban market-oriented production such as livestock keeping, floriculture and crop cultivation. This is often linked to the claim that in Africa a woman's traditional role is to ensure the household's food security; however arguing that women in UA are engaging for home consumption underestimates their role in, and contribution to, UA. This study finds that women are increasingly

participating in UA for economic purposes, probably due to economic hardship in urban areas and a single source of income being unable to meet the household's needs.

Hovorka (2006) studied how urban women with low income access housing in Harare, Zimbabwe, and found that UA is a major survival strategy for meeting their short-term needs by cultivating vegetables for household consumption on any unauthorised vacant plot of land or in their gardens, selling the surplus. Their fresh vegetables and chickens protect their children from malnourishment. Hovorka et al. (2009) state that women are traditionally responsible for food provisioning and are therefore motivated to start UA to meet the household's food needs to supplement the household income or to build capital to invest in other income-generating activities (IGAs).

Apart from the monetary gain, women farmers' UA empowers them (Mianda, 1996; Slater 2001). Slater found that women in South Africa described UA as a coping strategy, even when it fails to provide cash income for their household. They felt a sense of self-worth when their families consumed vegetables they had produced. Slater notes that 'women go to their gardens to reassure and reassert themselves, and re-establish their identity as women and their sense of self-worth' (Slater 2001:642). Thus implies UA not only has economic value for women; it also improves their self-esteem. Mianda (1996) studied how women gardeners in Kinshasa, Zaire organise themselves; their husbands and labourers involved in vegetable production and considered the sexual division of labour to explore how the women achieved autonomy in the garden and household. Mianda argues that in Zaire a husband is regarded as the main family provider, and a woman working undermines his financial abilities. Some men forbid their wives to work outside the household. Mianda explains how the women employed various ways of achieving greater autonomy in the household and garden. The sexual division of labour gives women the responsibility for childcare and agricultural production, while men are the main financial providers for the family. However, given the financial stress in Zaire at the time, men could no longer fulfil their provider role. Their financial shortfall opened a window of opportunity for women, who sought their permission to start garden production. The women managed their gardens by controlling the labour of men whom they employed to perform tasks socially perceived as men's work, and they controlled the market sphere from negotiating prices to selling, claiming that men are not good in negotiating prices at the market. Through this, the women

gained autonomy from their husbands, controlling the income from the garden based on their gendered responsibilities of agricultural production and/or retaining part of the money raised without their husbands' awareness.

Mianda's study shows that the women redefined their obligations and manipulated the socio-cultural and economic constraints that had limited their autonomy and exercise of power through garden production. Mianda (1996) and Slater's (2001) research contributes to an understanding of gender in UA, the gendered roles and responsibilities of women farmers in their households and social benefits of UA. Their study contributes to strengthening women's position in negotiating for resources within the household and at the farm level, and women's interactions with other household members regarding UA.

Women struggle and stretch their labour to accomplish both their domestic and gardening tasks. Dennery (1996), Flynn (2001) and Hovorka (2005) argue that women in UA rely on their own labour. Wilbers (2004) finds that UA uses women's ability to combine their multiple productive and reproductive roles; they easily juggle between domestic and farming activities. However, Hovorka et al. (2009) argue that women's multiple roles limit their ability to access distant land for cultivation such as peri-urban land, as they frequently need to switch between domestic and farming activities. Given the informal nature of UA, there is a tendency to overlook how women organise themselves to perform their agricultural and domestic activities, and how they sustain their gardening. They employ different strategies such as drawing on the labour of other women in the household. Hovorka (2005) argues that much of the literature that presents women in UA tends to present them as a homogenous group, without considering their varying experiences and challenges. This calls for deeper analysis of the relationship between gender and UA to open up the different forms of gender relations exercised and negotiated in the use of resources and assets in the garden and household.

The above studies document the role of gender in UA. However, there is a gap regarding understanding the relationship between women involved in UA with other household members; the relationship between women and men engaging in agricultural activities, and how the trade-off between UA and domestic activities affects female

farmers. Moreover, there is tendency to aggregate women in UA as a homogenous group, seeing their experiences and challenges in UA as uniform. In Tanzania much of the attention to UA focuses on its economic, food security and environmental contributions, as discussed below. This study finds that besides the gender differences in UA, women themselves are differently affected. Flynn (2001) highlights some UA gender issues, but focuses only on women, omitting how the interactions between men and women affect women.

By studying gardening activities and how they affect household gender relations, this study contributes to understanding the relationship between UA and urban resources; women's relationship with other household members; and the implications of gender in UA. It provides empirical knowledge and understanding of poverty alleviation policies and gender planning programs that guide and influence the practice of UA to offer a nuanced gender analysis of urban gardening in Morogoro Municipality.

1.2 UA in Tanzania

The practice of UA in Tanzania is similar to that in other countries in SSA. The locations where it is practiced vary in terms of land size and tenure, scale and types of activity, and farmers' mechanisms for accessing resources (Jacobi, 1997). The contribution of UA is noted in terms of income, food provision and employment. Dongus (2001) indicates that UA employs over 4,000 farmers in Dar es Salaam, and Jacobi (1997) points out that farmers in Dar es Salaam who cultivate amaranthus receive an average net income of 58,356 TZS per month. FAO (2012) states that UA benefits both low- and high-income earners and that 30 per cent of urban dwellers in Dar es Salaam generate income from it.

Flynn (2001) points to high food prices and unemployment as some of the factors that have increased engagement in UA over the last thirty years in Tanzania. The decline of urban dwellers' real income is also a factor in the increasing agricultural activity (Foeken et al. 2004). The current study also found other reasons, including the failure of other IGAs, retirement and diversification, as discussed in Chapter 4. Past campaigns and policies have also contributed to the emergence of UA: *Kilimo cha Kufa na Kupona* (Agriculture for Life and Death) in 1974/75; *Mvua za Kwanza ni za Kupandia* (First

Rains are for Planting) in 1974/75, the 1982 National Food Strategy and the 1983 National Agricultural Policy are just a few. These advocated and motivated urban people to cultivate crops and keep livestock to increase their food security. However, currently UA is not favoured by the authorities.

Both men and women engage in UA. Flynn (2001) carried out research among 19 women farmers in Mwanza, Tanzania focusing on kitchen gardens (home gardening) and peri-urban cultivation, and noted the gendered division of labour in UA, with women responsible for food production and the men for cash crops. She notes women use their own labour in home-gardening while male peri-urban farmers hire other male labourers for cultivation. This suggests that women farmers do not have capital to hire labour, and thus informal sources of female labour are important such as members of the extended family, friends and housemaids. Flynn found that time, the health and age of household members and the number of workers in the household affected how a farmer got assistance from other household members. Her study suggests that household composition determines farmers' UA strategies, and highlights that the labour available for UA is limited and involves complex interactions between men and women, so it is possible that UA shapes gender relations within the household. However, her study did not include women farmers' interactions with their spouses and other household members, which may affect the amount of time a farmer can allocate to UA.

Flynn (*ibid*) found that women in UA have limited access to land. As discussed in section 1.1, land tenure for home gardening is linked to the house, suggesting that the women she studied only had use rights to the land since it was their husbands, making the women's ability to claim the land in the future uncertain. Husbands accessed peri-urban land either through purchase or inheritance. Flynn's study focused on home-gardening and peri-urban cultivation and examined both crop and livestock activities. As mentioned, this kind of analysis misses nuanced gender access mechanisms to land and other resources for UA, and specific strategies used by women to sustain UA.

Although McLees (2011) did not focus on gender, he argues that farmers use informal networks to negotiate with landowners about access to land. The relationship between farmers and landowners is not equal, being based on the benefits that the landowner can derive from the farmer. McLees' study highlights the importance of social relations in UA for accessing resources for agricultural production.

The above studies acknowledge the contribution of UA to the household economy and wellbeing and the role of gender in UA. However, the following knowledge gaps are noted: first, how gender shapes women in UA in specific locations, and the sociocultural benefits of UA. Second, attention is mostly paid to land and labour access, overlooking other resources and assets such as water and irrigation pumps, and the different strategies farmers employ with different resources. This thesis seeks to fill these gaps.

1.3. Research questions

This study examines how gardening activities affect gender relations through the utilisation of gardening income and the division of labour. It explores access to gardening resources and assets, and how it affects gardening activities and hence income. The overarching research question is: How does involvement in gardening activities shape gender relations and contribute to women's bargaining power? This question focuses on negotiations about UA within the household and is addressed by the following specific sub-questions:

1. How is domestic and gardening labour allocated? How does this affect gender relations?
2. What factors affect gardeners' access to land, water, irrigation pumps, credit and agricultural inputs? How do these affect gender relations regarding the garden and the household?
3. How are decisions about the generation and use of gardening income made at the household level, and how do these reflect and affect gender relations?

1.4. Key concepts

This study focuses on male and female gardeners who cultivate leafy vegetable in Morogoro Municipality, Tanzania and how their gardening activities affect gender relations, by focusing on how males and females allocate labour to domestic and gardening activities and access resources and assets for vegetable production. It also

analyses the gardens' socio-economic contribution to the lives of the gardeners and examines decision-making regarding the utilisation of gardening income.

Understanding intra-household gender relations is complex, as they are constantly renegotiated. This study incorporates the concepts of gender, gender relations, household and access.

Gender as an identity influences access to resources, the division of labour and entitlement to the benefits of production in both the household and society (Pearson, 1992; Doss, 2013). This study employs the concept of gender to understand social relations and how gender inequality is constructed and maintained between men and women involved in gardening activities; how Tanzanian societies construct gender roles and responsibilities; and how these affect men and women differently in their gardening activities. Gender relations are used to understand the different ways that men and women relate to each other, their coping strategies and how their activity sustains their household income. Within gender relations, power relations are examined in the household and in the garden, since these shape access to resources, decision-making and the position of women.

The concept of the household is used as the unit of analysis because it is the site where interactions between men and women take place on issues such as production, reproduction, and the allocation and distribution of resources. Therefore the allocation of labour and decisions about the utilisation of gardening income are examined through this lens.

The last concept is access. This is used to explore the different ways in which gardeners access resources and assets, and how they acquire benefits from their gardening activities. In the light of the above concerns, the study examines the degree of women's involvement in gardening activities and how they benefit from UA. Gender analysis in UA is becoming an important aspect of understanding the utilisation of urban resources and the role of farmers in feeding city populations. Understanding gender in UA practices is useful to inform policy and local authorities on the effectiveness and sustainability of UA.

1.5. Research setting

This thesis focuses on two wards in Tanzania's Morogoro Municipality, Mazimbu and Kichangani. Kichangani is located within the town of Morogoro Municipality, while Mazimbu is about 5 km from the centre of the municipality. FOC and MRS were selected as the research sites for leafy vegetables cultivation. The sites are geographically different: MRS gardeners abandon their plots during rainy season because floods cover the gardens, the gardeners stopping their cultivation for three months or more depending on the intensity of the rain. On the FOC the site is not normally affected by floods during the rainy season. While MRS gardeners access land through private landlords, FOC gardeners access it through an institution, the Orphanage Centre, and private landlords. In this study, the terms 'gardener' and 'farmer' are used as follows: a gardener is a person cultivating leafy vegetables on intra-urban plots (open-space cultivation) while a farmer is a person in the general practice of agriculture including peri-urban farming, keeping livestock, floriculture, among other things. This study focuses on gardeners.

Access to water via irrigation pumps and access to land are significant dimensions of this study. The former provides insights into the gendered division of labour, while the latter presents the politics of accessing and maintaining land for UA. These contribute to explaining how gardening resources and assets shape intra-household gender relations. This study is informed by gender analysis of rural agriculture, the practice of UA and intra-household relations.

1.6. Thesis structure

Chapter 2 sets out the theoretical background of the study, focusing on the key concepts used: gender, gender relations, the household and access. The chapter uses Sen's (1990) cooperative conflict model and the separate spheres model (Lundberg and Pollak, 1993). Other studies on gender relations in agriculture are also used, especially that of Schroeder (1999, 1996). Ribot and Peluso's (2003) theory of access is used to analyse resource access, and Kabeer (1994) is used for a wider understanding of the concept of access. Chapter 3 presents the study areas, describes the geographical settings of the two

research sites, and discusses the methodological approaches and methods employed in the data collection and analysis.

Chapter 4 explores the nature and intensity of gardening activities, the contribution of the garden to the lives of the gardeners and the policy context of UA. It presents background to gardeners and gardening activities to understand how gardeners maintain their activities. Chapter 5 examines the gendered division of labour to bring an understanding of how it affects male and female gardeners. It examines the allocation of labour between gardening and domestic activities, and demonstrates how gardeners allocate their time to both activities and how this affects gender relations.

Chapter 6 examines how gardeners access crucial resources and assets, focusing on land, water, irrigation pumps, agricultural inputs such as fertilisers and seeds, and credit, and how this access affect their gender relations. Chapter 7 examines the impact of gardening income on the household, assessing how male and female gardeners make decisions over the utilisation of gardening income. Different factors are examined to understand how female and male gardeners' utilise gardening income in the household. Chapter 8 concludes with the major findings, provides contribution to the knowledge of UA, gendered access to UA resources intra-household gender relations, identifies the gaps that the study has filled and suggests areas for further research.

Chapter 2: Gendered access and intra-household relations: Conceptual framework

2.1 Introduction

The previous chapter has outlined the scope and introduced the concepts used in this study. This chapter explores those concepts – gender, gender relations, the household, and access – to establish the conceptual framework of the study. A review of the literature explores the main research question: How does involvement in gardening activities shape gender relations and contribute to women's bargaining power? The research questions developed in Chapter 1 are addressed through the literature to identify the gaps in other scholarly works. This study employs Ribot and Peluso's (2003) theory of access to explore the ways in which gardeners access resources; Sen's cooperative conflict model; the separate spheres bargaining model (Lundberg and Pollak 1993); and work by Schroeder (1996, 1999) to understand intra-household gender relations among male and female gardeners.

The chapter is organised as follows: section 2.2 examines the concepts of gender, gender relations, access and the household. The next section discusses intra-household gender relations from the Tanzanian perspective; section 2.4 discusses bargaining models and gender relations in the household; section 2.5 examines gendered access to resources, and the last section discusses the concepts which I used to understand intra-household relations of gardeners within their household and at the garden.

2.2 Key concepts

2.2.1 Gender

Gender is the social relationship between male and female (Pearson, 1992; Monsen, 2004). It is not determined by sex or biological differences but on social constructions of male and female identity (Monsen, 2004) and is shaped by various circumstances including sociocultural, economic and environmental factors. Reeves and Baden (2000: 30) note that 'the use of the term gender rather than sex signals an awareness of the cultural and geographic specificity of gender identities, roles and relations'. Gender is

culturally specific (Moore, 1988; Okali, 2006). Above all, cultures govern social behaviour, including how men and women interact. Gender also includes men and women's specific roles and responsibilities. The concept of gender helps us to understand how society works, determines how people perform their roles and sets out the gendered expectations among them. Naila Kabeer's social relations approach (1994; 1999) identifies five dimensions of social relations: power, resources, rules, activities, and people.¹ These dimensions produce gender differences through the distribution of resources, responsibilities and power, and are thus used to analyse gender inequality in society. Although this study does not apply Kabeer's framework, it outlines how institutions (household, community, market and state) produce social differences and argues that change in one institution affects the others. In this study I focus only on the household and garden to understand how gender differences in the distribution of resources and responsibilities are created and maintained among gardeners.

Gender as an identity influences access to resources, the division of labour and entitlement to the benefits of production in both the household and society (Pearson, 1992; Doss, 2013). Social norms can enhance or limit an individual's autonomy in the exercise of their agency, specify gender roles, govern behaviour and ascribe power to men and women differently (Agarwal, 1997; Folbre, 1997). Gender is important because it means that men and women are not a homogenous group.

2.2.2 Gender relations

According to Kabeer (1994: 280), 'gender relations refers specifically to those aspects of social relations which create and reproduce systematic differences in the positioning of women and men'. It defines their responsibilities and obligations and governs the division of resources between them (*ibid*). Men and women interact through different daily practices such as the gendered division of labour. However, interactions among men and women are not always symmetrical – they involve cooperation and conflict in the division of resources and responsibilities (Kabeer, 1999). Sen (1990: 147) states that 'conflicts of interest between men and women are unlike other conflicts such as class

¹ According to Kabeer (1994: 281-282), 'power (who decides, whose interest are served), resources (what is used, what is produced), rules (how things get done), activities (what is done) and people (who is in, who is out and who does what)'.

conflicts [...] this aspect of togetherness gives gender conflicts some very special characteristics'. In other words, spouses living together interact and are interdependent in how they do things and make decisions, making understanding their relations complex. In this case not only economic factors but also social aspects such as structures, social relations and social processes are important in understanding women's subordination. Power relations are significant in understanding the processes and structures that create gender differences among gardeners. The following section discusses the meaning and dimensions of power relations and how they affect women's empowerment.

2.2.2.1 Power relations

Gender relations are power relations. The rules that govern the relationship between men and women and how they perform their roles, meet their obligations and responsibilities are constantly contested and renegotiated in daily lives. Connell and Pearse (2015) state that gender relations are always changing through the interaction of men and women in different activities. The exercise of power can enable or hinder a person from doing things or meeting their objectives. In this study, power relations mean not only conflict but also cooperation among men and women. Foucault (1994: 340) argues that 'the exercise of power is not simply a relationship between partners, individual or collective; it is a way in which some act on others'. Power relations are created within society (*ibid*) and exist when power is exercised. Simply, power can be understood as the ability or capacity to do something or act in a particular way (OUP, 2013). This implies that a person's ability to act or do something is determined by the skills or means that influence them to act or do something. Limited knowledge, skills or resources can result in a person having little power compared to others. As an individuals' ability to act or do something is shaped socially, examining power in different dimensions is crucial. Rowlands (1997: 14) states that 'societies ascribe a particular set of abilities to social categories of people'. Foucault (1994) views power as a relationship between individuals, therefore it does not involve fixed game rules: since it involves the relationship between partners, the rules of the game are changeable as each has a chance to negotiate and redefine them.

Rowlands (1997) categorises different dimensions/levels of power to understand empowerment as a process, arguing that power, defined as the zero sum, implies when an individual gain is another person's loss. This kind of power is called 'power over'. When one person has more power, another has less. A person or group with more power can create rules that do not take into consideration less powerful people's or groups' concerns, marginalising them. Lukes (1974) argues that in this view, power is revealed by who prevails in decision-making; that is, the person or group with more power controls the others. This situation can create conflicts of interest. Power over is termed a one-dimensional view of power. In gender analysis, 'power over' is exercised by men over women. However, the interpretation of power along these lines has many implications: if women gain power their male counterparts must lose it (Rowlands, 1997) because in zero-sum one person's gains is another's loss.

Kabeer (1994) argues that even people who are considered powerless can resist and transform their lives, and that inaction or any form of resistance can be seen as a manifestation of power. This suggests that power should be understood as a process rather than a fixed element.

Rowlands (1997) conceptualises power in other forms including 'power to', 'power with' and 'power from within'. She argues that understanding power as a process reveals different human capacities. Similarly, Kabeer (1999) argues that women's empowerment is a process whereby women develop the capacity to make strategic life choices that they were denied. Rowlands' categories of power suggest that power manifests through different arenas: the political, the social, the economic and the cultural. If gender analysis focuses only on one form of power there is a danger of limiting the understanding of empowerment at the grassroots level. First, 'power to' according to Rowland, is power that can manifest through resistance and can create new possibilities and action without dominating the other person. Kabeer (1994) sees 'power to' as the ability of a person to influence the outcome of decision-making against the will of the other person. Luke (1974) states that power can be observed in crucial decisions: power is exercised through control over decision-making, and the person who makes the decision is considered to have more power. This view treats an individual's interests as unitary, ignoring differences, interactions and conflicts of interest.

‘Power with’ indicates a person’s ability to work with others in a group. Working with others is seen as important where solving a problem together makes more sense than doing so individually. This form of power signifies the importance of solidarity and collective action. For example, it is assumed that women can exercise agency and take charge of their own problems in group contexts. ‘Power to’ and ‘power with’ suggest that a person is aware of their own and other people’s interests.

Lastly, ‘power from within’ arises when a person recognises their potential. It is ‘the spiritual strength and uniqueness that resides in each one of us and makes us truly human’ (Rowlands, 1997: 13). It is generated within a person and therefore it is a process which builds capacity to increase or improve their inner strength. Empowerment in this category of power seeks to improve women’s strength and ability to do things they have never imagined doing. Townsend (1999) argues that empowering women must increase their awareness of what they can personally do and the structural mechanisms that hinder their achievement. With power from within, women can transform the structures in society which prevent their development. Achieving this level of empowerment opens up women’s hidden potential, and increases their confidence and ability to participate in development processes.

Kabeer (1999) offers a different way of understanding power, defining it as the ability to make choices in life. She argues that we cannot say that a woman is empowered regardless of the conditions and consequences of the choice she makes. A person has to make a choice from a range of alternatives, and the consequences of the choice are measured in relation to their strategic life choices (*ibid*). That is, empowerment should not only reflect individual change but also transform the social structure that hinders individuals’ empowerment, because structures shape how the individual accesses resources and exercises agency.

The different categories of power discussed above show that understanding gender relations as power relations is important for development programs that seek to empower women. Power relations are used to understand how male and female gardeners access resources and assets for gardening activities, how they make decisions about using gardening income and allocate labour, and to explore women’s bargaining

position. I now turn to the household as one of the institutions in which power relations between men and women are exercised.

2.2.3 The household

In Tanzania, a household refers to ‘a person or group of persons who reside in the same homestead/compound but not necessarily in the same dwelling unit, have the same cooking arrangements, and are answerable to the same household head’ (URT, 2013: xix). Another definition of the household includes a group of people living together and sharing household expenses including the husband, wife and children; and other household members such as relatives, visitors and servants only if they eat together (URT, 2007). Within the above definitions the core elements of the household are production, consumption, residence, and the distribution of what is produced by the members of the household. Thus the household is an institution that involves the interrelationships of individuals who produce and consume resources together (Kabeer, 1994). Through the interactions of household members, important decisions on resource allocation are made. Decisions such as household purchases, children’s education, what to eat, family planning, using medical services, the organisation of labour in agricultural activities, women working outside the home and so on are directly and indirectly related to the welfare of household members. Decisions made within the household can affect not only development programs, but also household production and consumption. Doss (2013) notes that within the agricultural household’s decision-making, factors such as the allocation of labour and adoption of technologies can influence agricultural production. Studies analysing gender at the household level reveal differences in the allocation of resources such as income, food, and education among household members (Mbilinyi 1972; Whitehead 1981). For this case, it is crucial to understand how household members decide to allocate and distribute resources.

2.2.4 Access

Access is related to property, which implies a person’s right to claim the use of things such as resources (Ribot, 1998). In this context a claim is enforced in society either through law or custom, and a right is a fixed concept. Ribot and Peluso’s (2003:153) theory of access states that ‘access is the ability to benefit from things including

material objects, persons, institutions and symbols'. While the first definition of access focuses on the *right* to use resources (Ribot, 1998), the latter shifts the focus from the *right* to the *ability* to benefit from things (Ribot and Peluso, 2003). The term 'ability' is broader than 'right' because the later involves a range of social relations (Ibid). Understanding access as ability provides a useful framework for examining how power relations shape the ways gardeners access resources, and calls for the analysis of different forms of social relations that provide the mechanisms for gardeners to access resources.

2.3. Intra-household gender relations in Tanzania

The discussion of intra-household gender relations in Tanzania accommodates cultural diversity as one of the elements that shapes decision-making (Mwaipopo, 1994; Campbell, 1995; Aelst, 2014). It is argued that a man is the household head, and his decisions do not necessarily favour every member. Factors such as social norms are significant in understanding the behaviour of household members in decision-making (Mwaipopo, 1994; Campbell, 1995). FAO (2014) indicates that social norms influence gender roles in Tanzanian communities and households.

In her PhD thesis on gender, households and climate change in Morogoro, Tanzania, Aelst (2016) examines decision-making between spouses regarding adaptation to climate change and utilisation of agricultural income. She states that the man is the main household decision-maker and is usually considered the main provider, and therefore in her study people see a wife's role as being to support her husband. In her study, while couples demonstrated joint decision-making not every decision was a joint one, with some made separately. Separate decisions happen when couples do not agree and hence do not cooperate. Aelst indicates that non-cooperative behaviour is influenced by a couple's different preferences regarding agricultural production. For example, when they do not agree on which crop to plant, the wife or husband plants their own choice of crop on a different plot. This suggests that although it is socially accepted that men are the decision-makers, some wives are not passive. Aelst argues that cooperative and non-cooperative household behaviour co-exist in Tanzanian households (see also Campbell 1995; Leavens and Anderson 2011; Vyas et al. 2015). Vyas et al. (2015) state that in households with cooperative couples, the spouses maintain separate incomes and are aware of each other's income, while non-cooperative spouses keep their income

completely separate. URT (2016) states that 36 percent of the married women interviewed for a demographic and health survey in Tanzania made decisions about their income, 55 percent jointly with their husband, and fewer than 10 percent let the husband make the decisions about their income.

Vyas et al. also found that women keep their income separate and contribute part of it to the household. Lundberg and Pollak (1993) argue that predefined gender roles and responsibilities create room for each spouse to make decisions. This is consistent with Vyas et al. (2015), who found that the husband was the main decision-maker while women made decisions about matters revolving around their role, such as small household expenditures. Women's earnings increased their confidence and satisfaction; however the norm that the husband makes the decisions constrained their decision-making power (*ibid*). Vyas et al. (*ibid*) state that women accept a subordinate position despite contributing money to the household, feeling that if they ask for a greater share in the decision-making because of their earnings this could create conflict with their husbands, who would see them as 'money arrogant' and disrespectful. Thus a woman's ability to make choices is influenced by the gender norms that subject her to a subordinate position.

Aelst (2016) notes other sociocultural household characteristics, and finds that some spouses who regarded the household as a place of unity and harmony feel it is important to keep the household peace. Aelst reports couples using different strategies to deal with intra-household conflict due to their different interests and preferences. She cites a case of a couple who could not agree on what crops to cultivate and decided to plant each crop separately to test their ideas. In this way they maintain peace and harmony in the house. This shows that different factors enhance women's intra-household bargaining power.

In another study in Tanzania, Aelst (2014) argues that Tanzania has specific traditional roles, with women supposed to feed their family and men to provide for the family economically. This argument is similar to those of Mbilinyi (1972) and Vyas et al. (2015). For example, Mbilinyi (1972) states that a wife has to bear children to continue the lineage, and feed the family. These gendered roles are reflected in the way decisions are made in the household. Aelst (2014) argues that traditional roles do not enhance

women's bargaining power, since their roles and responsibilities are predefined. Aelst (2014, 2016) and Campbell (1995) suggest that the influence of social norms is overlooked in bargaining models and thus household level analysis is insufficient or at least limited. Although not in Tanzania, their argument follows Agarwal (1997), who identified social norms as influential in decision-making processes. She points out that social norms can limit an individual's bargaining power and what can be bargained for, and particularly how the bargaining is done. Agarwal argues that social norms dictate the gendered division of labour within and outside the household, as well as decisions on whether women should work outside the household. These limits to bargaining power may favour one person's bargaining power over that of the other(s). For example, Englert (2008), in her study of land rights and gendered discourses in the Uluguru mountains of Morogoro, argues that intra-household decisions conform to the norm that the man is the main decision-maker. Men have more voice in terms of making decisions and the final say in the family. One of her respondents defined a father/husband as 'the president of the house' (Englert 2008: 89): most of the decisions must be approved by him.

The Tanzanian studies presented in section 2.3 suggest that socially, men are considered the main decision-makers, but some cases show that women are negotiating around this. Thus it assumes that household members have the same preferences and interests. However, Bryceson (1995) argues that aggregating the preferences and interests of men and women diverts the focus from their differences and overlooks the power relations between them. In addition, gendered norms about roles and responsibilities shape the way decisions are made and how couples allocate resources such as income and labour (Mbillyi, 1992; Bryceson, 1995; Campbell, 1995; Agarwal, 1997; Englert, 2008; Vyas et al., 2015; Aelst, 2016). Although social norms are not fixed but are negotiated and contested, this study assumes that the sociocultural factors discussed above are also important in intra-household bargaining in Tanzania.

2.3.1. Women's exercise of agency

Understanding the different ways in which women exercise agency is a step towards identifying their strategies for fulfilling their preferences and needs. Kabeer (1999: 438) defines agency as 'the ability to define one's goals and act upon them'. It is the

motivation which pushes an individual to perform an action to fulfil her goal, and this is related to power from within. Kabeer argues that agency is displayed in decision-making, as also are other attributes such as manipulation, negotiation and deception and so the exercise of agency can be implicit or explicit. Long (1992: 22) states that agency ‘attributes to the individual actor the capacity to process social experience and to devise ways of coping with life, even under the most extreme forms of coercion’. Agency should create a change from a previous situation or event. This is achievable through different economically, socially and culturally constituted capacities. Long (1992) states that people are not passive but rather active actors shaping their daily lives. The following studies explore women’s exercise of agency within marriage to meet their goals.

Smith (2015) researched Maasai women’s market activities in Northern Tanzania, focusing on their contribution to the household economy through livelihood diversification. She found the Maasai community predominantly patriarchal, with older men having more power than women and young men. Women have no power to influence the economic and political spheres and have limited access to profitable resources; for example they do not own livestock, but can negotiate access to them through marriage, as, once married they are given their own milk cow. They are entitled to sell milk but cannot sell the cow without their husband’s approval. Consequently, in Maasai society men diversify their economic activities more. However, a decline in household income left Maasai men’s diversification insufficient to sustain their households financially, and the women took advantage of their increasing impoverishment by engaging more with IGAs within and outside their community. Since Maasai women’s roles are primarily as mothers and milk-sellers, their increasing participation in IGAs has shaped the dominant gender norms to their advantage. Doing IGAs outside their household has caused Maasai women to challenge men’s authority and their gendered roles, but it came with a social price. For example, women travelling far from home cannot be monitored by their husbands and are perceived as prostitutes. Their marketing activities require them to travel to the Mererani Tanzanite mines to sell milk, beadwork, and tea, among other things. Although their IGAs were challenged, the women’s marketing activities have increased their freedom to work outside the household: they can contribute to the household and have achieved a degree of independence. Even within the extreme coercion of patriarchy, these women were not

passive but shaped predefined norms which required them to only take care of the milk cows and be mothers.

Bryceson et al's (2013) study of styles of conjugal relations in a Tanzanian artisanal gold-mining community states that historically, girls have been expected to be married soon after puberty, and they could not choose the man they want to marry. Once married, a woman is expected to take care of her husband and bear children. Divorce is not favoured, as bride wealth must then be refunded, so women prefer to remain married. Bryceson et al. argue that in contexts of economic vulnerability in gold mining, marriage is consciously seen by women as an economic partnership with their partner bringing such benefits as food, money and cloth. They consider this important in their decision to form a marriage. Moreover, girls find a partner with whom to live who can meet their needs and expectations: material security and physical protection. When the mining season is poor, male miners depend on their partners for economic support. As Bryceson et al. argue, although historically women have not had freedom, for example to choose a partner, women in gold mining have used declining household income as an opportunity to ensure that they benefit in a marriage. In this case, income exchange among couples and other social aspects such as male protection are important, and economic gain is a more important aspect of a woman's decision to form a marriage with a man than childbearing. Basically, this enhances her bargaining power.

Lowassa et al's (2012) study of the role of women in hunting bush-meat in Tanzania and Ethiopia is similarly insightful. She found that although women were not directly involved in hunting, they had a back-stage influence, as in Kabeer's (1999) point on empowerment, to make sure that men continue with the hunting. Women showed a preference for male hunters over non-hunters. In this way men are indirectly pushed to continue hunting to maintain their status as good husbands and to attract women. It is a husband's role to provide meat for his family, while a wife prepares food. Bush meat provides the family with both food and income, given the few alternative economic activities, and women heavily rely on this to fulfil their food-providing role in the household. Women use this norm to encourage men's hunting through verbal and non-verbal behaviour. If a man does not fulfil this obligation he may face his wife's insults or betrayal. The authors argue that although hunting bush-meat is illegal, the women had powerful and effective means of making their husbands continue hunting. The

women are not passive agents and can renegotiate their marital obligations in their favour. This throws light on women's agency in rural Tanzania and is important in understanding how women in the context of UA fulfil their goals and gendered obligations.

2.4. Bargaining models and gender relations in the household

2.4.1. Household models

The literature on the household focuses on how couples make decisions about the allocation and distribution of household resources. Various approaches have been developed to understand how household members make such decisions, including the unitary and collective models.

Becker (1974) developed the unitary model, which assumes that decisions made by the household head are of comparative advantage to other members of the household. Thus the household head is altruistic towards other members. The model assumes that household members have the same preferences, and decisions made by the head are favourable to each one (Haddad et al. 1997; Quisumbing and Maluccio, 2000). In this model, members of the household pool their household resources, including income, and the household head has autonomous control over these, governing decisions on how resources are allocated and distributed among the household members. However, by focusing on the economic contribution, other elements of the household such as reproductive activities, which are important to the maintenance of the household, are ignored. This model does not focus on household members as individuals.

Feminist scholars emphasise that men and women have different preferences and needs (Whitehead, 1981; Agarwal, 1997). It is difficult to aggregate household members' preferences, as stipulated in the unitary model. The model also ignores gender, as Sen (1990) notes that women and men may have different fall-back positions in the household. Thus this model does not guarantee that all the interests of all the household members are fulfilled. In some societies, sociological and anthropological studies such as Mbilinyi (1972) and Whitehead (1981) have revealed that women and men do not receive equal shares of resources. For example, a man with a bigger share of resources

than a woman or male child can get privileges for himself in education and health compared to a female child. Consequently the unitary model ignores power relations among household members, which can lead to unequal allocation and distribution of resources.

The collective model was developed as an alternative to the unitary model and considers the household as a group of individuals with their own preferences, and the ability to make collective decisions. In other words, the collective approach includes cooperative bargaining. The collective approach is subdivided into cooperative and non-cooperative approaches. The former assumes that household members pool their resources and have different preferences (Manser and Brown 1980; Doss 1996; Quisumbing and Maluccio 2000). In these models their fall-back position determines each household member's bargaining power and influences the bargaining outcome. The fall-back position depends on factors within and beyond the household. Folbre (1997) calls factors beyond the household extra-household parameters. For example, social norms that restrict women's ownership of land or work outside their household affect both their ability to survive outside the household as well as their bargaining power within it. Although this model is collective and emphasises cooperation, it does not mean that all members of the household share resources equally.

The non-cooperative model indicates no pooling of household resources and considers differences in individual preferences (Haddad et al., 1997). It assumes that household members are not aware of other members' income. Its advantage, Doss (1996) argues, is that it provides a person with the chance to make decisions based on their own labour and access to resources. Non-cooperative model considers material factors most important influence in bargaining power. The following section explores Sen's cooperative conflict model, which engages with the idea of both actual and perceived contributions in intra-household relations.

2.4.1.1. Sen's cooperative conflict model

Amartya Sen's model of household bargaining (Sen 1990) does not rule out the possibility of altruism, and recognises that there are inequalities among men and women which have implications for how resources are distributed among household members.

Sen's model considers different forms of cooperation and conflict as well as the probable effects on the well-being of the men and women in the household. It includes not only economic factors but also gender ideology in intra-household relations.

The model has three directional features: the breakdown well-being response or fall-back position; the perceived interest response; and the perceived contribution response. The fall-back position is the outcome of two individuals failing to cooperate, and applies when one person is going to end up in a worse position than previously. It weakens their influence over the bargaining outcome. In the perceived interest response Sen (1990: 136) argues that 'the self-interest perception of one of the persons were to attach less value to his or her own well-being' is influential to bargaining outcomes. The last feature is called 'perceived contribution': a household member who is perceived to make the largest contribution has more power to influence the bargaining outcome. In other words, a person who is perceived to contribute little can be in a weaker bargaining position. A person with a strong breakdown position making a large contribution to the household and attaching high value to their own well-being, has a strong influence over the bargaining outcome. 'The breakdown position indicates the person vulnerability or strength in the 'bargaining' (ibid: 135). Sen (1990) views these features as important to understanding household members' decision-making positions.

Sen (1990: 144) argues that 'outside earnings can give the woman [...] a better breakdown position, possibly clearer perception of her individuality and well-being, and a higher perceived contribution to the family's economic position'. This implies that when a woman's economic power increases, so does her bargaining position within the household. However, the model overestimates economic contribution as the single source of bargaining power (Jackson, 2007). Similarly, Agarwal (1997) argues that while a woman may contribute more than a man to the household, her contribution may be undervalued because of her gender.

At the beginning of my study I adopted Sen's model with the assumption that a female gardener's ability to contribute income to the household budget enhances her bargaining position. However, after ten months' fieldwork, conducting interviews and informal chats with both male and female gardeners, I realised that although economic contributions are important, sociocultural influences such as a husband's ill-health,

family remittances, children from a previous marriage and experience from a previous marriage are equally important to the bargaining outcome. I found many couples who kept their incomes separate while sharing household responsibilities, and such understandings are not necessarily influenced by economic power. Jackson (2007:109) states that 'households embody both separate and shared well-being interests, their members both conflict and cooperate, and these intersections are absolutely critical to the workings of gender'. I found that there were points on which especially spouses cooperated over family investments and gardening activities. Moreover, in certain areas spouses were aware of how their partners spent their income and their separate expenditure was legitimate. They negotiated on the bigger issues, while personal expenditure and/or issues related to traditional gender roles were already understood and therefore kept separate from the negotiations. Lundberg and Pollak's (1993) separate spheres bargaining model also fits male and female gardeners' behaviour regarding intra-household allocation and the distribution of resources within it, and therefore is useful to this study.

2.4.1.2. The separate spheres model

Lundberg and Pollak (1993: 994) note 'when husband and wife each bear the responsibility for a distinct, gender-specific set of household activities, minimal coordination is required because each spouse makes decisions within his or her own sphere, optimising subject to the constraint of individual resources'. This suggests that some resources and activities are shared, while others are kept separate. In Tanzania, Caplan (1995: 119) argues, 'the household is a complex unit in which both women and men hold their property separately, although they usually cooperate in the sphere of production'. This shows that couples share activities while the distribution of goods is kept separate.

The separate sphere model considers that society prescribes the spouses' responsibilities, assuming that cooperation exists on household goods that are consumed by both members of a couple. The husband and wife decide on the level of the goods that they contribute to the household, and these decisions are not determined by how much is contributed by each spouse. This is consistent with the present study, where although couples do not pool resources such as income, they share their input into

family investments such as paying school fees or building a house. There is a marked division of tasks in the household, with the woman primarily taking care of the domestic side. In this regard, a female gardener tends to allocate her income first to issues related to her domestic role, such as buying kitchen utensils.

The model focused on analysing the distributional effects of child allowance schemes, showing that whether payments go to the father, the mother or both has different distribution implications. Although child allowance schemes are uncommon in most African countries, their recognition of traditional gender roles and expectations in the bargaining process is crucial because in most African countries traditional gender roles influence how resources are distributed within the household, although this is not to say that traditional gender roles are fixed. The study adopts the separate spheres model (Lundberg and Pollak 1993) in the context of traditional roles and responsibilities as one of the influential aspects in bargaining because men and women are fully aware of their expected roles and responsibilities in society and this partly influences the ways in which they negotiate and utilise their resources.

Kabeer (1999) argues that not all decisions made by women are empowering, since some have less consequences for women's lives. In this case, a woman acting within her predefined sphere, as stated by Lundberg and Pollak, does not necessarily have the power to make decisions about her strategic life choices. These decisions are made in relation to her gender roles and expectations in the household, and therefore she may not gain bargaining power. Kabeer (1999) calls these decisions second-order choices. This suggests that a woman's bargaining power is multidimensional, and it calls for understanding beyond her gendered roles and responsibilities. Kabeer also argues that sometimes women can opt for private forms of empowerment in which they retain their image in society by acknowledging their husband as the decision-maker while acting as a backstage influence in decision-making processes. At this point, other scholarly works on gender relations are important to understanding gender dynamics within the household.

2.4.1.3. The gendered politics of labour negotiations in agriculture: The case of Gambia

Alongside the above discussion, the work of Richard Schroeder (1996; 1999) is important here because it explores the dynamics of gender relations in understanding the organisation and efficient use of productive resources within the household and the wider social context. Furthermore, social relations are key to women making better homes and succeeding in their garden; in Schroeder's case studies women relied on household members, particularly other females, to organise their labour. Women working outside the household are still expected to meet their domestic obligations, as Mbilinyi (1972) and Mwaipopo (2000) in Tanzania also report.

Schroeder's work focused on garden and household labour allocation and the domestic budget to investigate the impact of the boom in gardening on the household. He examined women's routines for garden and domestic activities, their budgetary responsibilities and their utilisation of garden income. Females' engagement in gardening activities increased their income while challenging their household's organisation of labour and marital obligations (Schroeder, 1996), ultimately increasing marital conflict over income utilisation and time allocated for garden work. For example irrigation, which can take up to six hours a day, keeps women from the household compound and they find themselves defaulting on their domestic responsibilities to continue earning income from their gardens. Men felt that their women were neglecting marital responsibilities such as bringing their husbands water to bathe, marking them as 'bad wives' for leaving them to take care of themselves. This caused resentment and tension within the household, since the men felt they had lost their authority over their wives. This builds on the conjugal roles and expectations of husband and wife within the marriage whereby the husband and wife are supposed to fulfil specific gendered obligations and failure to do this is considered neglecting their marital obligations. Whitehead (1981) argues that in the sexual division of labour, the conjugal contract includes an exchange of labour in production as well as exchanges in which personal and collective consumption needs, including the feeding and maintenance of children, are met. This shows how predetermined gender roles and responsibilities among couples (Agarwal, 1997) affect a woman's entry into the labour market. As Schroeder demonstrates, women use bargaining strategies such as giving their husband gifts to

promote harmony and change their perception of them as ‘bad wives’; in this case, as Sen (1990) points out, the role of perception influences intra-household bargaining. However, women’s domestic budget and financial needs, which were supposed to be provided by their husbands, were left in their own hands. The men also redefined their own conjugal obligations as household provider. Schroeder’s work demonstrates complexities in gender relations which involve the (re)negotiation and contestation of gendered roles and obligations and shows that gender relations are power relations. His work displays the roles and responsibilities of the wife and control of household income and expenditures. Such a gendered lens is used in this study to understand intra-household gender relations among gardeners (see Chapters 5 and 7). Schroeder sees women’s agency as a process shaped by not only economic but also sociocultural factors, suggesting that working outside the household does not free them from their gendered household responsibilities.

2.4.2. The gendered division of labour

Agarwal (1997) argues that gender relations are partly displayed in the division of labour; Edholm et al. (1977) state that the sexual division of labour assigns different tasks to men and women. Conjugal relations of exchange and the distribution of resources are important to understanding the division of labour. Whitehead (1981) argues that the division of labour is not simply the allocation of tasks: it calls for a different system that allocates labour to activities, and defines how the products of labour are distributed. This creates a system whereby husband and wife exchange and produce goods and services. Moore (1988) argues that the division of labour is primarily predetermined by societal gender ideology and norms and thus men’s and women’s roles and responsibilities are socially constructed. Mackintosh (1981:3) states that different societies have ‘some tasks which are allocated predominantly or exclusively to women, others to men, while some may be done by both men and women’, although these divisions are not rigid because factors such as economic change shape their nature and allocation. Understanding the gendered division of labour is crucial, as feminists view it as one of the angles in which female subordination is rooted (Mackintosh, 1981). Moreover, the gendered division of labour influences how household resources are allocated (Whitehead, 1981; Burfisher and Horeinstein, 1983).

In this study, I analyse the gendered division of labour to understand how it is created and maintained among gardeners, as well as the relationships of men and women gardeners in sustaining gardening activities.² Labour is one of the important resources for agricultural production; others include land and capital. I draw on Burfisher and Horenstein's (1983) study of agricultural production in Nigerian TIV farm households. Burfisher and Horenstein document how the different agricultural tasks of male and female TIV farmers complemented each other and were shaped by gender relations, focusing on sex roles and how the gendered division of labour is created and maintained and demonstrating that gender-specific roles and responsibilities are among the factors hindering agricultural productivity. The 'harvesting of rice, millet and sorghum is done jointly by women and men, with men cutting the stalks, women cutting off and bundling the heads of grains, and men transporting the bundles to the compound' (*ibid*: 13). Weeding is for women, while preparing ridges is for men: however, while their tasks are defined by gender norms there is also an interdependency of men and women within these tasks. Burfisher and Horenstein state that the different gender-specific roles and responsibilities affect not only the allocation of household resources such as labour but also the ability to adopt agricultural technologies and the allocation of labour during peak farming seasons, when different tasks such as planting, ridging and weeding are performed all together. Labour availability determines the size of plot a farmer can cultivate, which in turn is shaped by women and men's labour roles, with women involved in home consumption and men in cash crop cultivation, giving them different interests in and preferences for fulfilling their gendered obligations. This affects their contribution of labour to each other's agricultural activities. In other words, the expectations of their gendered roles and responsibilities influence their contribution of labour towards certain crops, in turn creating separate spheres in which men and women make decisions (see also Lundberg and Pollak 1993). Although Burfisher and Horenstein focus on rural agriculture, their analysis contributes the important argument that gender norms in UA create a division of labour according to gender roles and responsibilities which shapes the way goods and services are exchanged and produced in the household and affects the distribution of goods within the household (see also Mbilinyi, 1972; Caplan, 1995; Mwaipopo, 1995; FAO, 2014).

² Chapter 5 focuses on the gender division of labour

The debate on gender relations in Tanzania's agricultural activity focuses mainly on rural areas, with limited attention to urban areas. Bryceson (1995: 47) argues that 'Tanzania has a wide array of different agricultural systems which display an equally wide array of different blends of the sexual division of labour'. It is noted that Tanzania has different ethnic groups, each following its unique division of labour. Bryceson argues that given the prevailing hand-hoe cultivation, male control of female labour is important to maintaining male power and authority. This is similar to Yngstrom (2002)'s point that men access women's labour through marriage. In most cases bride wealth gives a man power over his wife's labour. Bryceson (1995) states that labour in rural production is becoming scarce, fuelling household negotiations over its allocation.

SIDA (1999) states that men and women in Tanzania accept that domestic tasks are performed by women and children; in this case the gendered division of labour is rigid. Domestic tasks take much of women and girls' time. Women in rural areas can spend from 6 to 30 hours in search of firewood, their domestic responsibilities interfering with economic activities. Urban women who engage in small-scale business face the stress of juggling their economic and reproductive activities (*ibid*).

Leavens and Anderson (2011) argue that crop specialization is not common in Tanzania as men and women cultivate crops depending on their profitability, with men growing the most profitable ones. Men tend to shift to crops traditionally cultivated by women once they become profitable: maize is traditionally a women's crop, but with the introduction of plough technology men are increasingly engaging in its production. Lyimo-Macha and Mdoe (2002) state that men control cash crops while women grow food crops.

Although the ongoing debate is rural-based, it provides a lens through which to examine the gendered division of labour in UA and how it shapes the distribution of resources in urban households, where similar negotiations between reproductive and productive labour also take place.

2.5. Gendered access to resources

The previous sections have focused on household gender relations, particularly in decision-making. The following section considers the garden. The key concept is access, which is used to explore the dynamics of male and female gardeners in accessing resources and assets for gardening activities.

2.5.1. Security of land tenure

This section explores the concept of tenure security. As explained in Chapter 1, informal means of access to resources and assets prevail in UA. It also focuses on land as one of the key resources in UA; as most research on women's access to land is focused on rural areas. In addition, UA is an informal activity and therefore in most cases, the cultivation of open spaces is considered illegal by the urban authorities (section 1.1). For a wider understanding of urban farmers' legal position, this section examines tenure security, particularly regarding land.

Urbanization is one of the challenges facing Tanzania, and Morogoro Municipality is no exception (see Chapter 1). In this context, tenure security regarding property (housing) and other resources such as land is becoming one of the challenges facing urban dwellers, given the increasing demand for these as the population increases. Peters (2004: 291) states that 'increasing population, heavy immigration [...] combined with the increased focus on cultivation and expansion of the cultivated area, has eventually led to pressure on arable land'. Rakodi (2014: 28) states that 'in most urban areas, claims to land are complex, land is potentially valuable and there are multiple competing interests'.

UN-HABITAT (2011) states that tenure security is the level of self-assurance a person has because of the rights over the land that they occupy. This kind of security is associated with the right to use and enjoy the benefits of the land, guaranteeing against any form of eviction (UN-HABITAT, 2004; 2011). A person's rights over the use of land are recognized by others, and has legitimacy over land use. A person with land rights is protected from forced eviction and can transfer the land to others (*ibid*). Tenure security is also linked to ownership. Rakodi (2014: 10) considers ownership a 'bundle of

property rights [...] associated with 'title', which provides for the ownership to be both long term'. This means ownership are formal rights over land use, and there are various benefits over secure land tenure, such as the land-users ability to invest in the land and access credit.

Formal and informal land rights can co-exist (FAO, 2002). Formal land rights are acknowledged by the state and can be protected, while there is no official recognition of informal rights (*ibid*). FAO (2002) and UN-HABITAT (2011) argue that land tenure is the relationship between people and land, whether legally or customarily defined. It is regarded as the social relations which comprise rules and regulations about land use, control and transfer of rights to others (*ibid*). The rules defining who has the right to access land reflect the balance or imbalance of power among people (FAO, 2002; UN-HABITAT 2011). Thus land tenure comprises various dimensions including social, economic, legal and political aspects, and examining access to land only from a legal perspective misses out other important factors such as social relationships, which are important in gendered land relations.

FAO (2002) and UN-HABITAT (2004) noted that land security is a matter of perception and cannot be measured directly. It is a relative concept which involves people's perceptions as well as their legal rights (Payne, et al. 2009), because indicators of security of tenure are not fixed from one context to another. For example where a person may have the right to use land for a certain period and legal protection against eviction, land tenure is secured. However, time limitations in land use may cause a person to be tenure-insecure regarding long-term investment on the same land. Urban farmers, as pointed out in Chapter 1, face the challenges of insecure land tenure (Foeken et al. 2004; Halloran and Magid 2013). They lack formal rights over the use, control or transfer of land, affecting their choice of crop type for cultivation: for example gardeners opt for short-cycle vegetables. At the same time, they fear eviction from their land. In this case, UN-HABITAT (2011) states that the level of land security of farmers with informal tenure arrangements can be weak, and their protection against eviction is low.³ The landlords of the gardeners in this study have land rights, while the gardeners,

³ Informal tenure means 'tenure arrangements where the level of security of tenure that they provide depends on various local circumstances' (UN-HABITAT, 2011: x).

their tenants, are land-insecure and depend on their mercy to continue their cultivation.

Given the complexities of land tenure security, the ongoing debate focuses on different tenure security arrangements because the most of low-income urban dwellers do not have legal rights or land use contracts (UN-HABITAT, 2011). FAO (2010) reports that access to the land of people with legal rights is shaped by complex social and legal frameworks with gendered implications. Similarly, Rakodi (2014: 6) notes that 'legal and institutional frameworks and social relationships, especially within the family' are some of the factors which shape women's land tenure security. Social relations are important in understanding tenure security, as they provide important means of negotiating for resources (Berry, 1993). Furthermore, people want greater land security since it has become a property, in other words individualist (*ibid*). This means that some people are included and others excluded from the land tenure system.

Moore (1986), Berry (1993), and Odgaard (2002) examined land rights from the perspective of social relationships and argue that they are not only a matter of rules and laws but also involve interactions among people. Access to and control of land is influenced by different social relationships such as marriage relations and family, as well as relations at different levels of society (Moore, 1986; Berry, 1993). Odgaard (2002) argues that since legal pluralism prevails in Tanzania, analyzing land rights via the lens of social relationships is crucial. As noted by Whitehead and Tsikata (2003), men and women do not have the same claims to land due to their different positions within the family or society.

2.5.1.1. Tanzanian land tenure security

Shivji (1998) states that majority of women in Tanzania have access to rather than control and ownership of land.⁴ They only have rights to access land and use it, but they cannot transfer these rights to others because they are shaped by their positionality as wives, mothers and daughters. Tsikata (2003) argues that both legal and customary laws oversee the land tenure system in Tanzania, but there is no clear distinction between the

⁴ The issues of gender in land matters was recognized by the presidential commission of inquiry into land matters assigned to Issa Shivji. The committee made recommendations which part were included in 1999 Land Tenure Reform

two as both may coexist within the same land tenure arrangement. Ikdahl (2008: 41) notes that 'the 1999 land tenure reform in Tanzania includes the elements of recognition and registration of existing land use and rights, facilitation of a market for land rights, and efforts to ensure non-discrimination and protection of women's use'. Women are assumed to use any available land however they access land as daughters, wives and mothers. Odgaard's (2002) study in Iringa District in Southwest Tanzania illustrates the dynamic interplay between customary and official law regarding land rights. Odgaard's study indicates that men have different perceptions of women's land rights. Fathers perceive that their daughters have the right to inherit land, although not as much land as their sons. Sons are supposed to take care of their parents, but fathers feel that daughters take care of older parents more than sons. Odgaard found that some of the fathers had given a portion of land to their daughters. On the other hand, brothers do not consider that their sisters have a right to family land as they will marry and use their husband's land. They feel that their divorced or widowed sisters can only use the family land without owning it and thus it cannot be transferred to their daughters. Odgaard's study points out the complexity of women's control and ownership of land, which is based not only on the law but also on cultural interpretation of their ownership of land as legitimate or not. Odgaard argues that the manipulation and reinterpretation of customary rules is normally based on males' views.

Odgaard (2002: 71) points out that 'all social groups living in the area participate in land negotiation processes, and their access to property is determined by active participation in these processes'. Land rights are obtained through negotiation between different social groups. However, people have different social positions and thus do not have equal power or the opportunity to get what they want from negotiations. Success in negotiations is determined by various factors such as the nature of the relationship between the negotiators and their bargaining power (*ibid*). Peters (2004) argues that negotiations are an important aspect of social relationship over land and therefore it is important to understand who are the losers and who the winners in the negotiations, since the process itself does not provide equal opportunities for both parties. In other words, it is important to understand the different types of political and social, etc., land relations in which land negotiations are situated.

Jackson (2003: 456) states that 'land is worked by women under different social relations – as labourers, as own-account household labour and as farm managers'. Moreover, 'land of differing values, location [...] as well as land with differing tenure and production relations – owned jointly or individually, inherited, purchased, rented, borrowed or share-cropped – will have distinctive kinds of social relations, norms and discourses that pattern their use' (ibid: 462-463). This implies that land relations are social relations, and these are important in understanding how land is gendered. Turning this argument to UA, Chapter 1 noted that land tenure in home gardening is linked to the house, while purchase and inheritance govern land relations in peri-urban cultivation (Flynn, 2001). This study finds that male and female gardeners do not have land tenure security. Their land tenure is in the hands of their landlords, who have the legal rights over the land,⁵ with the majority of the gardeners tenants.⁶ Therefore their social connections and ability to pay their plot rent mediate their relations regarding land. Here, informal tenure arrangements matter to the gardeners. Given the urban farmer's insecure land tenure, examining the different ways in which land is accessed is important to determine the degree of informal land tenure security among gardeners. Although understanding land access for gardeners through the lens of land rights is important, I look at tenure security via Ribot and Peluso's theory of access to understand the gardeners' ability and the different ways they access land. In this theory, their 'bundle of power' mediates their access to resources rather than a 'bundle of rights'. The former encompasses negotiations within social relationships to access resources, while the later provides legal means which gardeners do not have.

2.5.2. Theory of access

As Section 2.2.4 has highlighted, the key element in Ribot and Peluso's (2003) theory of access is ability, rather than rights. Their theory explains the structural and relational mechanisms that shape access to resources. In this study I use capital, technology, knowledge, and access via negotiation of other social relations (see Chapter 6) to

⁵ Rakodi (2014: 9) states that, 'a property right also typically conveys the right to contract with other parties by renting, pledging or mortgaging a good or asset, or by allowing other parties to use it'.

⁶ UN-HABITAT, (2011: xi) defines lease as 'the contractual agreement between a landlord and a tenant for the tenancy of land'. Contracts may be formal or informal for the temporary use of land.

examine the factors that hinder gardeners' ability to access resources and assets such as land, water, irrigation pumps, capital and agricultural information. Berry (1989), Kabeer (1999) and Ribot and Peluso (ibid), agree that the mechanism of access is in the form of social relations. Understanding the dynamics via which people access resources, as distinguished from property, is important. Kabeer (1999) argues that resources include not only materials but also human and social resources which can be used to increase a person's ability to exercise power and make choices, implying that access to resources is negotiated through societal rules and norms. Some people have more authority than others because the rules and norms governing the allocation and distribution of resources are highly gendered, and people of low income negotiate for access to the resources they need with people who have them. Kabeer (ibid) argues that if access to resources is taken as an indicator of women's empowerment, it should reflect potential rather than actual choice. Potential choice allows a person to make future claims to resources. The measure of access should not simply be access, but how it provides potential for human agency and value achievement, given that resources and agency are inseparable. Access to resources should enable a person to achieve their goals. My study focuses on social relations: the relationships and interactions among gardeners, and how these are used as a means of accessing resources and assets. They can also include the element of friendship among gardeners.

Importantly, Ribot and Peluso (2003) state that access to resources is shaped by the 'bundle of power' that a person holds in society. Power is also related to a person's intangible resources such as contacts, information and others, that can be used to access material resources such as land, credit, agricultural inputs. The authors argue that power is exercised through various mechanisms, processes and social relations that affect people's ability to benefit from resources. Thus power relations shape the way people access resources (Berry 1989) and in turn create inequalities among people. In accessing resources through social relations, people are guided by societal rules and norms, and thus interactions between formal (rules, policies) and informal (sociocultural structures) institutions influence a person's command over resources (Leach et al. 1999). An individual may be endowed with resources but does not have the ability to use and benefit from them. The power difference between men and women means that their ability to enjoy the benefits of resources may not be the same (Kabeer, 1999; Leach et al. 1999). McLees (2011) states that in UA there is an unequal power relationship

between landlords and farmers, since the landlords holds the right to the land and can decide at any time to evict the farmer. The current study found the same power landlord holds over gardeners. Cases described in Chapter 6 show that if a gardener delays paying the rent the landlord may allocate the plot to another gardener who is ready to pay. This form of insecurity is different according to the type of landlord: private landlords are more powerful than institutions such as the FOC, and give tenants no chance to negotiate over plot payment.

To understand the work of power in access to the resources important for gardening – land, water, irrigation pumps, labour, credit and agricultural inputs activities – this theory is employed to examine how male and female gardeners access these resources and how access mechanisms influence gender relations in the garden and the household.

2.5.3. Tanzanians' perspectives on access to resources

In Tanzania only 27 percent (FAO 2014) and 34 percent (URT 2016) of women access land. Although the data show a slight increase from 27 to 36 percent in women's access to land, the proportion is still small compared to men, 73 percent of whom own land (FAO, 2014). Women's ownership of land, either alone or jointly with their husbands, increases with age: 10 percent of women aged 15-19 and 68 percent of women aged 45-49 own land (URT, 2016). Women's access to land is linked to marriage (Flynn, 2001; Yngstrom, 2002; Englert, 2008). In the case of divorce or the death of their husband many women lose their right to use land. Yngstrom (2002) studied women, wives and land rights in Tanzania's Dodoma Region. She argues that married women experience land security during marriage, and experience tenure insecurity if their husband dies and/or they remarry or divorce, because the land belongs to her husband's family as lineage land. If a woman remarries her ex-husband's relatives worry that the land will go to the new husband, to whom they are not related. In the case of divorce, the woman is expected to farm her family's or her new husband's land. Thus marriage forms the basis of land access and security for women.

A woman's legal ability to claim rights to land changes once the status of her marriage changes. Although the Tanzanian Law of Marriage Act 1971 encourages the division of assets during divorce of spouses, women are not aware of their rights (Aelst, 2016).

Yngstrom states that many women in her case study could not exercise their claim to land because of sociocultural constraints which forbid women to inherit lineage land. Although Yngstrom's study is based in rural areas, she points to the institution of marriage as key to women's land security, and this is useful in understanding the land security of female gardeners.

Similarly, Mwaipopo (2000) examined the different ways that men and women access marine resources in Saadani Village in Tanzania, focusing on fishing nets and sea craft as key resources in fishing activities. Mwaipopo argues that gender roles and responsibilities shape the ways that men and women access resources. For example, a husband is obliged to provide fish for consumption in the household, while women remain at home to keep house and cultivate the garden. Few women in Mwaipopo's study engaged in fishing, which was regarded as a male task. This categorisation of male and female tasks extended to property access and ownership with women's access to fishing resources limited, and the few women fishers had to negotiate access to resources through their husbands or another male fisher. Although her study is not focused on resources such as land, it shows that gendered obligations give power and entitlement in access to resources. I now turn to UA, and particularly to how farmers access resources.

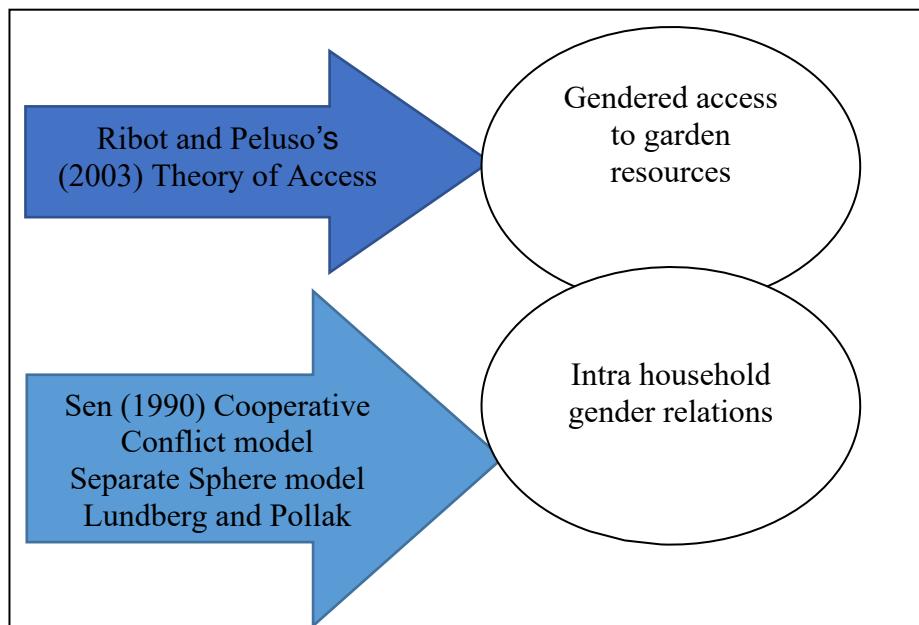
McLees (2011) examined mechanisms of access to land in open-space cultivation in Dar es Salaam, Tanzania, focusing on ability rather than rights, as per Ribot and Peluso's (2003) theory. He found that informal access to land is the major means of access, with farmers employing various means of accessing plots such as negotiating with the landowners, and clearing land and starting cultivation. However McLees' study demonstrates that mechanisms of access change historically: once a plot neglected by the owner starts to gain new value because a farmer has taken the time to clear the bush or drain the soil, making it suitable for cultivation, the farmer has to negotiate to retain access to it. Farmers' ability to benefit from land partly depends on their ability to maintain a good relationship with their landlord and keep to the agreement the landlord dictates. McLees elaborates that the farmer had cleared palm tree debris in order to maintain access to the land, not only increasing the land's value but reducing the risk of theft due to the farmer's presence on the site. Although the landlord derived several benefits from the farmers, this did not result in securing the farmer's tenure.

My findings corroborate those of McLées (2011), who found that informal networks are important in access to resources such as UA land. Here, power over land is exercised by landlords over farmers, with the latter land-insecure. However, as I demonstrate in Chapter 6, through their informal networks gardeners can use different type of social relations such as those with relatives, husbands and friends or close contact with the landlord to access land. Their strategies for accessing resources change according to gardening season, gender, availability of capital and type of resource. McLées' findings on informal networking is consistent with Foeken et al. (2004) and Simiyu (2012) who argue that an urban farmer needs to establish social connections before he can gain access to land. My study also finds that people's contact with friends and relatives and their daily economic activities at the gardens such as labouring or selling snacks forges a bond with gardeners which can be used as a stepping stone towards accessing their own plot.

2.6. Conclusion

This chapter has reviewed the key concepts used in this study to develop a conceptual framework, and set out the platform on which the current research is based. The concepts and approaches employed in this chapter are presented in Figure 2.1:

Figure 2.1: Concepts and approaches



The theories and models presented in the above figure combine the conceptual and theoretical frameworks for an understanding of gardening activities and intra-household gender relations among gardeners. The application of gendered perspectives to intra-household bargaining challenges the unitary household model, as household members have different preferences and interests. The combination of Sen's (1990) cooperative conflict model, the separate spheres bargaining model (Lundberg and Pollak 1993) and other studies of gender relations such as Schroeder's (1996; 1999) situate gardeners in the wider context of economic, and sociocultural influences in order to understand their intra-household relations.

Studies such as Mwaipopo (2000) and Yngstrom (2002) state that women access resources such as land through marriage, and Mbilinyi (1972), Aelst (2014, 2016) and Vyas et al. (2015) argue that men are the main decision-makers while women are mothers and wives. Men and women do not have same access to resources or power in decisions over utilization of their income. Given that access to resources is important not only in rural but also in urban agriculture, understanding female gardeners in the economic and sociocultural contexts as proposed in the framework is useful because gender relations are complex, involving power relations between men and women. The framework is useful for exploring how intra-household bargaining takes place within the process of cooperation or conflict, the exercise of agency, and its economic and sociocultural aspects in gardeners' household.

Lastly, application of the theory of access is also connected to power relations. Using this theory allows examination of the different ways gardeners access resources. It considers social rather than legal access to resources. Social processes and negotiations for power shape how an individual accesses resources. As UA is an informal activity which lacks formal access to resources, using the proposed conceptual framework is useful for understanding how power works among gardeners and other social groups such as landlords, labourers and household members. The next chapter present research methodology for this study.

Chapter 3: Research design and methodology

3.1 Introduction

The previous chapter established the conceptual and theoretical approaches of this thesis: this one presents the research design and methodology. The research questions were answered through qualitative and quantitative research methods: household survey, semi-structured interviews, focus group discussions (FGDs), informal conversations and observation.

The pilot study and main data collection in the field took place between December 2014 and September 2015. The pilot study was conducted from December 2014 to January 2015 at FOC to investigate how UA fits into the lives and livelihoods of women in Morogoro Municipality. It was also useful to evaluate the possibility of studying gender relations among urban gardeners, to identify criteria for selecting the research sites and to introduce the study to the gardeners. The main fieldwork involving FOC and MRS ran between February 2015 and September 2015, when I applied different research methods to collect data from gardeners' households, municipality, ward and NGOs offices, and the National Library.

The chapter is divided into four sections. The first describes the research setting in Morogoro Municipality and the two research sites. The second section discusses ethical issues encountered and reflexivity, and the third focuses on the methodology and research methods, particularly the sampling methods, data collection, interpretation and analysis. The last section concludes the chapter.

3.2 Research setting

3.2.1 Morogoro Municipality: Geographical and historical overview

This thesis focuses on FOC and MRS open-spaces in vegetable cultivation in Morogoro Municipality. Morogoro Municipality is in Morogoro Urban District, one of the nine districts in Morogoro Region. Different economic activities are undertaken in Morogoro Region including agriculture (crop and livestock cultivation), forestry, fishing, mining,

and manufacturing. Agriculture makes a significant contribution to the region's economy: for example in 2007 260,746 out of 385,260 households were engaged in agricultural activity (URT, 2012). The Government of Tanzania has identified Morogoro Region as one of the national food security granaries because of its large land area, high population engaging in agriculture and favourable climatic conditions for agriculture. As well as producing food for local consumption it has become one of the main suppliers of fruit and vegetables to the city of Dar es Salaam and nearby regions (UN-Habitat, 2009).

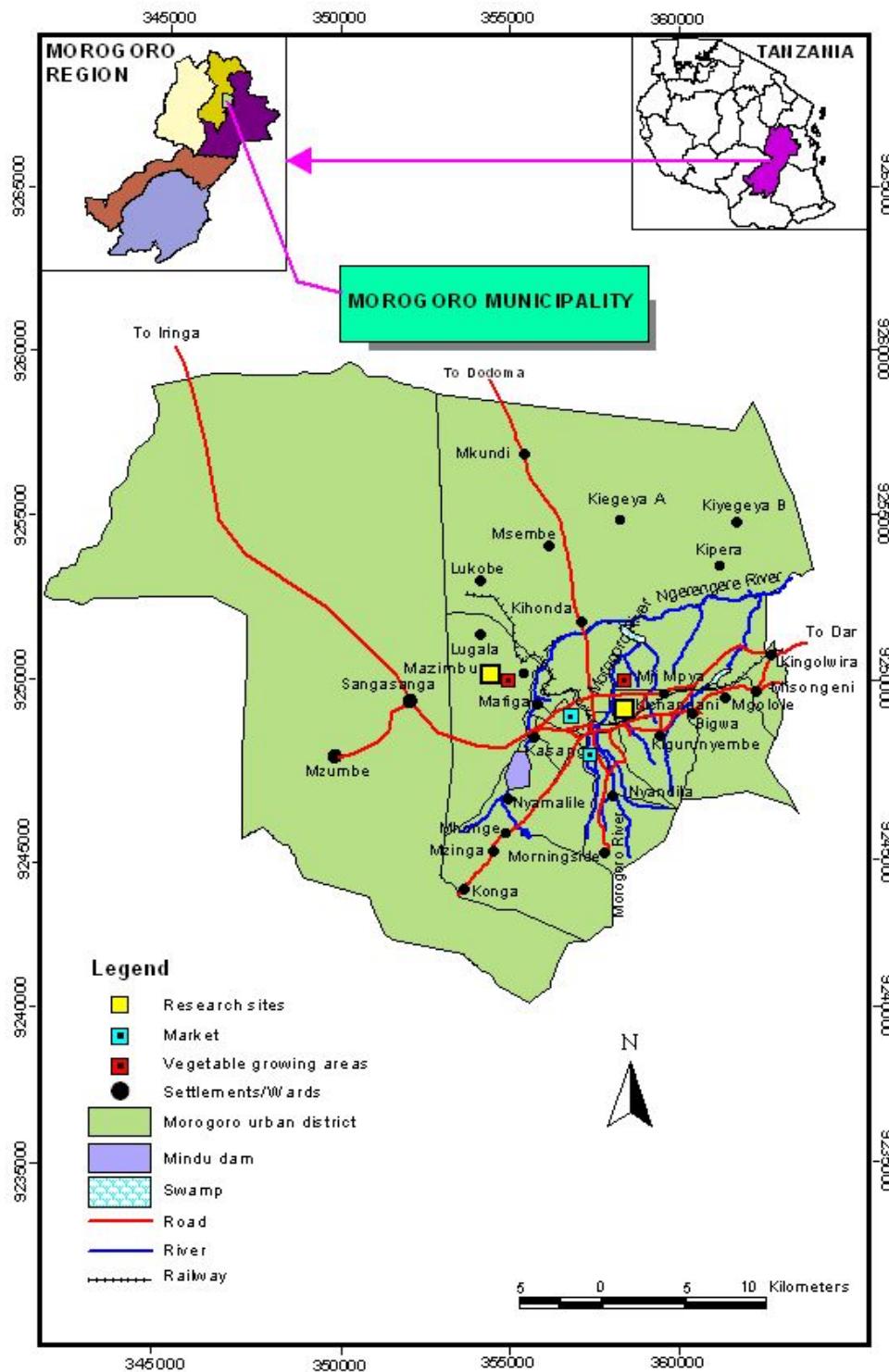
Morogoro Municipality serves as the headquarters of Morogoro region. It covers 531 of the Morogoro Region's 73,039 km². The Municipality is about 195 kilometres west of Dar es Salaam city, the biggest commercial city in Tanzania, and three hours' drive from Dodoma Region, the national capital of Tanzania. The location of the municipality has demographic and commercial relevance. It strategically serves as a transport hub for major roads connecting neighbouring regions such as Coastal, Dodoma and Iringa (URT, 2012). This has attracted the migration of people from neighbouring and other regions in Tanzania (UN-HABITAT, 2009). The municipality has experienced a significant population increase from 74,114 in 1978 to 117,760 in 1988, 227,921 in 2002 and 636,058 in 2012 (URT, 2012; NBS, 2015). Migration is one of the factors contributing to this increase.

The Municipality has 29 wards whose main productive sectors are manufacturing, tourism, livestock keeping, crop production, natural resources, fishing, off-farm activities and mining. Small businesses and employment in the private and public sectors employ 68 percent of the population (URT, 2012). Moreover, agricultural activities such as peri-urban food and horticultural crop cultivation and intra-urban livestock-keeping employ 32 percent (ibid).

During the 1970s, industrial development in the Municipality was prominent and growing fast. It had more than 19 medium and 100 small industries including welding, metal fabrication, carpentry, and food processing (URT, 2012). An estimated 15, 000 people were employed in these industries. The few large-scale industries in the municipality included Dimon (Alliance One Tobacco Processors Limited), the Abood Group of companies (canvas mill and oil industry), Tanzania Tobacco Processors

Limited and others. In the 1990s some of these industries collapsed due to liquidity and management problems. A few have been privatised and are currently operating, although they cannot meet the demand for employment triggered by the growing population (UN-HABITAT, 2009). This signals employment challenges and the significance of informal-sector activities in the municipality. The following map indicates the location of the wards, research sites and water sources in the municipality.

Figure 3.1: Map of Morogoro Municipality



Source: Author's own drawing

3.2.2 Research sites: Fungafunga orphanage centre and Mazimbu research site

This section outlines the geographical location, population, economic activities and historical context of the research sites.

3.2.2.1: Fungafunga orphanage centre

Fungafunga Orphanage Centre (FOC) is in Kichangani Ward, northeast of Morogoro town and about 1 km from its centre. Kichangani Ward has a total population of 19,166, with 9,146 males and 10,020 females (NBS, 2015). The ward has 4,409 households. Residents engage in various economic activities such as running retail shops, small restaurants and garages, working as street vendors, and in government and private-sector employment. Vegetable cultivation in open spaces is very common.

The historical overview of FOC provided in this section is drawn from conversations with the FOC manager, a primary-school teacher and a retired FOC officer, with secondary information from Internet sources. FOC is surrounded by vegetable gardens and bordered by Morogoro River in the west and Kaloleni Primary School to the south. FOC was established during colonial rule to take care of elderly people working in the canvas industry in Tanga Region. Currently the Centre is managed by the Government of Tanzania through the Ministry of Social Welfare, and cares for both elderly and disabled people. The Ministry employs a manager, nurses, a cook, cleaners and other administrative officials to operate the centre.

In the mid-1980s the Centre was surrounded by thick forest, which was dangerous for the residents at the Centre as it attracted robbers and hooligans who used it as their hiding-place. Cultivation started in around 1985 when FOC manager allocated plots to FOC officials to cultivate maize to cater for the elderly tenants and to clear the forest. At the time there were few officials at the Centre and therefore only a small part of the forest was cleared. The officials who cleared the land and started farming it were threatened by baboons, who destroyed the maize before it could be harvested. Some of the people living around the Centre requested plots to grow maize on. The FOC manager decided to allocate plots to them so that would they clear the rest of the forest. It is claimed that male farmers were the first to be allocated plots.

FOC and the farmers agreed on a bag of maize as plot rent monthly. At that point the farmers were cultivating maize throughout the year and watering them using watering cans. Although the pioneer farmers' plots were close to the river they could not cultivate large areas because of the intensive irrigation needed. More plots were allocated to them and they discovered the challenges posed by the baboons when they grew maize, therefore they grew vegetables instead. Since the agreement was still a bag of maize as payment, the gardeners had to sell their vegetables first to buy a bag of maize. At this point the FOC officials, who had been wondering how the gardeners could afford to buy a bag of maize, realised that vegetable cultivation was profitable. The payment system was changed to cash on a monthly basis. In the 2000s, the Ward Agricultural Officer advised the gardeners to use water pumps, which simplified the irrigation and ultimately has increased the competition for plots, as gardeners can manage many plots at once.

Currently the Centre has more than 100 cultivated plots with 43 registered gardeners.⁷ Two historical events have led to a reduction in the size of FOC land: first, it is claimed that during when the land was forest two residents living close to FOC encroached on it and later started cultivating maize and demarcated the area they had taken over by planting coconut trees. When the land use at FOC changed from maize to vegetable cultivation the encroachers did the same and started to rent plots to gardeners who requested them. The encroachers have now died and the land has been inherited by their children. Secondly, through the Ministry of Social Welfare the municipal authority requested part of the land at FOC for a primary school. The school was built, and the remaining part of the school land is now used for vegetable cultivation. During the interviews the school's head teacher said that the primary school has rented plots to two gardeners, using their rent as a source of income for the school.

The whole area which originally belonged to FOC now has four different landlords: FOC, the school and two individuals, Shentuli and Mama Kishobozi. It has an average of 80 gardeners who cultivate vegetables, of which 43 are tenants of FOC. After I

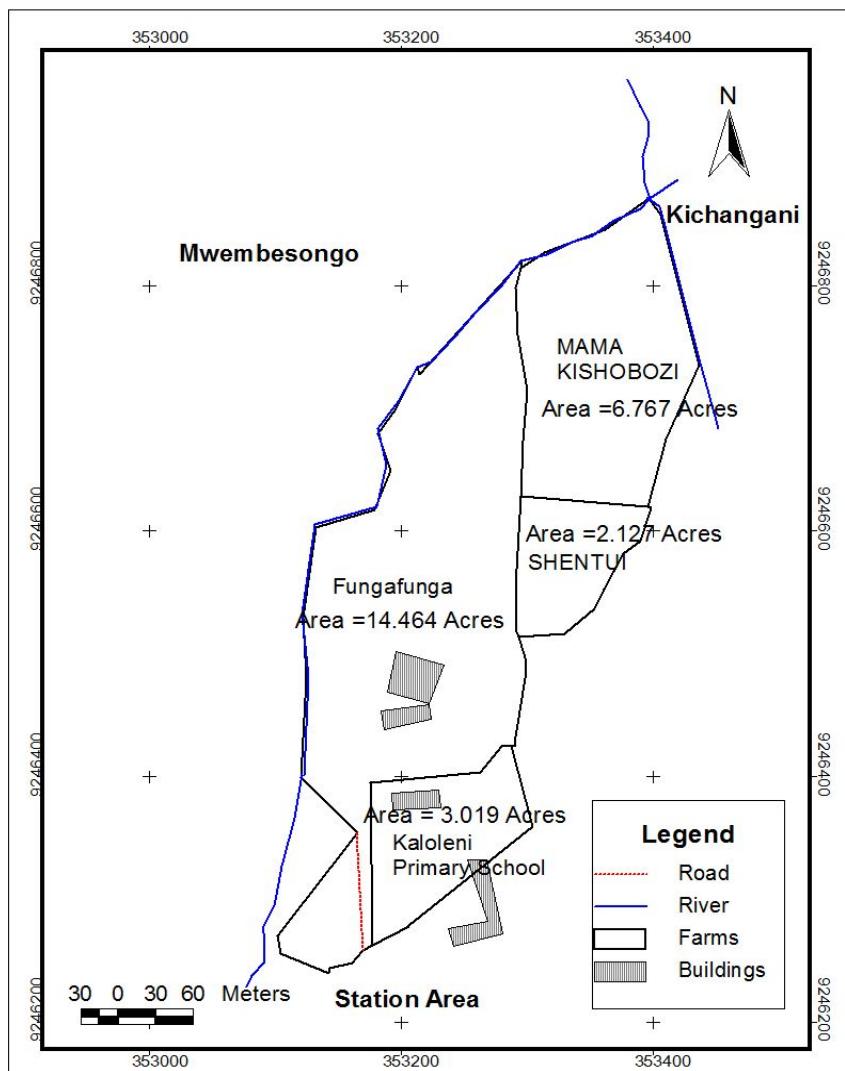
⁷ In this study, registration refers to informal land administration at FOC where gardeners' records are kept such as name, size of the garden and payment of the plots. Gardeners have not been issued any certificate or title to represent their land rights

realised the landlord dynamic of landlords within FOC it was interesting to study gardeners from four landlords to get a wider picture of plot access mechanisms, tenants'⁸ experience of the different landlords, and the levels of tenure security and how these affected gardening activities, because the payment mechanisms and rents differed across the landlords despite being part of the same space. I later noted that it was difficult to separate the four landlords, since some of the gardeners rent plots belonging to both landlords.

FOC gardeners cultivate the following leafy vegetables: amaranthus (*Mchicha*), Swiss chard (*Figiri*), Chinese cabbage, pumpkin leaves (*Majani ya maboga*) and *Solanum nigrum* (*Mnafu*). Map 1 indicates the location and size of the land occupied by each of the four landlords and the water source, schools and residential areas close to FOC. Due to the sensitivity and suspicious nature of the gardeners it was not possible to measure individual plots. A manager at FOC informed me that each plot covers 80 m².

⁸ Tenant refers to a person who pay the rent to use the land. But do not have any legal rights for continuing use of the land

Figure 3.2: Map of the FOC research site



Source: Author's own drawing

NB: The land belonging to Shentuli (2.127 acres) and Mama Kishobozzi (6.767) was appropriated from FOC.

3.2.2.2. *Mazimbu Research Site*⁹

Mazimbu Research Site (MRS) is in Mazimbu Ward on the western side of Morogoro Municipality. It has a total population of 72,527, of which 34,312 are male and 38,215 are female (NBS, 2015). This is one of the largest wards in the Municipality. The total number of households is 17,211, higher than the 4,409 in Kichangani Ward. However,

⁹ The gardens are within Mazimbu ward and; Mazimbu Research Site is provided for this study

with geographical coverage of 4291 square kilometres, Mazimbu Ward is smaller than Kichangani Ward, which covers 11,169 square kilometres. This indicates that Mazimbu Ward is one of Morogoro Municipality's densely-populated wards (URT, 2012). Various economic and social activities are undertaken in the ward including: small shops, small restaurants, areas occupied by institutions such as Sokoine University of Agriculture (SUA) and several primary and secondary schools, area used for crop cultivation (such as vegetables and annual maize) as well as livestock keeping.

I selected MRS because Mazimbu Campus is close to Sokoine University of Agriculture (SUA). As SUA is an agriculture-based university my hypothesis was that with this proximity, the gardens could be used by SUA students as field experiment plots and the knowledge and skills they gained could benefit the MRS gardeners and increase their vegetable production.

This section discusses the historical context of MRS vegetable farmers. The information provided here is drawn from formal and informal conversations with a female gardener whose family land was appropriated by the municipal authority, a gatekeeper and a Ward Agricultural Officer. MRS lies outside the main gate of the SUA's Mazimbu Campus. The campus was established by the governments of Scandinavian countries for South African freedom fighter refugees from the apartheid regime. The campus had schools, health centres, residential houses and other amenities and its various projects employed neighbouring people as labourers and housemaids. Some of the refugees cultivated vegetables, with the residents providing labour. After South Africa's independence, the freedom fighters went back to their country and the government of Tanzania offered Mazimbu Campus to SUA for academic purposes. Academic and administrative officials were offered the houses while other buildings were used as lecture theatres, health centres and offices. During this transition, residents who had worked for the refugees continued to cultivate vegetables on the plots. SUA decided to use part of the land to establish demonstration farms, leaving the remaining land to the farmers to continue their cultivation, but they were expected to pay rent. Some of the farmers who could not pay rent and whose plots were taken back decided to shift to the closest open space, which was outside Mazimbu Campus, to continue growing vegetables.

MRS is swampy, and part of the land was owned by the few families of the Luguru ethnic group, although they did not have official land permits.¹⁰ Population expansion in the municipality was increasing the demand for residential areas, while the Land department at the Municipality was striving to increase its revenue through land rent. Municipal officials reallocated some of the land, especially that being used for agricultural production, for residential purposes. The officials directed the farmers who had traditionally occupied the land to apply for to use it and pay land rent, failure to do meaning that the land would be sold to others. A female gardener said that many farmers' families could not afford to buy their land from the municipality, and therefore it was sold to people who could.

During the rainy season this swampy area experiences flooding for about three months. The people who bought the land realised that they could not build houses on it. This was an opportunity for farmers who could not buy the land, who negotiated with the owners to allow them to continue their cultivation, and they agreed. Most of the landlords allowed the gardeners to pay for the land on a six-monthly or yearly basis, unlike the monthly FOC rent. As some of the farmers cultivating vegetables at Mazimbu Campus were experienced in this, vegetables became more popular than rice as a crop. This historical account suggests that access to land for agricultural activities was not fixed or secure. Different events and circumstances changed how the land was accessed, and the gardeners had to negotiate in different contexts, in the end experiencing land insecurity. Understanding the changes to the mechanisms for accessing land and other resources, and land security and how it affects gardening activities, is crucial to this study.

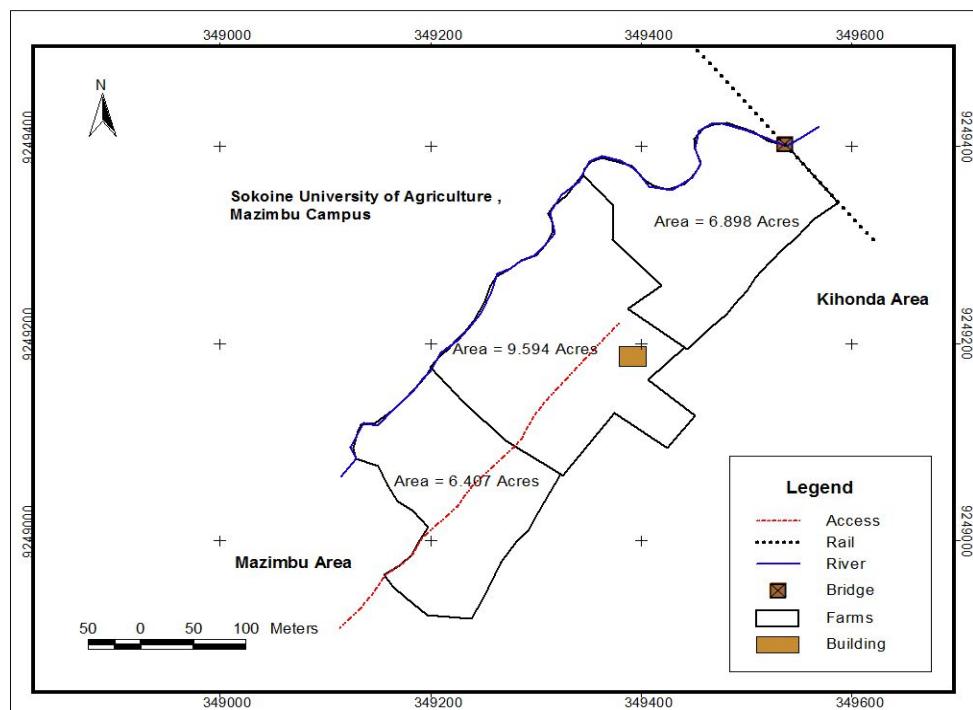
MRS cultivation practices differ from those at FOC. First, although MRS occupies 22.899 acres, the total number of gardeners, 50, is smaller than the 80 at FOC. This is because the land at MRS was demarcated for residential use by the municipal authority, and thereafter each landlord let an individual gardener use their whole area instead of dividing it into smaller plots. Another point distinguishes MRS from FOC: the gardeners are forced to practice off-farming economic activities because the rainy season floods the gardens for two to three months each year, whereas at FOC, water settles for less than three days. The household survey and interviews revealed different

¹⁰ The families owned the land according to customary rules but did not have the land certificate or titles to secure their land

MRS rainy-season coping strategies. Some of the gardeners cultivate maize in peri-urban areas outside MRS; others transform their gardening plots into rice fields, and when they dry out, resume vegetable cultivation. Some gardeners purchase vegetables from other open spaces (some from FOC) and sell them on the market or hawk them on the streets. Some of the female gardeners do paid domestic work for other people; and lastly a few female gardeners stay at home and depend on their husbands. The coping mechanisms elaborated here indicate how the location of MRS shapes the ways that gardeners earn their income seasonally and brings important insights to gender relations: some female gardeners experience a weak fall-back position as they cannot earn any income because they abandon their plots and must therefore depend on their husbands.

Like FOC, different types of leafy vegetables are cultivated at MRS: amaranthus (*Mchicha*), Swiss chard (*Figiri*), potato leaves (*Matembele*) and pumpkin leaves (*Majani ya maboga*). Map 2 shows the size of MRS and other infrastructures at MRS. As at FOC, it was not possible to measure individual plots because some of the gardeners were suspicious of the exercise.

Figure 3.3: Map of Mazimbu research site



Source: Author's own drawing

3.3 Ethics

3.3.1 Gaining Access to the field sites

I applied for a research permit from Morogoro Municipality when it was approved I submitted copies to Kichangani and Mazimbu Wards. Meanwhile I visited the ward offices and introduced myself to the ward officials. Agar (1996) and DeWalt and DeWalt (2011) state that identifying the person who has access to or represents the local setting in the research area is important to facilitate building rapport with the participants. Given the informal nature of UA I used my friendship network to make some contacts at FOC. I did my Bachelor and Master's degree at SUA, and a female friend who had been an SUA PhD student introduced me to a gatekeeper at FOC, a male gardener who has been cultivating vegetables at FOC for more than ten years and had been used as a contact point by previous researchers. A Ward Agricultural Officer (WAO) introduced me to a similar gatekeeper at MRS with the added advantage that he lived on the gardening site.

During my pilot study at FOC, I conducted six interviews with female gardeners I had met through the gatekeeper's connections. In the main fieldwork it was difficult to arrange a meeting with all the gardeners at once to introduce my study because they had different timetables. Therefore at the beginning I used a household survey to introduce my study to the gardeners (see section 3.3.4). Since I had used research assistants for the household survey, at the qualitative interviews, which I conducted myself, I re-informed the participants of the purpose of the research to ensure that they had received the right information from the research assistants and to secure their approval.

3.3.2 Power in the field: The gatekeeper's role

This section focuses on the interaction between myself and the FOC gatekeeper early in my fieldwork. During the household survey I noted that FOC has high land insecurity. Access to and the ability to maintain gardening plots was highly competitive, first because FOC is at the centre of Morogoro Municipality and gardeners have easy access to the market; second, the area is not affected by floods, as described in section 3.2.2.2; third, at the time of my research an FOC official was threatening to evict the gardeners

so that FOC officials could use the land (section 6.2.2.1). FOC gardeners are vulnerable to having their plots taken away at any time.

Anthropological and ethnographic literatures acknowledge the contribution of gatekeepers, especially in accessing participants in difficult settings (Agar 1996; Clark 2011; DeWalt and DeWalt 2011). A gatekeeper not only facilitates access to participants but also provides the means of building productive relationships between the researcher and the participants. To understand the role of the gatekeeper in the field, at individual interviews I asked the gardeners about the importance of a researcher to be introduced to them by a gatekeeper. Even though I encountered challenges with the gatekeeper early in the research, most of the gardeners insisted that a gatekeeper is useful. They noted that it is difficult for the researcher to differentiate between a gardener and a labourer cultivating a garden and so needs an insider to tell them. They also stated that among the gardeners there is no uniformity in the times that they arrive at and depart from the garden, and a gatekeeper can easily locate them. I constantly renegotiated my relationship with the gatekeeper during the research process. This study agrees with the literature on the positive contribution of a gatekeeper to bridge the connection between researcher and participants; however, other important issues can challenge the researcher's engagement with the participants. My purpose here is to emphasise that in this study, triangulating my methods was crucial to accessing different categories of gardeners and understanding their different experiences, perceptions and ideas about gender relations and gardening activities.

Before the pilot study started, I informed the gatekeeper about the purpose and methods to be used in this study. However, the gatekeeper was not comfortable after realising that I was going to spend a long time in the field. On many different occasions he asked me when the study would end and informed me that previous researchers had not remained in the field for longer than a month. This implies that the gatekeeper felt intruded upon and uncomfortable. Clark (2011) argues that in such situation the research might pose a risk to the gatekeeper as he might lose his control and local participants' trust in him. In this situation I encountered several challenges with the gatekeeper at the beginning of my research which threatened my ability to connect with other gardeners.

First, the gatekeeper did not approve of my submitting my research permit to FOC, insisting that I should conduct the research without the knowledge of FOC officials, calling some of them ‘traitors’ and selfish (which he expressed as ‘they have a big heart’). Knowing that it would be unethical to conduct research in FOC without the knowledge of the officials I submitted the permit during his absence. However, at that point the gatekeeper naming the FOC officials and preventing access to them made me realise that my interactions with him could become a standing block to my interaction with gardeners and FOC officials. This made me realise that there might be a lot going on between the gardeners and FOC officials, signalling a complex relationship between them. I realised that using different research strategies would be important so that I could talk to different categories of the gardeners.

Second, during the pilot study I interviewed six female gardeners at FOC who introduced me to other female gardeners. It was common for the gatekeeper to ask what I had been discussing with a gardener once I finished the interview. Knowing that it would be unethical to tell him, I always insisted on the confidentiality of the research, which made the gatekeeper uncomfortable. He started to insist that there were some female gardeners whom I should not interview, claiming that they were illiterate and therefore could not express themselves clearly, and that some did not have many plots and so their vegetable production was minimal. He told me about the two female gardeners who had over 15 plots, as per his perception that they would have much to tell about gardening activities. This was an interesting point about how the status of female gardeners is seen; however I took the gatekeeper’s perception with caution because female gardeners might not have the same experiences in gardening. The gatekeeper also tried to prevent me accessing some of the male gardeners who, he said, were also selfish. I later noted that these gardeners had more than 20 plots, and some had served as the garden leader in the past. I later realised that gardeners with many plots were being accused of taking plots from those who did not have so many.

At the beginning of my research my relationship with the gatekeeper was very challenging because he was a long-term gardener with influence, was informative and popular at the site, and as mentioned, had been used by previous researchers there. Normally gatekeepers are respected insiders and are trusted in the local setting (Agar, 1996; DeWalt and DeWalt, 2011). I saw that going beyond his back would be risky

because he had the power to prevent other gardeners from participating in my study. However, risking this would also be useful because interacting with different gardeners would reveal the dynamics of the situation on the ground beyond what the gatekeeper would tell me. As mentioned, triangulation was useful; for example I started chatting with the gardeners around and observing what was happening. I took the time to establish contact with other gardeners using different strategies and normally in the gatekeeper's absence. In the second phase of my fieldwork, when he realised that other gardeners were becoming closer to me than at the beginning of my research, he started to give me his full cooperation.

In conclusion, Dewalt and Dewalt (2011) note that personal characteristics such as gender, class and ethnic background can limit the researcher's participation in the local setting. I argue that power, trust and insecurities challenged my participation in the research setting through interaction with the gatekeeper. The fact that I had to submit the permit without his knowledge and to talk to gardeners when he was absent display his exercise of power. In this context the power between the gatekeeper and myself was relational; he had 'power over' me since he had greater access to the gardeners than I did; however, I knew that I also had the power to achieve my aim in the field. Later I had to create a good rapport with him and with other gardeners too. On a different note, trust was an important element, given the land insecurity at FOC. I found from the household survey that the gardeners did not trust one another. The challenges I encountered dictated the way I had to collect the data. Qualitative methods were most effective for building familiarity with the gardeners and exploring the dynamics of the information I gathered from different categories of gardeners.

3.3.3 Positionality: The role of the participant's experience in their image of me as a researcher

Individuals have different experiences, and therefore their interpretations and the meaning they make of the social world are diverse (Blaikie, 2010 and Creswell, 2014). This section presents an experience of a male UA gardener and how it affected my image as a researcher at FOC, beginning with an informal chat with him.

It was a quiet day at the site because there were few gardeners around. I was walking towards the garden¹¹ to interview a female gardener who had agreed to meet me that day. On the way I stopped for a few minutes to talk to a male gardener with whom I had become very familiar, who could be found in his garden most of the time. He was irrigating his vegetables. I had developed a habit of buying vegetables from any gardener around to get to know them. So I asked him to sell me some vegetables.

While we were walking to his plots to pick vegetables for me, he started asking me questions. I had time free to talk with him. He said 'Something is bothering me about your research, that is why I need to understand more about it'. I asked him what he wanted to know, and he responded: 'I know you are a researcher who wants to study gardening activities, but my worry is what kind of negative impact your research will have on us'. I was confused and disappointed, because I had been asked this question so many times by most of the gardeners, and I had kept on repeating that my purpose was to learn about gender relations in gardening activities. I had always insisted that my research was for academic purposes and that the information they gave me was confidential, thus it would not affect their lives.

However, I realised that gardeners have different experiences and understanding, so I felt it important to answer his questions precisely so that he understood my mission. This would also help me because he could explain to other gardeners with similar worries. I decided to help him pick the vegetables and during the process I asked him why he was worried about my research when he had known its purpose from the beginning. He explained that he had lived in Dar es Salaam for many years, cultivating vegetables along the Msimbazi River, a popular UA site. One day some researchers came and asked them many questions and took samples of the water they were using for irrigation. Then the newspapers reported that vegetables grown by the Msimbazi River were harmful to humans as they contained toxic elements. The media report caused the municipal authorities to chase away the gardeners who were cultivating beside the river. As discussed in Chapter 1, misinterpretations in UA shape the way stakeholders perceive it, in turn it affecting farmers' cultivation practices. His eviction from the Msimbazi River plot lost him his source of income. He could not secure a job or access

¹¹ In this study it includes all the gardeners' plots.

land in any other open spaces around Dar es Salaam, and was forced to migrate to Morogoro Municipality, where he started working as a labourer on FOC plots. He concluded: 'Since then I have not liked researchers because it was them who came to talk to us at Msimbazi River'. He also told me that FOC wanted to evict all the gardeners, and that municipality officials were claiming that cultivating close to the river is illegal.

This made it clear to me that he was suspicious of all researchers because he did not know how the research would impact his gardening activities. I took time to explain my research and my key point that I was there to learn, and it was for academic purposes only. I told him that as a lecturer at the Open University of Tanzania (OUT) after completing my PhD studies I would use some of the findings in my teaching or presentations at conferences. I assured him of the confidentiality of his information. Reflecting my experience with the gatekeeper at the beginning, I was morally placed in a position where I was obliged to constantly remind the gardeners of the research purpose, methods, confidentiality and intended possible use of the research: this was important to build a good rapport.

The experience of the male gardener above shaped the way he viewed any researcher. At the beginning of my research my presence at FOC created fear and insecurity towards his gardening activities; probably other gardeners were feeling the same. This shows that the misinterpretations in UA not only affect farmers with limited support from government authorities but also the way they perceive researchers, in turn affecting the research process. Questions about their lives at the garden brought fear and suspicion. This experience suggests that gardeners are not sure of their future at FOC, as I also observed from the gatekeeper's response. Therefore I tailored triangulation of the research methods to overcome the gardeners' fears and create a flexible environment for the research, to obtain a nuanced gender analysis of gardening activities. I found that building trust was an issue at the beginning with male gardeners, not because the gender of the researcher matters but because, it seemed, the male gardeners were more aggressive in contesting the threat of eviction at FOC. Using different methods such as informal conversations proved useful in building trust and developing friendly relationships with the gardeners. Although in the early phase of the research some, including the gatekeepers, were not comfortable, the longer I stayed in the field the

more trust grew between me and the gardeners, opportunity to interact with gardeners and listening to their conversation was useful. This was important, since the fear among the gardeners suggested that there was no trust, bringing the chance that they would not provide honest and reliable data.

3.3.4 Ethical issues

Before I travelled to Tanzania for my fieldwork, I applied for and was granted ethical approval at the School of International Development, University of East Anglia (UEA). After I arrived at Morogoro Municipality I applied for a research permit from the municipal authority. The research permit was not easily obtained; the application was made in mid-November 2014 but it was lost twice as a result of mishandling at the office and bureaucratic procedures at the municipal offices. I had to resubmit the application, increasing the wait for the permit to four weeks. Below are the ethical challenges I encountered during the fieldwork.

a. Informed consent

The first ethical issue was related to verbal versus written consent. During the entire research process, obtaining written consent from the participants was impossible, although the detailed objectives of the study had been elaborated to the gardeners. As discussed above, they were very suspicious of giving their consent in written form, fearing that the information could be used against them by the municipality or FOC. All of the gardeners insisted on giving verbal rather than written consent, and I had no option but to agree.

Before the interviews and FGDs, I asked the gardeners for their consent to my recording the interviews, and they all agreed. However, an exception occurred at MRS when a female gardener refused to be recorded, despite my explaining the objective of the research and the ethical procedures to her. She said that she would only talk to me if the interview was not recorded. She insisted that I should not write our conversation on paper. This was the first time recording was refused, and I had to honour her wish and instead wrote the whole conversation down on paper.

b. Reciprocity

I had an ethical challenge about whether to pay or give gifts to the participants. Some gardeners hire bicycles or motorcycles or take public transport to the garden. Some do not go back home for lunch, sometimes buying food from food vendors at the garden. My interviews disrupted their timetables. It was hard to know what sort of gift would be good as reciprocation. I had a limited budget, so choosing between giving a gift or cash was also a challenge. I discussed this with the gatekeepers and contacted my friend at SUA who had introduced me to the gatekeeper at FOC, and they advised me to give the gardeners a small amount of money because individuals have various needs, making it difficult to determine whether the proposed gifts would suit the purpose of every gardener: as well, buying gifts would be time-consuming. I decided to give each participant 2,000 TZS¹² at the end of their interview and explained that it should not be taken as payment for their participation, but rather as appreciation for setting aside their gardening time to participate in the research. I gave the same amount to the participants at both sites during the different phases of the research.

c. Confidentiality

After recording the interviews, I listened and transcribed them all and stored them on my laptop and external drive. I used pseudonyms for all of the gardeners. I also protected all my files that contained field data and my thesis chapters with a password.

3.4 Methodology and Methods

3.4.1 Methodology

The main aim of this research was to understand how involvement in gardening activities shapes gender relations and contributes to women's bargaining power. Given the limited information available on gender in UA in Tanzania, I sought to find out how male and female gardeners conduct their gardening activities and make decisions in the household about the use of income and allocation of labour, to understand their lives.

¹² The exchange rate in 2015 was approximately £1=3118.75TZS

Although this study is mainly qualitative, I also used quantitative methods to provide baseline data for different categories of gardeners, to introduce my study to the gardeners and to create a sampling frame for the in-depth interviews. The multiple methods employed in this study have provided a wide range of gardeners' perspectives.

3.4.2 Sampling methods

UA is an informal-sector activity which may neither be recorded nor registered by the municipal authorities, and getting a list of the gardeners in Mazimbu and Kichangani wards was challenging. Blaikie (2008) and Bryman (2004) argue that non-probability sampling strategies are useful when there is no available list of population elements. Therefore I used purposive and snowball sampling methods to select the two research sites and the participants.

I selected two of Morogoro Municipality's twenty-nine wards, Kichangani and Mazimbu, as my research sites. First, my focus was on gardeners cultivating leafy vegetables, therefore FOC in Kichangani Ward was chosen as the primary research site as it is popularly known for amaranthus cultivation and has around 80 gardeners. I chose MRS in Mazimbu Ward as the secondary site to provide more variety among the gardeners. Second, FOC gardeners access land through FOC as an institution and via private landlords, while MRS gardeners access land from private landlords only. It was important to have different mechanisms for accessing land in order to get a broad picture of land issues in UA. Lastly, while MRS is 5 km from the town centre, FOC is 1 km from Morogoro town. My assumption was that the closer the open space is to the town centre, the greater the advantage to the gardeners because they can easily access extension services, credit facilities, the market and other stakeholders in agriculture such as NGOs.

After selecting the research sites, I used the snowball sampling method to identify participants at both. Bryman (2008) points out that snowballing is relevant when a researcher needs to create a sample of a population, and it is used to establish contact with others. Therefore I asked a gardener to connect me to other gardeners. Through this procedure I identified 69 gardeners at FOC and 36 at MRS. I later used different criteria

to purposively select gardeners for in-depth interviews: first, access¹³ of the plot (male plots, female plots, husband-and-wife plots) was important to get an understanding of the gendered division of labour in the household and the garden. My hypothesis was that gender relations would be different across different access categories, thus it was important to capture this to understand intra-household relations. Second, I used the length of time gardeners had been involved in gardening; this varied from a month to over ten years. I considered this important because the experience and challenges of a new entrant could not be the same as those of the long-term gardener. The last criterion was the number of plots a gardener had, my assumption being that the more plots, the higher the income (economic contribution to the household), which might increase bargaining power in the household. Therefore I selected gardeners with from one to as many as twenty plots. My focus in this study was on people who were active in gardening. The following table indicates the different data-collection phases and methods used:

Table 3.1: List of participants selected for the interviews

Phases	Number of participants	Data collection method	Sampling method
1 st phase	105 gardeners: <ul style="list-style-type: none"> • FOC (52 males, 17 female): 69 • MRS (22 males, 14 females): 36 	Household survey	Snowball
2 nd phase	46 gardeners: <ul style="list-style-type: none"> • FOC (14 males, 12 females): 26 • MRS (7 males, 13 females): 20 16 key informants (see section 3.4.3.2) 2 wives of gardeners	Semi-structured interviews	Purposive
3 rd phase	Life histories taken of 10 female gardeners: <ul style="list-style-type: none"> • 6 at FOC • 4 at MRS 	Unstructured questions	Purposive
4 th phase	2 FGDs at FOC: separate discussions with male and female gardeners	Discussion of the key points	Purposive

3.4.3 Research methods and instruments

I used a household questionnaire, life histories, FGDs, observation, informal conversations and semi-structured interviews with male and female gardeners and officials in Morogoro Municipality. I also used secondary data from various sources

¹³ In this study, access means that gardeners benefit from the land use but do not have legal land rights. That is, they do not control, own or cannot transfer the land.

such as socio-economic profiles of Morogoro region. The key issues I examined were decision-making about the utilisation of gardening income and allocation of labour at household level, access to resources and assets for gardening activities, and daily interactions among gardeners at the garden such as how they perform their activities.

3.4.3.1 Household survey

The household survey provided baseline data on the gardeners and introduced my study to them. One of my research questions asked how the gardeners accessed assets and resources, and how household labour was allocated to domestic and gardening activities. The household questionnaire provided data on socio-economic and demographic characteristics, the occupations of other household members, the scale of vegetable production, access to gardening resources and assets, the timetabling of domestic and gardening activities, and the risks and coping mechanisms involved in gardening activities.

The questionnaire was applied to 105 participants: 36 gardeners at MRS and 69 at FOC. I was assisted by male and female SUA graduates. Before beginning the household survey, I trained the assistants by discussing all the questions and issues that were not clear to them and presented the aim of the study to them and the ethical procedures to be followed throughout the whole of the research. We later pre-tested the questionnaire and modified it accordingly. I used the data gathered from the survey to identify potential gardeners for the in-depth study.

3.4.3.2 Semi-structured interviews (SSIs)

SSIs were used to collect information from gardeners, key informants and two female spouses of male gardeners.

- a. Gardeners:** during the interviews 20 at MRS and 26 at FOC were interviewed in depth. SSIs provide an opportunity ‘to get close to the social actors’ meaning and interpretations, to their accounts of the social interaction in which they have involved’ (Blaikie, 2010:207). By using a list of guided topics I could identify

their insecurities and concerns, especially regarding land, which somehow triggered their resistance to welcoming any stranger into their garden.

The SSI covered all the research questions to bring a deeper understanding of gender relations among gardeners at MRS and FOC. The data collected from the male and female gardeners explored who, why and what decisions are made in the household and how these are influenced by gardening income. The focus of the study is on understanding how gender relations are affected by gardening activities, and vice versa; the interviews provided the information needed to understand the allocation of labour for domestic and gardening activities and decision-making about income. To understand gender roles and responsibilities in the household the participants were also asked about social norms and marital obligations. Intra-household gender relations cannot be isolated from social interactions in gardening, and therefore information about access to resources and assets such as plots, water, credit, irrigation pumps and agricultural inputs was sought to understand the dynamics of access mechanisms by gender, and how these affect gardening activities.

I observed that some of the gardeners stayed at the garden for most of the day, and so I conducted my interviews there as I could meet gardeners easily during their daily activities. It was also a way to observe how gardening activities were performed, access to resources such as water, and interactions among the gardeners. Although the majority of the interviews were conducted at the garden, as stated, with their consent I visited two male and two female gardeners at their homes, which provided a relaxed atmosphere where the gardeners were willing to discuss sensitive issues such as land insecurity and gender relations.

Interviews were conducted in Swahili, the national language, and were recorded with the consent of the gardeners. Couples who were both gardeners were interviewed separately. The duration of the interviews ranged from 45 to 90 minutes. The recorded interviews were transcribed in the same language to make sure that the meaning of the participants' information was retained. I conducted all the interviews myself. However, I noted that five male gardeners were not

comfortable talking about their marital relations and so asked a male assistant to ask them some of the questions again.

- b. Key informants:** Chapter 1 discussed UA being perceived as illegal and with negative consequences for the urban environment. For this reason it was important to interview some of the stakeholders at Morogoro Municipality about their views and perceptions of the gardening activities. I used SSIs to explore their perceptions on UA and how they support urban gardeners. The following were interviewed: three Ward Agricultural Officers (WAOs), two Ward Counsellors (WCs), a Municipal Agricultural Officer (MAO), a Municipal Director (MD), a Municipal Land Officer (MLO), a Municipal Environmental Officer (MEO), three NGO officials (BRAC foundation, Faraja Trust Fund, Tanzania Horticultural Association (TAHA)), an FOC manager, a teacher at Kaloleni primary school, and two gardeners' leaders (one from each research site).
- c. Female spouses:** while I was writing my Procedural Paper my intention was to interview a lot of spouses who did not garden to understand how other household members support gardeners and how non-gardener's spouses perceive their gardening contribution to the household. However, the majority of male and female gardeners would not consent to me interviewing their spouses. Only two male gardeners allowed me to talk to their wives. Although the sample in this category was small, their perceptions about the contribution of gardening activities and decision-making in their households were useful.

3.4.3.3 Life histories

Bryman (2008) state that life histories provide a detailed account of the life events, concerns and experiences of people. Using marital status and having young children as the main criteria for selection, I chose ten female gardeners (six from FOC, four from MRS) with whom I was familiar, because taking a life history entails the participant talking about her life experience and required familiarity between myself and the gardeners. Taking their life histories provided an opportunity for female gardeners to explain gender roles and responsibilities and their gardening lives in their own words. I used open-ended questions to explore issues such as family upbringing, social norms, marital obligations, and female' gardening to document their inner experiences and how they interpreted them, and to understand how they affect female bargaining power in the household. I also explored the women's cultivation practices and the benefits and challenges being a female gardener.

The interviews were recorded with the female gardeners' permission. Their duration ranged from 60 to 120 minutes, and in a few cases I made a second visit because the participant gardener had to attend to some other issue and it was not appropriate for me to continue the interview.

3.4.3.4 Focus Group Discussions

I conducted two FGDs at FOC because it was my primary site (see section 3.4.2). These gave me a chance to stimulate new issues and discussions which could not have happened in the other forms of interview. The FGD participants were in a better position to explore the similarities and differences in how they perceived things. Having gardeners in the discussion brought up various issues related to gardening activities and UA in general which helped me to understand what it means to be a gardener.

This study examined gardeners' intra-household gender relations. Female gardeners may have been uncomfortable discussing some of the points on marital issues in front of male gardeners. For example, questions such as how their spouses perceive them as gardeners, their gendered roles and responsibilities, and their position as women in

making decisions about income; therefore to increase their freedom of speech I conducted a separate FGD for men and another for women.

A focus group with six male participants was conducted in a classroom at the FOC primary school, followed by one with five female participants the next day. Male FGD was conducted with the help of a male research assistant while female discussion was assisted by female research assistant. Before they started the researcher explained the main purpose of the discussion and how it would be conducted. First, informed consent to record the discussions was sought. The discussions lasted 90 minutes for males and 150 minutes for females.

3.4.3.5 Observation

Mason (2002) argues that observation can be used alongside other research methods. Since my initial visit to both sites I had got into the habit of observing how the gardening activities were conducted and listening to informal conversations. It was important to observe directly what the gardeners said and did because most were suspicious of any stranger around them, as discussed.

I had decided on the key issues to observe at the garden, including the gardeners' timetable, selling arrangements, gender issues in gardening activities, and the plots' physical characteristics. Although it was important to decide what I should observe, later I realised that flexibility was also important for a deeper understanding of gardeners' lives and included other issues that were not in my guide but were relevant to the study.

It was not possible to take notes while observing, therefore I wrote up my notes immediately after leaving the field sites. In some cases I asked a gardener's permission to take photographs of different activities that were relevant to the study.

3.4.3.6 Informal conversation

Given the suspicious nature of the gardeners stated earlier, I used informal conversation to build familiarity and express myself to the gardeners about the aims of the study.

During my fieldwork I had the habit of talking to any willing gardener at the research site. Since these meetings were informal there was no need for a prior appointment. The conversations were unstructured and were not recorded at the site; I wrote them up after leaving.

These conversations involved gardeners who had been selected for interviews, life histories, and FGDs, and gardeners who had not been selected. I used different strategies to start the conversations: for example, I could start by greeting a gardener and discussing non-agricultural issues. This study was conducted in the year of the Tanzanian general election, and I realised that discussing the election interested some of the male gardeners, since there was hot debate about which party would win. This kind of opening conversation brought me close to the gardeners and opened avenues for further talk about gardening activities. The female gardeners were much more flexible, as any kind of conversation could open space for further discussion.

3.4.3.7 Secondary data

Collecting secondary data was an on-going process from the beginning of the procedural and analytical paper write-up. Various Tanzanian and worldwide studies concerning UA, gender in agriculture, intra-household gender relations and access to resources for UA were reviewed.

During the fieldwork I collected various scholarly articles, statistical information from Internet sources, reports from NGOs and ward offices, and policies from municipal authorities to supplement the fieldwork data. The information collected included details of the geographical location and historical context of Morogoro Municipality, population size and distribution, economic activities in the municipality and agricultural practices.

3.4.4 Interpretation and analysis

After the household survey, the questionnaires were checked for errors. I used the Statistical Package for Social Sciences (SPSS) to enter and analyse the household survey data, mainly to produce socio-economic profiles of gardeners in frequency and

percentages, and carried out minimal analysis to understand the relationships between the variables. Tables of frequencies and percentages were produced from the analysis.

The information obtained from the recorded interviews was analysed under the main themes of this study, which emerged from the literature review, the fieldwork and the data analysis data. The themes used to interpret qualitative information included resources, decision-making, bargaining power, women's agency, access to resources, the division of labour and social norms. Other factors considered during my interpretation of the information were marital status and age. Then I listened to the recorded clips to select, focus and translate the data from the fieldwork. Another stage involved transcribing and summarising the recorded data, seeking further meaning and interpretation through the key issues repeated by the gardeners.

3.5 Conclusion

The analysis of this study is based on the ideas, experiences and perceptions of male and female FOC and MRS gardeners. The research methods employed are relevant to exploring and understanding gender relations in the household and resource access mechanisms among male and female gardeners. Their different experiences and challenges were gained and understood through interaction with the farmers and by staying in the field for ten months. This chapter has focused on the study methodology, ethical issues and the practicability of the research. The methods used were justified based on the literature and my experience in the field. The practicability of the research is reflected in the process of the researcher building relationships with the farmers and the nature of the research setting. Structured interviews, informal conversations and observation allowed me to talk to different categories of gardeners and key informants in the process of collecting data on intra-household gender relations among gardeners.

Chapter 4: Gardening activities at FOC and MRS

4.1 Introduction

Having presented the methodological approaches in the previous chapter, this chapter provides background information on gardeners and gardening activities at FOC and MRS and sets the context for Chapters 5, 6 and 7. It offers insights into how seasonality shapes the division of labour (see chapter 5) and affects access to water for irrigation (see Chapter 6). This chapter also highlights the contribution that gardens make to the gardeners' lives (see Chapter 7). It presents men and women's demographic profiles, their challenges and lastly UA in the policy context. The chapter makes use of the interviews, FGDs, and survey data collected from the gardeners. Information from key informants is also used to understand their perceptions of gardening activities and the extent of support provided to gardeners.

The chapter is organised as follows: section 4.2 presents the socio-demographic profile of the gardeners; section 4.3 discusses why they started cultivating vegetables; 4.4 discusses the multiple roles of some of the gardeners, 4.5 explores the seasonality of gardening activities. Section 4.6 and 4.7 discuss stages of vegetable cultivation and gender choices in the marketing of vegetables, respectively. Section 4.8 presents the contribution of gardening to the lives of gardeners; 4.9 discusses challenges faced by male and female gardeners; policy aspects of UA are discussed in section 4.10 and conclusions are presented in section 4.11.

4.2 Socio-demographic profile: Who are the gardeners at FOC and MRS?

This section highlights the socio-demographic characteristics of the male and female gardeners including their age, marital status, occupation and education. Age is used to understand how it affects gender relations in the division of labour and decision-making at the household level. For example, female gardeners aged over 50 have more flexible domestic responsibilities than those aged 25-45; their age determines the volume of domestic activities, influencing how much time is spent at the garden. Marital status is used to understand the gendered division of labour and its impact on gardening activities and decision-making on the utilisation of gardening income. It is also used to

understand different categories of female gardeners and households, and how marital status affects their participation in gardening activities. Determining the occupations and economic activities of other household reveals their availability for gardening activities. Lastly, this study investigates how education shapes gardening activities.

4.2.1 Age of the gardeners

URT (2016) points out that age is a crucial in decision-making about the allocation of social services and identifying the labour power in a population. A woman's bargaining power increases with age (Ibid). Therefore, age explores how it shapes the division of domestic and gardening labour and decision-making about the utilisation of gardening income.

The age of the gardeners ranged from 17-72. While the youngest male gardeners were 17 years old, the females started from age 35. The one exception was a female gardener aged 25. At the age of 17 some of the females may still be living with their parents and do not have many responsibilities, while males become independent earlier. I found that the majority of male gardeners working as labourers in the gardens were aged 17-30.

4.2.2 Gardeners' marital status

The following table presents marital status of the gardeners:

Table 4.1: Gardeners' marital status

Marital status	Male	Female	Total
Married and living together	53 (71.6%)	21 (28.4%)	74 (100.0%)
Married and spouse living away	1 (100.0%)	0 (0%)	1 (100.0%)
Widowed	1 (16.7%)	5 (83.3%)	6 (100.0%)
Divorced	3 (42.9%)	4 (57.1%)	7 (100.0%)
Single (never married)	15 (93.8%)	1 (6.2%)	16 (100.0%)
Cohabiting couple	1 (100.0%)	0 (0.0%)	1 (100.0%)
Total	74	31	105

The survey found that 74 gardeners (71.6 percent male and 28.4 percent female) were married and living together with 1 gardener with a spouse living away from the household. Widows accounted for 6, divorced 7, single gardeners (never married) 16,

and cohabiting couples 1. Thus, married couples were much more involved in gardening activities than those of other marital status, consistent with Hovorka (2005), who found that married spouses in Botswana were more engaged in UA, and Sawio (1994) who states that 75 percent of urban farmers in Dar es Salaam were married.

Further findings from the SSIs indicate that only seven married couples both spouses undertook gardening activities. Married couples who were both gardeners helped each other in the garden with different activities, and a few assisted with domestic activities such as fetching water (see Chapter 5). However, married female gardeners, whose spouses engaged in different IGAs had limited access to household members for gardening (see Chapter 5). Marital status determined how different categories of gardeners benefited from gardening activities.

4.2.3 Gardeners' educational status

Foeken et al. (2004) state that education enhances UA production. That is, the higher the level of education an urban farmer has attained, the more chance of greater agricultural production. Women in UA tend to have less education than men, pushing them into subsistence UA (*ibid*; Hovorka et al. 2009). Table 4.2 shows the male and female gardeners' educational level.

Table 4.2: Gardeners' gender and education

Education	Male	Female
None	3 (4.0%)	4 (12.9%)
Primary	58 (78.6%)	22 (71.0%)
Secondary	12 (16.0%)	5 (16.1%)
College	1 (1.4%)	0 (0.0%)
Total	74 (100%)	31 (100%)

Survey data: 2015

From the table, the majority of the gardeners had completed primary education, while very few had secondary and college education. These findings are consistent with the literature, which indicates that most urban farmers have little education (Foeken et al., 2004), although Sawio (1994) found that 33% of urban farmers in Dar es Salaam had attained a university education. Sawio argues that UA is not practiced only by people

with little education; even educated people engage in UA, probably to diversify their activities or as a hobby.

Studies of UA show that women have less education and therefore end up in informal-sector activities (Tripp 1989; Foeken et al. 2004; Hovorka 2005). Nelson (1979) argues that women's low educational status limits their choice of economic activity, therefore they perform subsistence activities linked to the domestic sphere. However, the present study found no relationship between gender and the education of the gardeners.

4.2.4. Occupation of the household members

The survey asked gardeners about people living in the same household, cooking and eating together (see section 2.2.3). Household composition ranged from one to over ten people. The majority were male-headed with a husband the main earner. Other categories were households headed by a female, including single, divorced and widowed women, who was the main earner because of the absence of a husband. The last category was male-headed without a wife, and included households with a single, divorced or widowed man.

Tables 4.3 shows occupation of the household members and 4.4 show the household composition among the gardeners' households. For example, the following household members were present: grandchildren, parent(s) of the spouse(s), uncles/aunts, cousins, sisters/brothers in-law, mothers/fathers in law and non-kin housemaids or garden labourers. The household members had different occupations from that of the gardener household head.

The occupation of the household members was an important variable in the availability of household labour for gardening activities. The household survey asked how many people were in the household their sex, age and occupation, and how they assist in gardening. My assumption was that a household with more members engages in other economic activities apart from gardening, implying that the gardener(s) work more in the garden or depend more on hired garden labour to supplement the lack of household labour. On the other hand, in a household with household members not engaging in other economic activities the gardener can rely on their labour for either gardening or

domestic activities. Among 105 gardeners' households the survey found 486 people and different occupations. Of these, 162 were students and 65, including young children and elders, did not work, making a total of 227. Elderly people and young children did not participate in gardening due to their age and lack of physical strength. The remaining 259 household members worked. The findings indicate that students made up the majority of the household members (see Chapter 5 for the involvement of children in gardening activities). During the interviews I found that some students did not like gardening, while others assisted their parents only during weekends or holidays. The survey found gardening to be the major source of income for only 27 of the 105 gardeners (10 female and 17 male). Because the household survey produced a massive amount of data I have divided the table into household members by occupations and household composition.

Table 4.3: Occupation of household members

Type of occupation	Male	Female
Carpentry	3 (1.2%)	0 (0.0%)
Watchman	1 (0.4%)	0 (0.0%)
Casual labourer	8 (3.3%)	3 (1.3%)
Employed	12 (4.9%)	17 (7.2%)
Gardener	88 (35.8%)	55 (23.0%)
Plumber	1 (0.4%)	0 (0.0%)
Garage work	4 (1.6%)	0 (0.0%)
Housemaid	2 (0.8%)	6 (2.5%)
Housewife	0 (0.0%)	8 (3.3%)
Mason	2 (0.8%)	0 (0.0%)
Not working	31 (12.6%)	34 (14.2%)
Small-scale business	13 (5.3%)	35 (14.6%)
Student	81 (32.9%)	81 (33.9%)
Total	247 (100)	239 (100)

NB: Participant numbers do not add to the 105 interviewed as the table indicates the occupation of all the household members, including the gardeners. The total number of gardeners do not add up to 105 because other household members are also gardeners.

Table 4.3 shows the economic activities performed by household members apart from gardening, including plumbing, carpentry and garage work by both other household members and some of the gardeners. This diverges from rural agricultural households in

Tanzania where in most cases farming is the major occupation of the household members (Mwaipopo, 1994; Lyimo-Macha and Mdoe 2002). Having different economic activities in the gardener household highlights the importance of understanding the division of labour for domestic and gardening activities.

The above table shows 4.9 percent male and 7.2 percent female are employed. These involved gardeners employed at FOC and other adult household members employed as teachers and accountants and in casual employment. Other occupation included in the table is small scale business performed by gardeners and other adult household members. These include keeping livestock, a motorcycle transport business (*boda boda*), M-pesa business (A mobile-phone-based money transfer and financing services hosted by Vodacom), and cooking and selling snacks, to mention just a few. The table suggests that male gardeners' households diversify more than female gardeners'. Eight male gardeners' wives do not work, suggesting that the wife may assist in gardening activities. The following table presents gardener household's composition.

Table 4.4: Household composition

Category of gardeners	Nuclear family	Extended Family		
		Adult women ^a	Labourer ^b	Adult men ^c
Male gardener (married)	40	13	2	7
Male gardener (single)	8			1
Female gardener (married)	12	8	1	10
Female gardener (single)	2	1		
Total	62	22	3	18

^aThis category may include adult daughter, mother, mother-in-law, sister, niece/cousin in the household

^b There are few gardeners who are living with their labourer in their household

^c This category may include adult son, brother-in-law, nephew/cousin in the household

Table 4.4 indicates the presence of more nuclear households (62) than extended-family households (43). The latter contain parent(s), children, adult women, labourers, and adult men.¹⁴ This is consistent with URT (2012), which found that out of 227,921 households, 106,900 were composed of average household size of 2.8 persons in Morogoro Municipality, implying that these households contained the spouses and their

¹⁴ In this study, a nuclear household refers to the members living in it including parent(s) and children.

children. Households in Kichangani and Mazimbu wards were composed of average household size of 2.5 and 2.0 persons respectively (*ibid*).

The table shows 62 nuclear and 43 extended households. Since nuclear families are in the majority this suggests that the availability of household labour (apart from that of students) is limited for some of the gardeners. Furthermore, the table shows more adult woman in married male gardeners' than in female gardeners' households. This proposes the challenges faced by female gardeners in accessing household labour (see section 5.3).

4.3 Reasons for engaging in gardening

Studies in the African context (Foeken et al. 2004; Owens 2016) argue that the majority of urban farmers are rural migrants with low education who otherwise face unemployment. In this study, unemployment was among the factors that motivated gardeners to start vegetable cultivation; however, other factors are also important, as presented in Table 4.5.

Table 4.5: Reasons for engaging in gardening activities

Reasons	Male	Female
Unemployment	20 (27.0%)	7 (22.6%)
Major source of income	11 (14.9%)	2 (6.5%)
Failure of other business	30 (40.5%)	12 (38.7%)
Diversification	12 (16.2%)	10 (32.2%)
Retirement	1 (1.4%)	0 (0.0%)
Total	74 (100%)	31 (100%)

Survey data: 2015

The findings support Mlozi (1995), Jacobi (1997) and Howorth et al. (2000), who argue that unemployment pushes some urban people to engage in UA. The other reasons presented in the table imply that gardeners have tried other economic activities before starting gardening, as McLees (2011) corroborates.

Table 4.2 indicates that the majority of the gardeners had attained a primary and very few, a secondary education. This may have limited their chances of getting formal employment, in which case they may have turned to gardening as an easy activity. Apart

from education, the collapse of some of the industries in Morogoro Municipality, discussed in section 3.2.1, resulted in the retrenchment of workers, some of whom ended up in informal-sector activities. The tobacco-processing factory is one of the factories that survived, but it receives raw tobacco seasonally, hence for several months of the year labourers are left without employment for 3-5 months, forcing some to search for other sources of income. Apart from seasonality in the tobacco industry, the low pay motivates some of the labourers to engage in gardening as a part-time activity. During the fieldwork I noted that some of tobacco workers had turned to gardening, got used to it and decided not to go back to the tobacco industry.

The table indicates that the failure of other IGAs was another reason motivating some workers to take on gardening activities. Thirty men and thirteen women started gardening after a business failure. Some of those who were selling vegetables had owned a market stall selling vegetables and/or different food products. Lastly, diversification motivate some of the gardeners into gardening activities: they argued that higher urban prices for household goods made it difficult to depend on just one source of income.

The factors presented above suggest that individual gardeners have unique experiences and motives for gardening, and the socio-demographic findings presented in section 4.2 show a mixture of categories of gardeners in terms of age and marital status which produces nuanced understandings of gender relations in gardening activities. This implies that each gardener has a unique story to tell about their gardening activities.

4.4 The multiple roles of a gardener: Vegetable buyer, labourer and/or landlord

This section explores the multiple roles of some of the gardeners. Interviews and informal conversations with male and female gardeners revealed that some combined gardening activities with being a labourer, vegetable buyer or landlord. In other words, a gardener temporarily shifts into one of these roles according to seasonality and demand for their vegetables. Three different patterns were identified: first, a gardener can decide to rent one of their plots out and retain others in the same location and continue cultivating vegetables. This strategy is employed to raise money to pay the rent on the

other plots or buy agricultural inputs. Alternatively a peri-urban gardener can cultivate crops such as maize during the rainy season while renting their plots out for a short period, and then return to cultivating vegetables on their plots. This makes the gardener the landlord of another gardener. These are temporary strategies that gardeners use to generate income while a tenant (a fellow gardener) uses this opportunity to temporarily increase their number of plots. This is a form of subletting between gardeners, and the formal landlord remains unaware of it. The survey found that 33 percent of gardeners at MRS and 16 percent at FOC had rented their plots to other gardeners. The different strategies employed by gardeners to access more land implies that vegetables are in high demand while access to land is limited, highlighting the importance of understanding how gardeners access resources such as land (see Chapter 6).

Second, when gardeners finish gardening on their own plots they may seek paid labour on another gardener's plot. 'Off-farm income typically refers to wage or exchange labour on other farms' (Ellis 1998: 5) this is another source of income diversification. This trend is common among young male gardeners but very rare among married male gardeners. Section 4.2.1 indicated that most male gardeners aged 17-30 work part-time as labourers. It was not common for female gardeners to work as labourers, implying that young male gardeners have much more time to work, both on their plots and for others. Section 5.4.2 presents the trade-off between garden and domestic work for female gardeners, showing that they have a limited amount of time to divide between the two spheres. This means that female gardeners are limited to part-time labouring as it does not fit their gendered roles.

Lastly, a gardener buys vegetables from fellow gardeners when they do not have enough vegetables of their own to sell. In this role, the gardener becomes a buyer. There is gender variation in the strategies for selling vegetables: while a few female gardeners without young children bought vegetables to hawk on the street, some male gardeners took pre-ordered vegetables straight to the consumer. The following are quotes from some of the male and female gardeners who are also buyers:

My husband is not working because of illness, so I am supporting the family. I have only two plots whose income is not enough to sustain the family. Therefore

when I harvest my vegetables, I also buy vegetables from other gardeners to sell on the street. (Rehema)

The case of Rehema (see section 7.6.4) evidenced the contribution of her gardening activities to her household due to her husband's illness. Rehema's household consisted of a non-working husband and student grandchildren. She claimed that she needed to generate more money to sustain her family. She normally bought vegetables from other gardeners when she did not have enough to hawk on the streets. This case suggests that some gardeners maximise their opportunity as a gardener to generate more income based on financial demand in the household. Another female gardener's case is presented:

I started gardening in 2005 when my husband was alive; two pairs of hands were better than one. I have to take care of my children, that is why I have decided to buy and sell vegetables from fellow gardeners to generate more income for my family. (Hamida)

Gardening was the major source of income in Hamida's household because the other household members were not working. Her children were still in school, while her mother was at home.

On a different note, Jacob said:

I have a tender for supplying 400 bunches of amaranth to the Mazava factory every day. Sometimes I do not harvest enough vegetables to meet the demand. Therefore I buy vegetables from other gardeners so that I can maintain the supply. (Jacob)

Jacob, Hamida and Rehema's strategies for selling vegetables were different: while Jacob was going for large-scale vegetable sales, Hamida and Rehema had opted to expand their role due to financial limitations. During the fieldwork I noted that Jacob had more resources than the two female gardeners. For example, he had 26 plots and was a retired FOC officer. He had started gardening about 30 years ago when still an

employee at FOC. In section 6.3.3 I discuss Jacob's case and how access to authority, increases his chances to benefit from the gardening resource such as plots.

Although Jacob, Hamida and Rehema aimed to generate more income, they had different strategies and motives for taking on the role of buyer. While the illness and death of their husbands forced Hamida and Rehema to become buyers, for Jacob a good business venture and his desire to maintain the business opportunity motivated him to buy vegetables from other gardeners. Given the limitations to accessing resources such as land, the above cases imply that the desire for diversification of economic activities is higher among gardeners. For example, section 4.8.2 describes how 64.9 percent male and 51.6 percent female gardeners diversified their economic activities.

4.5 Seasonality of gardening activities

In her study on decision-making in urban crop cultivation, Dennery (1996) reports that seasonal variations in urban food production affect the amount of food produced and the agricultural timetable. Seasonality shapes the potential for taking up additional roles such as labourer or buyer, as discussed in section 4.4. It also affects the marketing of vegetables and intensifies gardening activity, shaping gender relations in the household. This section identifies the busiest UA period of the year and explores how seasonality affects gardening activity and ultimately, vegetable production. The FGDs with male and female gardeners produced an annual gardening calendar, below.

Table 4.6: Vegetable seasonality calendar

Time of year	Season	Impact of season on garden
February to April/May	Rainy	Low irrigation activities, high production of vegetables, good market season, average gardening activities
June to early September	Cold	Low production of vegetables because of diseases, average marketing, average gardening activities
September to December, sometimes into January	Dry	Shortage of water causing intensive irrigation, low market for vegetables (sometimes vegetables are thrown away)

During the dry and rainy seasons gardeners change their timetable to accommodate the changes. This affects their allocation of time to the garden and the household, and

income from vegetable sales. The following section discusses the data in the above table to clarify how changes in seasonality affect gardening activities.

4.5.1 The dry and rainy seasons

4.5.1.1 The rainy season

During the rainy season gardeners have less to do because rainwater irrigates their vegetables. Gardeners at FOC claimed that rainwater contains nutrients which enhance productivity; this can be justified by the fact that the floods bring alluvial soil to the gardens, increasing soil fertility. However, the Mazimbu gardeners have to abandon their flooded plots.

As Table 4.6 also indicates, other garden activities for example ploughing is not time-consuming because the land is softer compared to the dry season, when it requires a lot of energy. In this period gardeners, especially at FOC, have time to rest and do other activities, as evidenced by a female gardener:

During the rainy season I can stay at home for two days without going to the garden because there is no need for irrigation. (Lucy)

MRS gardeners have a different experience:

During the rainy season our plots get flooded and I stay at home and wait for my husband to provide. (Anna).

Lucy is a female gardener at FOC, while Anna is from MRS. While Lucy continues her vegetable cultivation without irrigating, Anna from MRS is forced to stop. Section 3.2.2.2 discussed how gardeners at MRS are affected during the rainy season and their coping strategies. I also observed that some of the lower-level open spaces in Morogoro Municipality are abandoned during rainy season due to flooding. FOC is one of the few open spaces which can be accessed and utilised for vegetable cultivation during the rainy season. In most cases I observed that vegetables are sold at the garden on either a

retail or a wholesale basis. In summary, other factors besides gender such as seasonality and location affect the gardeners' ability to benefit from gardening.

4.5.1.2 The dry season

During the dry season gardeners are challenged with limited water for irrigation. As the majority use an irrigation pump to access water (see section 6.5.1.1), the limited water changes their timetable. They need to wake up at around 4 a.m. to be the first to access the water; they explained that if they go to the garden late there is not enough water. This not only increases tension and conflict in the garden but also shapes the gendered division of labour in the household.

The dry season also affects the marketing of vegetables. The following are female gardeners' accounts of the challenges they face during the dry season:

During the dry season there is a shortage of buyers, thus there are plenty of vegetables. All the open spaces in the municipality which could not be cultivated during the rainy season are accessible in the dry season, and other people cultivate vegetables. There is no need to harvest the vegetables, put them in bunches and sell them yourself. I normally allow a buyer to do all of this – they can even increase the size of the bunch and it is okay for me, because there are limited buyers during the dry season when there are lots of vegetables. (Irene)

The above statement shows the increasing interest of urban people in cultivating their own vegetables, probably to cut down on food expenses or increase the variety in their diet. Similarly, McLees (2011) notes that towards the end of the rainy season people who are not gardeners cultivate vegetables, using any available open space or at home. This affects vegetables sales and gardeners are forced to take their vegetables to the market, or as Irene said, allow buyers to increase the size of the bunch; otherwise they have to throw vegetables away.

Other impacts of the dry season are noted:

Sometimes I have to forego some of the domestic activities during the dry season because of frequent irrigation. (Rose)

Between September and December the land is too dry, so the vegetables need frequent irrigation. During this time there are days when I cannot cook snacks for my business so that I can have more time in the garden. (Mwanahamisi)

The above show the impacts of the dry season on the division of labour between the household and other IGAs. For example Rose sometimes chooses gardening over domestic activities. She is divorced and her household comprises her mother and five school children. Rose has the advantage of the assistance of her mother and children with domestic activities. Given that her household members have no other IGAs, gardening is the major source of income in her household. Rose's household corresponds with the hypothesis discussed in section 4.2.4: that household members with no other IGAs are available to support a gardener in the garden or with domestic activities.

The dry season affected Mwanahamisi's business cooking and selling snacks because on some days she did not cook snacks so she had enough time for irrigation. Since she combined gardening and selling snacks as her means of livelihood, the dry season affected her income-earning capacity. According to her, she felt more economically secure when combining gardening and selling snacks to meet her household needs.

This section has discussed seasonality and location as important factors in gardening activities. Hovorka (2005) also identifies location as one of the factors influencing the amount of food produced from UA. Rose's case indicates changes in the gendered division of labour due to seasonality; she forewent some of her domestic responsibilities to irrigate her vegetables. But she could not have done this without assistance from her mother and daughters to cover her domestic responsibilities.

4.6 Stages of vegetable cultivation

This section explores the stages of vegetable cultivation as another factor affecting gardening activities. In this study, the stages of vegetable cultivation mean the different

gardening activities such as clearing the land, ploughing, making ridges, sowing, fertilizing, applying insecticides, irrigating, weeding, harvesting and selling. During my fieldwork I noted that the stages of vegetable cultivation affected the timetable of gardening activities and domestic responsibilities (see section 5.4.2). They affected the gardeners' daily routine: when they arrived at the garden, the time spent there and the time they left. Harvesting, irrigating and weeding are more labour-intensive than other activities such as sowing. I present the case of how different stages of vegetable cultivation changed Stella's timetable:

During harvesting, I wake up at 5 a.m. so that I can arrive at the garden at 6 a.m. because I need to harvest the vegetables, wash and tie them in bunches ready for sale. This process takes time, and most of the customers come to buy vegetables in the morning so they can take them to the market early. Since I do not have time to prepare breakfast at home, I buy from food vendors (women) at the garden.

She continues:

During weeding I do not need to arrive at the garden so early. I can go from 7 a.m. and weed up to 2 p.m. and go home without going back to the garden. But weeding is very intensive and normally takes up to four days, depending on the number of your plots.

Sowing is the least time-consuming:

During sowing I can go at 8 a.m. and stay until 12 p.m., and after I go home for lunch I do not return to the garden unless I have other activities on other plots.

Stella's account shows that the activities to be performed in a day influence her decision about what time she leaves her home for the garden. Furthermore, the stage of vegetable cultivation affects the allocation of time at the garden. This suggests the complexity of the division of labour and the decisions a gardener makes between garden and household activities, particularly about the use of time. The stages of vegetable cultivation go hand in hand with the number of plots a gardener has, and both increase

the gardening workload. Gardeners with many plots have an increased chance of getting more cash income because they can cultivate different types of vegetables on different plots; however, this increases the gardening workload.

4.7 Gender choices in the marketing of vegetables

In the previous sections I have demonstrated how seasonality affects gardening activities, other IGAs and the division of labour in the household. This section discusses the marketing of vegetables by gender. During the fieldwork I noted that some female buyers normally put vegetables in a basket which they carried on their head to sell in the street. Male buyers and male gardeners taking vegetables to the market put them in a basket and carry this on a bicycle, meaning that they could carry many more bunches of vegetables than females who carried them on their head.

4.7.1 Vegetable-selling arrangements

Urban farmers sell their products in one of the following ways: individual consumers buy directly from farmers, farmers sell to buyers directly on the farm (then the buyers take them to market to sell), and lastly farmers sell directly at the market (Magigi, 2008). This highlights the diversity of selling arrangements, but information on gendered roles in marketing is limited. This study identified the same pattern of selling arrangements, grouped as retail, when a gardener sells their vegetables in bunches, and wholesale, when they sell a whole plot and let buyers harvest the vegetables themselves, but further findings revealed different factors influencing the choice of selling retail or wholesale by gender.

While male gardeners can take vegetables to market by bicycle or change how they sell their vegetables according to the season, female gardeners are affected by seasonality and other factors such as the availability of household members to support them during selling, domestic activities and concerns about their personal safety. I start by presenting men's opinions of regarding selling retail or wholesale:

I like to sell my vegetables at the garden, retail or wholesale. Selling at the market can be profitable but it takes more time, which reduces my free time to work as a labourer. (Jamal)

Retail selling is good because you know exactly how many bunches you have harvested. When you sell wholesale you only estimate the number of bunches of vegetables and hence you're not sure whether you've profited or not. (Leonard)

Selling wholesale is better: you do not need to wake up very early in the morning to go to the garden to harvest the vegetables because it is a responsibility of the buyer to harvest them. (Julius)

The statements above indicate that the decision to sell retail or wholesale depends on individual choice. Julius considers wholesale is good, since he can have free time to rest. While Leonard is concerned to know the productivity of his vegetables, Jamal wanted spare time to work as a labourer. This shows the dynamics of marketing vegetables: the decision whether to sell retail or wholesale and whether to take them to the market is influenced by different factors. Female gardeners had their own concerns about selling retail or wholesale:

Sometimes I take vegetables to the market or sell the whole plot. When I take them to the market I cannot go earlier than 6 a.m. because it is too risky walking alone. (Flora)

I like wholesale because I can get free time to do other things like domestic activities. If there are no wholesale customers, I sell retail. Retail selling takes time because you sell bunches of vegetables until you finish all the plots; it might take two days. If I decide to take vegetables to the market, I must wake up very early in the morning around 5 a.m. and use public transport to the market. If you miss the bus you walk alone, and that is too risky. Otherwise, if you know that other gardeners are harvesting as well, you can agree to walk to the market together. Women whose husbands are also gardeners are lucky, because they go with their husbands to sell vegetables. (Rose)

Flora and Rose illustrate various factors in female gardeners' choice of whether to sell retail or wholesale. Although they would have liked to take their vegetables to the market because of the chance of fetching a higher price, they cannot since they are concerned about their safety and domestic responsibilities. In their interviews Rose and Flora were much more concerned about walking alone to the market. In Chapter 3 I indicated that one of the categories for selecting MRS and FOC was their easy access to the market. Mawenzi market is popularly known as the farmer's market in Morogoro Municipality, where rural and urban farmers take their produce to sell; from there, the buyers distribute their vegetables to the main market in the town centre and other markets.

The FOC and MRS sites have different arrangements for selling vegetables. While buyers come to the garden at FOC early each morning and evening, at MRS few buyers go to the garden. Therefore MRS gardeners harvest their vegetables in the evening and take them to market in the morning. This strategy brings challenges, particularly for women with young children. The following account involves Anna, whose youngest child is five months old. She lives a 90-minute walk from the garden. Her household comprises her husband and two young children. She wakes at 5 a.m. and performs domestic activities. Based on her busy morning schedule, she cannot go to the market early to sell vegetables, thus she prefers selling at the garden during the evening. If there are fewer buyers at the garden her husband helps her by selling them at the market. However, she does not like this arrangement, claiming that after selling her vegetables her husband sometimes takes some of her money without her permission.

Distance and taking vegetables early to market early in the morning were the challenges facing female MRS gardeners. They said that the best option for them was to use public transport, which not only increased the cost of production but also was a problem because the buses are not regular so early in the morning. Male MRS gardeners used bicycles or walked alone to market. Opinions from different gardeners suggest that being able to take vegetables to the markets with a labourer, or alone, and/or using a bicycle increase the chance of benefitting from the garden. Ability to benefit from the garden involves multiple factors therefore, including not only access to resources and assets (see Chapter 6) but also gardeners' strategies for survival in gardening activities.

Rose's words support the discussion in Chapter 5 about female gardeners whose husband are also gardeners being in an advantageous position. Their husbands can assist them in different ways, such as by carrying a heavy irrigation pump to their garden, irrigating or taking the vegetables to the market. Rose said that female gardeners whose husbands are gardeners do not worry about their safety, since they can go to market together or he can take the vegetables alone while the wife continues with other activities. Mary and Lucy, whose husbands are gardeners, described their husbands' assistance:

Sometimes my husband helps me to carry vegetables on his bicycle; when we arrive at the market he leaves me to sell them. (Mary)

If I can't sell all my vegetables at the garden, my husband takes them to the market. He uses his bicycle so he can carry many bunches of vegetables. (Lucy)

Mary's and Lucy's statements indicate a reciprocal relationship between spouses who are both gardeners. It also suggests challenges with the household labour for female gardeners who are either household heads or whose husband has a different economic activity. This reveals variation among female gardeners that affect how they benefit from gardening. While some are assisted by their husband with taking vegetables to market, others rely on labourers or take risks going early to market. Access to household labour is one of the important factors in the success of female gardeners; its availability for gardening activities in some of the households means that gardening is seen as the family enterprise. In this kind of household both husband and wife practice gardening, or a single parent (either female or male) is the household head.

While male gardeners' choices about whether to sell retail or wholesale are influenced by factors such as spare time to work as a labourer, knowing their exact productivity (number of bunches), and having time to rest, it is different for female gardeners. Gender matters in the marketing of vegetables, as it affects female gardeners' choices about how they sell their vegetables.

Although hiring a labourer to take vegetables to the market is the only alternative for female gardeners who do not have access to household labour, data from the FGD with

female gardeners highlights the challenges of hiring a labourer. However, failure to take vegetables to the market sometimes puts women in a disadvantageous position, as stated below by female gardeners in the FGD:

Male labourers are not to be trusted: when you give them vegetables to take to market they cheat you on the price. However, if there are few customers at the garden you have no option – you give the vegetables to a labourer to take to market. Giving them to a male labourer is a gamble: you either win or lose.
(Rahma and Stella, FGD)¹⁵

Some of the male gardeners go to the market with the labourers and stay there until all the vegetables are sold. This way, a labourer cannot cheat them. For us women, we cannot stay at the market as we have other activities to do at home.
(Irene and Tatu, FGD)

Furthermore, the women stated that a gardener who can sell their vegetables at market or who has a tender to supply vegetables makes more profit, because relying on female buyers at the garden or sending a labourer to market can make a loss. Female buyers at the garden do not have the capacity to buy all the vegetables; they mainly buy retail, and use baskets instead of bicycles. This shows the need to take vegetables to the market when vegetable production is high, however using a labourer who cannot be trusted when they take vegetables to the market alone is a loss. This finding confirms McLees' (2011) argument that open-space farmers profit more when they sell their produce direct to the consumer without engaging a middleman. However, accompanying a labourer to the market is a challenge for most female gardeners. While they are aware of the labourer's deceit, they are concerned with their gendered household role. This study found that despite women participating in gardening activities to earn income, taking care of the domestic activities is still their major gendered role.

This section has presented the different factors shaping male and female gardeners' decisions about whether to sell retail or wholesale. While seasonality plays an important role in shaping gardening activities, gender also shapes the marketing of vegetables.

¹⁵ It should be noted that gardeners' quotations with more than one name were paraphrased because their ideas were similar.

Female gardeners employ different strategies to market their vegetables, although this is not to say that female gardeners do not benefit from their gardens. The women's accounts above suggest that they do not enter into gardening activities on an equal footing with men, however.

4.8 The contribution of gardens to the gardeners' lives

Foeken et al. (2004); Ngome and Foeken (2010) argue that UA is important to both the urban poor and people of high income. Furthermore, it is undertaken for both subsistence (such as home gardening) and commercial purposes, so it plays an important role as a household strategy for food security, employment and income for other household expenditures. As discussed in Chapter 1, it is argued that women participate in UA for home consumption and men for income. Ngome and Foeken's (2012) study in Cameroon found that home consumption was a major motivation for married women to participate in gardening, while male gardeners were much more concerned with income. Foeken et al. (2004) states that the main motivation for gardeners in open spaces is home consumption, with the surplus sold to generate cash income. Contrary to this, FOC and MRS gardeners cultivated vegetables to generate income rather than for home consumption. Gardening income is spent on building houses, supporting other IGAs and meeting household expenses such as school fees, medical bills, food expenses.

Since generating income is the major priority for gardeners, only small amounts such as one to three bunches of vegetables were taken home for consumption. This was a common trend with most of the gardeners. However, the home consumption trend could not be established because there was no uniformity in how often a gardener took vegetables home. During the interviews, the gardeners were asked how income from the garden contributes to their lives and other benefits of the garden that they consider important. I decided to ask this question to learn the value and meaning of gardening to male and female gardeners. Because the gardeners did not keep records of the cost of and income from their vegetable production such as the price of agricultural inputs and other resources and assets, it was difficult to identify the real income from the garden. Moreover, this study is qualitative rather than quantitative, and understanding what gardening meant to gardeners was more important.

4.8.1 Income contribution

The following table gives rough estimates of income from some types of vegetables.

Table 4.7: Estimates of income on different type of vegetables

Type of vegetable	Number of weeks to harvest	Number of bunches per plot	Income in TZS (from all plots)
Amaranth	3	2000 per 5 plots	700,000 (including cost of inputs)
Amaranth	3	600 per 2 plots	90000 (excluding 38,000 for inputs)
Amaranth	3	350 per 1 plot	40,000 (excluding 15,000 for inputs)
Chinese cabbage	4 to 6	221 per 6 plots	150,000 (excluding 70,000 for inputs)
Chinese cabbage	4 to 6	1000 per 20 plots	540,000 (excluding 60,000 for inputs)
Swiss chard	6	150 per 1 plot	70000 (excluding 34,000 for inputs)
Pumpkin leaves	3	300 per plot	260000 (excluding 40,000 for inputs)
<i>Solanum nigrum</i>	4	1,000 per 2 plots	350000 (excluding 54,000 for inputs)

NB: The majority of gardeners had more than one plot on which they cultivated different types of vegetables

The above table estimates the income from cultivating and selling different types of vegetables. The number of bunches of a vegetable that a gardener can harvest depends on the application of agricultural inputs and irrigation. Roughly, the table shows that amaranth is much more profitable than other vegetables because it matures quickly. During informal conversations gardeners said that amaranth requires a small amount of manure and a few applications of insecticide. This could explain the popularity of cultivating it at FOC. This confirms Jacobi's (1996) account of the economy of growing amaranth in open spaces in Dar es Salaam and its role in income poverty alleviation. He found amaranth very popular in most open-space gardens and that it made a significant contribution to household income.

As stated above, the table provides estimates due to the absence of record keeping. I relied on gardeners' stories to understand the significance of gardening activities in their

lives. Although some had other IGAs, gardening made a significant contribution to their household expenditure and other family investments. Male gardeners said:

Through income from the garden I can take care of my family, pay the school fees and for food, medical expenses and other expenses at home. I am not jobless – gardening is my employment. (Peter, Daniel, Jacob)

With the income from the garden I have managed to open a small pharmacy for my wife and buy a piece of land. (Martin)

Consistent with these male gardeners' accounts, farmers mainly cited economic benefits as the major contribution of UA in Jacobi (1997), Mlozi (2004) and FAO (2012), as discussed in Chapter 1. Gardening has enhanced their ability to meet their gendered responsibility for providing for the family. Female gardeners commented as follows regarding the economic contribution made by their gardening activities:

Through my gardening income I have the freedom to buy whatever I want because it is my own money. I can buy household utensils, food or my own khanga. [It is a piece of cloth tied on a woman's waist] (Rahma)

Gardening is not profitable when you only have a few plots, but I can manage my life and support my family. My family and I don't go to bed on an empty stomach. There is hope of getting money once I sell my vegetables. The money is always not enough, because even rich people are not satisfied, they want more money. (Rehema)

Apart from meeting the daily household expenses with the gardening income, interviews and informal discussions revealed that the success of a gardener is measured by their ability to own a house, and this is regarded as the major achievement from gardening. The following section explores this in detail.

4.8.1.1 Building a house

In urban Tanzania most people prefer to build their own house to avoid the cost of renting. However, this can only be done if they are financially able to do so. As a Tanzanian citizen, I am aware that most people perceive that when you build your own house you avoid problems and disturbances with landlords. For example, landlords can raise the rent regularly without notice or restrict access to some of the services in the house. The survey data indicate that 38 percent of the gardeners had built their own house, either on their own or with their spouse; 50 percent rented their house (3 percent rented the whole house, while 48 percent shared a house with other tenants); and 11 percent lived in a relative's house. The following statements describe the achievement of building a house:

I have built two houses. On average, I can get up to 1,000,000 TZS per month because I have a tender to supply vegetables to the Mazava factory daily. (Jacob)

I have managed to build my own house with gardening income. (Julius, Samweli)

These male gardeners managed to build their houses using their income from gardening. It is interesting to note that they co-owned their plots with their wives (see Chapter 5). While they assisted each other with some of the gardening activities, building a house is considered a male achievement rather than one shared by both partners. The wives revealed:

My husband is a gardener as well. We have managed to build a house together from gardening income. I am satisfied with the gardening because I am old – I cannot do anything new to make a living. (Mwasiti, Samweli's wife)

My husband and I are gardeners, so we have managed to build our own house. We have also bought peri-urban land for crop cultivation (Tatu, Julius's wife).

The same was noted about Jacob's wife, who was also a nurse at FOC and had 13 plots. Jacob said that he had 26 plots, without mentioning that they were shared with his wife (section 4.4). During my interview with his wife, she said that she had 13 plots while

her husband also had 13 plots, in total 26. Moreover, she is entitled to have plots at FOC. She said that they had built two houses with the income from the garden. Although male gardeners excluded their wives by presenting it as their own achievement, their wives were much more open to showing that building their house was a joint success. Probably because I am a female researcher, some of the male gardeners were not ready to acknowledge that some of their achievements came through collaborating with their wives, since it is the social norm for the husband to provide for his family.

The above statements show that building a house was valued by many gardeners to the extent that a gardener who has not built a house feels he needs to work harder to achieve this. Gardening income is also used to start other businesses to increase household income, as discussed in the following section.

4.8.2 Source of capital for other IGAs

The majority of the gardeners said that the price of food and other household necessities is increasing in urban areas and therefore it is difficult to depend on only one source of income. Other factors including the seasonality of gardening activities and land insecurity contribute to some gardeners diversifying their activities. Ellis (1998:4) defines livelihood diversification 'as the process by which rural families construct a diverse portfolio of activities and social support capabilities in their struggle for survival and in order to improve their standard of living'. Diversification is also conducted in the context of declining economies, where people struggle to engage in different activities for survival (*ibid*). Ellis argues that 'livelihood' encompasses not only income but also the social institutions (such as family, village), gender relations and property rights that maintain the means of livelihood. Although Ellis's diversification literature focuses on rural diversification, it is also documented as a survival strategy for people in urban areas (Maxwell 1995).

Despite gardening activities remaining their main source of household income, the majority of the gardeners in this study had other economic activities. Although examining these was not the focus of the thesis, understanding their patterns contributed

to understanding of the division of labour in the garden and the household, as proposed in section 4.2.4. Table 4.8 shows the involvement of gardeners in other IGAs:

Table 4.8: Gardeners' involvement in other IGAs

Response	Male	Female
Yes	48 (64.9%)	16 (51.6%)
No	26 (35.1%)	15 (48.4%)
Total	74 (100%)	31 (100%)

Survey data: 2015

The table shows that majority of the gardeners are involved in other IGAs. IGAs include cooking and selling snacks, running a *genge* (a small kiosk selling different types of grains and vegetables), renting out a motorcycle, peri-urban crop cultivation, selling *vitenge* (a piece of cloth tied around a woman's waist, similar to a *kanga* but heavier), making soap, running a small shop, renting an irrigation pump to other gardeners, hawking vegetables on the street and exchange farm labour, among others. This suggests that for gardeners it is important to have other sources of income to support their household expenditure and gardening activities.

Section 4.5 presented the seasonality of gardening activities and the different impacts that have been documented such as on gender, labour and the marketing of vegetables, in turn affecting household income. For example, during the rainy season MRS gardeners stop cultivation, some continuing with other economic activities while waiting for the water to drain from the garden. During the dry season there is increasing competition in the vegetable market due to high production in other open spaces, and at this point gardeners sometimes sell vegetables at a low profit. This partly justifies why more than 50 percent of the gardeners diversify their activities. Seasonality is one of the determinants of their diversification, as Ellis (1998) agrees, arguing that the need to deal with income instability in seasonal agricultural production motivates people to find ways to diversify their income. Gender affects diversification options, patterns and outcomes (*ibid*). In this study very few women had diversified their IGAs compared to men. This is similar to other studies in Tanzania; for example Smith's (2015) ethnographic study of livelihood diversification among the Maasai women found that more men had been involved in diversification than women, since men have greater access to productive assets than women. In the present study, women's diversification

included selling snacks, *vitenge*, *genge* and vegetables. Their diversifications of activities are strongly determined by age and marital status, consistent with Smith's study (*ibid*). For example two female gardeners who also engaged in other IGAs were over 50 years old, and one was divorced.

Section 4.4 indicated that some of the gardeners combined roles as a way of increasing income. The following account indicates how gardening income is used to fund other IGAs:

I started gardening in 1990. I used the income from the garden to start a genge business where I sell food. When I get money from the garden I buy foodstuffs to sell at the genge. When I want to purchase agricultural inputs or pay for anything for the garden, I can also take money from the genge business. (Stella)

The above indicates that the two ventures support each other. Once an IGA is established using gardening income, in turn, its income is occasionally used to support gardening activities. Several gardeners with other IGAs noted that the two business ventures supported and sustained one another. Since more than half of the gardeners had IGAs, this suggests that gardeners desire to take on more than one source of income to increase their sources of income.

4.8.3 Social benefits of the garden

Apart from monetary gains, as discussed in the previous sections, non-monetary gains are also important. Some of the gardeners claimed that the economic benefits from gardening activities are not great, but they consider the non-monetary benefits to be significant in their lives. They compared the benefits of gardening activities with their past economic activities. The following statements are from male gardeners:

Before I started gardening I worked as a mason, but some of my customers were not paying me. I had to take one of my customers to court. Gardening is more convenient than being a mason; I have peace of mind with gardening work. (Samweli)

People know that I'm working, therefore it is easy to borrow money from friends because they know I will repay the money. (Godfrey, Macha)

As a gardener, I can decide and choose to work any time I like. This is different from being an employee. (Salim)

Although I am not very satisfied with the gardening income because I have a small number of plots, I have the freedom to work and use my free time to rest. (Julius)

These accounts by male gardeners indicate the importance of a garden and the value attached to the lives of gardeners depending on individual experiences and perceptions. While Godfrey and Macha see gardening as valuable social capital, Salim and Julius see freedom to work when they like as more important. Samweli's previous job made him value gardening the more.

Female gardeners said:

I am satisfied with the benefits of the garden because I can meet my daily needs, although the benefits are less than the time I invest. My neighbours see me as a busy woman, which is good for me, because it reduces the time for gossip with them. (Christina)

I have never sold any of my household furniture to solve my problems, because I can meet both my needs and those of my children. I spend most of my time at the garden to avoid gossiping with my neighbours. (Irene)

Christina and Irene enjoy gardening because it keeps them busy and away from gossiping with other women. According to them, gossiping indicates a lack of economic activity to keep one busy.

Like Salim and Julius, some of the female gardeners value the freedom to work when they want. Rebecca explained this in relation to her gendered responsibilities in the household:

I have peace and freedom, and no man disturbs me. If I did not involve myself in activities such as gardening, no man would live with me with my four children from my previous marriage.

Rebecca values the independence she has acquired from gardening just as other gardeners' value the freedom to work when they like. She considers being independent the major benefit, since she can take care of her children from her previous marriage. Her experience is elaborated in Chapter 7, which shows how her bargaining power improved as the result of many factors: her participation in gardening, having her own income, and her children from her previous marriage. Each gardener attaches their own value and meaning to their gardening activities; hence the impact of gardening on households and gender relations is dynamic.

Other female gardeners feel that gardening has made a significant contribution of supplementary income to their household and see it as granting them economic independence and the ability to support their families:

I feel good that I have something to do other than stay at home. If my husband does not have money I can help him with the household expenditure. I do not need to depend on him for everything. (Rahma)

As a woman, I feel good to be able to contribute money to the household budget.
(Lucy)

The literature on UA in Tanzania focuses on the monetary gain and food security of households engaging in agricultural activities, as discussed in section 1.2. However, this study has revealed social benefits that gardeners value, evidenced by the statements of Julius and Christina indicating that even though the economic benefit from their gardens is not great they feel that the work has high value in their lives. Moreover, this study shows that gardening enhances women's sense of autonomy and improves their status, not only through contributing income to the household but also by avoiding social habits that they perceive as a waste of time, such as gossiping. These findings are

similar to those of Mianda (1996) and Slater (2001), discussed in Chapter 1, which found that UA contributes to women's empowerment and self-fulfilment.

The findings in this section suggest that policies, government authorities and other stakeholders would benefit from seeing UA through a different lens. Even though monetary gain can easily be measured and evidenced, other social contributions have the same impact, and the women attach high value to their gardens. UA not only ensures survival, as argued by (Maxwell, 1995; Foeken et al., 2004;): other benefits are important as well.

4.9 Challenges faced by male and female gardeners

Despite UA's contribution to the urban economy and households, it is still characterised by various structural and policy challenges such as the neglect of small urban livestock keepers and crop growers, the relevant authorities' failure to designate and allocate land for urban agriculture, and limited access to agricultural inputs and extension services (Mwalukasa, 2000; Foeken et al. 2004). UA is not clearly mentioned in policy papers, but farmers are affected by policies such as environmental and land policy.

Throughout my entire fieldwork period I learned that gardeners have limited access to land, water and agricultural inputs which are vital for the proper functioning of vegetable production. They are overburdened, because they have to depend on their own knowledge and limited inputs and face high land insecurity. They mentioned various challenges, as discussed below.

4.9.1 Limited marketing

Section 4.5.1 discussed how the marketing of vegetables is affected by seasonality, with limited sales during the dry season, and thus gardeners are sometimes forced to throw away vegetables. The following were the challenges faced by male gardeners:

The gardening business is seasonal and sometimes there are no customers; this forces us to throw away our vegetables. But we should not despair, that is why we say 'umbo unao umbo hunu kitu.' (Mosha)

Umbo unao umbo huna kitu is a motivational slogan used by gardeners at FOC and means that it is better to cultivate vegetables and fail to get customers than not to cultivate at all. Because when you stop cultivation it increases other gardeners' chances to get more customers. In other words, if business is not good it is much better to have the vegetables than not, since in business one cannot fail to make even a small amount of money. Mosha's account explains the marketing challenges due to seasonality.

4.9.2 Vegetable diseases

Christina mentioned vegetable diseases as another challenge:

Pests and diseases are very serious challenges to vegetable production. We do not have proper agricultural knowledge about treatment, so we are not sure how to deal with vegetable diseases. Sometimes the insecticides applied don't work, and agricultural officers don't visit us at our gardens. (Christina)

In interviews and informal conversations gardeners complained about not receiving any kind of support from the government and agricultural officers. The survey found that 12 percent of the gardeners had learnt to grow vegetables through farmer training and at primary school, while 87 percent had received no training. In the latter category, 33 percent had learnt to grow vegetables during their childhood, while 67 percent had learnt from fellow gardeners when they started gardening. These data indicate that there is limited agricultural knowledge about vegetable cultivation among the gardeners, and this affects how they deal with pests and diseases, as noted by Christina.

4.9.3 Land tenure security

Chapter 2 Section 2.5.1 discussed land tenure security and noted that urban farmers do not have legal rights. Informal tenure arrangements are used whereby gardeners' land security relies on their landlords. On similar account, McLees (2011) states that urban farmers face land tenure insecurity, affecting UA production as it limits their ability to invest in production. For instance, he states that water is very limited during the dry season, but farmers cannot invest in dipper wells since they are not certain about their future on the land. The current study found a similar impact of land insecurity,

particularly at FOC. In Chapter 3 I discussed how FOC farmers face more land insecurity than those at MRS. For example, Lucy said:

The threat of eviction is a big challenge at FOC because we do not know about tomorrow. Once you harvest your vegetables you quickly sow other vegetables so that no plot is left vacant.

Land insecurity is a big threat. I do not know how I will cope with life if we're evicted from here. My life depends on this garden. (Mwantumu)

Chapter 3 discussed how land insecurity creates tension for the gardeners over access for plots. This study also found that land insecurity affects gardeners' motivation to apply insecticides and manure, since they are not sure whether they will be able to keep their plots in the future.

4.9.4 Multiple roles

A final constraint, particularly for women gardeners, relates to their multiple roles. The following statements explain the challenges for two female gardeners:

Being a female gardener is a challenge. Sometimes you're supposed to be at the garden when you're also needed at home for cooking and childcare. The domestic work is too much, to the extent that I cannot expand the number of plots. (Diana)

Gardening is too tough for a woman. We use so much energy in gardening so that we can make a living. Activities such as irrigation, carrying the irrigation pump and ploughing are heavy work. It's different for male gardeners: they do not have domestic activities therefore they cannot get tired like women. (Mwanahamisi)

Although some female gardeners felt that their participation in gardening activities increased their ability to contribute to the household budgets (see chapter 7), those with young children and/or who do not have another woman in the house to assist in

domestic activities claimed that balancing productive (gardening) and reproductive (domestic) activities was a challenge (see Chapter 5). Based on this, support with household labour is important, for example for female gardeners with young children. Other female gardeners like Mwanahamisi felt that activities such as ploughing are too tough for a woman, but they are forced to participate to sustain and/or support their families. This suggests that both genders face some of the same challenges, while others are very specific to male or female gardeners.

4.10 The policy context: Stakeholder involvement in urban gardening

In this section I analyse how policy related to UA is defined and how urban farmers are recognised and supported by government authorities. This study addresses how gardeners access resources and assets they need for their gardening activities. It highlights the agricultural inputs, such as the supply of improved seeds as one of the agricultural services which gardeners could have benefited from the government support, as well as agricultural information received through extension services. At this point the study explores the extent of support for agricultural services provided by the government and other stakeholders. UA stakeholders were interviewed to explore their perceptions and understanding on vegetable cultivation in Morogoro Municipality.

From the literature, it was noted that the government's role in Tanzania is to support farmers by providing agricultural information through extension services and by supplying improved seeds and fertilizers, focusing on agriculture in rural areas. On page 372, this study recommends the formalization of land allocation for urban farmers to increase their tenure security. However, this is noted to involve conflicting interests among urban planning authorities, as urban land is not intended for agriculture but for other purposes such as housing. I identify three policies related to UA in Tanzania: the 1997 National Agriculture and Livestock Policy, the National Land Policy of 1997, and the Food and Nutrition Policy of 1992.

The 1997 National Agriculture and Livestock Policy emphasises increasing food production and cash income. Two issues related to UA are raised in the policy: first, it states that '*urban centres are threatened by increasing livestock-keeping which pollutes and damages the environment*' (URT 1997:10). Secondly, '*strategies involved in*

promoting agricultural production should conform to land use and management for a sustainable environment'. These policy statements correspond with the National Land Policy of 1997, which emphasises:

Agriculture is not a principal function of towns, but when properly organised, urban agriculture has the potential to provide employment, income and is a supplementary source of food supply. In [its] present form agricultural activities often conflict with the proper planning of urban land use. In some cases, agricultural activities are conducted in fragile environments or hazardous areas of towns resulting in land degradation and water pollution. (URT 1997:30)

Although UA is recognised in these two policies, the interest is in protecting the urban environment based on negative claims about UA, as discussed in Chapter 1. Despite policy not directly prohibiting UA, it is perceived as unsustainable in the urban environment.

The 1992 Food and Nutritional Policy focuses on combating nutritional problems in Tanzania using locally-produced foods, and emphasises the need to increase agricultural production, overlapping agricultural policy. Moreover, the policy emphasises access to agricultural resources and the importance of proper land use to increase agricultural production and improve food security to combat nutritional problems in Tanzania (URT, 1992). In Tanzania undernutrition is still prevalent, with more than a third of children affected by chronic malnutrition (URT, 2013). The main concern of the Food and Nutritional Policy is to motivate people to increase their agricultural production, and ultimately to increase food security and combat nutritional challenges. However, different interests arise from the three policies: agricultural and nutrition policies emphasise access to agricultural resources to increase production, while land and agricultural policies define UA as having a negative impact and prioritise other development activities. Since the government's main interest is the control of public land and promoting investment, UA is perceived as conflicting with other urban land use.

The voices of urban farmers are not generally represented in policy papers. The lack of policy on UA, particularly in terms of the allocation of land and supply of agricultural

inputs, affects not only female but also male farmers. They are exposed to insecure land tenure and limited access to inputs (Foeken et al. 2004; Foeken 2005; Halloran and Magid 2013), which can affect their ability to increase agricultural production for food and income.

Given the increasing importance of urban gardening in the lives of gardeners and urban consumers, I spoke to key informants: ward and municipal officials and two agricultural organisations in Morogoro Municipality. The interviews were aimed at understanding the present perceptions of the different stakeholders and their roles in institutionalising and supporting UA, particularly gardening activities.

The Tanzania Horticultural Association (TAHA) is non-profit organisation located in Morogoro Municipality and Arusha Region which supports rural and urban agriculture and particularly horticultural crops. It supports farmers who cultivate vegetables, flowers and herbs by giving agricultural advice to farmers and linking them with good market opportunities. It is located 2 km from FOC. In section 3.4.2 I indicated that location was one of the categories I used to select the two sites. My hypothesis was that the closer the site to the market, the municipality and UA stakeholders, the higher the chance of the gardeners benefiting from material and non-material support. Therefore with TAHA close to FOC and supporting other horticultural farmers in peri-urban and rural areas, I was interested in getting its views and perceptions of gardening. During my interview with its operational manager, she said:

We do not support gardeners who cultivate leafy vegetables because they are for home consumption. There are no leafy vegetable farmers who can invest on a large scale. We support farmers who cultivate 1-3000 acres of land.

Although the previous sections have discussed the significant economic and social contribution that gardening makes to gardeners' lives, the above statement suggests that vegetable cultivation in open spaces is ignored and undervalued. The perception of TAHA's operational manager was similar to that described in other studies that see open-space cultivation as mainly for home consumption.

Despite TAHA being close to FOC, it does not provide for gardeners at FOC since they consider large scale cultivation. Foeken et al. (2004); Foeken (2005) and Halloran and Magid (2013) state that planners and stakeholders often prioritise the large-scale production of food, neglecting small-scale farmers and leaving them with limited access to resources and agricultural inputs, which increases their insecurity about key resources such as land. Although Hovorka (2009) states that the role of women in feeding the cities is often ignored, the above statement from the TAHA official indicates that the role of both male and female gardeners in providing fresh vegetables is ignored and is becoming invisible.

I also interviewed a municipal director (MD) about her perception of gardening. During her interview she said:

I am aware that there are urban farmers. How are we going to get vegetables if they do not cultivate them? But they need to cultivate and follow the [by-laws]. One of them is that cultivation should take place 60 meters from the river. We have observed that they often farm very close to the rivers, and when you want to enforce the by-laws and evict gardeners, politicians are not in favor of their eviction.

Although the MD acknowledges the contribution of the gardeners' fresh vegetables, based on the the municipal by-laws her interest is in gardeners abiding by the regulations. Moreover, the statement indicates a conflict of interests between the MD and politicians, particularly ward councillors (WCs), who do not want to see their voters evicted from their livelihoods. Her views and those of TAHA show different organisational interests in gardening activities, which in the end leave gardeners on their own. The Environmental Officer (EO) at the Municipal Environmental Department had similar thoughts to the MD about urban gardeners:

Gardeners cultivating close to the river banks, which is against the by-laws. We are supposed to make regular inspections to see if they abide by them, but we lack resources to facilitate inspection, so we leave the gardeners to continue their cultivation.

On the other hand, the WC said:

There is no agriculture in town, there are only gardens. By-laws do not allow cultivation and keeping livestock in town. Land in town is supposed to be used for residential and commercial purposes. We do not allow crops which can hide bandits such as maize. Farmers are important in town, since they supply food, but we do not allow them to cultivate permanent crops. But I am a ward leader and people have elected me. I know that the welfare of their families depends on the garden; it is difficult to evict them because of the restriction about cultivating 60 metres from rivers.

The statement from the WC suggests that even though he is aware of the by-laws he is more concerned about protecting the gardeners; in other words, his voters. This is the same conflicting view stated by the MD: once they want to evict gardeners who cultivate close to the river banks, they face obstacles from WC and other politicians. I was interested to understand the perception of a Ward Agricultural Officer (WEO):

I do not meet with the gardeners regularly. I saw some of them last month when we had a meeting. The agenda of the meeting was development issues in the ward.

The WEO explained that he did not supervise the gardeners, as he specialised in plant protection, especially for maize and rice crops. Through my observations at the ward offices, there was no agricultural officer specialising on horticultural crops. The officer's expertise was in agricultural extension, agricultural science and agronomy. He said that he is contacted for advice by farmers who cultivate maize and rice in peri-urban areas, and that in 2013 he helped some of the gardeners at FOC to get some peri-urban land:

I advised them to organise themselves into a group. My idea was to transform such land into a cooperative farm. Although the land was given to them in 2013, most of them had not developed it.

Furthermore, he explained that:

Municipal or Ward offices do not give agricultural inputs to urban farmers. We only offer advice to farmers.

He indicated that there are organisations such as PRIDE, BRAC and VICOBA where farmers can go and apply for a loan. However, further investigation revealed that his office had given irrigation pumps to peri-urban farmers who cultivate horticultural produce such as cabbages, carrots and tomatoes. Thus, when asked why the irrigation pumps were not channelled to gardeners at FOC he responded:

How can you assist gardeners who have only two plots? The office supports farmers who have a large land area and the determination to expand their activities, who work hard. It is not possible to offer irrigation pumps to farmers who have a few plots and their production is low.

The above implies that since gardeners have fewer plots than other peri-urban farmers who have up to 30 acres of land for crop cultivation, the WEO sees them as not determined or serious farmers. Moreover, he was disappointed by the gardeners' failure to continue with cultivation at the land which he had requested from the municipal authority. He complained that urban gardeners are lazy because they have failed to expand production into peri-urban areas. He said that 20 gardeners who had been allocated the communal land decided to form a group and were allocated 120 acres of land, which they divided amongst themselves. Interviews with some of the gardeners revealed that some of them still maintain the land, while the majority have abandoned it. A male gardener said:

We were allocated land at Kiyeguya, but it is very far from the town centre, and water is not available. (Hassan)

Peri-urban cultivation is very expensive – finding a buyer is also difficult. It is possible to cultivate other horticultural crops which you can easily pack and bring to the market at the town centre. You need transport to do that. Cultivating leafy vegetables which easily perish in peri-urban spaces is difficult. (Jacob)

While the WEO is disappointed that gardeners have abandoned their allocated land, the gardeners had their reasons for not developing it. The WEO's perceptions were similar to those of the TAHA officer, who saw a farmer as a large-scale cultivator. In their interpretation, an intra-urban gardener with access to only a few plots is not a serious farmer.

This section has shown that gardening activity is often ignored, not only in policy papers but also by stakeholders. The uncertainty of UA impact how gardeners conduct their gardening activities, limiting their ability to increase production. As noted, gardeners face multifaceted challenges, but they continue gardening and value their gardens highly. Rakodi (1988:498) states that 'it is important to examine the network of social relations in which tasks are performed within the household [...] in the absence of state-provided services or restricted access to those that are available'. This agrees with the present study, which finds that social relations are important in accessing resources, and increase the ability to maintain gardening. This suggests that social relations in one way or another substitute the missing link between government and urban farmers.

4.11 Conclusion

The majority of gardeners are married and engage in gardening to generate income for their families, as also found by other UA studies (Flynn, 2001; Simiyu, 2012). There is little difference in the gardeners' education, the majority only finished primary school. Lack of education may have an impact on how they perform their gardening activities, for example in dealing with challenges and with vegetable pests and diseases.

Although vegetable cultivation is a major source of income for the gardeners, they may also diversify into other IGAs. This study has identified different factors that influence gardeners' decisions to diversify: the impact of seasonality on vegetable production and on the marketing of vegetables, and land insecurity. Although seasonality influences the marketing of vegetables for all gardeners, female gardeners who are not married or whose spouses are non-gardeners are also influenced by other factors such as their inability to take vegetables to the market early in the morning because of safety concerns. Female gardeners also sometimes fail to get to market to sell their vegetables

early in the morning because of their domestic work, and thus are compelled to employ male labourers who end up cheating them. This limitation affects the women's ability to secure good prices for their vegetables and hence increase their income from the garden.

This chapter has added the importance of non-monetary contributions to the Tanzanian UA literature, which mainly focuses on the economic benefits. These new values attributed to gardening activities have emerged by gender, with male gardeners valuing gardening as social capital, as more convenient than their previous work and allowing them to work when they want to, and for increasing their ability to fulfil their role as head of the household, providing for their family. Female gardeners value being able to contribute to the household budget without depending on their husbands and the self-fulfillment that gardening brings.

The different stakeholders have different perceptions of the importance and state of gardening activities. However, by-laws and regulations see UA as illegal and detrimental to the environment. This results in the neglect and undervaluing of UA, and particularly gardening. However, UA makes a significant and valuable contribution to the gardeners' lives, which suggests that it is not a transitory rather a permanent activity.

Chapter 5: The gendered division of labour

5.1 Introduction

The previous chapter discussed gardening activities in relation to seasonality, marketing, policy, and the gardeners' experiences and challenges. One of the points it highlighted is that allocating labour between gardening and domestic activities is challenging, and that access to help in the garden from other household members is important for female gardeners. I found this depended very much on such things such as household composition and structure: if there is another woman to share the domestic activities, a female gardener can have more time to tend the garden. Additionally, section 4.2.4 indicated that household members engage in economic activities other than gardening, and that children form the majority of members of the 105 gardeners' households. This suggests limited availability of help from other household members.

In this chapter I examine the division of labour between productive (gardening) and reproductive (domestic) activities in order to understand how this affects gardening activities as well as gender relations. The reproductive role is examined to understand gender norms in roles and responsibilities and the ability of male and female gardeners to allocate their time to gardening activities. Marital status is the key variable used to analyse how the division of labour affects male and female gardeners. The chapter examines garden and domestic activities in three areas: the performance of gardening tasks by men and women, in order to define gender roles in gardening; the availability of household members for gardening and domestic activities; and the division of labour for domestic activities.

Section 2.4.2 demonstrated the marked division of agricultural and domestic labour between husbands and wives. The literature in the African context explores agricultural responsibilities by gender and how this affects adoption of agricultural technologies (Burfisher and Horenstein, 1983). The literature describes the roles and responsibilities of wives and husbands in Tanzania, and males and female's agricultural tasks (Mbilinyi, 1972; Bryceson, 1995; Mwaipopo, 1995; Yngstrom, 2002; Leavens and Anderson, 2011; FAO, 2014; Vyas et al., 2015). This chapter examines some of these assertions, and attention is paid to gendered norms in reproductive and productive activities as well

as the perceptions of other household members regarding gardening activities. As this study focuses on active male and female gardeners, I asked how a gardener can get support with gardening when both spouses are gardeners; where only one spouse gardens; and where the gardeners are unmarried, to understand the position of female in relation to male gardeners, and how female obligations and responsibilities in the household affect their gardening activities.

The chapter is divided into four sections. Section 5.2 examines the performance of gardening tasks by gender; section 5.3 explores the availability of household members to help with gardening activities; section 5.4 examines the division of labour in the household, and the last section summarises the chapter.

5.2 Performance of gardening tasks

Simiyu and Foeken's (2014) study of urban crop cultivation in Kenya describes the labour contribution of men and women farmers. Their sample included urban farmers who cultivated their own plots, mainly home gardening with a very few cultivating open spaces. The authors argue that the division of labour is set by the type of crop that men and women cultivate and the different agricultural tasks they perform. For example, in urban crop cultivation the women weed, harvest and sell the produce, while the men till the land, buy seeds, plant and plough. Agricultural tasks such as ploughing and tilling are considered men's tasks as they are hard work, while weeding is considered less demanding and therefore easily manageable by women.

Simiyu and Foeken state that despite the marked gendered division of labour there was high level of flexibility in farmers' performance of their tasks, crossing some gendered labour boundaries. For example, a woman who cannot hire a male labourer or has no man to assist her will do tasks predominantly regarded as a male work herself. The authors also note that different factors such as time availability, gender roles, physical strength and social norms shape the ways men and women farmers perform agricultural tasks. They found that gender is important in sustaining UA since it shapes the way farmers choose the crops they cultivate and allocation of labour. The agricultural tasks done by male and female farmers complement each other.

In Simiyu and Foeken's study, both husbands and wives were farmers. This raises questions about the division of labour when one spouse is a farmer while the other has a different economic activity. This is important to understanding how such a farmer sustains UA. Furthermore their study focused on self-owned plots (mostly at the homestead) with a few respondents cultivating open spaces. In Chapter 1 I discussed how UA is practised in different locations and stated that focusing on just one location reveals some nuanced experiences, challenges and gender relations which are important to sustain UA in a specific location. The link between gardening and domestic activities and how this link affects gardening activities is missing: this is the focus of the current study. The following section examines tasks performed by men and women in the garden.

5.2.1 Separate tasks by gender

Gardening involves various activities such as clearing land, ploughing, making ridges, sowing, fertilising, applying insecticide, irrigating, weeding, and harvesting and selling. Table 5.1 sets out the sex roles in gardening activities.

Table 5.1: Male and female gardeners' task performance

Activity	Number of females out of 25	Number of males out of 21
Clearing the land	0	8
Ploughing	3	18
Making ridges	14	16
Sowing	18	19
Fertilising	20	20
Applying chemicals	5	11
Irrigating	1	20
Weeding	22	2
Harvesting and selling ^a	25	20

Source: In-depth interviews 2015: females (25) males (21).

^a Harvesting and selling involve harvesting and washing the vegetables, tying them in bunches and negotiating with buyers. I combine these tasks because in most cases they are done all at once at the garden during retail or wholesaling of vegetables at the garden. When selling is done at the market, harvest and selling do not happen all at once. Gardeners listed the tasks that they were responsible for.

^b The table shows the number of male and female gardeners responsible for particular gardening activities
NB: There are wide variations in how gardeners perform their gardening activities

The table shows the involvement of male and female gardeners in the selected gardening activities. In the interviews I asked the gardeners to list the task for which they were most responsible.¹⁶ It shows that male gardeners have more responsibility in ploughing, sowing, irrigating, harvesting and selling, female gardeners were involved more in harvesting, weeding, sowing and making ridges. Table 5.1 shows that male gardeners performed most of the activities, however during the FGDs I realised that they did some of them because they had no choice. Below I discuss male, female and gender-neutral tasks.

5.2.1.1 Male tasks

A. Irrigation

This section discusses the task of irrigation, and the irrigation pump as the key asset in accessing water for irrigation. Table 5.1 shows that 20 out of the 21 male gardeners are responsible for irrigating their land. The reasons given for this included making sure that it is done properly. Most of the gardeners do not live near the gardens; some live up to 90 minutes' walk away. During the fieldwork I observed that some gardeners carried their irrigation pumps from home to their plots while a few had friends living close to the garden and stored their pumps with them.

The task of irrigation entails fitting the hose to the pump and then tying the other end of the hose to a big stone and dropping it into the river. This process increases the irrigation workload, yet the majority of the male gardeners argued that they preferred doing this themselves to using a labourer who may not do it properly. The following views are from two male gardeners:

I like doing the irrigation because I do not need to bend down. (Salim)

I am responsible for irrigation because my wife cannot handle the irrigation pump; it is too heavy for her. (Mosha)

¹⁶ In this study, 'responsible' refers to the person who does a certain task frequently, but the task is not necessarily seen as their obligation since the gendered performance of gardening activities is not fixed.

The above accounts propose different reasons as to why Salim and Mosha are responsible for irrigation. For example Salim likes doing the irrigating because he does not have to bend down.



Figure 5.1: An FOC gardener irrigating his plot

While male gardeners, irrespective of marital status, are more responsible in irrigation, only one married female gardener does irrigation, as indicated in the table. Irene's husband is also a gardener. She said that she learnt how to irrigate from her mother, who is also a gardener. Other female gardeners' reasons for disliking the task of irrigation were related to using the pump. They claimed that while the pumps simplify the watering, using them is very challenging. I found this was due to both technological and social access factors. First, the irrigation pump is heavy, and therefore if a farmer has more than one plot and they are at a distance from each other, the pump is cumbersome to carry from one to another. Second, two of the female gardeners disliked irrigation based on biological factors: they stated that when they have their menstrual period and get wet during irrigation they feel uncomfortable. Lastly, an interesting constraint to social access was raised in the FGD with female gardeners:

Sometimes I can't put the hose into the river because teenage boys are bathing there, so I have to seek help from a male gardener (Stella)

As a woman, you feel shy putting the hose into the river while men are bathing. Sometimes they can abusive you if you continue connecting the pump while they are bathing (Rahma).

During the FGD female gardeners said that to overcome the constraint posed by men bathing, before going to the river to cross or to connect a pump they had to call ‘*hodi*’ loudly. *Hodi* is a Swahili word used to indicate that there is a stranger at the door. It is important to call because men, who the women described as unemployed youth who frequent the garden, may be bathing, smoking marijuana and resting at the river, and if they fail to call out the men may abuse them verbally. The women’s accounts above suggest that sometimes they feel that they do not belong to the gardening community because of such social access restrictions, which do not apply to male gardeners. Although the majority of female gardeners have access to irrigation pumps (see Chapter 6), their gender shapes the way they use them and hence their access to water. Despite this, irrigation pumps simplify gardening by reducing the frequency with which vegetables need to be watered, and according to female gardeners it gives them time to attend to other activities, mostly domestic tasks.

This study found that married female gardeners whose husbands garden at the same site are at an advantage. For example, while Salim does the irrigation his wife does other gardening tasks and does not have to go to the river to connect the pump, or carry it.

Married female gardeners whose husbands are not gardeners and unmarried female gardeners have different strategies for coping with social access. First, they might seek help with connecting the hose to the river from a male gardener who is a friend or relative. Stella’s brother is also a gardener at FOC and helps her with the irrigation. A household member, especially a son, can also be asked for help. In their absence women hire a labourer to irrigate their plots. They also follow the rule of calling before entering the river to connect the pump, and do the watering themselves, normally as a last option. It was interesting to note that Dennis, a married male gardener whose wife is not a gardener, does not allow his wife to go to the river to connect the pump when she is at the garden assisting him. He gave the same reason as the female gardeners: that the youths down by the river can be abusive. While other studies of UA in Africa have

found that irrigation is a female task (Ngome and Foeken, 2012; Simiyu and Foeken, 2014) as discussed, I found it to be a male task.

B. Ploughing

As the table shows, male gardeners are responsible in ploughing. On different occasions I observed that they hired labour for ploughing only when they were busy with other gardening activities. I found that it was not common for male gardeners whose wives are not gardeners to ask them to help with the ploughing. When I asked why, they stated that ploughing is a tough activity.

Most of the married and unmarried female gardeners also said that ploughing is a tough activity. They had different reasons for disliking it, including that they were too old for it, it is heavy work, and that it takes up too much time that they need for other activities. For example Stella, who is 54 years old, claimed that in the past she could plough but now she is too old. Other female gardeners' reproductive roles limited their time for ploughing, using time that they need for domestic tasks. Mwanahamisi and Rahma stated:

Gardening is a heavy activity for a woman. (Mwanahamisi).

You need to go back home to take care of the house and children, and you also need to plough and do other gardening activities. (Rahma)

The above statement is similar with the women's statements in section 4.9: that their multiple roles are among the challenges that female gardeners face. Although Mwanahamisi and Rahma spoke on different occasions, they felt that their plight is common to all female gardeners. During the fieldwork I observed that hiring a male labourer for the ploughing and to clear the land is common practice for female gardeners, although when there is limited capital they do the ploughing themselves to reduce the cost of production. Two married female gardeners said that rather than do ploughing for them, their husbands, who are non-gardeners, may offer them money to hire a labourer. This suggests that a husband sees the time he would spend helping his wife with ploughing as much more valuable than the money to hire a labourer. A female gardener doing the ploughing herself crosses the gender boundary, but she does it to

minimise the cost of production. This corroborates Simiyu and Foeken (2014) who also found that the division of labour in urban crop cultivation is flexible.

5.2.1.2 Female tasks

A. Weeding

Table 5.1 shows that weeding is viewed as a female task, as reported in studies of Tanzanian rural agriculture (Mbilonyi 1972; Leavens and Anderson 2011; FAO 2014) and of UA in Kenya (Simiyu and Foeken 2014) and in Cameroon (Ngome and Foeken 2012). SIDA (1999) found that in Tanzanian rural agriculture 70 percent of women and 30 percent of men weed. Table 5.1 shows that the majority of male gardeners are not involved in weeding.

Interviews and observations revealed that weeding needs a lot of concentration and so takes more time than other activities. It can take two or three days, depending on the number of plots. Hiring a labourer for the weeding is expensive compared to other gardening activities. For example, at FOC labour for weeding costs 12,000-20,000 TZS depending on the area to be weeded, estimation and bargaining power determining the price; ploughing costs 6,000-10,000 TZS, and harvesting, 4,000-5,000 TZS. Although there are more male than female labourers, the majority of the gardeners preferred to hire female labour for weeding, claiming that women, whether gardeners or labourers, are good at it. Majority of male gardeners are not involved in weeding their vegetables because they have to squat, and bending is not efficient. Male gardeners feel that they cannot squat for a long time as women do. This suggests that some differentiation of men and women's gardening tasks is based on the belief that women naturally have the capacity and personality necessary for weeding. Elson and Pearson (1981) explored the reasons why women constitute more of the labour force in world market factories and argue that women are believed to have naturally nimble fingers and to be submissive and more suited to coping with repetitious work. Women's work has secondary status in the labour market to men's, and as a result they receive low wages (*Ibid*). Besides weeding being more costly than other activities, it is repetitive because at least two or three days are required to weed more than six plots. Male gardeners said:

When it is time for the weeding my wife helps me. (Dennis, Salim)

Dennis's wife is a non-gardener, but she helps her husband with the weeding. Salim's wife Rahma is a gardener. Salim and Rahma assist each other with gardening activities. For example, Salim helps his wife with the weeding and the irrigation, their case suggests gardening couples may assist one another with their activities (see section 5.3.1). An unmarried gardener who did not like weeding said:

I can perform all the gardening tasks except weeding. I hire a female labourer because women can do it quickly. (Jamal)

For Jamal, hiring a labourer is the easiest way to get the weeding done since he has no wife to assist him. Two single male gardeners claimed that they weed their vegetables without help because they cannot afford to hire a labourer as Jamal does.

Twenty two of the twenty-five female gardeners did their own weeding. Although they claimed that it takes time, they preferred to do it themselves. During the fieldwork I observed that while weeding they have to be careful not to uproot the vegetables.

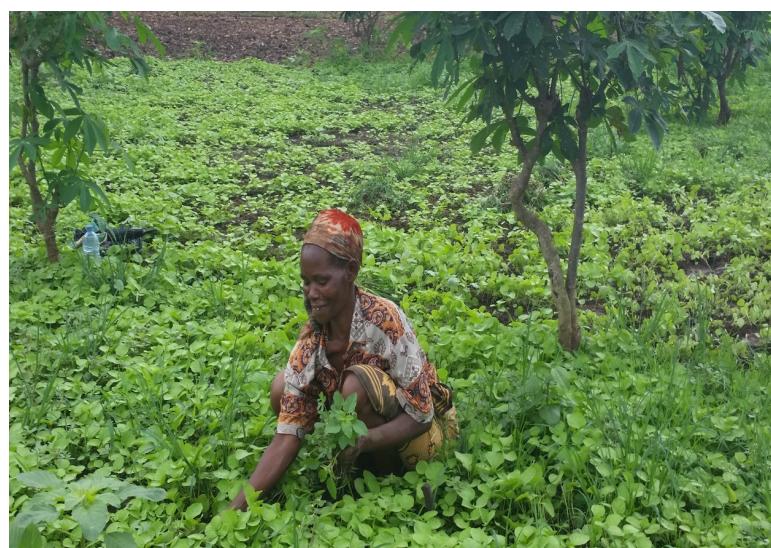


Figure 5.2: A gardener weeding her garden

Of the four women who are not responsible for weeding, three had young children who accompanied them to the garden. They said that they could not concentrate on the gardening because of their children. For example Anna, a married female gardener, had

a 5-month-old daughter. While I visited her at the garden she had already washed the baby's clothes and cooked lunch. She lives a 90-minute walk from her garden. Her husband assists her occasionally with the irrigation and sells vegetables as he is a casual labourer. Anna stated that the weeding takes longer because she has to attend to her child when she is awake, and it is difficult to weed with a child on your back. Anna said that hiring labour is the only option, although it reduces her profit from the garden. She claimed that when she was single she did everything herself, including the weeding. Currently she does the harvesting and selling comfortably with her child on her back. This shows that the way Anna performs her gardening activities changes according to the stages of her reproductive role, and thus her gender shapes her gardening activities. So gendered roles are not fixed but are reconstructed according to life circumstances. Mackintosh (1981) argues that men and women's tasks are not rigid, with different factors such as economic change shaping their nature and allocation.

5.2.1.3 *Gender-neutral tasks*

A. Harvesting and selling

This study found that harvesting and selling are gender-neutral activities. All the gardeners said that they enjoyed selling as they were reaping the benefits of their labour. Section 4.7 explored gender choices regarding the marketing of vegetables. Besides seasonality and the availability of buyers, gender is another of the factors shaping decisions about the marketing of gardeners' vegetables. This section presents further analysis of gender norms in the harvesting and selling of vegetables.

Although male gardeners sell their vegetables both retail and wholesale, they do not like selling retail. I observed that in most cases a gardener selling retail deals with a minimum of six buyers at once who are mostly female, although when buyers are limited they may sell to just one. The majority of male gardeners disliked this arrangement: first, dealing with many buyers at once is problematic because the gardener needs to harvest and make bunches at the same time. Second, the majority of gardeners said that female buyers complain to the gardener about the quality of the vegetables or demand bigger bunches. This confuses male gardeners. Lastly, the majority of male gardeners claimed that being surrounded by many buyers increases the

chance of being cheated: while the gardener is picking the vegetables and attending to one buyer, others might steal vegetables and make the bunches bigger. Mosha said:

When I'm selling the vegetables I just harvest them while my wife arranges them in bunches and deals with the buyers.

Mosha shares gardening plots with his wife, and like other male gardeners he does not like selling retail to female buyers for the reasons stated above. As his wife is also a gardener, theirs is a case of gendered division of gardening labour. In the previous section I discussed Mosha assisting his wife with the irrigation: here, his wife sells the vegetables. Other male gardeners said about retail selling:

My wife helps with selling the vegetables because most of the customers are women. I do not like confrontations with buyers, and she can negotiate better with her fellow women. (Julius)

Retail selling is cumbersome because female buyers complain a lot. So you quarrel with them all the time; it is better to sell wholesale. (Salehe)

The above statements are similar to Simiyu and Foeken's (2014) findings that male UA farmers dislike selling vegetables because most customers are women. In their study, male respondents stated that women buyers are very difficult to deal with because of their constant complaints, and the farmers' wives assist with the selling. In the current study, the evidence from Julius and Salehe indicates that retail selling is one of the gardening activities where married male gardeners ask for their spouse's assistance. However, I observed that in most cases the entire selling process is not left to the wife, as the husband is nearby harvesting or doing other gardening activities, perhaps because he may want to see how much money she is taking. I also found that in couples where both spouses are gardeners the wife regularly assists with retailing. When her assistance is limited, married male gardeners either sell with the help of a labourer or alone. This implies that access to his spouse's labour increases the married male gardener's choices about selling vegetables. When a male gardener hands over the selling to his wife it increases female status in the retail marketing sphere and becomes a woman's domain. Although unmarried male gardeners dislike retailing they can do it without an assistant:

I do not have a problem selling to female buyers; they are my major buyers. I always laugh with them and respect them as mothers. If I hear them being abusive I pay no attention. (Jamal)

My car does not choose its passengers [This means that he can sell his vegetables to anyone, be it a female or male buyer provided that he is getting money]. (Kileo)

While Jamal is a single man living alone, Kileo is divorced and works as a cook at FOC. Jamal's statement suggests that a gardener is required to be humble and flexible while selling, which might be difficult for married male gardeners. This is because married male gardeners have free access to their wife, who can support them with the selling. Unmarried male gardeners are flexible in dealing with female gardeners, because they do not have access to female help and they do their selling themselves. The case of married male gardeners who are assisted by their wife proposes that access to other household members' help in the garden is important when retailing their produce.



Figure 5.3: Buyers harvesting amaranth on a female gardeners' plot

The picture above shows several retail buyers at a gardener's plot harvesting vegetables that they have bought. Although having many female buyers at once is challenging, female gardeners did not point it out as a major challenge. For example, in the FGD Lucy said that she does not let her husband engage in retail selling because he cannot be humble to customers. The interviews and FGDs revealed that currently gardening is a business, and therefore the number of gardeners is expanding in Morogoro Municipality. Despite FOC being known for amaranth production, gardeners indicated that nowadays the vegetable business is competitive. Gardeners are concerned about how to attract buyers, and being humble and flexible in negotiations with them is one of their important selling strategies. Lucy's husband is a gardener cultivating his own open space, but he occasionally assists her in her garden and helps her take vegetables to the market, as discussed in section 4.7.1. Negotiating with a lot of female buyers challenges male gardeners as stated above; however it seems that Lucy's husband can sell vegetables at the market.

Although the previous section shows that selling on a retail basis poses challenges for male gardeners, about 80 percent of gardeners claimed that retail selling is good as they estimate the number of bunches sold, as discussed in section 4.7.1. While Table 5.1 presents harvesting and selling as gender-neutral tasks, observation and informal conversations revealed nuanced gender norms and challenges implying that despite the fact that a gardening job can be shared by both spouses or left to just one, there are marked tasks for males and females. However, there is plenty of flexibility when a married male gardener does not like selling retail: he achieves this task either through his wife or a labourer, while unmarried gardeners manage by themselves.

The previous sections have discussed the performance of gardening tasks by gender. Factors such as access to other household members' help in the garden, the reproductive role, age, technological and social access constraints to using an irrigation pump, and agricultural experience shape men and women's gardening activities.

While there is a marked gendered division of labour in gardening activities, there is also a high degree of flexibility (see also Simiyu and Foeken, 2014). The cases presented above show that male and female gardeners' experiences and challenges and their labour requirements differ. For example some gardening spouses help each other,

minimising the cost of production, while others pay a labourer for an activity that is believed to be either a male or a female task.

Having examined the performance of tasks by male and female gardeners, the following section explores the availability of other household members' help in the garden for gardening activities. The previous sections and Chapter 4 pointed out that access to household members who can help in the garden is important, as it reduces production costs and builds the sense of a garden family enterprise once household members assist in it, increasing the garden's value to the household.

5.3 Availability of other household members' help in the garden

This study found that the availability of Other Household Members (OHM) for gardening is influenced by household composition and structure, such as the occupations and ages of household members. For example, survey data presented in section 4.2.4 found that 33 percent of household members were school children, who do not help with gardening regularly, and 13 percent were, old people and young children under 5 years old, whose age exempts them from being a source of labour. OHM perform economic activities other than gardening which increase tension over access to their labour for gardening activities. Simiyu (2012) agrees that the diversification of other household members' activities increases tension in the organisation of household labour for urban farming.

In Chapter 3, I mentioned that female, male, and husband and wife's ownership of gardening plots as one of the criteria for selecting gardeners for interview. My hypothesis was that different ownership of gardening plots would affect gendered division of labour. I interviewed seven households in which both the husband and the wife gardened: two at MRS and five at FOC.

5.3.1 Households in which both husband and wife garden (HHWG)

5.3.1.1. Jacob's household

Jacob is 60 and his wife Upendo is 50 years old. They live about a 45-minute walk from FOC.¹⁷ He is a retired FOC officer and continues to cultivate vegetables on the plot allocated to him as an employee. His wife is a nurse at FOC and has her own plots, which Jacob takes care of when she is busy at FOC. Upendo said that she normally sets aside not more than three hours after work to tend her plots. Jacob's household also includes an employed adult daughter, two schoolchildren, a three-year-old grandchild and a housemaid. They use labourers for gardening tasks because they do not engage their children in gardening. Their sources of income include gardening, peri-urban crop cultivation, a retail shop and a house that they rent out.

5.3.1.2 Salim's household

Salim is 50 and his wife Rahma is 45 years old. They live a 30-minute walk away from FOC. Their household comprises two schoolchildren, an adult son working at a garage and a labourer for gardening activities who is paid a monthly salary and has access to other household benefits such as free food. Salim and Rahma have separate plots, and Rahma shares part of her garden with her younger sister at FOC. Salim and Rahma garden independently, assisting each other at peak times. Since Rahma shares with her sister she does not depend on her husband except for activities such as irrigation and ploughing, while her husband depends on Rahma for weeding. Sources of income include the gardens and peri-urban crop cultivation.

5.3.1.3. Julius's household

Julius is 52 and his wife Mwantumu is 32 years old. Their household is a 90-minute walk from FOC. Their household comprises husband and wife, four schoolchildren, a child under a year old and a non-working relative. Julius and Mwantumu share their plots and garden by themselves with the help of a relative during the week, while their children help at weekends and very occasionally on weekdays. For example, when there are few buyers their children assist them after school with hawking vegetables on the

¹⁷ In this case, minutes are measured by walking. It should be noted that these are estimates since the gardeners even if they have watches, do not have the habit of looking at the watch before starting walking from the house to the garden. Moreover, others use bicycles, take public transport or hire motorcycles.

street. Sometimes Mwantumu stays at home doing domestic tasks and caring for her young child while her husband takes care of the garden. At the garden Julius performs tasks such as ploughing and irrigation while Mwantumu weeds, harvests and retails the produce. Their sources of income include gardening, peri-urban crop cultivation and selling *vitenge*.

5.3.1.4. Mosha's household

Mosha is 60 and his wife Zamaradi is 45 years old. Their house is 10 minutes' walking distance from FOC. Their household also includes an employed adult daughter and three schoolchildren. Mosha is employed as a security guard by a private organisation, leaving his wife in charge of the garden. This couple share their plots and gardening activities, Mosha does the ploughing and irrigation while Zamaradi takes care of all the remaining gardening tasks. The children who live with them do not assist in the garden unless forced. An adult son who does not live with his parents is also a FOC gardener and sometimes helps his mother with the garden when his father is at work. Mosha and Zamaradi do not hire labourers but work on their own with the help of their adult gardener son. Sources of income include gardening and security guard work.

5.3.1.5. Irene's household

Irene is 37, while her husband Imma is 40 years old. They live a five-minute walk from FOC. The household consists of Irene and her husband, three schoolchildren, a 1-year-old child and a labourer who works in Irene's garden and assists with domestic tasks. The spouses have separate plots at FOC; Irene has more than 20 plots and supplements her own labour with that of the male labourer and by hiring other labourers at the garden. Imma has two plots and works alone without hired labour. Their children do not help their parents with gardening activities. Occasionally Imma assists his wife in her garden, especially by taking her vegetables to Dar es Salaam City to sell. This couple's income sources include gardening, a house that they rent out and peri-urban crop cultivation.

5.3.1.6. Christina's household

Christina is 54 and her husband Matiku is 62 years old. They live 10 minutes walking distance from MRS. Their household consists of three members: Christina, her husband, and Christina's female relative, who assists with domestic tasks. They share plots and perform all their gardening activities without hiring a labourer. For example when it is time to sell the husband takes the vegetables to the market while his wife continues with domestic or gardening activities. Sources of income include gardening, retailing fish and peri-urban crop cultivation.

5.3.1.7. Samweli's household

Samweli is 65 and his wife Mwasiti is 50. They live a 30-minutes walk from the MRS. Their household comprises Samweli and his wife, an adult daughter who is a food vendor on a casual labour basis, a schoolchild and 3-year-old grandchild. There is no household support for gardening activities. The husband and wife have separate plots, and help each other. Now and again they hire labour for activities such as clearing and ploughing the land. Gardening is the household's major source of income.

Table 4.4 in section 4.2.4 showed that the majority of the gardeners' households are nuclear, with most of their members being young children and schoolchildren in the majority. Table 4.3 indicated that the majority of the OHM are engaged in economic activities other than gardening. This implies that the availability of OHM for gardening activities is limited or irregular. This is the same with households presented above which show limited access to OHM labour for gardening. The occupations and ages of the OHM influence their availability for gardening activities. For example, there are more schoolchildren in these households, which in turn, leads couples to either hire labourers or assist each other in the garden. Only Julius's household relies on the children's labour at weekends.

The HHWG rely on more than one source of income, and this too affects their access to household labour. As the majority of these couples are around 50 years old, their adult children who could assist in the garden may not live in the household, or if they do they are busy with other economic activities which affects the amount of labour available for

gardening activities. Two of the HHWG have a hired garden labourer living with them to reduce the cost of gardening. They pay the labourer monthly and s/he also has access to the same household services as the gardeners' children. It is easier to control a labourer living in the same household than a one-off labourer at the garden.

In summary the majority of the HHWG have limited access to OHM labour for gardening, leading them to assist each other with gardening activities. Hiring a labourer supplements the household labour, although some couples opt not to do so to keep the production costs down. Income is probably another factor affecting hiring decisions.

The following section extends this discussion to gardeners whose spouses are not gardeners and to unmarried gardeners according to men and women's plot ownership. Although I have already elaborated the HHWG experiences with the availability of household labour, below they are discussed again alongside other categories of gardeners.

5.3.2 Household labour for gardening activities

This section analyses the availability of OHM labour in the following categories: gardeners receiving OHM support; gardeners who occasionally receive OHM support; and dynamics of child labour in gardening activities. Although Table 5.2 shows that the majority of gardeners receive OHM support, the interviews, FGDs and informal conversations revealed limitations to their access to household labour; the different strategies that gardeners use to access household labour; and their perceptions of children labour.

Table 5.2 :Gardeners' who receive assistance in gardening

Response for gardeners who receive assistance	Male	Female
Yes	51 (68.9%)	24 (77.4%)
No	23 (31.1%)	7 (22.6%)
Total	74 (100%)	31 (100%)

Source: Survey data 2015

Male and female gardeners were asked if they received assistance with their gardening from their household members. Of the 31 female gardeners surveyed, 24 received support from household members; 21 were married, 2 were widowed and 1, divorced. The interviews with female gardeners revealed that of the 21 married female gardeners who receive assistance from OHM, 7 receive support from their husbands. Seven of the married female gardeners had husbands who were also gardeners, as presented in section 5.3.1. Married female gardeners whose husbands were not gardeners occasionally received assistance from their husbands. During the interviews they said their spouses were engaged in other economic activities. Three female gardeners whose husbands were not gardeners received material support. For example, a husband can offer money to hire a labourer during peak gardening times.

The survey data indicated that a higher proportion of female gardeners receive support. Children were also a source of labour, particularly for female gardeners with a non-gardener husband. Mbilinyi (1972) and SIDA (1999) argue that in Tanzanian society children are seen as a source of agricultural and domestic labour and as economic assets for the future when the parents are older. For example children are expected to assist their mother at the farm and with domestic work, and later to support their elderly parents financially. In this study, some of the gardeners saw children as a source of labour, the limitation being that their support is only available at weekends, particularly for schoolchildren. During the fieldwork I observed one exceptional case where a widowed female gardener worked during the weekdays with her grandchild, a student. Flora informed me that she came to the garden with her granddaughter because she could not afford to hire a labourer. However, it was not common for children to assist gardeners on weekdays.

Table 5.2 also shows that seven married and unmarried female gardeners do not receive support from the household for gardening. For example Veronica, a single female gardener at MRS, depends on her own labour because she is living alone. Another case, presented in section 5.3.4, is Tatu, whose limited access to household members is one of the factors that led her to opt to do her ploughing herself.

Of the 74 male gardeners surveyed, 51 are supported in gardening by household members. Forty-nine of these gardeners are married and two unmarried (widowed and

divorced). Seven of the 51 who receive support had wives who were also gardeners. This is similar to the case of the female gardeners whose husbands are also gardeners. They support each other in the garden. The wives of the remaining 42 male gardeners who receive household assistance have other economic activities or are housewives.

This study found that it is common for married male gardeners to be helped by their wives with activities such as weeding and retailing vegetables. Martin stated that sometimes he forced his wife to help him with the garden. His wife is selling in a shop for which Martin provided capital. Further to this, I asked him how he forces his wife to help and he said that he threatens her verbally. Although forcing a spouse to assist with gardening activities was not common, Martin's case indicates that husbands employ different strategies to make their wives assist them in gardening. Another male gardener whose wife is a housewife argued that his wife must assist him when he needs her help in the garden because she benefits from the gardening income. It was stated that once a wife was informed that she should go to the garden it was non-negotiable. This suggests that a wife who does not work outside the home provides regular labour for gardening. Probably her being a housewife provides a husband with the freedom to make decisions about his wife's labour and she is obliged to help him. Husbands can use their position as household head to maximise the chance of getting their wife's support in the garden. This is consistent with studies in Tanzania that found that through marriage a husband has access to his wife's labour because he paid the bride price which makes his wife his property (Bryceson 1995; Caplan 1995; Yngstrom 2002; Vyas et al., 2015). Female gardeners cannot force their husbands to assist them with their gardening (see section 5.3.4). The following section discusses married male gardeners who occasionally receive support from their wives.

5.3.3 ‘My wife assists me occasionally’

This section presents male gardeners who do not force their wives to assist them with gardening. The wives have choices about assisting their husband, and normally they assist them based on their time availability. Married male gardeners said:

My wife sells snacks and charcoal at home. She assists me when she is free.
(Salehe)

My wife has a stall at the market, therefore sometimes she helps me to sell vegetables. (Daniel)

My wife is employed as a tailor and she goes to work every day. She occasionally comes here to supervise the garden when I travel out of Morogoro. (Peter)

Although I did not talk to Saleh and Daniel's wives, the above accounts suggest that the wives of these have the freedom to choose when they assist their husbands in the garden. The men said that when their wife is not available they can opt to hire a labourer or do the work on their own. The accounts above diverge from the premise that a man controls his wife's labour, discussed above. In these cases there is room for negotiation between husband and wife. Possibly Salehe, Daniel and Peter value their wives' jobs thus they do not want to take them from their economic activities. Chapter 7 discusses Peter's joint decisions with his wife about how they use their income. This is because his wife also works and contributes to the household. Peter gave me permission to talk to his wife; during the interview I asked whether she assists her husband in the garden. She told me that she is very busy at the tailoring shop and only assists him when he is out of the town.

As per the argument that in Tanzania the man has the power to make the decisions about on the allocation and distribution of resources among his household members (Bryceson 1995; Caplan 1995; Yngstrom 2002; Vyas et al. 2015) my expectation was that the majority of male gardeners would have power over their wife's labour for gardening. However, the cases of Salehe, Daniel and Peter suggest that there is much flexibility in negotiating their wives' labour, while in a case like Martin's the wife cannot negotiate with her husband. This shows that in some households men are flexible in decision-making about the allocation and distribution of resources.

5.3.4. ‘My husband does not know the location of my garden’

Table 5.2 shows that seven female gardeners: four married, two divorced and one single received no support for gardening from their household members. This section considers the four married female gardeners. Female gardeners said:

My husband thinks that gardening is a rural activity and therefore he cannot do it. He normally says ‘What kind of activity is that? It should be done in rural areas’. He doesn’t even know the location of my plot while we live 5 minutes from the garden. (Stella)

My husband says that gardening is very tough and therefore I cannot manage by myself. (Roselyne)

My husband is very busy and ignores my garden activities. (Diana)

The above accounts reveal how female gardeners’ husbands perceive their gardening activities. Stella’s husband makes a value judgement about gardening activities. Section 5.2.1.1 presented Stella’s case and how her brother helps her with the irrigation. Diana’s husband provides financially for all the household’s basic needs, and does not ask for her gardening income. Diana has just two plots and can manage most of the activities herself except for ploughing, irrigation and clearing the land, for which she hires a labourer. She said she cannot take on more plots because of the limited assistance from her household members with gardening, and this limits her ability to expand her gardening activities. The perception of Stella and Diana’s husbands who ignore their gardening activities suggest that the way that they perceive gardening activities influences their willingness to support their wives in the garden. Sen (1990) argues that perception, such as about who contributes more to the household, influences decision-making and bargaining power. Stella’s case is different: although her husband devalues her gardening activity, her contribution is significant (see section 7.6.2). His perception of her contribution is not important here; rather, his masculinity matters.

During the FGDs and interviews I noted that a husband’s support is important to reduce production costs and to boost the feeling that gardening is valued by members of the

household. Female gardeners who do not have their husbands' support for gardening may be assisted by their children or a hired labourer, or work on their own. The following picture shows *Tatu*, whose husband does not support her gardening work.



Figure 5.4: A gardener cultivating her garden

Figure 5.4 shows *Tatu* cultivating her garden. Her husband works as a garage mechanic. Her household comprises herself, her husband and children of 19, 15, and 7 years old, who are at school. *Tatu* gets no assistance with her gardening activities from her children (because they are students) or her husband. Her household is a 10 minutes' walk from her plots, but her husband has never visited her garden. Although her husband does not support her gardening, he acknowledges her income contribution and sometimes borrows money from her. She shares some of her plots with her sister and works on her own garden and on the plots co-owned with her sister. She finds ploughing and irrigation very hard work, but sometimes has no choice but to do the ploughing herself, because hiring a labourer increases her costs of production. She was lamenting her husband not helping her with the ploughing and irrigation, at least to cut down her production costs.

Tatu's statement, above, show that support from the husband or OHM is important to women gardening. Section 5.2.1.1 indicated that ploughing is a male task because it is tough, but the picture shows the crossing of gendered labour boundaries. In the absence of male labour, *Tatu* is left with no option but to plough her garden. This finding is consistent with Simiyu and Foeken (2014), who argue that when a husband is a farmer

he performs fewer traditionally female tasks because his wife takes care of these. In the absence of a wife, a male farmer also performs female tasks, crossing the gender boundary. *Tatu's* and other cases presented in this section suggest that the availability of household labour is important in gardening activities because it reduces production costs and allows a female gardener to opt out of gardening activities that she believes are male tasks. Such labour also increases her ability to expand her plots, ultimately increasing her vegetable production and gardening income.

5.3.5. ‘My children think gardening is tough and that it’s a rural activity’

Section 5.3.2 stated that children are seen as a source of labour in Tanzanian society, therefore this section examines the availability of their labour for gardening activities. The survey found that children living at home are either at school students or very young, most being less than 5 years old. The former can assist during weekends or holidays, while the latter are too young to work. This section focuses on school students.

Even though some parents feel that their children are obliged to help them in the garden, the children have a different view of gardening activities. While the children were not interviewed, their position was analysed based on their parents' opinions and perceptions. Gardener parents were asked how they thought their children saw gardening and about their willingness to help in the garden. I also probed to understand how accurately the parents' responses represented their children's perceptions. The parents had different views about children's availability for gardening activities. The following account presents one of these:

My children are very stubborn and do not like gardening at all, but they will know the benefits of gardening in the future. (Diana)

The previous section elaborated that Diana's husband ignores her gardening activities. Her children do not assist her either. Her interview revealed that although her family consumes vegetables from her garden and she occasionally buys them things, her contribution is not well acknowledged. This low perceived contribution affects Diana's bargaining power (see 7.4.1), consistent with Sen (1990).

Mwanahamisi said:

My son sees gardening as tough and a rural activity. I can't force him to come to the garden to help me. He only comes when he wants to.

This is a female-headed household, a widow, with Mwanahimisi the main provider for her children. Her son is 24 years old and not working, so he depends on his mother for his basic needs. She also has a 10-year-old son who is at school. Mwanahimisi said that her adult son does not like gardening and therefore he very rarely helps his mother to irrigate the vegetables. The other son sometimes assists her with domestic tasks. As the main provider, she also cooks and sells snacks to supplement her gardening income. She said that help from her son in the garden would be a great relief. Mwanahamisi finds balancing her three activities – domestic tasks, gardening, and cooking and selling snacks – challenging. However, during our interviews I realised that being a single woman gives her the freedom to postpone some of her domestic tasks to go to the garden or sell snacks. This agrees with Mwaipopo's (2000) study in Tanzania, which found that unmarried women had more freedom to travel out of the village to trade in fish, unlike married women who needed their husband's permission to travel. Mwaipopo's study shows how marriage can limit a woman's ability to expand her economic activities. Sometimes Mwanahamisi hires a labourer to assist her with ploughing and irrigation. However, she claimed that she could not increase the number of plots, because it would increase her workload despite her already full timetable.

Male gardeners had different views about the utilisation of children labour in gardening activities:

My elder son does not want to garden unless I force him: he prefers football.
(Mosha)

The above indicates that while Mosha sees the significance of children's labour, his son either have different ideas about his future career or does not want to assist his father. I asked Mosha what kind of force he uses and he said that he beats him or threatens to deny him food. When I asked Mwanahamisi how she tried to persuade her son to assist

her at the garden, she said that it is not possible to force him because he is grown up, therefore it was better to avoid confrontation with him. The accounts of Diana, Mwanahamisi and Mosha show that not all households have access to children's labour, and some children do not like gardening.

5.3.6. 'My children help me at weekends'

Although the above section was about children who dislike gardening work, interviews revealed that other gardeners are assisted by their children. Although irregular, their labour is important to reducing the cost of hiring labour. The following are the comments of male and female gardeners:

If there are no customers at the garden, my daughters hawk vegetables on the street after they come back from school. (Julius)

Female gardeners also benefit from children's labour:

During the weekend my children come to assist me and do gardening tasks. (Paula)

Despite children's labour being limited to weekends and holidays, the above underlines the importance of children's labour. It implies that either the children recognise their obligation to assist their parents, as Mbilinyi (1972) states, or gardening is considered a household business.

The following part discusses the dynamics of the availability of children's labour for gardening activities. It shows that children from different households have different perceptions of gardening tasks. During the FGDs I asked why some children support their parents with their gardening activities while others do not. The gardeners said that first, children are influenced by their peer group: if a child's friend realises that their parent is a gardener they might mock them, making the child feel inferior. Furthermore, when children ask each other what they want to become in the future, they might directly point to a gardener's child and say mockingly 'You will be a gardener like your parent(s)'. This might result in a child refusing to assist the parent in the garden. This

suggests that gardening is perceived by other children as a second-class activity. Second, a Swahili saying, ‘*mtoto umleavyo ndivyo akuavyo*’ means ‘the way you raise your child determines their future based on which some gardeners argued that they do not want their children to become gardeners, while others train and prepare their children to become gardeners. Thus some parents do not see their children as a source of labour for gardening activities. Monica said:

I do not like my children to come to the garden. The language used here is not good for my children’s development.

During the fieldwork I observed male teenagers who were not gardeners frequenting the garden for most of the day. These teenagers smoke marihuana, drink alcohol and sometimes bathe in the river used for irrigation (see section 5.2.1.1). According to Monica, the presence of the male teenagers makes the garden unsuitable for her children. This suggests that her children might otherwise have assisted her.

Hamida stated that she is sending her children to school so that they will be employed in the future. She is a widow, and it is very rare for her children to help her by hawking vegetables after school. In most cases, she relies on their help with domestic activities. Hamida said:

I do not like my children coming to the garden often. Gardening is a seasonal activity, and sometimes you get money while other times you don’t. It is better for my children to study and get paid employment in the future and not to become a gardener like me’

Hamida is the head of the household, which means all the responsibilities are hers. She said that her gardening income pays for her children’s school fees and other household expenditure. However, she considers that using her children often in the gardening limits their time for studying. Hamida views gardening as an unstable occupation, and does not wish her children to end up like her. This shows that not only children’s but also parents’ perceptions of gardening work affect the availability of children’s labour. Some of the male gardeners agreed with Hamida:

I do not want my children to end up as gardeners with only a primary education.
(Jacob, Hassan)

Hassan said that he works very hard to secure his children's future. He wants to encourage them to study hard and be employed in the future, unlike him, who started gardening at primary school. Jacob (see section 4.4) had a similar view, claiming that if he does not educate his children they will probably become gardeners like him, which is not his plan for their future. Although they appreciate the income from gardening which is used to pay school fees and other basic needs, they do not wish their children to become gardeners. This suggests that they see gardening as low status work or a seasonal activity.

The above section has presented gardeners' different attitudes towards their children's labour in the garden. While some depend on them to assist during weekends, others who need help have children either too young to help or who do not like gardening. Others feel that gardening is an unstable and tough occupation and choose not to engage their children in it. The above findings suggest that in households that see gardening as a household activity, gardeners utilise their children's labour in the garden. Secondly, households whose gardeners make adverse value judgements about gardening work do not use their children in the garden, while in households like Mwanahamisi's which could use their children's help, the children do not like gardening or are too young to help (as in Tatu's case). This implies that access to children's labour is influenced by the age and perceptions of the child as well the parents. Where children's labour is limited gardeners either hire a labourer or do the work themselves.

5.4 Division of labour in the household

5.4.1 Allocation of domestic tasks

Section 2.4.2 discussed how tasks performed by men or women are socially constructed (Mackintosh, 1981; Moore, 1988; Edholm et al., 1997). FAO (2014) examining the allocation of time for reproductive activities in Tanzania, highlights that the gendered division of labour affects men's and women's time for productive activities, and that Tanzanian women particularly face time constraints which limit their participation in

productive activities. For example, FAO (2014) states that 32 percent and 52 percent of men and women respectively devote time to domestic activities in rural Tanzania. The time spent by men changes with age: they spend more time on domestic tasks during their childhood and youth, and this drops after they reach working age, particularly during marriage. This is consistent with the current study, that found that single male gardeners do some domestic tasks such as cleaning the house and washing dishes and clothes, while married men very rarely engage in these activities. The specialisation of domestic tasks starts in childhood when girls are taught to perform domestic tasks such as cooking, fetching water etc. (Mbillyni, 1972; FAO 2014). This study considers the gendered division of labour important: during the fieldwork I realised that female gardeners, particularly those with young children or whose spouses are non-gardeners, struggle to balance their gardening and domestic activities. To accomplish their roles, they need to utilise different social relations. For example, at the garden they either pay a labourer, or if they cannot afford this, they work on their own. In the house, daughters and other any woman in the house assist in domestic activities. This means that a female gardener who does not have any women to share domestic activities and/or capital to hire a labourer suffers more. In this study I could not establish the amount of time that male and female gardeners spent on domestic activities, but I focused on gender roles in the household. It should be noted that spending more time at the garden is not taken as the only factor of garden success.

The survey asked male and female gardeners who was responsible for domestic tasks such as childcare, cleaning the house, washing the dishes and clothes, cooking, and fetching water. The following table presents the gender roles in the household.

Table 5.3: Women's performance of domestic activities

Activity	Female gardeners					
	Myself (single)	Myself (married)	Sons	Daughters	Another woman	Husbands
Childcare	12	18	1	12	10	2
Cleaning the house	13	18	1	16	8	-
Washing dishes	13	18	-	12	7	-
Washing clothes	13	18	-	16	8	2
cooking	13	19	-	12	5	-
Fetching water	13	19	1	18	8	2

Table 5.4: Men's performance of domestic activities

Activity	Male gardeners					
	Myself (single)	Myself (married)	My wife	Sons	Daughters	Other household members
Childcare	-	2	50	-	18	14
Cleaning the house	14	-	52	5	27	15
Washing dishes	16	-	47	1	30	15
Washing clothes	16	2	49	1	31	16
Cooking	12	-	51	1	24	14
Fetching water	13	2	49	1	29	13

Source for Table 5.3 and 5.4: Survey data 2015.

^aThe number shows total number of who is participating in domestic activities

NB: The counts do not add to 105 total surveyed gardeners as other household members are included and one person performs different tasks.

Table 5.3 and 5.4 indicate that the majority of women perform the domestic tasks. Married female gardeners are assisted by daughters or other women in the house. The survey did not ask about men performing domestic tasks during their childhood and before they married. Table 5.4 shows that single men perform domestic tasks while few married men perform them (see also FAO, 2014). This shows that women are responsible for domestic tasks.

During the FGDs and interviews, Rahma and Christina, whose husbands are gardeners, noted that they are occasionally assisted by their husband in domestic tasks such as fetching water, childcare or washing clothes but not with cooking, washing dishes and house cleaning. The latter tasks are considered a woman's work and thus a man cannot do them. Rahma and Christina said that their husbands do not offer assistance on a daily basis, only when they see their wife is busy at the garden and they have no gardening activities of their own. This means that their husbands have the choice to help them or not; it is not a gendered norm for them to do work for their wives. This is consistent with (FAO, 2014; Aelst, 2016) which find that activities such as cooking are women's work, and Agarwal (1997), who states that activities such as housework and childcare are socially constructed as women's work.

Unlike the two gardener husbands who occasionally assist their wives, male gardeners whose wives are not gardeners did not assist their wives in the house. From this, it appears that male gardeners whose wives are also gardeners are sympathetic to their needs, probably because they know the nature of gardening activities. This is contrary to Schroeder's (1996, 1999) finding that when women had more income than their husbands, the husbands felt that they were neglecting their marital responsibility for taking care of their husbands and the domestic tasks. Rahma and Christina's husbands were much more understanding. The following sections present specific domestic tasks categorised as female and male work.

5.4.1.1 Female tasks

A. Childcare

Childcare involves taking care of young children, feeding, dressing and bathing them. Tables 5.3 and 5.4 show two men involved in childcare; however during discussions and interviews with female gardeners they said that childcare means '*looking after a child*' implying that a man cannot bath or feed a child, and the mother has to make sure that a child is fed and cleaned before the father takes over. However, a man can only assist with childcare if there is no daughter or other woman in the house at the time. Basically, childcare is performed by any woman available in the household: it is women's work.

In this study, out of 25 female gardeners interviewed 12 had young children under 10 years old, and very few had another woman in the house to share either the childcare or the domestic tasks. For example, section 5.2.1.2 cited the case of Anna at MRS who had a 5-month-old child. With no other woman in the household Anna had to combine care for her children with gardening. This is similar in Kenya, where childcare is culturally women's responsibility, as they are primarily defined as mothers (Nelson 1979).

B. Cooking

In this study, cooking is primarily the work of female gardeners, whether married or unmarried. The majority of female gardeners cooked regularly, other female household members taking over when they were busy at the garden. Thus for female gardeners

whose children are young and who do not have any other adult woman in the house, cooking is their work. Table 5.4 indicates that 12 men are engaged in cooking; these are single male gardeners. Table 5.4 also reveals that 51 married gardeners claimed that it is their wife's role to cook for her husband, or that of daughters or another woman in the house, consistent with (Mbiliyi, 1972 and FAO, 2014). In the FGDs male gardeners indicated that they enjoyed eating food prepared by their wives. Cleaning dishes is also considered a woman's work, as indicated in Table 5.4, although children can assist from time to time. Single male gardeners also wash dishes as they rent rooms and some cook their own food in the evening.

C. Cleaning the house

In this study, cleaning the house was defined as sweeping the compound, mopping the floor, cleaning the bathrooms and dusting the furniture. Table 5.4 shows that 14 single male gardeners clean the house; these include single and living alone and one male gardener living with his relative. Most of the single male gardeners rented rooms in a house shared by other tenants and preferred to clean their own rooms, but hired someone to do communal tasks such as cleaning the bathroom and compound.

Married male gardeners said that cleaning the house is a woman's task. However, five male gardeners indicated that their young sons assisted their mother with cleaning, such as by sweeping the compound, corroborating the observation that when a man is single or young he performs domestic activities but when he is married he does not perform them. Generally, married and unmarried female gardeners form the majority of those who perform domestic tasks. In most cases they did this work early in the morning before going to the garden, in the absence of a woman in the house who could help.

Given that using domestic service is increasingly common in urban areas (Tacoli, 2012) my assumption was that female gardeners could hire a housemaid to enable them to spend more time at the garden. However, housemaids were not common in the current study, with only two gardeners commenting that they could afford the service. Nelson's (1978) study in Mathare valley in Kenya focused on beer brewers. She argued that women in *buzaa* brewing avoided hiring a maid because of the cost, thus they did the

brewing in their own rooms, and in this way they could take care of their children and business simultaneously, like Anna who took her child with her to the garden.

5.4.1.2 *Gender-neutral tasks*

A. Fetching water

Aelst (2016) found that in rural areas of Morogoro, during a drought men increasingly helped their wives to fetch water. She argues that this did not change the gender norm, and it was still regarded as a woman's task to fetch water. In her study the men involved in this task used bicycles to fetch water, unlike the women, who carried a bucket on the head. The current study found that fetching water is a gender-neutral task. Although Tables 5.3 and 5.4 indicate that women are responsible for fetching water, interviews revealed that married and unmarried male gardeners occasionally fetch water, but only when the water tap is close to the house, and the majority of gardeners lived close to a tap. In this scenario, a man feels comfortable fetching water.

The above shows that domestic activities are mainly women's work, as found in other studies in Tanzania including (Mbilinyi, 1972; Bryceson, 1995; Caplan, 1995; FAO, 2014; Aelst 2014, 2016). The section proposes that although there are some cases of men doing some domestic activities when young, this does not change the gendered norm, with female gardeners expected to perform multiple roles, unlike male gardeners. Hovorka et al. (2009) argues that women in UA spend more time to undertake all their domestic and agricultural activities and mostly rely on their own labour for production. Similarly, Kes and Swaminathan, (2006) argue that the time women spend on reproductive activities limits their time for productive activities. This suggests that women gardeners are not as able to expand agricultural production or to diversify their economic activities as men. Having shown that female gardeners are expected to perform the domestic activities, the next section explores the division of work between garden and house.

5.4.2. Trade-off between gardening and domestic work

The allocation of labour between a household and garden is important. Simiyu and Foeken (2014) state that gardening needs constant attention because it is intensive. Male and female gardeners were asked what time they get up and what they do before going to the garden. Understanding the work routines of garden and house is important to understand the ability of male and female gardeners to allocate time for gardening and whether female gardeners who spend more time in the garden will be able to take their own vegetables to the market and fetch a good price, as presented in Chapter 4. More time invested at the garden, a gardener can work as paid labour at the garden, thus increasing their income or attending other IGAs. Lastly, spending more time at the garden, a gardener gets connected with other gardeners, facilitating a flow of information, for example on the availability of vacant plots for renting.

Female gardeners had a routine for getting up early in the morning, although sometimes it changed according to crop stage and seasonality. This is also demonstrated in section 4.6. Irrigation, harvesting and selling are the gardening activities given highest priority, because they are time consuming. Generally, married female gardeners with children get up from 4-5 am, depending on whether there is another woman in the house, to attend to their children and do other domestic tasks such as cleaning the house and preparing breakfast. Those with young children also wash clothes while preparing the children for school.

Unmarried female gardeners have more flexible timetables; for instance for irrigation, harvesting and selling Monica gets up at 6 am and postpones some of the domestic tasks to go to the garden. When she is doing other gardening tasks she gets up at 7am and does her domestic work before going to the garden. She lives alone as her two children are at boarding school. Although the routines of female unmarried and married gardeners with children vary, the difference is in the number of domestic tasks a female gardener has to do before going to the garden. Despite female gardeners going to the garden at different times, on average they arrive from 6-6:30am for irrigation, harvest and selling. Lucy at FOC elaborated her morning timetable before going to the garden:

I wake up at 5 am, leaving my husband in bed. I clean the house, I wake the children to prepare for school and prepare breakfast. I also cook lunch for my children to eat when they come back from school, and carry part of it to the garden. Thereafter, I prepare water for my husband to wash.

Lucy is married and lives with her children aged 24, 15, 13, 10 and 7 months. Lucy's husband is also a gardener. Sometimes he does not wait for her, as he goes to the garden as early as 5am. Based on the intensity of the gardening activities, she can stay at the garden until 4 pm or 7 pm. Like most of the female gardeners, her timetable is not fixed, since it depends on the stage the vegetables are at. Sometimes she gets up earlier to be early at the garden. One of her strategies to increase her gardening time is by preparing lunch for her and her children when they return from school, so she does not need to go home at lunch time. Although her children assist her with domestic tasks, preparing lunch increases her workload in the morning. This makes her tired when she arrives at the garden. The timetable of female gardeners who are unmarried is more relaxed. The following table presents how male and female gardeners manage their time for domestic tasks and gardening activities.

Table 5.5: Home and garden work routines

During harvest, selling and irrigation					
Estimated time spent	SN^a	Female gardeners		Male gardeners	
		Activities		Activities	
4.00-5.00 am	1	Clean the house, prepare breakfast, childcare		Prepare to go to the garden	
5.00-6.00am	2	Clean the house, cook snacks		Prepare to go to the garden, feed the chickens	
6.00-6.30am	3	Clean the house, prepare breakfast		Prepare to go to the garden	
6.30	4	Prepare to go to the garden			
During sowing, weeding					
5.00-6.00 am		Clean the house, prepare breakfast, childcare		Prepare to go to the garden, feed the chicken	
6.00-6.30 am		Clean the house, childcare		Prepare to go to the garden	
6.30-7.00 am		Clean the house and prepare breakfast, childcare			
7.00-8.00 am		Clean the house, prepare breakfast			

^a SN: 1: female gardeners with young children and no other women in the house to assist in domestic activities; 2: a female gardener with another IGAs so needs to cook snacks to take to the garden and/or have another woman to share domestic tasks; 3: woman with no young children; 4: elderly woman with another woman in the house to assist with domestic activities.

Source: Interviews, 2015

The above table shows variations in times for getting up and the activities done before going to the garden. Time taken to arrive at the garden was estimated and is not included in the table. Table 5.5 shows that both male and female gardeners get up early in the morning for the harvest, selling and irrigation, but the women arrive later than the men because some of them must do household chores first while the men get up and prepare to go straight to the garden. They take a bath, and if it is not too early in the morning they have breakfast. Single male gardeners go straight to the garden and buy breakfast from a food vendor.

During irrigation, harvesting and selling male gardeners can go to the garden as early as 4:30 am, or go at 6:30 am to do other jobs. The latest time that female gardeners were noted arriving at the garden was 6:30 am during peak times and from 8 am for other gardening activities. Blackden and Wodon (2006) argue that the allocation and flexibility of female labour for activities outside the household is more limited than that of men. This similar case presented here indicates that the amount of time invested by a female gardener in gardening activities differs from that of a male gardener. Arriving early is crucial to gardening: they explained that it is better to irrigate early in the morning when the soil temperature is low, thus preserving moisture, and also to access water before others during the dry season. The different arrival times of the female gardeners depend on what domestic tasks must be done before going to the garden.

The above discussions indicate that female gardeners have time limitation to divide between the garden and the domestic sphere. Unmarried and older female gardeners' time is more flexible than that of other women. For example, Table 5.5 shows that one woman gets up and prepares to go straight to the garden. This is Stella, presented in the following section, who, with a grown daughter and granddaughter has the chance to rest in her free time and to go straight to the garden without performing domestic tasks.

5.4.3 How female and male gardeners use their free time

To further understand gender norms in domestic activities, I asked how male and female gardeners spent their free time because having time to rest is important for the well-being of gardeners. During interviews, gardeners described free time as the time

available between gardening activities such as irrigation, harvesting or selling vegetables. The majority of gardeners indicated that their free time depends on the cycle of the vegetables, seasonality, and how many plots they have, so their free time is variable. Table 5.6 shows different uses of free time by gender.

Table 5.6: Activities in free time

Activities	Male	Female
Domestic tasks	12	21
Resting at home	20	4
Watching football	3	0
Chatting with friends	19	8
Labour on other farmer's plots	10	2
Supervision in the garden	4	0
Community events	1	12
Visiting relatives or friends	1	4
Doing other IGAs	10	5

Source: In-depth interviews 2015. Female (25) Male (21)

^aThe numbers show activities performed by male and female gardeners during free time

Table 5.6 shows that for the women, free time is sometimes spent at community events such as funerals and weddings. Only five female gardeners had IGAs, including selling snacks at the garden, a *genge* business and selling *vitenge*. More than 90 percent of married and unmarried female gardeners used their free time for domestic tasks. During the interviews and FGD, female gardeners said that since sometimes they go to the garden early in the morning without cleaning the house properly, they use their free time to clean the entire house and wash clothes that they could not wash during the week. Only two unmarried women and two older female gardeners with no young children, like Monica in the previous section, stated that they could rest during their free time. Veronica is single and lives alone and therefore her domestic activities are not intensive. The cases of Monica and Veronica show that being single increases a woman's chance of resting. Stella is 59 and living with her husband and daughter and granddaughter, aged 18 and 13 respectively. Stella can decide to rest at home during her free time if her daughter and granddaughter assist her with the domestic tasks. The last case is Farida, who is 48 years old and lives only with her husband. She said that her husband cultivates crops in peri-urban areas, thus she is generally alone in the house. Monica, Veronica, Stella and Farida had a lot of flexibility in when they performed domestic activities.

The majority of married male gardeners rest at home during their free time, although single gardeners do some domestic tasks, as noted above. This is consistent with Ngome and Foeken (2012), who found that in Beau Cameroon, 80 percent of female gardeners performed domestic tasks in their free time while 75 percent of male gardeners spent their time with friends or resting. In their study the majority of the gardeners were also employed and therefore did their gardening early in the morning, and in the evenings the women did domestic chores such as cooking and helping the children with their studies while the men chatted with friends, watched TV or went back to the garden.

Table 5.6 suggests that social networking is crucial for male gardeners, and that men and women look at their free time differently. Most of the married male gardeners preferred either conversation with friends or sometimes watching football during the evening, similar to Ngome and Foeken (2012)'s findings above. In Tanzania, men commonly chat about politics, football and community issues with male friends and drink coffee, and some justify their social networking as bringing them into contact with different types of people who might be useful to their business.

The above section has shown how male and female gardeners spend their free time and how they view free time differently. During the FGD with male gardeners an interesting point came up regarding the position of female gardeners and women in general:

In the African culture when a man and a woman return home from the farm or office, when they reach home it is common for the husband to rest or chat with his friends. If the food is late the husband is angry with his wife, forgetting that they have been together at the farm or office all day. (Jacob, Peter)

Two important points emanate from the above account: while 'culture' implies social behaviour in the African setting; 'common' indicates behaviour done often by different people, making it a societal norm. In other words, while gender roles and responsibilities are social constructions, the household is a primary unit where roles are performed. Mackintosh (1981) argues that feminist scholars see the division of labour as one of the angles where female subordination is rooted. The above account suggests that despite a woman working and contributing to the household's welfare, her domestic

obligations and responsibilities are unchanged. This indicates that although both a male and a female gardener may engage in gardening activities, their gender affects women's ability to expand their gardening activities. It could be argued that the more time a female gardener spends on domestic activities the less time she has for the garden, forcing her to hire labour, but this depends on the availability of capital. Ultimately hiring labour increases production costs. Although spending less time on domestic activities is not the only element of success in gardening activities, it releases the tension and juggling between house and garden.

5.5 Conclusion

The findings in this chapter suggest that domestic activities are seen as women's work, consistent with the literature (Mbilinyi, 1972; FAO, 2014; Aelst, 2014, 2016). Although women actively engage in gardening and earn income to meet their immediate needs and contribute to the welfare of the household, the sexual division of labour and gender roles in the household are inflexible in relation to economic opportunities for women outside the household (SIDA, 1999). This chapter has discussed how female gardeners continue to perform domestic activities in line with their cultural obligations, despite their engagement in gardening activities. The majority of women juggle their domestic and reproductive activities, reducing their chance of increasing their income by increasing the number of plots that they garden on. More plots require more labour, necessitating spending more time on gardening.

This chapter has found that the majority of the gardeners' households were nuclear families, with children, and particularly students, providing labour in the household. However, not all children like gardening and therefore gardeners used various strategies to make decisions about their children's labour.

Chapter 6: Gendered access to gardening resources and assets

6.1 Introduction

Having discussed the gendered division of labour in the household and garden and in the performance of tasks and how it affects gardening activities and gender relations, this chapter examines mechanisms for access to gardening resources and assets using Ribot and Peluso's (2003) theory of access, which emphasises structural and relational mechanisms shaping access to selected resources and assets for gardening. These include technology, capital, knowledge, the negotiation of other social relations and authority mechanisms. First, access to technology, particularly an irrigation pump, is important. The previous chapter discussed how the irrigation pump simplifies irrigation but also involves socio-technological constraints to accessing water which particularly challenge female gardeners (see section 5.2.1.1). Second, access to capital for gardening which is one of the factors of production. This study assumes that access to formal or informal financial capital can be used to invest in gardening activities such as paying plot rent. The ability to pay rent on time is very important, as explored in the coming sections. Third, access to knowledge, in this case agricultural information through extension services, is important because knowledge and skills allow gardeners to improve their vegetable production and hence their income. Lastly, access through negotiation of other social relations, in this study informal networks, which serve as a major means of access to resources and assets. Trust and friendship are important elements of access through social connections. For example, during the fieldwork I found that social ties to any FOC official(s) increase a gardener's ability to keep their gardening plots in the context of FOC land insecurity.

The limitation of Ribot and Peluso's (2003) theory is that it does not specifically include gender in the understanding of different access mechanisms. This study focuses on intra-household gender relations, using Kabeer's (1999) three interrelated dimensions – resources, agency and achievement – which determine the ability 'to make strategic life choices in a context where this ability was previously denied to them' (ibid: 437). Thus, empowerment should reflect on potential than actual choices.

Ribot and Peluso's (2003) theory incorporates three elements – means, relations and process – which should be looked at when analysing the extent to which people can benefit from resources. This study looks at the ways which gardeners use to access resources, the social relations such as friends upon which they draw to access and maintain their plots, and lastly, changes in the strategies used to access gardening resources.

During my fieldwork I identified land, water, irrigation pumps, credit, extension services and agricultural inputs as major gardening resources and assets. In the following sections I investigate these resources and assets because they are areas where gender differences in negotiation and competition for access can be observed. Credit, extension services and agricultural inputs are briefly discussed to show their importance for gardening activities. The chapter answers the questions: What factors affect gardeners' access to land, water, irrigation pumps, agricultural inputs and credit? How do these affect gender relations regarding the garden and the household?

The chapter is divided into nine sections. Section 6.2 discusses access to plots for gardening activities; section 6.3 explores land registration at FOC; section 6.4 explores the different ways of hiring plots; section 6.5 examines access to water; section 6.6 explores access to financial capital; section 6.7 discusses extension services; section 6.8 explores access to agricultural inputs, and section 6.9 presents the conclusions reached.

6.2 Plots for gardening

Section 1.1 discussed three different types of UA location and how farmers access land. This study focuses on one of these: open spaces where gardeners cultivate leafy vegetables. MRS and FOC gardeners access land through an institution and private landlords. Focusing on open spaces is important, given that the gardeners' strategies, challenges and experiences are different and more complex than those in other locations such as the homestead, as discussed in section 1.1. At the study sites both male and female gardeners are excluded from formal access to land through buying, as urban people with low incomes cannot afford to purchase land. Hence informal access to plots from private or public landlords is the major means of accessing land for gardening (McLees, 2011). The current study found that social relations are significant in the

informal networks that gardeners used as an entry point, and that their experiences and challenges in the process of accessing resources differed by gender. Kabeer (1999) argues that social relations produce inequalities and determine rights and what kind of claims a person can make to a resource.

The following table presents the plot distribution at FOC, the primary site of this study. Section 3.4.2 pointed out that FOC was selected as the primary site because of its popularity for amaranthus production and it has around 80 gardeners. Sections 3.2.2.1 and 3.2.2.2 highlighted the difficulties in measuring gardeners' plots, due to the gardeners' suspicions that they might be evicted from their land as a result, making it a challenge to determine the exact size of the plots in the questionnaire. A plot measures 80 m², and therefore a gardener with four plots has 320 m², either joined or separate. The following table shows the number of plots owned by gardeners at FOC.

Table 6.1: Plots distribution by gender at FOC

Number of plots owned	Female	Male
Fewer than 5	7	21
5-10	4	19
11-16	5	11
17-30	1	1
Total	17	52

Survey data: 2015

The majority of gardeners have 1-10 plots, 16 gardeners have 11-16 plots, and only 2 gardeners have 17 or more; the latter have connections with FOC employees. From the table, there is no substantial differences on the size of the plots owned by male and female gardeners.

6.2.1 Access to plots

The following table presents the different ways that gardeners accessed their plots.

Table 6.2: Plot access mechanisms (N:105)

How plot was accessed	Male	Female
Through friends/relatives	53 (71.6%)	21 (67.7%)
Through FOC manager	13 (17.6%)	6 (19.4%)
Other means	8 (10.8%)	4 (12.9%)
Total	74 (100%)	31 (100%)

Survey data: 2015

Informal networks are the major means of access: most of the gardeners accessed land through friends or relatives. For instance they were informed by a gardener of the availability of a vacant plot or introduced to the landlord. This shows the importance of social relations and that knowing a gardener is important for accessing gardening plots; at this point the gender of the gardeners is not important. Other means of accessing land included working as a labourer and/or selling snacks at the garden, and creating close relationships with gardeners before asking about securing land. In section 3.2.2.1 I noted that FOC employees are entitled to plots free, which explains how 19 gardeners accessed their plots via FOC.

Although Table 6.2 shows that 71.6 percent males and 67.7 percent female of the gardeners accessed their plots through friends or relatives, as indicated above, further analysis found that 22 percent of these were rented from fellow gardeners. Section 4.4 discussed how a gardener can sublet plots as an additional source of income. In the past, plots were allocated on a first-come-first-served basis (section 3.2.2.1). Ngome and Foeken (2012) found in their study at Beau, Cameroon that gardeners apply for plots through municipal authorities which consider different criteria before allocation, including first come first served. I present here different strategies used by male gardeners to access plots, followed by those of female gardeners:

I knew a gardener who was also employed at FOC. I asked him how to get plots at FOC and he wanted a small token as motivation to connect me to the officer who was allocating plots. (Peter)

I moved to Morogoro in 1992 and I was employed at the tobacco factory. It is seasonal work with low pay. My friends were cultivating at FOC; they helped me to get one plot. (Daniel)

I started cultivating vegetables in 1995 when I was at primary school. I was hired as a labourer to do the irrigation. After two years, I rented five plots. (Hassan)

Peter's statement suggests that knowing a friend might not be enough, as a bribe was also required. Peter's case exemplifies that before one can benefit from social relations, employing certain strategies is sometimes necessary. However, not all gardeners followed this route. The last account indicates a different strategy: Hassan started gardening as a casual labourer when he was very young. I was curious to know why Hassan had started gardening while at primary school. He said that he had lost his parents before starting his primary education. An elder sister looked after him, but her income could not sustain them. This motivated him to engage himself as labourer to get money to support the family. After he completed primary school Hassan became a full-time gardener. Section 5.3.6 noted that Hassan did not want his own children to end up as gardeners with only a primary education.

Female gardeners used the following strategies to access land:

I started cultivating vegetables in the back yard of the house I was living in. Later my landlord started to build a house close to where I was gardening. My friend was gardening at FOC; she helped me to get the plots. (Rehema)

I started growing vegetables at MRS three years ago. Before that I was a vegetable buyer, and through this I was known to many gardeners so I got the plot easily. (Mary)

These female gardeners employed means to access their plots that were similar to the men's, with exception of Peter using money. Although the gardeners employed different strategies to access their plots, their ability and strategies to keep them were different (see section 6.2.2.1). Informal conversations and interviews revealed that over the past six years, access to plots at FOC has become more difficult. The following section explores competition for plots at FOC.

6.2.2 Competition for plots at FOC: Changes to plot access mechanisms

A. Strategies used by newcomers

Newcomers employed strategies to access plots through social networking with friends and relatives. The accounts presented in this section show how the means of access changed, especially for the newcomers:

I had been selling snacks here at FOC, I was known to many gardeners so one of them helped me to get the plots. (Mwanahamisi, Farida)

I came here six years ago as a labourer. After a year I was able to rent a plot from a gardener. (Jamal)

The above gardeners used the opportunities of selling snacks to gardeners and working as a garden labourer to get closer to the gardeners, and then enquired about the possibility of getting their own plots. This explains how, with the high demand for plots and land insecurity at FOC, newcomers change their strategies to be close to the gardeners hence gaining access to plots, while in the past first come first served was the major means of accessing plots (see chapter 3 section 3.2.2.1). The strategy used by Mwanahamisi, Farida and Jamal involved hiring plots from gardeners and not from FOC. During the fieldwork I learnt that the entry point, that is, hiring from a fellow gardener, does not matter: what matters is the ability to keep the plots or register with FOC.

B. Strategies for temporarily increasing the number of plots

Given the complexity of land access at FOC and the competition for plots, I asked gardeners how they gained more plots. This study assumes that the more plots you have the more benefit you can reap from gardening, as in the case of Jacob and Irene (see section 6.3). The following illustrates how male gardeners expand their plots:

If you want more plots, you can get them from those who have failed to pay the rent. (Gerald).

Sometimes a gardener will decide to sublet his plots during the rainy season to cultivate other crops such as maize and rice on peri-urban farms. (Peter)

The above accounts include inability to pay plot rent and peri-urban cultivation as some of the factors that lead to vacant plots. Subletting is an internal arrangement between gardeners, of which FOC, the landlord, is unaware, and is common among gardeners registered with FOC. Gardeners hiring from other landlords claimed that their landlords regularly supervise their gardens, and since they collect the rent individually they can tell if a gardener has sublet his plots. Lucy, a female gardener, noted:

If you are close to the garden leader(s)¹⁸ and you have the money, you tell them that they should inform you if there are any vacant plots. When someone fails to pay, you pay the rent yourself. You also give the leader a token to help you to access the plot

From Lucy's account, close relations/friendship with the FOC garden leader is important since he can let you know when there is vacant land. She said that the token – money – is given to the leader in advance as motivation to inform you about a vacant plot first. The garden leader mediates between the gardeners and FOC officials: for example a gardener's plots cannot be taken away unless the leader has authorised it. This explains how close contact with the leader facilitates the chance of accessing a vacant plot. This may increase the security of gardeners who pay through the leader, but it increases the insecurity of others, because the leader has the power to negotiate on behalf of FOC gardeners, he can also use his position to oppress gardeners who do not have a good relationship with him.

6.2.2.1 Politics of retaining gardening plots¹⁹

Ribot and Peluso (2003:158) state that 'access relations are always changing, depending on [...] and power within various social relationships'. FOC authority is threatening to evict its gardeners to use the space itself for vegetable production. Given the sensitive nature of the eviction, as discussed in Chapter 3, the gardeners were not entirely easy in

¹⁸ In this case, a garden leader refers to a gardener selected by other gardeners. The basic role for a garden leader is to mediate between the gardener and FOC officials through collecting plot rents and follow-up gardeners who delay or do not pay plot rent (see section 6.4.1 for further explanations). It should be noted that, garden leader just lead the gardener registered at FOC, they have not registered as a farmer's group.

¹⁹ Retaining means the ability to keep the land before any eviction

my presence. After I had been in the field for a long time they were willing to talk about the threat. Female gardeners said:

There is chaos here – we're just waiting for the outcome. You cannot keep other people's property by force when they want it back. We're waiting for the outcome of their decision. (Farida)

This area belongs to the government, and if they decide to take it back there's nothing we can do. If a male gardener hears anything relating to the eviction he tells his closest friend and keeps it quiet, when we ask about it they will not tell us. There is hypocrisy here and no solidarity among gardeners. (Rahma, Lucy)

Farida rents her plots from a fellow gardener. Although she was worried about eviction from FOC land she felt that there was nothing she could do. Rahma and Lucy's statement reveals why female gardeners remain silent about the eviction. During the FGD they complained that since the eviction notice had been announced their male counterparts had not involved them. They felt that the male gardeners thought that the women could do nothing to protest against the eviction. Hence the female gardeners have decided to wait for the outcome, and do not follow up or attend any of the meetings about the possible eviction.

Male gardeners said:

Mguu mmoja ndani mwingine nje, ['one leg inside and the other outside', meaning that life is uncertain so one must be prepared for any outcome]. It's hard to continue investing in growing vegetables. (Julius)

FOC employed an agricultural officer who we thought would help us. Instead he wants to destroy us. At this point I feel like slashing him to pieces with a machete. (Peter)

The FOC officials have realised that gardening is profitable, so they want to take back the land. One day I met one of them while crossing the river. I told him if he dares to take my plots I will kill him. What you always hear about in

Mvomero [another Morogoro District with conflict over land between pastoralists and farmers that kills many people every year] – you will soon hear it here. I've been cultivating here since 1989. I've already sharpened my machete. (Mosha)

Julius is not motivated to invest in his gardening any more: the land insecurity has had a marked effect on him. Jackson (2003) argues that words are resources just like material resources, and through words a person delivers the power to claim resources. The last two accounts indicate the powerful sense of ownership that makes Peter and Mosha feel that they deserve to continue using their plots. Mosha claimed that when he started gardening at FOC it was a forest (see section 3.2.2.1). Therefore most of the gardeners who started gardening at the beginning feel that they have the right to continue using the land. They said that they had invested so much labour that the land is now good for any activity: that is, they have increased its value. Daniel had a similar opinion:

The threat to evict the gardeners is based on selfishness. The rent we pay to use the plots helps the elders at FOC. The elders live in a good environment, but in the past when this area was forest it was unsafe to pass through here. We have cleared the forest and now they want to evict us.

McLees (2011) argues that the relationship between landlords and urban farmers is based on unequal power relations; landlords have more power than farmers as they own the land, which gives them the right to take it back at any time. Mosha and Daniel had invested a lot of labour in making the land more desirable, and therefore the landlord would not incur labour costs to make it suitable for other activities. McLees (2011: 619) argues that ‘land under farming is an investment that increases the future value of the land by keeping it clear of bush and looking organised’.

FOC manager also wants to change the method of paying rent (see section 6.4) from collectively through the garden leader to individual gardeners submitting their rent in person, and it demands that each gardener signs a contract with FOC. The gardeners contested the eviction using different strategies and persuaded the female gardeners to refuse to sign the contract. Peter and Daniel said:

We refused to sign the contract because one of the clauses gives the officer the power to breach it at any time without prior notice. Another clause states that each gardener must pay rent directly to FOC and not through the leaders.

The account above suggests that the FOC gardeners were aware of the risks and challenges of paying rent in person. Most felt that it would be difficult to defend themselves standing alone. Of the 43 gardeners, only 3 had agreed to sign the contract, and efforts to get a copy of the contract had proved fruitless. The above account shows that the gardeners preferred the existing system of paying through the leader, seeing paying individually as a ‘divide and rule’ tactic with officials able at any time to evict a gardener, who would not have the support of fellow gardeners. The following section discusses the importance of registering at FOC as one way for gardeners to keep their plots.

6.3 Registering land with FOC

6.3.1 Women’s access to land registered under a husband name

This section presents the cases of female gardeners whose husbands had helped them to get FOC plots:

My husband started gardening at FOC while I was selling charcoal at home. The business was not good, so I joined him. (Mwantumu)

My husband started gardening when I was cooking and selling snacks. Later he got a job as a security-guard, and so I decided to continue cultivating his plots. (Zamaradi)

My ex-husband is a cook at FOC; he gave me some of his plots. (Rachel)

The accounts of the gardeners above show that it is possible to access plots through a husband or his relatives, unlike the male gardeners’ access mechanisms (section 6.2.1). Mwantumu, Zamaradi and Rachel are not registered with FOC, but their husbands are. Mwantumu’s husband had already been gardening for more than two years when she

joined him. They decided to share the plots. This was also the case with Zamaradi, who spends undertakes most of the gardening activities because her husband is a watchman.

Although generalising from the above cases is not wise, the above statements concur with (Van den Berg 1997; Flynn 2001; Lyimo-Macha and Mdoe 2002; Yngstrom 2002), who find that women access land in sub-Saharan Africa through marriage, and once the marriage ends they lose the right to use the land. Despite the land used for gardening activities being privately-owned by FOC, Rachel's case is contrary to the above author's argument because she is divorced but continues to cultivate her ex-husband's plots. Rachel has two children by her ex-husband who, she said, does not support them financially. He may have left the plots to her so that she can earn income to support their children, allowing him to avoid his responsibility for them. However, by continuing to cultivate in her ex-husband's name Rachel has no grounds for a future claim to the land. Maintaining plots in the husband's name may be a good way to keep a couple's plots, but Mwantumu, Zamaradi and Rachel are vulnerable as their names are not registered with FOC. If the gardeners are evicted and FOC officials pay compensation, their husbands would be paid rather than the women, and the labour they have invested in their plots will be wasted.

Although both male and female gardeners only have the right to use the plots, some of the female gardeners' right to use the land depends on their relationship with their husbands. Other studies also argue that changes in women's marital situation jeopardises their access to land (Van den Berg, 1997; Flynn, 2001; Lyimo-Macha and Mdoe, 2002; Yngstrom, 2002; Pedersen, 2015). Like Mwantumu and Zamaradi, if they divorce or their relationship is not good their husbands can prevent them from using the plots.

6.3.2 Female registration: Access to FOC authorities

My fieldwork revealed that a close relationship with a FOC official or being part of FOC itself created a strong possibility of accessing plots and enhanced the chances of those who already had plots keeping them. In this section I present the case of Irene, whose plots are registered in her own name. She said:

My mother works as a nurse at FOC and we have lived in the vicinity of FOC since my childhood. I started helping her in the garden when I was young. Later she helped me to get plots at both FOC and the primary school. (Irene)

Irene's mother still lives near FOC, and Irene lives a five-minute walk away. After Irene completed her primary education her mother helped her to get plots at FOC. Years later, again through her mother, she rented more plots at Kaloleni primary school. Therefore Irene has a total of 30 plots registered in her name and two landlords. In section 3.3.2 I stated that a gatekeeper insisted that female gardeners with many plots know a lot about gardening. At that point this made me question the issue of gender relations at the garden. I later came to realise that a female gardener with many plots and connections such as Irene is perceived as having high status. Irene is a well-known, successful and respected female gardener at FOC.

Irene became close to me during the fieldwork. One day we were chatting about the FOC's threat of eviction. I noted that even though she was worried about the eviction like the other female gardeners, her concern was different. She was not worried that all her plots would be taken away but rather that she would then have fewer plots. She would keep her plots at the primary school. Moreover, her mother is still employed by FOC with a right to plots even after the other gardeners are evicted. Because her mother is getting older, Irene is certain that she will still have access to plots if evictions occur. Irene is in a strong position because her two brothers and sister do not live in Morogoro and do not cultivate their mother's plots. The cases of the above female gardeners have illustrated the dynamics of land insecurity/security and have shown that although informal networks are the major means of accessing gardening plots, a close relationship with FOC increases its tenants' land security. The following section presents the case of a male gardener.

6.3.3 Male registration: Access to FOC authority

Jacob is in a similar position to Irene. Although he has retired from FOC, he still cultivates the plots allocated to him when he worked at the centre. During my interview with him I asked him how the threat of eviction affected him as he no longer worked at FOC. He replied:

I am the child of the family [FOC]; no one will evict me here.

(Jacob)

Jacob said that he had worked at FOC and his wife was still employed there. He claimed that the centre has not paid his retirement pension, and he often tells the FOC manager that if they want to take his plots they should first pay this. Jacob still feels that he belongs to FOC, and with his unpaid retirement pension and his wife working at FOC with her own 13 plots, he considers his plots secure. In section 4.4 I mentioned that Jacob takes care of all 26 of his own and his wife's plots. His plots are registered in his name and his wife's in hers, but they share gardening activities. Jacob and his wife are very successful in their gardening business (see section 4.4). Like Irene, Jacob is not worried about eviction. He helped some of the other gardeners to access their plots at FOC. Jacob and Irene can harvest up to 2,000 bunches of vegetables per crop, compared to a gardener with 1-5 plots who harvests 300 bunches per crop. The couple do not rely on household labour for gardening activities because they can afford to hire labour, and because they want their children to be well-schooled, as discussed in Chapter 5. Irene is different from the other female gardeners as she has so many plots and can supply vegetables on a large scale. She has a good network of customers from Dar es Salaam, who come to buy vegetables at FOC during the rainy season. Sometimes her husband helps her to take her vegetables to Dar es Salaam to sell. Irene and Jacob's case suggests that although social relations are important, other factors such as employment at FOC are also important. However, the latter produces inequality among gardeners, with gardeners who do not have close relations with FOC land-insecure while gardeners such as Irene and Jacob have high land security.

This analysis of access has presented the different power relations among the gardeners and the dynamic ways in which they access plots. It has discussed how access, particularly to FOC determines how and why some gardeners feel secure against the threat of eviction while others feel vulnerable.

6.4 Different forms of renting plots

Access analysis involves understanding the mechanisms through which access to resources is retained (Ribot and Peluso, 2003). In this study, ability to pay the rent is one way of retaining plots at both sites (see also Ngome and Foeken, 2012). The survey found that 92 percent of gardeners pay their plot rent via various types of arrangement, as shown in the table below. Only 8 percent admitted that fail to pay their rent. Table 6.3 presents the different types of landlords at FOC, the amount they charge and how the rent is paid.

Table 6.3: Plot rents and how they are paid

Landlord	Rent amount	When paid	Contact point (who is submitting the payment)
FOC	2500 TZS per 80 ² m	10 th of every month	Garden leader
School	500,000 TZS	Six monthly	Individual gardener
Mama Kishobozi	300,000 TZS	Six monthly	Individual gardener
Shentuli	10,000 TZS	End of every month	Individual gardener

NB: It should be noted that the amount of rent charged cannot be compared because School, Mama Kishobozi and Shentuli estimates the charges.

The table shows that FOC charges a lower rent and have fixed date in collecting the plot rents. Moreover, it was noted that the gardeners felt more secure paying the rent through the garden leader than individually. All the FOC gardeners give their rent in cash to the leader, who takes it to the FOC manager. During the fieldwork, I noted that the FOC manager keeps a book with the names of the registered gardeners which shows their monthly payments throughout the year. When the garden leader submits the plot rents, the FOC manager gives him a receipt for the money received, in the name of the leader rather than of the individual gardeners. FOC charges gardeners 2,500 TZS per month per plot; e.g. a gardener with three plots pays 7,500 TZS. The other landlords estimate the size of their plots to estimate the price and collect rent from each individual gardener. The landlords who charge per year require the rent to be paid six monthly. This implies that gardeners have different experiences of paying their rent if they rent plots from different landlords.

Table 6.3 indicates that FOC charges the lowest rent of all the landlords. This makes FOC plots more desirable. In the following sections I explore the dynamics of plot rents and their payment, and how they increase land security/insecurity. I use the cases of FOC gardeners, not only because FOC is the primary site in this research but also because of the high land insecurity there.

6.4.1 Payment through the leader

The forty-three gardeners who are registered at FOC pay their rent through their leader, who collects it before the 10th of each month and submits it to the FOC manager. Lucy elaborated on this arrangement:

We have the rule that if you are not able to pay the rent for three consecutive months, your plots are taken away. But if you cannot meet the deadline to pay the rent, you inform the leader in advance and he will negotiate with the FOC officials on your behalf.

The above account echoes section 6.2.2 which explained that the leader mediates between gardeners and FOC officials. The FOC manager normally asks the leader first why a gardener has failed to pay the rent. If a gardener has already explained to the leader, he will negotiate on their behalf to extend the payment deadline; if the gardener has not already talked to the leader they must pay a penalty of 5,000 TZS plus the rent. Gardeners who refuse to give a reasonable answer and do not pay for three consecutive months have their plots taken away; this is the last resort since the gardeners perceive FOC as a good location for their gardening business, and none want to lose their plots. Therefore once gardeners are registered with FOC, their ability to keep their plots is influenced by factors such as access to financial capital and their relationship with the leader. Moreover, gardeners registered with FOC feel that paying rent through the leader as a group is more secure as there is room for negotiation. The leader takes the pressure off the gardener by negotiating with the FOC. Gardeners who pay private landlords have different experiences and insecurities, as presented below.

6.4.2 Paying rent to private landlords

This section uses a case of Rahma, a long-term female gardener at FOC. She started gardening in 1987. One day she was absent from the garden and I called her because I wanted to interview her. She said she had injured her leg and was not going to the garden, and invited me to her home. During my visit we chatted about gardening. Rahma rents plots from both FOC and Shentuli, a private landlord, and I was able to explore the challenges of paying rent to different landlords and how this affected her land tenure.

As we sat in her living room, she told me that she had been the first female gardener at FOC in 1987. At that time, she had gone straight to the FOC manager and a plot had been allocated to her. After some years she rented some plots from Shentuli. She told me that gardeners who hire plots from Shentuli pay the rent monthly and on an individual basis. There is no group payment or negotiation as for gardeners registered with FOC. She claimed that this kind of arrangement is risky, because if the landlord decides to take back the plots one cannot negotiate. She said that Shentuli raises the rent frequently, and if you cannot pay on time, after a month he gives the plots to another gardener.

During our conversation, a man came and asked her to go outside with him so that they could talk. After a while she came back and told me that the man was Shentuli. At that point, I had not met him. She told me that he had come to collect her rent, and that they are supposed to pay the rent at the end of the month. However, this was the 19th. I asked why, if the agreement is to pay at the end of the month, he came for it early. Rahma said that if he needs money he does not care if it is the end of the month or not. He can decide to take the rent in advance from any of his tenants. Since she was sick, Rahma told him that she needed time to gather the money because she had been paying her hospital bills. According to Rahma, Shentuli then threatened to rent the plots to another gardener, so she had taken some of the money reserved for food and given it to him.

I asked if her FOC plot rent was also due. Rahma said that the payment had been due two weeks ago. She had called the leader to tell him about her situation and he had negotiated with FOC to postpone her rent to the next month. I asked if the leader can

come to collect the rent at home like the other landlord, and she said ‘*That has never happened; the leader collects the rent at the garden. This landlord who has left here is very aggressive and tough. When he does not see you at the garden he comes to your house to collect the rent. He knows where all his tenants live.*’ I was curious to know whether he does the same even with his male tenants, and she responded, ‘*I am not sure if he does the same.*’

Rahma’s case clarifies that there is room for neither negotiation nor group payment with a private landlord, who can break his agreement with his tenants at any time. As a woman, she said she felt more comfortable paying rent through the leader than in person, since she does not have to negotiate directly with the landlord. Payment through the leader gives a gardener who cannot pay the rent on time a grace period if the leader negotiates well, making this method flexible compared to paying landlords such as Shentuli. Renting plots from different landlords presents different challenges and experiences to the gardeners. Rahma was not overly worried about her FOC plots, as the leader had negotiated for her, but she had had to pay Shentuli with money set aside for food.

6.4.3 Payment through a fellow gardener

It is common for gardeners to sublet part of their plots to other gardeners at both sites. However, as discussed earlier, in most cases subletting from a gardener is temporary. Section 4.4 stated that 33 percent of gardeners at MRS and 16 percent at FOC sublet their plots. In this arrangement the sub-tenant pays more than the tenant pays FOC or a private landlord. Gerald said:

I rent my plots from a fellow gardener, and at any time he might decide to take them back; and because other people want to outbid me, he raises the rent as he wishes.

Price competition over who pays more increases the land insecurity of gardeners who cannot afford high prices, and reduces their ability to keep their plots. A gardener who wants to sublet seeks a tenant who can pay more than the original rent so that he can pay for his own plots and other gardening activities. Price competition to rent from

gardeners increases the sub-tenant's land insecurity, as they are not registered with FOC.

The three forms of payment presented above reveal different levels of land insecurity among gardeners. McLees (2011) argues that insecure land tenure is the major challenge facing urban farmers and limits their ability to increase their agricultural production, as discussed in Section 4.9. McLees finds that the vegetables cultivated in open spaces have a short crop cycle, therefore if a gardener is threatened with eviction, it is possible for him/her to negotiate a delayed rent payment until they can be harvested. Like renting from a gardener, paying private landlords rent on time is the only way to keep such plots, as there is no flexibility or negotiation.

6.5 Access to water

Access to water is very important in vegetable cultivation because limiting it destroys the crop. FOC gardeners access water for irrigation from the River Morogoro, while those at MRS depend on River Mazimbu. Access to water is analysed here based on the dry and the rainy seasons. In the dry season the shortage of water affects the gardeners' timetables and production, more seriously at MRS than at FOC. The following image shows the river in the rainy season.



Figure 6.1: FOC: River Morogoro in the rainy season

In the rainy season water is reliably available (see section 4.5). Gardeners have time to rest or engage in other activities because they do not need to irrigate their crops. However, water is in limited supply at MRS in the dry season.



Figure 6.2: MRS: Depleted River Mazimbu in the dry season

As the picture indicates, the supply of water at MRS is limited in the dry season and is not sufficient for the number of plots. During this time the gardeners change their timetables. Some, especially men, get up by 4 am to get to the garden and irrigate before the others, because from about 7 am onward most of the water has been used up. As discussed in Chapter 5, because female gardeners are expected to attend to their domestic activities first some cannot get to the garden as early as the male gardeners.

During the 2014 dry season, gardeners at MRS decided to drill small wells at the river to increase the amount of water available. Rose, a female gardener, informed me that only a few gardeners appeared to drill the holes, and once it was done they forbade those who had not participated in the drilling to use the water to irrigate their vegetables. The latter gardeners went to their plots very early to use the wells before the former. This led to much conflict among the gardeners. Rose said:

When there is not enough water, people fight. They exchange abuse. I always decide to go and sell my vegetables at this time because if you are not strong enough you cannot use the water.

Therefore Rose was left with only few months to grow her vegetables, given the flooding at MRS discussed earlier. She claimed that she did not have power to fight male gardeners over water. By power, she meant the abusive words they use. Access to

water is facilitated by irrigation pumps, otherwise gardeners have to water by hand using buckets, which is tedious and not common. This study found the irrigation pump very useful to gardeners, as discussed below.

6.5.1 Access to technology: The irrigation pump

Ribot and Peluso (2003) state that some resources have to be extracted using technology. Technology increases the ability to physically reach a resource, and people with access to the technology stand a better chance of benefiting from the resource. Access to an irrigation pump is one of the important aspects of gardening. It simplifies the irrigation of vegetables because it requires less labour than hand-watering; it allows the gardener to cultivate more plots; and it shapes the division of labour in the household because female gardeners dislike the job of irrigation and thus the help of their spouse, children or relatives is important. This section discusses the irrigation pump as the technology for irrigation, and the different ways that gardeners access it, and how it changes the values of gardening activities.

6.5.1.1 Ways of accessing an irrigation pump

People use different strategies to benefit from resources (Ribot and Peluso, 2003). This is taken as the key point in understanding how male and female gardeners access irrigation pumps, and how this asset benefits them. As Table 6.4 indicates, of the 105 gardeners, 101 (98.6 percent males and 90.3 percent female) use irrigation pumps and only 4 water by hand, using buckets. Access to an irrigation pump is therefore important.

Table 6.4: How vegetables are irrigated (N:105)

Means of irrigation	Male	Female
Bucket	1 (1.4%)	3 (9.7%)
Irrigation pump	73 (98.6%)	28 (90.3%)
Total	74 (100)	31 (100)

Survey data: 2015

During the household survey I asked the gardeners how they irrigated their vegetables, and as the above table indicates, the majority used an irrigation pump. However, over

the entire fieldwork period I realised that access to an irrigation pump does not indicate full control of the asset. Gardeners said that they used an irrigation pump, but the ability of some of these to benefit from a pump to access water at the time they wanted was influenced by different factors, as discussed below.

A. Access to irrigation pump through buying

Analysis of the household survey revealed that of the 101 gardeners who had access to an irrigation pump, 65 (49 male and 16 female) had bought one themselves; 25 (19 male and 6 female) hired a pump from another gardener; 9 (5 male and 4 female) borrowed from other gardeners; and 2 female gardeners indicated that their husband had bought their irrigation pumps. Interviews revealed that majority of both male and female gardeners had bought their pump using their own money. The following responses are from female gardeners whose husbands are not gardeners:

I decided to buy an irrigation pump, so I told my husband of my intention.
(Rebecca)

My sister and I decided to buy an irrigation pump because we share our gardening plots. (Pamela)

I informed my husband first that I wanted to buy an irrigation pump. My money was not enough, so I had to ask my husband and my brother to contribute.
(Paula)

Rebecca is married and lives with her second husband. She is 36 years old with four children. Her husband does casual work for a construction company; he was married before and has children from his ex-wives. Paula is 50 years old and is married with five children. Her husband is engaged in casual employment as a mason. Pamela is 41 years old and is married with three children. Her husband cultivates crops on peri-urban land while she shares gardening plots with her sister, who is unmarried.

The first two accounts suggest that decisions regarding their gardening activities are in Rebecca and Pamela's domain. They only informed their husbands of their intention,

because the latter are not gardeners, leaving Rehema and Pamela free to make their own gardening decisions. Although they bought the pump themselves, further conversation revealed different motives behind a wife informing her husband about such a purchase. For example, Rebecca's intention when consulting her husband before she bought the pump was noted:

I told my husband of my intention to buy an irrigation pump so that he would accompany me to the shop. I also did not want him to feel ignored.

Rebecca stated that she wanted her husband to feel good despite her gardening income being higher than his. In other words, informing her husband before buying the pump was a way of making him feel respected. Other motives included needing her husband to carry the pump for her on his bicycle. In this way Rebecca used her husband to avoid the cost of transporting the pump from the shop to her home, and suggests that her intention in asking her husband to come with her was beyond just respect. Although Rebecca claimed that her husband does not have a stable income, his physical support is important to her. Rebecca maintains her respect for her husband as the head of the household despite his irregular income, since she can gain physical support from him. Moreover, informing him about the asset she wanted to buy would avoid marital conflict.

The following cases of female gardeners whose husbands are also gardeners illustrate their joint and separate decisions to buy an irrigation pump:

My husband and I do gardening together so we decided to buy the irrigation pump together. (Mwasiti, Christina, gardeners)

Mwasiti and Christina are both married and started gardening together with their husbands. Their statement suggests that they made the decision to buy their irrigation pumps with their husbands. Although Mwasiti and Christina's statement suggests that couples who are both gardeners make such decisions together, this may not apply to all couples. In some instances the spouse who started gardening first made the decision to buy a pump. For example, Julius said:

I started gardening before my wife because she was doing other activities, so I bought the irrigation pump myself.

Julius shares gardening plots with his wife (see section 5.3.1.3). The plots they share are registered in his name because he started gardening first.

The above section suggests that gardeners who share gardening activities make joint decisions on assets unless they are bought before the second spouse started gardening. Gardeners' whose spouses are not gardeners make their decisions alone, although women may inform their husbands for various reasons.

A. Access to an irrigation pump through hiring

The previous section discussed purchasing power as one of the means which gardeners access an irrigation pump. However, 25 gardeners hired their pumps. Hiring a pump incurs two separate costs: the rent and diesel. During my fieldwork I noted that access through hiring increases the cost of production, and a gardener faces challenges such as the irregular irrigation.

Rehema is married and is both a gardener and a hawker (see section 4.4). She cannot afford to buy her own irrigation pump and therefore hires from other gardeners, since irrigation by water bucket is very time-consuming. She said that given her multiple roles as gardener, vegetable hawker, wife and mother, allocating time to them all is challenging. Not owning her own pump increases her time challenge, because being a vegetable hawker entails walking streets for as many as six hours at time. Rehema said:

If you do not own an irrigation pump, you are challenged when you want to irrigate your plots. The owner of the pump might tell you to wait until he finishes his own plots.

It might seem that any gardener can hire a pump from another, as 65 gardeners have their own pumps. However, further conversation with Rehema revealed that the possibility of hiring from another gardener is minimal. Different factors such as the

distance between the owner of the pump and the person who wants to hire it matter, as she explained:

I normally hire from a person who is close to my plots. It is not possible to hire from someone whose plots are far away from you. The pump is very heavy, so people do not like carrying it all the way to your plot; they prefer to hire to gardeners whose plots are closer.

Rehema's account reveals that gardeners who rent an irrigation pump have a limited choice of who they can hire from, and must wait for the owner to finish irrigating his own plots before he will hire to another gardener. Rehema said that not watering in time due to waiting for an irrigation pump can affect the vegetables. She took me to her gardens to witness this: she had planted amaranth and it had started to turn yellow due to lack of water because she had had to wait more than two days to irrigate them. From what I observed, timely access to an irrigation pump reduces the risk of crops dying from lack of water.

At MRS I visited Flora, a widowed female gardener aged 50. Her case was similar to Rehema's. At her plot I observed her using a water bucket for irrigation while at her side there was irrigation pump that she was not using. I asked her why she was not using the pump, and Flora said:

I have hired this pump from a male gardener for 3000 TZS per day. I also bought diesel for the pump. But the pump leaks and is not working.

I asked Flora what she would do, since she had already paid the owner:

The rule here is that you pay the money in advance before you rent the pump. Whatever happens with the pump it is not the owner's responsibility.

Once a gardener hires an irrigation pump, if it develops problems the money is not refunded, even if the owner knew about the problem. Consequently Flora lost both money and time as she had to water by hand.

Rose noted another challenge of hiring a pump:

I do not have an irrigation pump, therefore it is difficult for me to have many plots. When you want to hire an irrigation pump the owner might tell you that it is not free. Some owners do not allow you to operate their pump yourself, so you have to wait until they finish on their own plots and come to irrigate yours.

Rose is 50 years old and divorced with five children. She started gardening 23 years ago, and her gardening is the main household livelihood. Rose and Rehema's accounts suggest that social ties shape access to pumps through renting, which must be at the owner's convenience as some gardeners do not allow others to operate their pump. Thus gardeners who do not own irrigation pumps have limited choices, which in turn affects the growth of their vegetables, as I observed at Rehema's plots. Kabeer, (1999: 437) states that 'choice necessarily implies the possibility of alternatives'. These gardeners do not have alternatives, so their timetables must fit with those of the gardeners whose irrigation pumps they hire and to whose roles they must adhere. As the above accounts indicate, the distance from a gardener who has a pump and the availability of money to pay for hiring and diesel matters in access through renting.

B. Watering by hand

Table 6.4 indicates that one male and three female gardeners watered their vegetables using water buckets, increasing their workload as they must water more frequently because the water does not sink in as deeply as it does with pump irrigation. Salim is 19 years old and single, and started gardening two years ago. He said that he could not afford to buy a pump, and described the challenge of watering by hand:

Watering by hand is troublesome. For example, you start watering from 9 am until 12 pm, then you continue from 3 pm until 5 pm. You have to repeat this after just one day. (Salim)

Salim's account shows that irrigating by hand takes longer than using a pump. Limited access to an irrigation pump is one of the factors that prevents gardeners taking on more plots.

In this section, the accounts of gardeners who do not have their own irrigation pump show how important owning a pump is in various ways. First, it is cheaper than hiring and allows the gardener to cultivate more plots. Second, it makes it possible to irrigate the vegetables regularly and conveniently. The majority of gardeners who did not have their own pump indicated that financial constraints and their small number of plots (most had just one or two plots), among other things, limited their chance of buying a pump because they cannot earn much.

The above accounts suggest that the availability of capital, trust among gardeners, personal links and the number of plots cultivated are the factors constraining access to an irrigation pump. Female gardeners who have to hire an irrigation pump face increased challenges with allocating time to both garden and domestic tasks. The following section explores women's experience of access to an irrigation pump.

6.5.1.2 Gendered meaning of irrigation pump ownership

A. Female gardeners' experience

Section 5.2.1.1 discussed how women do not garden on an equal footing with men. Socio-technological constraints shape their access to water via an irrigation pump. Interviews and informal conservations with gardeners revealed that the irrigation pump has had a strong economic and social impact on gardeners' lives. I asked female gardeners about the significance of the pump in their lives:

Before 2000 we watered by hand using buckets. It was very difficult. I could not manage many plots. I am old now, I can no longer carry buckets to water the vegetables; the irrigation pump has simplified my gardening work (Stella)

Between 2008 and 2010 I watered my vegetables by hand using a bucket. This tormented my children, because after school they had to come to the garden to assist me. Sometimes I told them that they should not go to school so that they could help me to water the vegetables. (Rebecca)

I started gardening in 1987. At that time we watered by hand, using buckets. For faster irrigation you carried two buckets of water holding 20 litres each. I was

spending more time irrigating the plots because we had to water twice a day. Nowadays the irrigation pump has simplified the work, I can irrigate for two hours and then go home to prepare food for my children. (Rahma)

I bought an irrigation pump this year. Before I had it I could make 20000 TZS selling sweet potato leaves. Now I get up to 100,000 TZS with every sale. (Mary)

The above accounts of female gardeners who had experienced watering by hand describe the positive contributions of an irrigation pump in their lives. Age, income and domestic work were used to analyse the importance of the pump to their gardening and household. Rebecca's children were now only helping her in the garden at weekends rather than on schooldays, as in the past. Her gardening business is totally her own. Rahma (section 5.4.1), whose spouse is also a gardener, has young children to take care of and no other women in the house to help with domestic work. The irrigation pump gives her time to go back home to do her domestic jobs. Access to technology also simplifies work for older gardeners such as Stella who is 59 and cannot carry water buckets as she used to in the past.

Income is another benefit of having an irrigation pump. Mary's husband works as a security guard, and she too can now contribute money to the household budget. In this way the value of her garden has increased, since her husband nowadays helps her with garden activities, for instance by carrying her vegetables to market on his bicycle. In this case, gardening has significant contribution at Mary's household.

The above women's experiences show the dynamics of the contribution that an irrigation pump makes to female gardening, and that it is difficult to generalise about women's gardening experiences and challenges. Different factors such as age, the amount of domestic work to be done, and their income contribution reveal the benefits of the irrigation pump in their lives. This also signals that mechanisms of access to other resources cannot be generalised either.

6.5.1.3 Changes in gardeners' perceptions of the value of their gardening

The previous section discussed contribution of irrigation pumps on female gardening, this section adds the experience of male gardeners. Gardeners feel that the irrigation

pump has not only changed their own perception of the value of their work but also those of other people. Based on gardeners' understanding and experiences, this section addresses the change in their perceptions of the value of their gardening activities in relation to their adoption of the irrigation pump. Male gardeners said:

Before I married my wife I told her about my gardening work. I told her that I needed her to accept and love my work. I told her that seeing me wearing good clothes she should not get the impression that I am working as a government officer: a garden is my office. (Peter)

Peter is married and his wife works as a tailor. He has been cultivating vegetables at FOC for more than ten years. I asked him why he had to tell his fiancée about the nature of his work before their marriage. Peter answered that on two different occasions he had proposed to girls and both had refused, saying that a gardening income cannot sustain the basic needs of the family. Peter made sure that his next fiancée would agree to marry him whatever his occupation. When I asked him how he had felt when the girls had rejected him, he said:

I felt bad about the rejection because I loved them, but not because of my work [in the garden]. I feel okay with gardening because I get an income out of it

Peter has a primary education and migrated to Morogoro in 1990. He could not get a job, so he started cultivating vegetables in an unfinished building. In 2000 he was able to access some plots at FOC through a friend. He said that with an irrigation pump he took on more plots, and with the income from the garden, bought another piece of land 15 km from FOC, where he also grows vegetables. Other gardeners had similar experiences:

In the past, women in the neighbourhood ignored this work, believing it to be done by illiterate people. (Sulemani)

People saw us as idiots in the past, but nowadays even prostitutes will do everything to date a gardener because they know we can pay for their service. In

the past, for example, pumpkin leaves were sold at 50 TZS, but currently the price is 1000 TZS. (Jacob, FGD)

People value things when they are widely known. In the past gardening relied on watering using buckets and we could not expand our plots. Therefore vegetable production was minimal and changes in our lives were not seen. People always value others by relating to what they do and their living standard. I mean, people look at your standard of living and compare it with what you do. Unemployment has led people to engage in gardening, and the increasing number of people gardening increases its value. (Sulemani, FGD)

The above accounts reveal the experiences and feelings of male gardeners regarding how they perceive themselves, and other people who are not gardeners perceive them. Their accounts suggest that neighbours made value judgments about gardening. Currently, gardeners feel that they have achieved high status by increasing their gardening income, and the people around them have started to see the value of gardening.

Suleman argues that unemployment is one of the factors that push some urban dwellers to engage in UA (Mlozi, 1995; Jacobi, 1997; Howorth et al., 2000). Sulemani completed his secondary education and went to Dar es Salaam to seek a job. Unable to secure formal work, he returned to Morogoro and joined his parents in gardening activities. During their FGD, male gardeners stated that the increasing number of gardeners indicates that vegetable cultivation is a prominent business venture, and claimed that with the introduction of irrigation pumps they could take on more plots and increase their income. Moreover, the use of technology increases the status of gardening work compared to the manual irrigation of the past. They claimed that these factors shape the way other people perceive gardening as a livelihood.

Female gardeners explained how they felt that other people perceive them:

Irrigation by water bucket was very difficult, so most of the female gardeners opted out. Likewise, people in the neighbourhood claimed that women who cultivated vegetables smoked marijuana. (Rehema).

We were ignored by other people. In the past the FOC was surrounded by forest, which robbers used to hide in. Some of the neighbouring women did not want to become gardeners to avoid the bad image imposed by proximity to the robbers. Everything has changed now: people understand that gardeners are not robbers. Nowadays the same people who underrated us want to get plots, but it is so difficult. (Rahma, Stella, FGD)

Rehema's account also suggests that some of the female gardeners abandoned gardening because of the belief that they smoked marijuana to gain physical strength. With the current high demand for vegetable plots the gardeners believe that gardening has gained social value, and feel accepted in society.

The above sections have discussed the dynamic contribution of the irrigation pump to gardeners' lives and activities. Although gardeners attach different meanings and values to the pumps, they both see positive changes in their identity as gardeners and their contribution in the household.

6.6 Access to financial capital

Ribot and Peluso, (2003:165) state that 'access to capital in the form of credit is a means of maintaining resource access'. In this study, access to financial credit is as important as other factors of production such as land and labour. This study assumes that gardeners with access to credit can pay rent for a plot and buy agricultural inputs and an irrigation pump, all of which improve their vegetable production.

Research question 3 of this study examined how decisions about the generation and use of gardening income are made at the household level, and how these reflect and affect gender relations. This study deals with gardening activities as small- and medium-scale informal-sector enterprises, although I did not analyse gardening as a business operation in depth because my interest was in gardening income and how it contributes to the lives of the gardeners (see section 4.8), paying more attention to the social benefits. Moreover, I found that the gardeners did not keep records of their day-to-day gardening operations, thus making it difficult to quantify the costs and benefits of their gardening

activities.

URT (2002) and ARGIDIUS (2012) state that small and medium enterprises (SMEs) include non-farm activities such as manufacturing, commerce and services, and usually are categorised as informal-sector activities. Their description of SMEs does not include UA as an informal-sector activity; however, UA scholars such as Howorth et al. (2000) and Flynn (2001) class it as such. URT (2002) categorises SMEs as those which do not require high capital or investment to start up. SMEs are considered easy of entry, but important to the economy and for poverty reduction in both rural and urban settings. SMEs contribute about a third to Tanzania's gross domestic product (GDP) (URT, 2002).

Access to finance as capital and/or credit is important for the operation and survival of SMEs. UA, like any other business venture, requires access to financial services to optimise its production (Cabannes, 2012). Finance in the form of credit, savings and insurance is not the only service required by SMEs (Kleih et al., 2013). Other important requirements include managerial skills, financial literacy, record-keeping and others (ibid). Cabannes (2012) argues that financing should be regarded as a dynamic and complex combination of the mobilization of resources such as savings, credit and subsidies.

However, ARGIDIUS (2012) points out that SME operators lack access to finance from formal banks because of the difficult loan requirements, including formal registration of the SME, collateral and a credit history, conditions which cannot be met by some SME entrepreneurs. For instance, urban farmers are land-insecure (see section 2.5.1 and 4.9.3) and lack the formal land titles which could be used as a collateral for access to credit. ARGIDIUS (2012) states that only 20 percent of the 3.1 million SME operators in Tanzania have received loans from formal financial institutions; 12 percent use informal means to access loans; and about 70 percent do not use financial services at all. These findings suggest that the majority of SME operators access finance through informal sources. It is similar for female SME entrepreneurs, who face limited access to formal credit due to their lack of collateral and the small size of their business (Tundui, 2002). Tundui states that women's major sources of capital are their own savings, family and friends, and other informal financial institutions such as PRIDE and rotating

services. The present study also finds that the majority of the gardeners accessed credit from informal sources such as loans from family and friends, rotating services, informal credit from suppliers of inputs such as seeds, etc.

6.6.1 Access to credit through informal institutions

The survey asked gardeners how they accessed financial credit to support their gardening activities. The findings indicate that 41 gardeners used credit while 64 did not. Among those who used credit, 41 gardeners accessed it through informal organisations or social relations. For example, 14 percent got credit from friends and relatives, 14 percent from the Village Community Bank (VICOB), 2 percent from UPATU (money go around group members), a credit rotation scheme, and other organisations such as Foundation for International Community Assistance (FINCA), Bangladesh Rural Advancement Committee (BRAC) and Promotion of Rural Initiative and Development Enterprises (PRIDE). Female gardeners who received informal loans said:

I have joined the UPATU scheme; it includes 17 women in my neighbourhood with different IGAs. (Rachel)

We do not get support from the government. I have joined a VICOB group in the neighbourhood. (Lucy)

Informal access to credit was therefore the major source of gardeners' credit. UPATU and VICOB are very common in Tanzania and were set up to increase business capital among small scale entrepreneurs.

6.6.2 Other sources of financial capital

The 61.0 percent gardeners who did not use credit claimed to use different means of financing their gardening activities, most saving income from their vegetable sales to pay for gardening requirements. They also mentioned family assistance as one of their sources of finance for gardening activities. The survey found that 27 gardeners received remittances from children or relatives who live elsewhere.

A. Fear of seeking a loan

During my fieldwork I noted that some of the 64 gardeners who did not use financial credit had a negative view of loans, as the following male and female gardeners' statements indicate:

I am aware of the credit organisations, but I do not want to borrow because I am afraid that they will confiscate my properties if I fail to repay the loan,
(Stella)

I have not taken out a loan with any organisation. Although BRAC targets women, a few male gardeners have also secured loans from it. (Albert)

Stella had witnessed some of her neighbours' assets being confiscated by a loans officer after failing to repay a loan, and she claimed that she is better off saving her money in a safe place for use in the future. I did not clearly understand Albert's account because before I interviewed him I had visited BRAC, where officials told me how they offer their loans. When I asked him to explain his hesitation in seeking a loan, he responded:

One of the loan criteria for BRAC and other organisations is that you make repayments every week. It is difficult for gardeners to pay every week, although a few can do it. Vegetables take about 28 days before they are ready to sell. I would apply for a loan if the repayment was monthly.

Although Albert's reasons might not apply to every gardener, they suggest why 64 of the gardeners could not access credit. Even though Albert first claimed that BRAC is biased towards women, further probing made it clear that the conditions for a loan are difficult for gardeners to meet. I visited the BRAC foundation office in Morogoro Municipality and noted that it offers micro credit for small-scale entrepreneurs, both farmers and non-farmers. An interview with an Agricultural Finance Officer revealed that the Livelihood Enhancement through Agricultural Development Project (LEAD) 2015/16 targets farmers who grow maize and keep livestock in the municipality, training them in agricultural activities and giving them inputs such as maize seed and

chemical fertiliser. Maize and rice are priority crops in Morogoro Municipality. Table 4.8 indicated that 64 gardeners have other IGAs, and some may register these to access a BRAC loan.

6.7 Access to knowledge: Extension services

Information is an important factor in agricultural production. Improving farmers' access to agricultural information can contribute to increased production through efficient utilisation of available resources. Farmers need information for their day-to-day activities such as about marketing, the availability of credit facilities, farming practices etc. to improve their production. Van den Ban and Hawkins (1996) list different channels that deliver information to farmers including mass media, radio, farm magazines and extension services.

Section 4: 10 stated that extension services provide agricultural information to enhance agricultural production: however in Tanzania this service focuses on rural areas. Extension services being one of the channels for agricultural information, this section explores how gardeners benefit from these to improve their vegetable cultivation. During the interviews I asked gardeners whether and how Ward Extension Officers (WEO) support their gardening activities. I noted that gender is not important in accessing extension services, because the majority of gardeners do not have access to extension services. The following are some of their responses:

Last year the WEO came and taught us how to prepare insecticides with local available materials. (Salim, Rahma)

Since I have started gardening, I have not seen any Agricultural Officer. (Rehema, Stella, Salim)

We are proud that we can manage our gardening alone, that's why we don't need agricultural officers. (Mosha)

They may be Agricultural Officers by name, but they do not help us. (Jamal)

We teach ourselves how to cultivate vegetables; we do not get any kind of support from agricultural officers. If they get a salary they get it for nothing.
(Diana)

The above accounts indicate the gardeners' feelings about WEOs. The majority of them have never met a WEO. During the fieldwork I noted that when a WEO visits a garden he only talks to the gardeners who are present. He does not give advance notice of his visits. Given that gardeners have different timetables for their gardening activities, the chance of meeting all of them is minimal. This may explain why some gardeners have seen a WEO at the garden while others have not. Mosha, Jamal and Diana's statements suggest that the gardeners have despaired with extension services. Diana's statement concurs with the survey data, which found that 61.0 percent of gardeners learn about vegetable cultivation from fellow gardeners, while 23.0 percent started gardening as children. Mosha and Diana's claims that they do not require assistance from WEO, when one of the gardeners' challenges is vegetable diseases (section 4.9.2), are controversial.

6.8 Agricultural inputs: Manure and seeds

Various scholars argue that farmers in urban areas, especially in Africa, have limited access to agricultural inputs (Cofie et al. 2004; Foeken et al. 2004; McLees, 2011; Ngome and Foeken 2012). In this section I briefly discuss access to manure and seeds. Gardeners' purchasing power and ability to negotiate with sellers is their major means of accessing these inputs.

6.8.1 Manure

Gardeners at both sites commonly use tobacco dust as manure. Others include urea and chicken manure, although they are not used regularly because the former is expensive and the latter is scarce. The following male and female gardeners explained how they access manure:

Tobacco is available during the rainy season. During other seasons, urea and chicken manure are used. We like tobacco because it stays on the field for up to four months. (Rachel)

I use urea when the vegetables are in the early stage of growth, and tobacco as well. Tobacco enables me to grow vegetables for up to four months without reapplication. (Stella)

The municipal authorities do not allow gardeners to apply tobacco dust to the vegetables. When we order tobacco from the factory it passes close to the municipal offices and they can easily see it and follow it up. Nowadays we tell the drivers to cover it. (Jumanne)

Rachel and Stella's statements show that gardeners prefer tobacco as manure as it lasts longer and is cheap and easy to obtain, the factory drivers delivering to the gardens. Chicken manure is limited in quantity and not produced on a large scale. Gardeners claimed that when they want chicken manure the chicken owner may ask them to clean the coop before taking the manure. Although gardeners prefer tobacco dust, the municipal authorities had forbidden its application. Jumane's account reveals that gardeners are experiencing resistance to using tobacco in their garden from the municipal offices. Irene said:

Last year the amount of manure from tobacco was very limited. The officers from the municipality went to the tobacco factory and asked them to stop supplying it to gardeners. However, the soil here is very infertile, and without fertilisers production will be very low. They claim that tobacco is poisonous and unhealthy for people.

However, during my fieldwork I observed gardeners using tobacco, arguing that it is harmless. Irene continued:

I have been using tobacco for more than 15 years and I eat the vegetables, but I have not yet suffered from tuberculosis as they claim.

Some of the gardeners went to meet the Ward Councillor (WC) and the WEO to discuss the ban on using tobacco, which was then lifted.

6.8.2 Seeds

The use of improved seeds is a precondition of good production (Ngome and Foeken, 2012). I noted that most of the gardeners bought seeds from local suppliers. I also observed that men on bicycles brought sacks of vegetable seeds to sell at the garden. The following account illustrates informal access to seeds:

There are people who come here to sell the seeds of different kinds of vegetables. If I need seeds, I call them and order and they deliver them here.
(Rahma)

There are people who supply seeds to us. You can negotiate with them and get up to 100 kg of seeds and pay for them after selling the vegetables. (Lucy)

Gardeners must negotiate at different levels to access resources, assets and agricultural inputs. That is, labour at the household level and land, water, and agricultural inputs at the garden, and credit and the market beyond the garden. This study found that accessing each resource involves different means, strategies and negotiations. For example, a female gardener negotiates with another woman in the house to assist her with domestic tasks and at the garden she uses a friend or relative or her husband to access land, and those who do not own a pump negotiate with fellow gardeners to rent one to access irrigation. For the irrigation she hires a labourer or relies on her husband, if the plots are co-owned, or her children, because the pump is heavy. She hires a labourer to take her vegetables to market, risking being cheated, or takes them herself depending on the time she has available. Gardeners employ different forms of social relations in and beyond the household to maintain their gardening activities.

6.9 Conclusion

This chapter has demonstrated that informal access mechanisms are the major means by which gardeners access the gardening resources that they need (see also McLees, 2011;

Ngome and Foeken, 2012). The availability of formal allocations of resources and assets for gardening is limited and gardeners lack formal entitlement to the use of resources such as land. Through their social relations, gardeners employ various strategies to benefit from their gardening activities. Ribot and Peluso's (2003) framework provides a lens through which to analyse access within gardening activities. The findings indicate that other factors limit gardeners' ability to benefit from the available resources such as location and land insecurity. The impact of land insecurity has pushed gardeners to employ various strategies, including verbal threats and resistance to signing a contract that would allow them to keep their plots. Geographical challenges at MRS that is floods during rainy season affect gardeners' income during the off-season, and some of the gardeners diversify into other economic activities to provide for their families. Thus the mechanisms of access are not fixed, the means and relations that people use to gain access to a resource changing according to the situation at hand.

While the previous chapter described the female gardeners' reliance on household relations for domestic and gardening activities, different forms of social relations are involved in accessing plots and agricultural inputs. In rural areas women access land through marriage; in urban gardening, land is also occasionally accessed through the male spouse (Van den Berg, 1997; Flynn 2001; Lyimo-Macha and Mdoe, 2002; Yngstrom 2002). Building social relations beyond the household is important. At the garden, while a few gardeners access plots through household members such as husbands, most go through friends or directly to the landlord, or employ various strategies to access plots such as being a labourer or selling snacks to become known to the gardeners and position themselves to take over plots that become available. This also implies that for gardeners to benefit from gardening they need to expand their social network beyond the household. Relying on household members may limit their chance of gaining access to plots because as stated networks of friends and/or gardeners are used. The social relations and strategies in the household discussed in Chapter 5 are quite different from the social relations that a gardener can employ at the garden to access plots and other agricultural inputs.

Chapter 7: Intra-household gender relations between male and female gardeners

7.1 Introduction

Having discussed the gendered division of labour in gardening and domestic activities and gendered access to gardening resources and assets, the present chapter explores the impact of gardening income on gender relations. It focuses on how spouses decide how gardening income is to be used.

In this chapter I discuss married couples' intra-household relations. I acknowledge that there may be some types of intra-household relations, for example involving divorced gardeners, that I have missed. I focus only on married couples because this thesis assumes that it is possible to explore the pattern of cooperation and conflict among spouses rather than in other types of intra-household relations. This is because husband and wife have gendered roles and responsibilities for the welfare of the household. Whitehead (1981) argues that the relationship between husband and wife involves the exchange of goods, services and income within the household. This chapter uses SSIs and life histories drawing on the opinions and ideas of couples who are both gardeners, and gardeners whose spouses have a different economic activity. The sample included seven couples who were both gardeners; husbands and wives were interviewed separately (see Table 7.1).

As discussed in section 2.4.1.1, Sen sees women's economic contribution to the household as the major source of their bargaining power. However, in this study other socio-cultural factors apart from gardening income, such as a husband's illness, children from previous marriages, the experience of previous marriage, and extended family were found to contribute to women's bargaining power. This study also found a marked gendered division of activities which to some extent influences how a gardener makes decisions according to her/his sphere as per the separate spheres model (Lundberg and Pollak, 1993). This chapter employs Sen's cooperative conflict model (Sen 1990) along with Lundberg and Pollack's (1993) separate spheres model to examine how gardening income affects gender relations (Whitehead, 1981; Schroeder, 1996, 1999). It addresses the question of how decisions about gardening income are made and utilised at the

household level. It also encompasses women's perceptions and ideas about how their participation in gardening activities has changed their bargaining position.

The chapter is structured as follows: section 7.2 discusses the socialisation of boys and girls; section 7.3 explores how gardening income is used in the household; section 7.4 presents male and female decision-making responsibilities; section 7.5 explores women's strategies for controlling their income; section 7.6 discusses the impact of gardening income on gender relations; and section 7.7 presents the chapter's conclusions.

7.2 Socialisation in childhood: Marital obligations and responsibilities

In Tanzanian society, the roles and responsibilities of men and women are determined in childhood (Mbilinyi, 1972; FAO, 2014). For example, girls are trained to cook and fetch water. This suggests that social norms are significant in understanding gender relations within how couples perform their gendered responsibilities and decision-making, as discussed in section 2.3. This section explores how childhood upbringing shapes the way men and women perceive their position and their marital obligations as husbands and wives.

The study found that some gardeners have continued to follow what they were taught by their parents about their future marital responsibilities. This helps to shape the way a couple makes decisions about the utilisation of gardening income. In this study, although socialisation during childhood is not taken as the major influence on how decisions are made, understanding this highlights predefined gendered obligations during marriage. Owen (2010) states that the majority of urban farmers are rural migrants who tend to transfer their agricultural activities to urban areas. This study found that 10.6 percent of the gardeners in the sample had migrated from rural areas in Morogoro Region, 53.2 percent were migrants from other regions, and 36.2 percent had been born in the municipality. Although the data corroborates Owen's argument, gardeners who had migrated from other regions had lived in the municipality for long time.

During the life-history interviews with female gardeners I asked them about their childhood experience and what they had been taught regarding marriage by their tribes. I asked the same question of male and female gardeners who were not included in the life histories, in the FGDs and interviews. The following sections present women's opinions and experiences of their marital responsibilities, followed by men's.

7.2.1 ‘You must obey your husband’

Some of the female gardeners had been taught to respect their husband. The majority of the gardeners I interviewed said that the husband is considered the head of the household and the main decision-maker (see also Mbilinyi, 1972; Caplan, 1995; Aelst, 2014; Vyas, 2015). The following are female gardeners' responses:

In our tribe, when you reach the age of marriage older women teach you how to live with your husband. You are taught to respect him, not doing things without his approval and taking care of his sexual needs. (Stella)

When I was young my mother told me that I must be able to do all the domestic activities. She used to wake me up early in the morning to fetch water before going to school while my brothers were still sleeping. When I came back from school I helped my mother to cook and do other domestic activities. When I was about to get married, I was taught that I must obey and respect my husband. I should not do anything without his consent. (Rahma)

Stella migrated from rural Morogoro to the municipality in 1976. She was married at the age of 15. Her ethnic group is Luguru, which is originally a matrilineal society. Rahma married at the age of 19 in Tanga Region and migrated to Morogoro Municipality with her husband in 1983. Although Rahma and Stella are long-term residents in the municipality, during the interviews it was noted that they maintained the cultural view of marriage. For example Rahma, who has young children to take care of and gardening activities, complained that she did not have time to rest. She felt that being able to manage her household is the sign of a successful wife, and that she must accomplish her duties as mother, wife and gardener. This suggests that living in the municipality for a long time has not changed her traditional view of her marital role and obligations.

Stella also felt that she must respect and ask her husband's permission to do anything she does. However, during the interviews I realised that there have been some changes from the traditional view of marriage in the way she makes decisions about using gardening income (see section 7.6.2). As Stella is 58 years old and does not have young children this suggests that a woman's view of her marital roles and obligations changes with age.

Rehema stated:

When I was a girl, the old women in our villages taught girls to respect their husbands because they are the one who come to marry you. We were told to do everything at home, including taking care of husband, children and guests.

Rehema is 55 and has been married for more than 30 years. She migrated to Morogoro Municipality 30 years ago. Rehema and Rahma originate from Tanga Region, where wives are expected to take proper care of their husbands so that other women cannot steal them away. Rehema understood 'taking care of her husband' as doing activities such as washing, cooking and attending to his sexual needs. According to her tribe she is not supposed to support her husband financially, since it is a husband's primary role to do so; however, urban life has pushed her to work to support her husband financially. The impact of gardening on Rehema's marital relations is discussed in the coming section, which shows some changes in the way she views her marital roles and obligations.

Roselyn is 35 and is from the Luguru ethnic group. She was born in Morogoro municipality. She said that she is aware of her tribal obligations as a wife, but does not follow what she was taught growing up:

According to my tribe I am supposed to stay at home and do the domestic work, including taking care of the children and my husband. (Roselyn)

Roselyn is married with two young children. She said that depending on her husband alone made life very difficult, and thus she decided to start gardening to reduce her financial dependency on her husband. She said:

There are no traditions in urban areas, because life in town changes everything

Roselyn's accounts indicate that she is aware that domestic activities and taking care of children and her husband are her gendered responsibilities. Her case resonates with Smith's (2015) study of livelihood diversification among Maasai women in Northern Tanzania, which found that Maasai women are primarily responsible for building their homes. However, the men's economic activities were not enough to sustain them and therefore the women engaged in different economic activities to support the family.

7.2.2 ‘A man must take care of his wife and everyone in the house’

During the interviews I noted that some of the male gardeners, and particularly those who had migrated to the municipality, had been taught their marital responsibilities. Peter said:

In my tribe I am supposed to work hard and take care of my family. My father used to tell me that I should be able to manage my family. He also told me not to marry a woman for pleasure only, but to find one who can support me.

From Peter's account, his major obligation and responsibility is to provide for his family financially. He migrated to Morogoro Region from Iringa in 1990. Gardening, tailoring and other IGAs such as painting cloth, making soap and growing bananas are the sources of income in his household. Peter said:

Life in the Morogoro Municipality is getting expensive: for example the price of food, transport, house rent and everything is increasing every day. I cannot afford to pay for everything.

Peter acknowledges that he needs the support of his wife because urban life is very expensive. Since he expects his wife to contribute to the household, his view of their marital responsibilities influences how gardening income is used in his household. For instance, Peter makes decisions together with his wife and they pool their resources.

Samweli has views similar to Peter's, acknowledging that his wife's support is important to the welfare of the household:

A man should make sure that there is food on the table. My wife is my child, although she needs to support me financially. When you go out to work your family will be happy; as a man, when things are not working out the family will be shaken.

Samweli is 53 years old and was born in Morogoro Municipality. He worked as a mason before shifting to gardening activities. He is married with two children, and his wife is also a gardener. Samweli claimed that he is responsible for providing money so that his wife can buy food. Like Peter, Samweli declared that he needs his wife to support him financially, although he maintained that his is still the final authority in the house. During the interview I asked him what he meant by '*my wife is my child*':

Being a man, you are the one to plan at home; your wife is supposed to be the listener. In most cases your wife cannot initiate any plan because you are the one leading her.

This proposes that since a wife is only a listener, the husband makes the decisions and then informs his wife. This segregation of his wife from the decision-making could impact how their gardening income is allocated and used in their household. Other male gardeners maintained their position as head of household without declaring that they needed their wives' support, because it is traditionally their responsibility to take care of their family:

I am the head of the house, therefore everything concerning the welfare of the family is my responsibility. (Daniel)

A husband is the leader at home. I must make sure that my family members eat, get medical services and everything. In fact, I am responsible for everything.
(Mosha)

The man of the house must take care of his wife and children. (Jacob)

The above accounts suggest that Daniel, Mosha and Jacob claim sole responsibility as the breadwinner without mentioning their wives' support. During the interviews I realised that most of the male gardeners consider themselves the head of the family because they saw their fathers in the same position. From this they learnt that once married they must take the leading role at home. Jacob's wife is an FOC employee with her own plots. However, Jacob considered it his responsibility to provide for his family despite his wife also contributing to the household expenses. Jacob and his wife do not make decisions jointly and only cooperate on major family investments such as school fees or building a house. Their decisions about the use of their gardening income may be influenced by how Jacob perceives his marital responsibilities.

The cases of the male gardeners presented above show little variation in how they perceive their marital responsibilities, but there is a difference in how they expect women to contribute financially to the household upkeep. Their views affect how they decide on the use of gardening income, as discussed next.

7.3 Use of gardening income in the household

This chapter draws on interviews with married gardeners to present their opinions and perception about the use of gardening income, and on my own observations. Table 7.1 shows the distribution of the married gardeners interviewed. The last column indicates that only two non-gardening wives of gardeners were interviewed, as indicated in Chapter 3.

The methodology involved asking gardeners how their gardening income is used in the household. The question explored both the economic and the social contribution of gardening activities. In this context, the amount of money earned is estimated due to the gardeners not keeping accounts. Moreover, my intention in this study was not to

measure household income. The gardeners' income here does not include cash transfers from spouses, friends or relatives, although some indicated that they receive remittances.

Table 7.1: Married gardeners interviewed for intra-household gender relations

Married women	Married men	Both husband and wife garden	Wives of the gardeners
13	19	7	2

The findings from the interviews and FGDs indicate that gardening income is used by gardeners in different ways, including the husband doling it out, keeping separate income and pooling income.

7.3.1 Doling out system

Munachonga (1988: 187) states that under the doling out system a 'husband keeps and controls all the money'. A wife is only given a small amount for specific expenses, and thus cannot influence any decisions made by her husband. During interviews and FGDs, although the male gardeners stated their position as head of the household the majority did not overtly indicate that they had full control of gardening income.

Gerald is a married male gardener who clearly indicated that he controlled the gardening income. He is 28 years old and the last-born in his family, and originates from the Chagga tribe. His wife is not working and his gardening is the main source of income in his household. According to the traditions of his ethnic group, as a last-born he is supposed to take care of his parents, who live in another region:

Being a Chagga and the last born in my family, I am supposed to send money for my parents' upkeep monthly. My wife is from a different ethnic group, therefore she has different traditions. Sometimes she does not understand why I have to send money to my parents regularly.

When I asked Gerald for the reason for sending a remittance to his parents every month, he said:

Being a last-born I am entitled to inherit my father's house and the whole compound. Of the remittances I send to my parents, a certain amount supports them and the rest can sometimes be used to renovate the house that I will inherit.

According to Gerald, sending his parents money shows his sense of responsibility and caring for his parents, cementing his inheritance of the land and house. By the same arrangement his elder brothers will inherit another part of their parent's land. Because his wife is from a different ethnic group, Gerald said, she is not comfortable with him sending money to his parents every month. I asked him how he uses his gardening income, as his wife is not working and he is supposed to send money to his parents:

I do not tell my wife how much I earn from the garden. She does not know anything about my gardening activities and I do not like discussing them with her. When I sell vegetables and earn, for example, 300,000 TZS I give her money for the household expenses without telling her how much I have earned. It is impossible for me to tell my wife about my income.

Gerald said that his wife does not assist him regularly with his gardening activities and therefore knows nothing about his garden – for example how much rent he pays for the plots or the cost of labour. This gives Gerald the freedom to control his gardening income. He understands that his wife is not comfortable with him sending money to his parents regularly and therefore does not tell her how much he earns. However, apart from sending money to his parents there are other reasons for his control of the gardening income:

Sometimes my wife can ask for money for her own upkeep, and if I feel that her demand is not important I might refuse. If I refuse to give her money for her personal spending how can I tell her that I am sending money to my parents, or show her my money? She will start complaining. and there'll be no peace at home. I cannot give her money every time she needs it, because you know how

you women [including me in the conversation] are: if I give her money every time she asks, she'll start to use it recklessly. She might go to the salon to have her hair done or buy clothes that she does not need. As a man, I must keep a certain amount of money secretly for rainy days.

This case is similar to Munachonga's (1988) argument about income allocation in urban Zambia. She states that a husband who keeps and controls all the money tends to think that his wife is careless with money and thus controlling the money is a way of ensuring that it is properly used according to his plans. This suggests that Gerald has full control of his income and decides how it is to be used. Although I made several attempts to get the other side of the story, I could not find a chance to talk to Gerald's wife about how her priorities are ignored.

Although Gerald is still young and lives in the municipality, he maintains his traditional responsibility for sending his parents money. Moreover, as the major income earner supporting his wife he feels responsible for making decisions. The above account indicates that after Gerald gives his wife money for the household expenses he does not tell her the exact amount of money he has earned. Concealing part of the money allows him to send some to his parents without his wife's knowledge, helping to avoid marital conflict.

Lastly, I asked Gerald what he meant by 'rainy days'. He said:

This happens when business is not good, and as a man I must take care of the family. My wife will not understand me when I tell her that I do not have money. She will always remind me that I am supposed to take care of her. Therefore I need to save money for the future when the gardening income is not enough. I am the man, I make the money and I make the major decisions at home.

The above account reveals that Gerald is clear about his marital responsibilities and that he is providing for his family. He feels that saving for the future is important. Chapter 4 demonstrated that gardening income is seasonal, and Gerald is saving to meet his obligations even when the gardening business is not going well. He exemplifies

husband-centred household headship with his extended family responsibilities (family remittances) and the seasonality of gardening shaping the way he uses his income.

7.3.2 Separate incomes

This section presents an account of male and female gardeners who spend their gardening income on personal needs, family investments and daily household expenses. The findings from the interviews and FGDs reveal separate spheres of spending and that it is a husband's responsibility to allot a household allowance for food and other expenses including house rent, school fees, medical bills etc. A wife will take on this responsibility if her husband does not have a job, or his income is not enough. Dennis said:

I do not tell my wife how much I earn because I am the one who makes the decisions. Therefore the money will not be used contrary to my decisions and plans. But we decide on how to use the income from the shop together,

Dennis is 27 years old, married with one child. His wife is a shopkeeper whose business capital came from gardening income. Dennis started gardening in 2008 as a casual labourer, and in 2009 he obtained one plot. Thereafter he increased the number of his plots to six. The couple allocate time for each of them to work at the shop, so when he is at the garden his wife is at the shop.

As the household head, Dennis said, he should be the one to approve most of the household decisions and plans. He said that he cannot hide the income from the shop because his wife also works there. Thus both spouses being involved in an income-earning activity limits the chance of either to conceal part of the money taken, because both are aware of the money flow. However, as his wife rarely supports him in his gardening activities he does not reveal his gardening income to her. Dennis has full control of this, but his wife is aware of the profit from the shop. They use the income from the shop for household expenses, and the gardening income for investment in the garden and Dennis's personal spending. Since I could not talk to his wife (see chapter 3 section 3.4.3.2), I could not find out how she meets her financial responsibilities with the shop income.

While male gardeners' decisions to spend money without consulting their wives are based on their position as household head, for female gardeners experience of previous marital relations, perceptions of a husband over gardening activities and children from a previous marriage influence their decisions to keep income of their own. Rebecca said:

I do not discuss how I use my gardening income with my husband. I have bought land for farming and I have built a house myself.

Rebecca has four children by her ex-husband. Her current husband is a carpenter, and he also has three children from a previous marriage. Together they have one child. Her husband's first three children live with their mother. Therefore Rebecca's household comprises her current husband, their child together and her children from her first marriage. Rebecca said:

When you have children from your previous marriage they are your responsibility, because your current husband cannot contribute much for them.

Rebecca claimed that her ex-husband does not support their children. As noted in section 6.5.1.1, she enlisted his physical support when she bought an irrigation pump. However, her account shows that she does not make decisions about the use of her gardening income with her husband. Rebecca feels that her children from her first marriage are her own responsibility, thus she decides how to use the income from the garden. During the interviews she said that her current husband contributes money for food and other needs which are not sufficient for her children. This may be because Rebecca's husband is also required to support his children with his ex-wife. She said:

I do not ask my husband how much he earns from his work. Sometimes I lend him money but he does not pay me back. I will keep on asking him to pay it back until I despair and there is nothing I can do to recover my money. Sometimes I do not give him money when he asks me to lend him some.

Rebecca's is a complex household arrangement as they both have children from previous marriages, motivating each to keep separate incomes to support their own

children. Rebecca shares the household expenses with her husband and keeps separate income for her first husband's children's school fees, personal spending, investment in her gardening activities and maize cultivation. She feels that the gardening income gives her the freedom to make her own decisions about how to take care of her children without interference from her current husband. She believes that her current husband decided to marry her because he knew that Rebecca would take care of her four first children and he would not have to be responsible for them. This is the case of a woman who controls her own income, but she complains about her responsibility for the four children. Her family's increasing demands have pushed her to work very hard, both at the garden and at the maize farm, to meet her responsibilities.

Irene's is a similar case. With three children from her deceased husband, she has remarried and has one child with her current husband. The following is an extract from Irene's life history:

I was married in 2002, and cultivated vegetables while my first husband was employed at the municipal offices. We supported each other financially. Unfortunately my husband passed away. His relatives grabbed all the assets [including the household furniture and the house] that my husband and I had bought. I lost everything, including the household furniture that I had bought with my own money. I had to start all over again. I could no longer pay the rent at FOC, and my mother [who is a FOC employee] had to help me to keep my plots. My children and I moved to my mother's house because I could not afford to rent a house. In 2011 I built a house with ten rooms and I have tenants. I built this house from selling vegetables and dagaa [small fish, which Irene no longer sells] from Zanzibar.

In 2012 I got married again. My current husband is a driver and a gardener. We do not share the gardening activities or income, but sometimes I ask him to help me with some of my gardening tasks. He does not know my gardening income, and I do not ask him how much he gets from his plots. I get more money than him, that is why I do not want him to know the exact amount; this is because of my experience in my last marriage. Although he supports me financially because we have a child, I do not ask him for too much. If you want marital conflict one

way is to demand money frequently: your husband will get tired of you. If you don't do anything and you depend on him financially for everything at home he might decide to go for another woman. If you live with a man you have to be strong and help him financially, but you must have your own separate income. This is because I want to protect my future in case anything happens – in case he leaves me for another woman or passes away and his relatives confiscate all the assets. I own two irrigation pumps, and I allow him to use them at his plots. Sometimes I help him to irrigate his plots. This is how we help each other, and that is why I say 'Don't put too much pressure to a man: he will stay for a while, but later he might change his mind and you will ruin your marriage. There are other women in town who can take care of all a man's needs, and it's easy for a man to leave you for such a woman.

In urban Tanzania, it is traditional practice for a mother to prepare a 'kitchen party' before a girl is married, and later both parents prepare her 'send-off' party. Kitchen parties involve only women, who teach the bride-to-be how to take care of her husband and home. In most cases they teach her that it is shameful for a woman to fail in her marriage, and they teach her strategies for keeping her man. These include cooking delicious food, keeping the house and herself clean, respecting her husband and his relatives, and being sexually active. However, in most cases these lessons do not focus on economic independence. The send-off party involves male and female guests saying farewell to the bride-to-be before she goes to her husband's house, because once a woman is married she follows her husband to his home, although this is not necessarily the groom's family house. Thus a woman's ability to keep her marriage whether she is employed or educated or not is regarded by society as success. As Irene revealed, despite making more money than her husband she refrains from asking him for money for housekeeping. Irene's case demonstrates that reciprocity and understanding each other's needs are important elements of marriage which also shape intra-household gender relations. This corresponds with Aelst's (2016) finding that a household is regarded by spouses as a place of harmony and unity.

Society expects that a woman will keep her marriage. Irene feels that constantly demanding money from her husband would create marital conflict. Her decision to keep her income separate is influenced by her past marital experience when relatives took all

of her and her deceased husband's assets. Irene was concerned that if she exposed her income to her current husband and her marriage fails she might lose everything again. With her gardening income she pays the school fees for her children from her previous marriage and buys their clothes, makes her own investments such as adding more rooms to her tenants' house, and pays for her personal needs, the house rent and food. She said that her husband also contributes money for house rent and food.

Irene and Rebecca's cases reveal that decision-making about the use of gardening income is not influenced by economic conditions alone, contrary to Sen's (1990) position. Irene is a successful gardener, so my expectation was that her economic power would be a major factor in her decision-making. But her experience and perception indicate that other sociocultural factors are equally important in intra-household gender relations. Her experience of her previous marriage, her children from the previous marriage and reciprocity shape the ways that Irene and Rebecca decide how to use their gardening income.

Apart from the above factors identified, other female gardeners noted that their husbands' perception of their gardening and family remittances influence their intra-household bargaining. Tatu (see section 5.3.4) indicated that her husband does not support her gardening activities and her husband does not know how much she earns from the garden, which gives her the freedom to decide how to use her income. Tatu said:

When I have sold vegetables I buy what is needed at home at that moment, for example food, clothes for the children, domestic furniture, kitchen utensils, and pay any gardening costs. I save part of my money for my personal use and send part of it to my mother in the village. I do not tell my husband when I send money to my mother

Tatu keeps back some of her income not only for her personal needs but also for the welfare of the entire household and to fulfil her natal family responsibilities. Family remittances are one of the factors influencing Tatu's use of her gardening income, as is also the case for Gerald (see section 7.3.1).

When I asked Tatu why she does not tell her husband when she sends money to her mother, she said that he would complain that she is biased sending money to her mother and not her mother-in-law. She sometimes decides to balance the money she sends to her mother and her mother-in-law:

Sometimes I decide to give my mother-in-law money so that my husband will not accuse me of being biased. But I support my mother frequently because she is my dependant. Therefore I cannot tell my husband about my gardening income, and he does not tell me how much he earns either.

Further discussions with Tatu revealed that giving money to her mother-in-law is a strategy for maintaining peace with her husband. Tatu said that her husband also sends money to his mother without informing her, therefore they both keep some of their income separate. Mbilinyi (1972) states that in Tanzanian society children are viewed as economic assets, with parents expecting their older children to take care of them. This shapes the way that Tatu and Gerald use their income. Tatu said that her husband pays the house rent, school fees, medical bills, and for some of the food for the household, and puts money into his garage business, while she takes care of household expenses such as food and clothes for her children. This suggests that although they keep separate incomes they are aware of the roles and responsibilities of the husband and wife (see also Whitehead, 1981). However, it seems that conflict arises when Tatu or her husband send money to their parents without the knowledge of the other. Their secrecy about how much they earn raises suspicions. Tatu uses different strategies to find out her husband's actual earnings:

Sometimes when he is back from work, I search his trousers when he is out of the room. I then realise that for example he has given me 20,000 TZS for the household expenses but in his trousers I find 50,000 TZS. This discourages me from showing him my money

While male gardeners can make decisions about their non-gardening wives' labour, the cases presented here suggest that the assumption that a husband can control both his wife's income and her labour cannot be generalised.

The cases of Irene, Tatu and Rebecca, who keep separate incomes, corroborates the studies that argue that the majority of couples in Tanzania urban households keep their earnings separate and do not disclose the amounts to their partners (Tripp, 1989; Caplan, 1995). Yet each spouse is aware of their marital responsibilities and tries to fulfil them. The following section explores how separate income is used, particularly in personal spending. I present female gardeners' views and opinions on how their spouses share their income with them.

7.3.2.1 A man's double pocket: Front and back

The FGD with female gardeners revealed how their spouses share their income with them:

Men have front and back pockets. The front pocket is for the wife and kids, but the back pocket is not for the family, it's for personal spending. But I am the one washing my husband clothes, so I search his trousers to find out if he is telling the truth when he tells me he has no money. When you tell the truth there is peace at home, because hiding money is not good for the marriage'. (Rahma and Tatú during FGD)

Female gardeners discussed how income from gardening is used in their households and whether their spouses disclose their income. Some female gardeners do not trust their husbands regarding how they spend their money, and therefore do not share their own incomes with them. They asked, if their spouses do not tell them what they earn, why should they? Moreover, the women claimed that the money in men's back pockets is used to take care of their concubines and drink alcohol with friends. Searching their husband's pockets is a strategy for women to confirm whether the money a husband has contributed to the household expenses is the exact amount he has earned. This shows suspicions among spouses over how separate income is used. In some cases a wife may find that her husband still has money despite his declaration that he does not. Trust is an important part of intra-household gender relations, particularly about how much separate income spouses keep.

While female gardeners suspect that their husbands keep separate income for concubines and drinking with friends, male gardeners had different views:

As a man, you cannot tell your wife everything because you need to keep a certain amount of money. For example, if you get 10,000 TZS, you keep 4,000 TZS so that when there is no money at home you will be able to provide.
(Daniel)

Daniel's opinion is similar to Gerald's, stated in the previous section, about keeping some money back for their future security. Men feel obliged to provide for the family whether there is money or not. This motivates them to conceal their income from their wives. For example, Daniel explained that as a father and a husband he is responsible for taking care of everything, even when there is no money at home. Daniel's understanding of his responsibilities is based on being taught to be a man and provide for his family. During the interviews I noted that the majority of married men had the habit of concealing their income from their spouses, as was also the case with women gardeners. It was interesting to note that Tatu and other women searched their husbands' pockets to discover whether they had been honest about their income. However, some of the married male gardeners were aware of their wives' strategy and have strategies of their own so that their wives cannot find money in their trousers:

My wife realises that gardening is profitable, so she's in the habit of searching my trouser pockets. If she finds money when I have refused to give her any, she complains. Then I have to pretend that the money is to pay the rent for the plots.
(Hassan)

Hassan's wife is not a gardener, but occasionally assists him with weeding. He said that she comes to the garden to pick vegetables for home consumption. However, that is not the only reason she visits the plots:

When she comes to help me with weeding or any other activity, she inspects the other plots as well. She notices the plots whose vegetables are ready to sell, then if she does not see the money, she asks where it is,

Hassan uses mobile banking with M-Pesa, a system where a person keeps money on their phone using a mobile network provider such as Vodacom. Cash is withdrawn via

the M-Pesa agent. The phone owner is the only one who can access the money in the M-Pesa account unless they share their password with another person. Hassan said that he neither allows his wife to use his phone nor shares his password with her. Using this strategy keeps his wife ignorant of Hassan's gardening income. Hassan's wife sells charcoal from the house, and I asked whether Hassan knew how much she earned and if he used her income. He responded:

I know my wife's income: she must tell me after selling charcoal. Then we plan how to use the money.

I did not understand how Hassan manages to know his wife's income from selling charcoal when he does not declare his own income to her. Further conversation with him revealed that he gave his wife the capital to establish the charcoal business and so feels that she should tell him everything about the business. Additionally, Hassan has a motorcycle with which he earns money by carrying passengers when he is not busy at the garden and he also uses it to fetch charcoal for his wife. He insists on knowing how much she has sold if he is to help her in this way.

The findings from the FGD and interviews revealed that the majority of married male gardeners have similar views about how separate income is used. Daniel and Jacob said the following in the men's FGD:

If you do not have money and you do not receive a warm welcome from your wife, you must hide a certain amount of money so that it will protect you when business is not good. With women nowadays, it is good to be neutral so that she doesn't know whether you have money or not. You keep saying 'I have no money' even though you have some. It is very difficult for a woman to believe you do not have money; she will always think you must have a concubine to whom you give money.

It was interesting to note that the male gardeners are aware of their wives' reactions when they tell them they have no money. Such marriages are marked by distrust which impacts on decisions about how gardening income is allocated. The findings also

indicate that some of a husband and wife's decisions about the use of gardening income are not made openly due to their different needs and interests.

Trust is important in intra-household relations. Jacob and Daniel stated that a wife cannot believe a husband who says he has no money, believing that he is hiding money to spend with his concubine and on alcohol. This suggests that many marriages are based on distrust and secrecy (see also Munachonga, 1988; Tripp, 1989; Caplan, 1995). The previous sections have presented cases where husbands and wives are suspicious and do not trust each other on how separate income is used.

Salehe's reason for not disclosing his income to his wife is different:

You cannot show all the money to your wife. If you have 50,000 TZS you show her 30,000 TZS. A man cannot have nothing in his pocket. If it happens that you have no money, you pretend to be sick. When you have money, you feel confident, you become a real man.

Salehe has divorced his first wife but still supports their children. Therefore the income from his gardening is divided between his current wife and his ex-wife's households. Salehe feels that having money all the time protects his masculinity. Although his major responsibility is to provide for the two households, his feelings about masculinity influence his choice to keep some of his income separate.

Simiyu (2015) examines how power relations shape intra-household decision-making in urban gardening in Kenya. The author examines the roles of men and women in decision-making at the household level and in UA, and finds that age, education and a woman's income contribution increase her power in decision-making. For example, if a man cannot provide for his family due to losing his job or to bringing in a low income and his wife takes on the responsibility for providing for the family, it enhances her grounds for making household decisions. Simiyu shows that older women have greater autonomy to make decisions; in other words the longer a woman is married, the greater her bargaining power, as her experience in decision-making increases her husband's confidence that she can make useful decisions. This agrees with Mwaipopo (2000: 3): 'as partners mature together, they allow each other to take on new and different roles'.

Simiyu's findings contradict those of this study, which finds that although economic power is important, other sociocultural influences are also important. But it is consistent regarding age, as in the case of Stella (see section 7.6.2), who now has greater autonomy when making decisions.

The cases presented in the sections above reveal different opinions on and strategies for the use of gardening income. The majority of the male gardeners do not share their whole income with their spouses, claiming that as the household head, they keep back a certain amount of money to protect themselves in case of emergency. Moreover, money is sometimes kept back for personal spending, and particularly to increase their confidence as a man. It shows that money kept for personal spending is also used for other household expenses in an emergency, such as when there is no money in the house. Although the majority of spouses kept and used their incomes separately, they were all fully aware of their marital responsibilities. Having demonstrated the different ways in which gardening income is used, the following section presents decision-making patterns by gender.

7.3.3 Pooling income

This section presents cases of spouses who decide together how to use their income. Peter said:

Nowadays my wife and I decide how we use my gardening income and her income from tailoring, because we need to focus on our investments.

The above suggests that agreement about family investment influences the pooling of income. Peter was among the two male gardeners who allowed me to talk to his wife, who is not a gardener but a tailor, and could not help her husband regularly in the garden. Peter's wife said:

About three years ago we were not in the habit of sharing our income, although we supported each other financially. We realised that we could not save money unless we pooled our income; nowadays, we are building a house and

expanding the horticultural production, so we save money together as much as possible. (Peter's wife)

Peter's wife told me how they had lost money by failing to pool their incomes. They paid the school fees, medical bills and house rent together, but Peter provided money for food and other purchases. Two years ago they started to construct their house and bought a piece of land so that Peter could expand his vegetable cultivation. They now pool their income to meet their goals. This is a turning point for them and shows that intra-household gender relations are not fixed; once a husband and wife start to share the decision-making it shapes the way they allocate and utilise their income. Although the husband and wife have different needs and interests, in some areas they have joint interests and make joint decisions. In this context there is no uniform rule about decision-making on use of gardening income; it can change based on the spouses' agreement to pool income. Godfrey's is another case of joint utilisation of income:

My wife and I decide together how we use the gardening income. I have my needs, she has hers, and my child has his. So we have to plan for everything. I show my wife all my money because she does not work.

Godfrey is 28 years old and migrated to Morogoro Municipality in 1980. He started gardening in 1988. As his wife is a housewife he provides for everything. Gardening is the main source of income in his household and his wife assists him with this, especially weeding and selling the vegetables. Godfrey claimed that he declares all the income from the vegetable sales to his wife because:

Since my wife is not working, she is my household manager, she is like my bank and watchdog over the money I earn because my income is low. If I want to watch football and I do not have extra money for it, I do not go because I cannot take food money just to watch football. Well, it depends on how much you earn whether you can retain some part of it. If you do not have enough money for the household's needs, you can't retain part of the money: I would be selfish to do so.

As his wife is not working, Godfrey has made her responsible for managing his income. When he sells his vegetables they decide how to use the money, including expenses such as food, clothes, and school fees. Godfrey stated that the gardening income is not enough, so he shows it to his wife so that they can both plan and make sure it is not used recklessly. In this way he feels secure and they avoid conjugal conflict.

The last case of joint utilisation of income is that of a female gardener. Anna started gardening in 2009. Her husband works as a casual labourer at the tobacco factory, but its activities are seasonal. In the off-season he takes on masonry work, although this is not a regular source of income either. Anna said that her husband supports her with gardening activities such as irrigation because she has a young child. Section 5.2.1.2 relates how Anna explained how her difficulties with doing gardening activities and domestic work with a young child. Asked how she uses her gardening income, she stated:

My husband and I are now building a house. We decided together how we would use our income because we need to save money for our house project. My husband shows me his salary slip, so I know how much he earns. Sometimes he helps me sell my vegetables, so he knows how much I earn from the garden.

According to Anna their house project is very important and they have decided to save every penny to achieve their goal, as in Peter's case discussed earlier.

The cases cited above suggest that decisions about significant expenditure such as paying school fees, building or renovating a house, buying household furniture, paying the house rent and buying land are in most cases seen as the husband's responsibility, while decisions about spending on food, clothes and kitchen utensils are left to the wife. In other words, in decisions involving large amounts of money men tend to take the leading role to see that their goals are met. Decisions about purchasing gardening equipment such as an irrigation pump and hose, buying agricultural inputs and hiring a labourer are taken by the gardening spouse, except where both are gardeners.

7.4. Hierarchy of decision-making responsibilities

In Chapter 2 I noted that not all decisions that women make can be regarded as empowering, since some have lesser consequences for the gendered norms of roles and responsibilities (Lundberg and Pollak, 1993; Kabeer, 1999). Kabeer (1999: 446) states that the ‘hierarchy of decision-making responsibilities [...] reserves certain key areas of decision-making for men in their capacity as household heads while assigning others to women in their capacity as mothers, wives, daughters and so on’. This implies that men and women’s decision-making is determined by their gendered roles and responsibilities. In my interviews with married gardeners I noted marked gendered differences in decision-making about household expenditure. That is, there are certain decisions that men cannot make because they consider them to be the woman’s domain. The following sections present female and male decision-making roles.

7.4.1 Women’s decision-making responsibilities

This section presents the types of decision that female gardeners make, and how these reflect their marital responsibilities. Decisions about what to cook, eat and wear are left to women. Their income is considered supplementary, and thus is used mainly for purchasing kitchen utensils and daily household expenses such as food while men’s income is used for housing, paying school fees and other big expenses (see also Whitehead, 1981; Guyer, 1988; Munachonga, 1988; Simiyu, 2015). The following female gardener stated her responsibilities:

As a woman, when you find that kitchen utensils are worn out you have to decide by yourself to buy them, because you are the cook. (Diana)

Diana started gardening in 2005, but her husband considers her gardening activities insignificant. He gives her money for the household expenses without knowing how much she earns:

My husband does not tell me anything about his money. For example, he started building two rooms but he did not tell me. As a couple it is not proper not to discuss everything. But mtoto umleavyo ndivyo akuavyo [your child will grow

the way you have raised him/her], and I cannot start asking him about his money today because we did not begin our relationship discussing everything.
(Diana)

Diana and her husband are not used to asking each other how much they earn, or to making joint decisions on matters relating to their welfare. Her husband is responsible for taking care of her and the children. Although Diana feels that it is not proper not to disclose their incomes she said that she does not want to start asking him now as it may cause marital conflict. She decides how she uses her gardening income and usually uses it on household stuff such as clothes and kitchen utensils, and for her personal needs. Lundberg and Pollak (1993) and Kabeer (1999) argue that decisions made by women that are within their gendered roles and responsibilities tell little about their power to make strategic life choices, or choices that they did not have the chance to make in the past.

7.4.2 Men's decision-making responsibilities

The majority of the male gardeners in the sample do not disclose their income to their wives. During the interviews I found that they believe that they should be the one to decide on important matters such as building a house, paying house rent or school fees, buying assets like bicycles and motorcycles, etc, as evidenced by the following accounts:

My wife tells me how much money she gets for her vegetables because I know what she can get from the vegetables sale. If I do not have any plans such as buying bricks to build a house or paying the school fees, I leave my wife to make the decisions about the household. (Mosha)

As noted in section 5.3.1.4, Mosha's wife takes care of the gardening most of the time because he works as a security guard. The above statement indicates that Mosha influences the decision-making when he has his own plans, such as to build a house. Section 4.8.1.1 discussed how building one's own house is seen as an important achievement in the gardening business. Mosha feels that it is his responsibility as the head of the house to decide about family investments such as buying building materials.

After about six months in the fields I realised that when a male gardener claims that he makes decisions with his wife it does not mean that he involves her in decisions. The FGD with male gardeners revealed that:

When you discuss how to use the money with your wife, you have already decided what you want to do with it. It is like you are informing her so that you can hear what she has to say on the matter. If she has similar ideas and supports your plan, we call that a joint decision. But if she is against your plans you will use your position as a man to do what you want to do. (Daniel, Jacob, gardeners)

Daniel and Jacob's account indicates that the unequal power relations between spouses are influenced by different interests and needs. Whether there is cooperation or conflict over how gardening income is allocated depends on whether a husband's interests or plans are supported or rejected by his wife.

7.5 Female strategies for controlling gardening income

In this section I discuss two female gardeners whose husbands are also gardeners to understanding how female gardeners with gardening husbands control their gardening income. I first present the case of Mwasiti, a female gardener at MRS, followed by that of Rahma at FOC.

Mwasiti is 50 years old and married with three children. Her husband is a gardener too, and although they cultivate different plots they cooperate on all of their gardening activities. Gardening is their main source of income. In discussions with Mwasiti and her husband on different occasions both claimed that after selling their vegetables they decide together how the money should be used. However, further conversation with Mwasiti revealed the following:

Sometimes I have more money than my husband, although we share the gardening activities.

It was not clear how this was the case. Sometimes her husband prefers to sell all the vegetables on the plot at once rather than taking them to the market, as Mwasiti does. They sell their vegetables at the market if there are few customers at the garden. Mwasiti clarified:

When we sell vegetables at the market together, in the afternoon he leaves me there and goes back home or to the garden. When I go home after selling my vegetables I do not show him all the money I have taken.

The above point was interesting and propelled me to probe more to understand her strategy. I asked why her husband is the one going back home or to the garden rather than her, as she is probably responsible for preparing lunch at home. Moreover, how can she hide part of the money when, as her husband is there until the afternoon, he is in a good position to know how many bunches of vegetables are left to be sold, and their price? Mwasiti said:

He will know the price and number of vegetable bunches left for sale. But I always tell him that after he left the market more gardeners brought vegetables to the market and so I reduced the price so that I could sell all the rest, while in fact I sold them at the price they were when he left the market. He believes me. I am a woman; I need money to buy kanga [a cotton cloth that wraps around the waist]. And I do not lend him money, because he will ask where I got it from.

Mwasiti cheats her husband so that she can keep a certain amount of the money she makes. She explained that her husband leaves the market and lets her continue selling because she is humble and knows how to deal with customers. Although the garden and the market are different settings, Mwasiti's comment supports the discussion in section 5.2.1.3 about female gardeners being good at retail selling because they are good with customers. To understand the intra-household gender relations in Mwasiti's household, and particularly how their gardening income is used, I spoke to Samweli, Mwasiti's husband, who said:

We share gardening activities and therefore we have similar incomes. Neither my wife nor I can have more money than the other, because the whole of it is our

money. She can keep a certain amount of money for her personal expenses. You know women, when they pass through a shop they are tempted to buy something, underwear and other things, therefore she does not need to ask for money for that. As a man, I am more concerned with buying bricks to build a house and paying the school fees. I also keep a certain amount of money for drinking, and I am not obliged to tell my wife when I want to go drinking. I retain at least 3,000 TZS in my pocket.

After talking to Samweli I understood that Samweli and Mwasiti seem to have an unspoken agreement about much money each keeps for their personal expenses. It could be said that they cooperate in their gardening activities, but their bargaining over their personal spending money is hidden. Samweli is aware that his wife keeps back a certain amount of money from the vegetable sales and is comfortable with that, since he does the same. This case presents separate sphere of activities and cooperation over household goods (cf. Lundberg and Pollak, 1993): Mwasiti and Samweli share labour in the garden and decide together on the use of their gardening income for household needs such as the school fees, daily expenses and family investments, but each is aware that the other is keeping back some money for personal use, and as long as each spouse meets their marital obligations there is no marital conflict.

This implies that gender relations are complex relations; Mwasiti employs various strategies to hide money for her personal use and her husband does the same. Although they share the gardening activities they have different interests that motivate them to strategize how to secretly keep back some of their income. Furthermore, this case shows that some household decisions are made jointly while others are made separately based on the needs and interests of the individual. For example, Mwasiti oversees the kitchen and does not need to wait for her husband to decide what should be cooked or bought for her kitchen. While her husband makes what he calls significant decisions such as buying building materials and paying school fees. This case shows the different ways that husbands and wives make decisions.

Rahma and her husband are gardeners. They do not share plots but they assist each other with gardening activities. We discussed how she uses her income from gardening:

After selling vegetables I do not tell him the exact amount I have made, but he might know because during the selling he might have been around, helping me with other gardening activities. Sometimes I hide my money, but at the end I buy what we need at home so that he can see what I have spent it on. This way he does not bother to ask me about the vegetable sales. Sometimes, too, I do not like to ask how much he has earned, because doing that is like denying him freedom.

During my interviews with Rahma she told me that they have five acres of peri-urban land where they cultivate rice and maize in the rainy season. In their land for crop cultivation they share everything including the labour and the income. She said that in most cases the income from the crops is spent on family investments such as building a house or paying school fees. While they share the income from the crops, they sometimes hide income from the vegetables. According to Rahma, gardening in the municipality is more profitable than peri-urban cultivation, which is capital-intensive and time consuming. Rahma contributes gardening income to the household budget and keeps money for herself. She said that her husband also keeps part of his gardening income for his own needs.

Her husband also being a gardener increases the likelihood of him knowing her income, and vice versa. One of her strategies for keeping back money is to purchase things that are needed at home such as kitchen utensils, children's clothes and food. Rahma and her husband have joined the Savings and Credit Cooperative Society (SACCOS) to increase their capital for gardening. They make joint decisions on their peri-urban agricultural activities, SACCOS repayments and children's school fees, and individual decisions on personal spending. Rahma keeps her own money to avoid having to make frequent financial demands of her husband when she needs clothes or to have her hair done. According to her, frequent requests for money will make her husband suspect that she is spending recklessly. Her household presents both shared and separate uses of income. Talking to Rahma's husband, I found that his views were similar to his wife's:

When we sell vegetables we buy what we need at home and save the extra money. My wife takes care of the daily household expenses and we decide

together on family investments. But I do not show all the money to her, and I don't think she does either. (Salim)

Further conversation with Salim revealed the following:

I do not declare all my money to my wife because if anything happens at home I am still responsible for taking care of it. Also I buy building materials to build a house.

Like Jacob (see section 7.2.2), Salim feels that it is his marital responsibility to provide for his family. Furthermore, his wife inherited a house from her first husband and they are currently living in it. However, Salim does not feel comfortable living in another man's house and is saving money to build another for his family to live in.

The cases of Mwasiti and Rahma have presented different strategies employed by women to control their gardening income, which Kandiyotti, (1988) calls 'bargaining with patriarchy'. In most cases women employ these strategies in situations of unequal gender relations. Mwasiti hides some of the money from selling the vegetables and Rahma buys anything needed in the house after selling her vegetables, so that their husbands are not sure of their exact income. Female gardeners employ different strategies in a situation where the spouses seem to have an unspoken agreement about how much each can keep back for personal use.

The cases presented in the previous sections indicate that female gardeners such as Irene and Rebecca's children and their previous marriage experiences influence them to keep separate income, while Rahma and Mwasiti employ different strategies to keep their own income back. Lastly, Tatú's husband ignores her gardening activities. She contributes her income according to her responsibility as a wife, keeping some back for her personal needs and family remittances. Male gardeners' obligation to provide for their families and children from previous marriages and their saving for the future, personal spending needs and sense of masculinity influence their decisions about keeping back separate income. This shows that the different uses of gardening income are based on economic and sociocultural factors, on whether a husband is a gardener, and on whether he values gardening activities. A single intra-household bargaining

model cannot cover gardeners' household decision-making (cf. Aelst, 2014, 2016; Vyas et al., 2015).

7.6 Impact of gardening income on gender relations

This section presents the perceptions and opinions of female gardeners regarding the effect of gardening income on their marital relations, and whether it makes a significant economic contribution.

7.6.1 'Our marital relations improved'

In the life-history interviews I asked female gardeners about the significance of gardening income to their marital relations. I present the case of Lucy, who said that her gardening income had given her her independence. Lucy migrated to Morogoro Municipality in 2009 from Arusha Region after divorcing her husband. She remarried in Morogoro. Lucy claimed that her gardening income has improved her marital relationship:

Sometimes a man cannot verbally appreciate you if you support him financially, but in his heart, he is appreciating. There are other men who cannot appreciate the contribution from their wives. When I sell my vegetables and pass through the market, I can buy my husband some trousers or any kind of gift, and he is happy. This improves our relationship.

Lucy believes that her gardening income is important not only as a contribution to the household budget but also to improve her marriage. Although she said that she does not buy gifts for her husband regularly, when she does she can see from his face that he is very happy. Moreover, she said that assisting with the household's finances releases the tension that he feels about his financial responsibilities. Similar points were noted during FGD with female gardeners:

Through gardening, I have my own money. Our marital relationship is now good because we do not quarrel often. Previously, if my husband and I did not

have money and the children had no food I could start a fight out of frustration. But now, if he does not have money I use my savings to buy food for the children. When my husband comes back and finds that there is food he cannot interrogate me because he knows my source of income. He might also say he does not have money for the children's school fees, and if I have it, then I pay them. (Rahma, Tatu, gardeners)

During the women's FGD I noted that being able to contribute to the household budget, whether their husbands acknowledge it or not, has improved some women's marriages. They also said that if they have their own money they do not have to ask their husband for money, especially for their own personal use.

7.6.2 Threatening masculinity: Female gardeners' income

Gardening income has improved some women's marital relations. However, not all female gardeners have the same experience. Stella's husband was employed at SUA as a plumber. Currently he does casual plumbing jobs and according to Stella, does not have a steady income. Through her gardening activities Stella has managed to start a *genge* business and to buy land where she cultivates crops. She said that her husband had provided money for household expenses when he was employed, but since his retirement he no longer supports the family, despite his casual work. She said:

He has left most of the household responsibilities in my hands. He has realised that I can pay for everything at home, so he does not struggle to work hard. When he earns money he goes out drinking with his friends. When he comes home and realises that I have cooked ugali [a Tanzanian staple food made from maize meal like a stiff porridge] and dagaa [dried fish] he shouts at me [because some people think that only poor people eat these foods].

I asked her what happens next:

My husband claims that a man needs to eat good food. I tell him that if he does not want to eat what I have prepared he should leave it. I always tell him that if

he wants good food he should give me money as a man is supposed to do, and he will have good food on his table.

As the main earner, Stella's gardening income is important. As her husband is aware that his wife is earning, he has shifted his marital responsibilities to her (see also Simiyu, 2015 and Vyas et al., 2015). Simiyu notes that although a woman's income may meet the household's needs, her economic power threatens her husband's masculinity. According to Simiyu, Stella's husband feels that he is losing his power as the household head. Schroeder (1996) argues that women's engagement in gardening activities changes their conjugal relationship, with men shifting some of their responsibilities to their wives. In this context Stella is the one making the decisions about how the income from the garden and her *genge* business is used. She stated:

Sometimes I feel it would be better if I was single, because I could take care of myself properly. To me getting married is a loss, because I do not get any benefit from it. If I had decided to depend on him my life would be a disaster.

Although Stella's case involves marital challenges, her gardening income has a positive impact on both her and household. She can take care of her household by providing foods, medical care and clothes, and she has also managed to include an extra IGA via her gardening activities. She feels that her gardening has increased her ability to control her own income and thus to become economically independent. The above account suggests that Stella feels that marriage is supposed to be an economic partnership from which each spouse should benefit.

In section 7.2.1 I reported that Stella told me that during her childhood she was taught to respect her husband and take care of his needs, although covertly she contests 'respect your husband', as he does not fulfil his marital responsibility of providing for his family. She established a *genge* business and bought a piece of peri-urban land for crop cultivation without consulting her husband. She indicated that she makes decisions about her gardening and *genge* businesses and the welfare of the household. Given her age (58) and her husband's inability to provide for his family, it has increased her decision-making power, as illustrated by (Mwaipopo, 2000 and Simiyu, 2015).

7.6.3 Change of husband's perception of gardening activities

Unlike Stella, Roselyn had found gardening difficult in the past, as her husband was neither physically nor financially supportive. He does not like agricultural work but has decided to support her financially; for example he has helped her to buy an irrigation pump. She told me how the gardening income has changed her husband's perception of gardening:

When I started gardening my husband did not like it. He said that I should stop, because he believed that when I had money I would disobey him and become stubborn. He also said that gardening is very tough and I would not manage. At that time if I asked him for money to buy something for the garden, or asked him to help me he was not ready to support me.

However, since she has started to contribute to the household's income the situation has changed:

Nowadays he sees that I can give him money when he does not have any. I give him money because he also supports me with my gardening activities. He does not like gardening, so sometimes he gives me money to pay labourers. He also gave me money to buy an irrigation pump. (Roselyn)

This shows how her husband's perception of gardening has changed and her contribution to the household income has motivated him to support her gardening activities financially.

7.6.4 Rescuing the household from economic breakdown

This section presents the case of Rehema, showing not only that her household depends on her gardening income but also that this challenges her husband's position as the household head similar with Stella's case discussed earlier. Rehema said:

My husband was employed as a bus driver with a monthly income. He was involved in an accident two years ago, and was forced to stop working because

he was sick for a long time. Since recovering he has not yet found a job. I am now the major breadwinner in the family, responsible for my husband and four grandchildren.

As mentioned in section 7.2.1, according to her tribe Rehema is not supposed to help her husband financially but should attend only to her domestic duties and her husband. However, life in urban areas has changed her. While she maintains respect for her husband as her tradition demands, for example she said that before she started gardening she asked for his approval – her husband's inability to work has pushed her to work very hard to support the family. Rehema has more than one source of income (see section 4.4); she is also a vegetable buyer. However, her domestic responsibilities have not changed and she still takes care of all the housework. Moreover, she faces another challenge from her husband:

Sometimes my husband is not comfortable that I pay for everything at home. Men are like children: you notice their reactions easily. He is angry for no reason, just about trivial matters. When he was still working he did not behave like this. But I know the source of this whole problem is his inability to support his family.

Rehema said that like other African men, he feels that as a man he should provide for the family and be the decision-maker. Faced with this situation, Rehema decided to disclose all her income to him to maintain the peace and harmony at home:

Normally I show my husband all the income from the garden, because while he was working he also showed me his income, and there is no need for me not to do the same. As his wife I am obliged to maintain respect even if he is not working. If he had not allowed me to start the gardening I would not have done it.

However, Rehema does not feel happy about revealing her income:

I am not really satisfied showing all the money to my husband, because when I tell my friends about it they usually laugh at me. They claim that I am very

stupid because I shouldn't show my money to my husband. They said that because I work so hard and so should not disclose all my income to my husband.

Despite pressure from her friends not to disclose her income to her husband, Rehema remembers her upbringing when she was taught to be respectful and truthful and not to hide anything from her husband. Rehema still shares her income with her husband. Her decision to do so seems to be a way of establishing her husband's trust, respecting him as the household head and keeping the home in peace. Although she is the breadwinner, there was no indication that the contribution of her income to the household has improved her bargaining power, contrary to Sen's argument (1990).

7.6.5 'I give my husband money so that I have the freedom to work'

During the interviews I noted that some female gardeners give their husband money.

During their FGD they said:

If your husband does not allow you to work outside your home, you cannot work in spite of his decision. So when you have money you can give him some so that you have your freedom to work. If you do otherwise, you create problems which will hinder your freedom to work. (Lucy, Rahma, FGD)

A man might downplay a woman's work, even if it is more profitable than his. So if your income is higher than your husband's you are not supposed to show it in front of the children, to avoid them disrespecting their father. (Stella, Tatu, FGD)

The accounts above indicate that a woman's disclosure of her earnings to her husband does not imply that she is weak. Female gardeners have different motives for giving or disclosing their income to their husband, and they do it to achieve their goals. For example, giving her husband money increases a woman's freedom to work outside the home because she was taught not to do anything without her husband's approval (see section 7.2.1 for Rahma account). Stella and Tatu's accounts suggest that some women support their husband to maintain his position as household head. To maintain respect for the man at home, when a woman has more money than her husband she does not

show it in front of her children or other people. The female gardeners' statements suggest that they value their marriages and employ different strategies to protect them and maintain their husband's position as household head.

7.7 Conclusion

This research has found that the majority of spouses do not pool their income, as other studies in Tanzania also report (Mwaipopo, 1994; Caplan, 1995; Aelst, 2014). However, although their income is not pooled, the couples still share some of the household expenses, with elements of separate and shared decision-making. Making decisions separately is based on personal use of money and/or expenses that may be outside those of the household, such as supporting spouses' parents. On the other hand, the spouses' shared decisions about issues such as building a house require pooling their income. This chapter has discussed cases of female gardeners such as Rebecca, Irene and Tatu who are able to make decisions over their income influenced by other factors than economic materials.

There are marked decision-making responsibilities, which for women revolve around domestic activities, and for men, around family investment. This creates a sphere of decision-making on how gardening income is used (see also Lundberg and Pollak, 1993). Therefore the ability to earn an income empowers some female gardeners, especially those with previous experience of controlling their own income, while for others like Diana, their gardening income does not improve their bargaining position. One of the findings to emerge from this study is that while a woman's economic contribution may increase her bargaining power, other factors such as prior marital relations and children, and an obligation to send family remittances are equally important. Although some of the cultural traditions taught to girl-children are changing, others are still maintained and affect how women make their decisions. While male gardeners' bargaining power as the household head is constant, that of female gardeners' can change due to their garden income, cultural socialisation as children, and prior marital experiences and responsibilities.

Chapter 8: Conclusions

8.1 Introduction

This detailed study of intra-household gender relations on labour allocations, access to resources and assets; and bargaining power has shown that there is more to urban gardening than economic benefits. Women's involvement in gardening gives them a sense of independence, the freedom to work, and self-esteem, and while they face various challenges such as time limitations they still engage in gardening to earn an income. They know the importance of earning to support their husbands with the household budget, and controlling their own income gives them financial independence from their husbands and spending money for personal needs.

I have been living in Morogoro Municipality for 16 years, buying and consuming vegetables without knowing the dynamics of their cultivation. This research has opened my eyes to the lives of gardeners in the municipality. I have learnt that even with the state's often negative perceptions of UA and the challenges that gardeners face, such as land insecurity at FOC, they employ different strategies including temporarily increasing the number of plots they cultivate to make ends meet. As stated in Chapter 6, gardening is a permanent rather than a transitory activity. Cultivating vegetables in urban open spaces offers a good example of the link between the household and the garden that determines how gardeners maintain their activities. Gardeners not only need financial capital, and access to land tenure and security, but also develop and depend upon a multiplicity of social relations within and beyond the household; for instance they enlist their spouse, a relative or children in the household for help with domestic and gardening activities, while networking with friends and labourers at the garden is becoming important for access to resources. This suggests that it is not enough to look only at intra-household relationships to understand how gardeners perform and maintain their activities.

This study has provided detailed information on gendered access to gardening resources and assets, the gendered division of labour and intra-household gender relations among male and female gardeners in Morogoro Municipality, Tanzania. I explained in Chapter 1 that this research was motivated by my previous research work and interest in gender

in agriculture. My previous research work on UA did not address the interactions with male farmers, and especially the allocation of labour within the household, the use of income and access to resources. This study has shown me that understanding gardening without looking at the relationships between female gardeners and other household members, their interactions with male gardeners, and the trade-off between domestic and gardening activities would not have given me a clear picture of gardeners' realities. This research opened my eyes to the economic, political and social-cultural dimensions of urban farmers' lives.

In order to answer the main question the research addresses three interrelated dimensions: labour allocation, access to resources and assets, and bargaining power in the household. The three research questions are discussed below with the findings. Different methods were used to triangulate the findings, as discussed in Chapter 3. Chapter 4 provided background information on the gardeners and gardening activities and noted the impact of seasonality on the production and marketing of vegetables, and discussed household composition and occupations as influences on access to household members' help with gardening activities, setting the context for Chapters 5, 6 and 7.

This chapter is divided as follows: section 8.2 summarises and discusses the findings from the three research questions, while section 8.3 shows this thesis's contribution to knowledge about UA, gendered access to UA resources and intra-household gender relations. Section 8.4 offers conceptual and methodological reflections, while section 8.5 considers policy in relation to urban gardening. The last section suggests an area for future research.

8.2. Summary and discussions of the findings

8.2.1. Gardeners' division of labour

How is labour for domestic and gardening activities allocated? How does this affect gender relations?

This question was addressed in Chapter 5 through the examination of productive and reproductive roles; the performance of gardening tasks; gardeners' ability to allocate time for gardening activities; and the gendered impact of such labour allocation.

In Chapter 5 I discussed how domestic activities are considered women's work, increasing female gardeners' workload. Women's participation in gardening has not changed their gendered roles and responsibilities. I also found that the female, more than male, members of a household share the domestic activities (see also Caplan, 1995; Schroeder, 1996, 1999; Aelst, 2016). For instance, female gardeners with young children, whether in a female-headed household or married, rely on other women to assist them with the domestic work. On the other hand while male gardeners, and especially single men, perform tasks such as washing dishes and cleaning the house, married male gardeners do not do this, suggesting that their performance of domestic activities changes with the different stages of their life cycle.

Women who garden are not homogeneous: they differ in marital status, age, the presence of another woman in their household and the ages of their children. For instance, female gardeners over 45 years old who do not have young children and those with an adult daughter or grandchild have more time to tend their garden because they have less intensive domestic work than women with young children. There is a flexibility in how they perform their domestic activities to the extent that they can postpone them to go to the garden and can spend more time there. A married woman of 20-45 who has young children and no other women in the house to share the domestic work finds it difficult to manage her garden and home routines and either has to hire a labourer or do all the tasks herself, as *Tatu* does (see Figure 5.4).

In Chapter 5 I also considered the availability of other household members' assistance with gardening activities, and found that access to domestic or gardening labour from a spouse, children or other relatives is important to gardeners, particularly women. This is because female gardeners need to perform their domestic activities early in the morning before going to the garden, and those who have young children go back in the afternoon to cook lunch. With no household support, *Anna* took her 5-month-old child to the garden. The availability of household members to contribute labour is one of the conditional factors in female gardeners' gardening activities. Different factors such as

household composition and household members' occupations influence their availability to help with gardening activities. I discussed how married female gardeners with non-gardening spouses do not necessarily have regular access to household labour, or to the physical support of their husbands, as in *Tatu* and *Stella*'s cases (section 5.3.4). However, married male gardeners whose spouses are not gardeners have regular support from their wives, and I have shown that in two cases they make the decisions about their wives assisting them with gardening activities. Although these two cases cannot be generalised, they support the notion that a husband may control his wife's labour (see also Bryceson, 1995; Yngstrom, 2002). I found more sharing of gardening activities and regular support with labour in couples who were both gardeners, who assisted one another in their gardening activities, reducing the challenge of allocating labour for gardening. This suggests that for such couple's households, gardening is considered a family enterprise.

Chapter 5 set out the performance of gardening tasks by gender. Jobs such as weeding and retailing vegetables at the garden are seen as women's work, while ploughing and irrigation are for men, although this specialisation is not rigid. In cases of limited household labour support or financial constraints a gardener does the work her/himself. Such specialisation of gardening activities creates interdependence among gardeners, labourers and household members such as the spouse, children and other relatives living in the house. For example, if a male gardener is not comfortable weeding or retailing his vegetables he can ask his wife to help at the garden, or a female gardener can hire a labourer, for example for the ploughing. This underlines the importance of household members' help in the garden and the ability to hire a garden labourer to compensate for the lack of assistance from within the household. The household does not operate in isolation: social relations beyond it are also important for gardeners.

8.2.2. Gendered access to gardening resources

What factors affect gardeners' access to land, water, irrigation pumps, credit and agricultural inputs? How do these affect gender relations regarding the garden and the household?

This question was addressed in Chapter 6, which explored gardeners' various means and strategies for accessing resources and assets for their gardening activities, and found that they are accessed informally. Focusing on one type of gardening location (open spaces) and a specific type of crop (vegetables), and applying Ribot and Peluso's (2003) theory of access revealed that informal networking is gardeners' major means of accessing resources and assets. More importantly, the means and strategies that gardeners use to access resources change according to each resource. For example, owning an irrigation pump is important for accessing water for irrigation. However, technological constraints such as the pumps being heavy limit female gardeners' access to water. Access to household help is important here, as a husband or son can help to carry and connect the pump. Although the literature on rural Africa notes that women sometimes access land through their husbands, this is not necessarily the case for women in UA. Gardening women may negotiate access through networks that are independent of their husbands.

The strategies used to access resources vary according to individuals' networks. Access to and the ability to retain that access go hand in hand. Gardeners' ability to retain their plots is based on their ability to pay the land rent and their social connection with the landlord, the latter providing tenure security, as in Jacob and Irene's cases in section 6.3. The different ways that gardeners pay for their plots determine their level of land (in)security. This suggests that vulnerabilities of gardeners are shaped by the type of landlord and mode of payment, for example rent paid to a private landlord is not flexible whereas paying rent via a garden leader includes a degree of flexibility. Here the gardeners' gender is not important: what matters is the availability of capital to pay the rent on their plots, and their social connections.

This study has shown that gender matters in urban gardening. Retailing vegetables is the female gardeners' sphere because they are seen to be good at it, and irrigation is a male job, not only because the irrigation pumps are heavy but also because men bathing in the river constrains women's access to water. As with labour, women's domestic responsibilities constrain their gardening, mediated by the stage they are at in their life cycle and access to adult children or other women in the household who can help them. While women do not negotiate for their husband's support in accessing land, their

husband's labour is important in their gardening activities, especially in tasks seen as male work such as ploughing and irrigation.

8.2.3. Urban gardeners' intra-household gender relations

How are decisions about the generation and use of gardening income made at the household level, and how do these reflect and affect gender relations?

This question was addressed in Chapter 7, which looked at how married gardeners utilise their gardening income and how this shape intra-household gender relations. My hypothesis was that gardening income increases female gardeners' bargaining power, following Sen's (1990) argument that earning an income strengthens a woman's bargaining position. Chapter 7 described the cases of Rehema and Stella who, due to their husbands' illness and retirement from gardening, made significant economic contribution to their households. While there was no indication that Rehema's contribution had increased her bargaining power, it allowed Stella to make some of her own decisions, for example to buy land and open a *genge* business, but her husband felt that he was losing his voice as the household head. Although the economic factor is important in intra-household bargaining, Chapter 7 described how social aspects of gender are important as well, including age, past marital experience, children from previous marriages, family remittances, perceptions of gardening activities, a husband's retirement and trust between couples, all of which influence how gardeners make decisions and utilise their gardening income. Although some gardeners said that the man is the head of the household and the main decision-maker, interviews about the use of gardening income revealed that the women make some decisions without consulting their husbands.

Chapter 7 described how the majority of couples do not pool their income, as found by other studies in Tanzania (Campbell 1995; Caplan 1995; Aelst 2014, 2016; Vyas et al. 2015), but they do cooperate in allocating income to family investments such as building a house, paying the children's school fees and so on. Couples also keep some of their income separate, with each partner aware that their spouse keeps it back for personal needs and respecting this as a way of maintaining marital peace. Separate income is not only used for personal needs but may also be kept back for emergencies.

However, there was suspicion about how separate income is spent, suggesting that both trust and secrecy shape gardeners' intra-household gender relations. For example, women feared that their husbands might spend their personal money on concubines or alcohol. Lack of trust and open agreement about gardening income can lead to marital tension.

My findings on marital roles and responsibilities and the utilisation of gardening income follow Lundberg and Pollak's (1993) argument that gender roles and responsibilities influence intra-household bargaining, with each spouse making the decisions within their own sphere of responsibility. I found that culturally, a husband's role is to provide for his family while a wife supports her husband. A wife can only assume her husband's responsibilities if he is sick or incapable of providing for his family financially. As noted earlier, domestic activities are gendered, partly shaping the way that decisions are made about the use of gardening income. There is a hierarchy of male and female decision-making responsibilities: the majority of female gardeners make decisions about their daily activities, such as what to cook and about childcare, while male gardeners tend to make the decisions about large expenses such as school fees, buying land and building a house. Female gardeners' decisions are what Kabeer (1999) refers to as 'second-order choices'.

There is some indication that some of the norms emerging from childhood socialisation are maintained and influence how decisions are made. For example, Rehema declared her gardening income to her husband because she had been taught not to be secretive with her husband. However, this does not necessarily mean that she was powerless: rather, she did it to suppress what could have resulted in marital conflict.

8.3. Conceptual and methodological reflections

Although Sen (1990) argues that economic power enhances women's bargaining power, he does not consider how women's ability to participate in outside economic activities changes over their life cycle with factors such as age and household composition. These affect their ability to engage fully in gardening activities, their dependence on other household members for gardening, and their social networks beyond the household. An older female gardener is more flexible in terms of spending time in her garden than a

woman aged 20-45 with young children. Using the lens of Sen's cooperative conflict model revealed the possibility that open conflict does not necessarily feature in intra-household bargaining. The gardeners used different ways to make decisions and use their gardening income, and understood their marital responsibility to include avoiding marital conflict. Their key interest was in ensuring peace and harmony at home by respecting each other's spheres and the boundaries of their own responsibilities.

Using Ribot and Peluso's (2003) mechanisms – means, relations and processes – provided a useful lens to analyse how gardeners gain, maintain and control gardening resources. Analysis of access to an irrigation pump for easy watering; to financial capital; to agricultural information via extension services; and to resources through the people who control them such as landlords and the owners of irrigation pumps revealed different strategies and social relations gardeners use to access resources. 'First come first served' was the major means of accessing plots, but with increasing insecurity other strategies are used such as being a labourer (see chapter 6 section 6.2.2). My observation, conversations and interviews about gardeners' views and ideas find that access to gardening resources is influenced not only by mechanisms suggested by Ribot and Peluso (2003) but also by other factors such as gender and the location of the open space they garden on.

Lundberg and Pollak's (1993) model is useful in the sense that gender roles and responsibilities, and particularly the division of labour, shape gender relations in decision-making, with spouses each tending to make decisions within their own sphere. I found this model appropriate for understanding intra-household bargaining in Tanzania, especially regarding how couples cooperate over family investments and retain separate activities and income. Their separation of roles, incomes and decision-making responsibility allows couples to avoid tension in their marriage. Thus cooperation and separate use of gardening income coexist in the households, whose men and women have different goals in their gardening activities due to their individual experiences and perceptions. For instance, women value their income from gardening because it means they can support their husband and meet their personal needs, while men see it as a means of providing for the family.

8.3.1. Methodological limitations

This thesis has strength in that it employs a variety of qualitative research methods to explore gender relations in the household, as well as the day-to-day interactions of the gardener. The thesis has explored the relationships and interactions between female gardeners and other household members, their home and garden routines, and their bargaining power to get a wider picture of gardeners' realities. Qualitative information was effective to explore the dynamics of their experiences and challenges. Although the research has achieved its intended objectives, it has some limitations and shortcomings.

First, the research was conducted in two open spaces different in their geographical settings (MRS is heavily affected by the rainy season and FOC is not), modes and payment of gardening plots (see section 3.2.2). There were theoretical challenges involved in including both sites in the analysis of the data, given that the study was mainly qualitative. FOC, the primary site, was more involved in the analysis especially in Chapter 6. It might have been better to use a mixed approach to enable quantification of the differences and similarities between the two sites.

Second, this study contributes to the detailed analysis of intra-household gender relations using qualitative information on labour allocation, access to resources and assets, and bargaining power in the household. The study is based on the perceptions, ideas, experiences and challenges of gardeners, as interpreted by the gardeners themselves as well as by me, a Tanzanian woman who has lived in Morogoro Municipality for over fifteen years. I was aware of my positionality as a researcher, and of the gardeners' suspicion of strangers at the beginning of the research, which may have affected the results (see section 3.3.2 and 3.3.3). 'Subjectivities are at play in how we evaluate research too, for there are personal factors which influence the degree to which we find research results convincing, and interpretations believable (Jackson, 2006:535). The researcher's subjectivity 'is a self-consciousness that constantly examines one's own self in interaction with respondents' (ibid: 534). Recognising my subjectivity and its impacts on the research process and respondents it implies objectivity.

Third, although this study did not apply the social relations framework to analysing

gender inequalities in the distribution of resources, responsibilities and power within the household, community, market and state (see Kabeer, 1994; March, et al. 1999), social relations have emerged as prominent in gardening activities. They are an important means for the gardeners who use them as a pathway to access resources and assets, as well as to retain their gardening activities. The analysis has focused on the households and gardens as a community, but it could have benefited more if the social relations approach had been used for the institutional analysis of UA. Institutions differ from one another and across cultures. Moreover, the social relations framework analyses the people and their relationships with resources and activities, and how these are shaped through different institutions.

Lastly, the thesis has focused on intra-household gender relations without paying attention to inter-household resource flows which could affect intra-household bargaining. This kind of intra-household view limits understanding of how household resources are transferred to other households, and how they shape intra-household gender relations, for example (see section 7.3.1). Family remittances appeared to be one of the factors which influence decision-making on how gardening income was used (see section 7.3). This means that inter-household resources flow is important to understanding intra-household gender relations.

8.4. Policy reflections

8.4.1. Urban gardening

Chapter 4 discussed how past policy and historical perception of UA in Tanzania affects how current stakeholders such as policymakers, NGOs and municipal officials perceive it. Gardening is viewed as less important than the municipal by-laws that it breaches. However, both male and female gardeners attached high social and economic value to their gardening activities, suggesting that despite the existing conflict of interests between urban authorities and gardeners, gardening will continue to be practised for many years to come. While urban dwellers depend on their gardeners for their supply of fresh food, the gardeners themselves depend on them as an important source of income. The authorities should recognise urban farmers and create new possibilities for supporting them by supplying agricultural inputs and appropriate extension services.

Given gardeners' high dependence on social relations for access to resources, this study proposes that any support targeting urban gardeners should take informal means into consideration. Formalisation of the allocation of plots, for example, could disrupt gardeners' existing social connections, marginalising those with limited other forms of access to resources or connections with the authorities, and keeping them vulnerable.

8.4.2. The household

Since domestic activities are gendered, any program seeking to empower women's gardening activity, for example by increasing the number of plots available to them, should consider that this will also increase the amount of heavy work such as irrigation and ploughing, for which the majority of women either hire labour or are forced to do themselves. It could also result in women spending less time on their domestic responsibilities, possibly creating marital tension.

The case of married female gardeners such as Roselyn indicates that their husbands' perception of their gardening has changed due to the contribution that their gardening income makes to the household, which cannot be underestimated. Women's gardening income is directly or indirectly acknowledged in households, suggesting that there are differences in how household members perceive gardening.

This study contributes to the literature on gender, gender relations in agriculture, UA, access, and the household, with an understanding of gender and power relations within the household and in UA. Rather than focusing on the household only, it has explored the link between the household and gardening activity, and the perceptions of UA stakeholders. Some of the findings may be applicable to decision-making about urban agricultural households, UA development interventions, and women's empowerment. In this regard this thesis is unique, especially in the emerging field of UA, and regarding Morogoro Municipality, where UA practice is growing.

8.5. Areas for future research

This study has also found that resources and assets are accessed through informal means. Access involves negotiation within social relations among the gardeners and; through their household members. Social relations emerge as an important aspect of success in UA. This calls for a shift from the current understanding of informal networking to explore the types of social and political relations in which informal means of access to resources and assets are situated, including examining who are the losers and the winners in these informal negotiations, and how such relationships affect gender relations over access to resources and assets.

The study also found that gardeners are land-insecure. They do not have land rights and fear eviction from the land they cultivate. However, long-term gardeners claim informal land rights to enhance their informal tenure security. For example, Chapter 4 illustrated how some of the gardeners who have cultivated FOC land for a long time claimed that when they started, the area was heavy forested and they themselves had cleared it. Now it is valuable, and they are under threat of eviction. They feel that they have invested a great deal of their labour and deserve secure tenure. Thus in some situations both formal and informal land tenure arrangements co-exist. This study's results suggest that informal tenure arrangements should not be ignored by urban authorities. Future research should focus on the interplay between legal rights²⁰ and informal tenure arrangements²¹ to understand the different forms of land security and how it can guarantee that farmers are not evicted

²⁰ This means landlords who have legal rights over land use

²¹ This means the urban farmers who use landlords' land

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Appendices

Appendix 1: Household survey

A. Questionnaire information

Number:

Code:

Name of the researcher:

Date of interview:

B. Respondents identification

Name:	Religion:
Sex:	Marital status: Codes
Age:	Ethnicity:

Codes: 1= married and living together; 2= married and spouse working far away; 3= widowed; 4= divorced; 5= single/never married; 6= living together

C. Household identification/composition

1 Who are the members of the household?

Codes: 1= HH (Household Head), 2= spouse; 3= daughter/son; 4= mother/father in laws; 5= uncle/aunt; 6= daughter/son in laws; 7= grandchild; 8= mother/father; 9= nephew/cousin; 10= sister/brother in law; 11= brother/sister; 12= non kin (servant)

2. Where is your house located?

3. What is the distance from your house to the garden? (measured in minutes walking)

D. Nature/originality gardeners

D. Nature/originality gain

2. If not in Morogoro, when did you move to Morogoro?

3. What was your major means of income before starting gardening?

4. How long have you been practising gardening?

5. Reasons for engaging in gardening. Codes: 1= Unemployment; 2= Major livelihood activity; 3= Failure of other business; 4= Diversification

E. Assets ownership

1. Do you have access to a house? Codes: 1= build a house alone; 2= build a house with a spouse; 3= rent a whole house;4= rent a house with other tenants

2. If codes 1 and 2, what type of a house? Codes: 1= cement bricks and iron sheets; 2= baked bricks and iron sheets; 3= baked bricks and grass roof; 4= mud and grass roof; 5= mud and iron sheets

3. Other type of assets: Water pump, hand hoe, bicycle, motorcycle, car, mobile phone, television, radio, refrigerator, sofa set,
Others _____

F. Other sources of income in the household

Source of income	Member of the household	Expenditures
Waged work: Codes: 1= employed; 2= casual labourer		
Other IGAs		
Remittance		
Gifts		

G. Intra-household relations

1. Who is responsible for the following activities?

Activity	Responsible person	Reason (s)
Taking care of children		
Cleaning		
Washing (dishes and clothes)		
Cooking		
Fetching water		

2. Management of cash income

Source of income	Managing/deciding for cash income	Reasons
Vegetable cash income		
Other sources (see F)		

3. Do you get household support for gardening activities? Codes: 1=Yes; 2= No

4. If no, what do you think are the reasons

5. If you get support, who normally assist you in the garden?

6. What type of activities do you get assistance? Codes: 1= land clearing; 2= ploughing; 3= sowing the seeds; 4= weeding; 5= irrigating; 6= spraying pesticides; 7= harvesting; 8= selling

H. Access to assets and resources

1. Do you have access to land for other activities than gardening? Codes: 1=Yes; 2= No

2. How did you get the land? Codes: 1= bought; 2= inheritance; 3= renting

3. If yes in the above questions, what is the purpose for land ownership?

Codes: 1= to build a house; 2= for large scale agricultural production; 3= other (specify)

4. Land/plots for gardening:

Number of plots:	
------------------	--

What is the measurement of one plot?	
How do you rent your plot?: Codes: 1= female plot; 2= male plots; 3= co-owned plots	
How did you get the plot?: Codes: 1= through friend/relative; 2= direct from the institution; 3= Other (specify)	
Who is your landlord? Codes: 1= Institution; 2= fellow farmer; 3= Do not have; 4= Other (specify)	
Do you pay for your plot? Codes: 1=Yes; 2= No	
If no, why	
If Yes, how do you pay?	

5. Do you get any financial credit to support your gardening? Codes: 1=Yes; 2= No
 6. If yes, where did you get the credit?

7. Is water available everyday for irrigation? **Codes: 1= Everyday; 2= not all the time; 3=scarcity**
 8. What is the distance of water source to your plots? (measured in metres)

9. How do you irrigate your vegetables Codes: 1= water bucket; 2= water can; 3= water pump
 10. If you use water pump, how do you access it?
Codes: 1= bought myself; 2= renting; 3= borrowing; 4= spouse bought it for me
 11. If bought, how much did you buy it? _____
 12. If you use water pump to irrigate, how frequently do you irrigate your garden (s):
Codes: 1= once daily; 2= twice daily; 3= after every two days; 4= after every three days; 5= once a week
 13. If you use water bucket/can, how frequently do you irrigate your garden (s): **Codes: 1= once daily; 2= twice daily; 3= after every two days; 4= after every three days; 5= once a week**
 14. Hiring labour

Do you employ casual labourer? Codes: 1= Yes; 2= No	
If no, why?	
If Yes, how many labourers do you have?	
Sex of the labourer (s)	
Cost of hiring a labour	

I. Vegetable cultivation

1 Labour allocation

Activity	Who is responsible*	Morning (time)	Afternoon (time)	Evening (time)	Cost of labour per plot
Clearing the land					
Ploughing					
Sowing the seeds					
Weeding					
Irrigating					
Spraying insecticides					
Harvesting					
Washing and locking into bunches					
Selling					

*Codes: 1= myself, 2= hired labour, 3= husband and wife, 4= other household members, 5= assistance from fellow farmers

2 Vegetables income:

Type of vegetable	Bunches harvested per plot	Bunches for food	Bunches for selling	Price for selling	Cost of Inputs	Net income
Amaranthus						
Chinese						
Figiri						
Matembele						
Majani ya maboga						
Others						

J. Risk/insecurity and coping mechanism

1. Since last year, has your gardening activities experienced any of the following?

Risk	Effect (s)	Coping mechanisms
Floods		
Drought		
Eviction by municipality or landlord		
Vegetable pests/diseases		
Animal destruction		
Unreliability of the market		

K. Social relations

- Are you a member in a farmer's group? Codes: 1=Yes, 2= No. If no go to Question 3
- How does membership in a group assist you in gardening activities? Codes: 1= help in gardening activities; 2= borrowing money; 3= borrowing seeds; 4= borrowing water pumps; 5= other (specify)

3. What kind of gardening assistance can you get from other farmers? Codes: 1= help in gardening activities; 2= borrowing money; 3= borrowing seeds; 4= borrowing water pumps; 5= other (specify)

4. Do you support each other during sickness, death, ceremony? Codes: 1= Yes; 2= No

5. Do you generally trust other farmers? Codes: 1= No; 2= I trust some farmers; 3=Yes

L. Other information

1. Do you get any financial assistance? **Codes:** 1= Yes, 2= No

2. Do you get extension services? **Codes:** 1= Yes, 2= No

3. If yes in the above questions, where do you get assistance? **Codes:** 1= Ward office; 2= Municipal office; 3= Non-governmental organization

4. What kind of support do you receive? **Codes:** 1= credits; 2= agricultural knowledge; 3= agricultural inputs

5. Did you learn about agricultural production? **Codes:** 1= Yes, 2= No

6. If Yes, where did you learn? **Codes:** 1= attending training; 2= in the college

7. If No, where did you get agricultural experience? **Codes:** 1= childhood experience; 2= fellow farmers

M. Interviewer/researcher checklist/assessment

Were all the questions completed	1= Yes, 2= No
If no, what do you think are the reasons	
Was the respondent flexible during interview	
Was the location of the interview conducive for the respondent? (why for any response)	
Based on your impression, do you think the information given was reliable?	
If yes/no why do you think so?	
Based on your impression, how do you rate scale of production/ income earned for a respondent Codes: 1= overestimation, 2= underestimation, 3= uncertainty	

Appendix 2: Interview guide for male and female gardeners

1. Identification of the participant
2. Former and present occupation: reasons for taking up gardening activities
3. Historical context of gardening activities
4. Marital status: marriage traditions, gendered norms and practices
5. Gardening activities and seasonality: access to labour, land, water, irrigation pumps, credits, extension services, daily timetable and activities, gendered meaning on UA and resource ownership, which mechanisms of access of resources matter most in gardening activities
6. Channels of information for marketing of vegetables
7. Children: (number of students, tasks boys and girls perform, perception of gardening activities) Daily activities for domestic and gardening
8. Intra-household relations: utilization of gardening income, gender division of labour (daily activities for domestic activities, access to household labour), perception of gardening activities, entitlement to benefits of vegetable cash income
9. Roles of gatekeepers

Appendix 3: Women gardeners' life histories

Date:

Name:

Age:

Marital status:

A. BACKGROUND AND FAMILY HOME

1. Where were you born?
2. If not in Morogoro town: When did you move to Morogoro town?
3. How long have you lived in Morogoro town?
4. What are the marriage traditions in your tribe?: What is expected of you as a woman in your tribe?
5. What are the best or worst things/memories you can remember from your life?
6. What is your experience as a female child in your family home?

B. HOUSEHOLD RELATIONS

1. Which assets do your household possess?
2. How do those assets mean to you and other household members?
3. How do you and other household members perform daily activities?
4. How is labour organized in your household for gardening and other income earning activities?
5. How your spouse /other family members are perceiving gardening?
6. How do your family members (spouse) support your gardening?
7. If you both cultivate vegetables: how do you organise (divide/share) gardening activities and make decisions over gardening income?
8. What are your responsibilities as a wife?
9. Being a wife and/or female-headed household, how do you manage household and gardening responsibilities?
10. If other couple is non-gardener: Who makes decision on the use of gardening income and why?
11. What type of decisions are you making in the house
12. How does gardening income contribute to the welfare of the household?

C. FEMALE CULTIVATION PRACTICES AND EXPERIENCES

1. Why did you consider gardening here?
2. What type of gardening activities do you prefer?
3. Can you tell me your daily timetable?
4. Which month/time is the gardening activities congested most?
5. How is labour managed/allocated during this congested time?
6. How do you spend your free time?
7. How do you access water?
8. Which resources and assets do you consider important for UA and why?
9. How do you sell your vegetables?
10. What do you think is the best way of selling vegetables?
11. Do you have any agricultural knowledge?
12. What input do you apply in your vegetables?
13. How does gardening contribute to your life? (Materially, symbolic)
14. How do you define your relationship with other farmers? (Male and female)
15. Do you get any support from Municipal authorities?

Appendix 4: Guide for Focus Group Discussion

DISCUSSIONS GUIDE

1. **Welcome note**
2. **Building rapport** (introduction: moderators/facilitators, gardeners). Briefing on how the discussion will be done
3. **Purpose of the discussion**

Since you have participated from the beginning of my research, you are here today to talk more on your experience as male and female gardeners. Therefore, I am here to learn from you on your experiences, challenges, meanings, perception and ideas which are important to this discussion. You are free to agree or disagree to each other's ideas in any issue.

The purpose of this discussion is to understand: general practice of UA, particularly gardening activities, contribution of UA to the household and how UA shape gender relations within the household.

4. **Confidentiality:** letting the participants know why the discussion will be recorded and how the information recorded will be used. Let the participants know what will be discussed is totally confidential and for academic research purposes only.

4.1 Intra-household relations

- a) Household members support in gardening activities.
- b) Gender division of labour: domestic and gardening activities
- c) Meaning of contribution of gardening income to the household
- d) Perception of household members towards gardening activities
- e) Men as the main decision maker
- f) Hierarchy of decisions between husband and wife
- g) Gardening activities Vs intra-house gender relations

4.2 Resources availability

- a) Differences between female and male farmers in resource accessibility, productivity, selling, number of plots
- b) Social relations influence access to land, credit and agricultural inputs.
- c) How do you assess yourself in-terms of benefits you get in relation to other farmers?
- d) How has the access and utilization of fertilizers and other inputs changed?
- e) Gardeners' meaning and feelings towards land insecurity
- f) Which payment method is important (through leaders or individually)
- g) Which means of access to resources matters most
- h) Seasonality: year calendar (timetable): during rainy season, dry season

4.3 General Questions

- a) Experiences and challenges in gardening activities
- b) Relationship with other gardeners
- c) Contribution of garden to the lives of gardeners

- d) Perception of other people in gardening activities
- e) Type of farmers benefit most from the garden?
- f) Type of outcomes do you expect from a progressive farmer?
- g) Perception towards Agricultural officers and Municipal authorities
- h) Awareness in any policy related to urban agriculture
- i) Different discourses: Slogan '*umbo unao, umbo huna kitu*'

Appendix 5: Guide for observation

1. Attitudes of men towards female gardeners
2. Performance of gardening activities: access to water, irrigation, ploughing and other activities
3. Selling arrangement: gender roles
4. Discourses (gender issues and meaning)
5. Daily timetable: (time for cultivation, lunch, coming back to the site etc)
6. Attitudes towards strangers
7. Physical characteristics of plots:
 - productivity
 - location to the water source
 - size of the plots
 - type of vegetables
 - arrangement of plots vs landlords

Appendix 6: Guidelines for key informants interviews

Name:

Sex:

Position:

1. Objectives and activities of the organization
2. Awareness of UA in general and gardening activities
3. Perception of contribution of UA in the municipality
4. Policies and By-Laws: how gardening activities is addressed
5. Any support geared towards farmers: land tenure (zoning), agricultural inputs, extension services
6. Sustainability of UA

Appendix 7: Research permit

HALMASHAURI YA MANISPAA MOROGORO	
Simu/Nukushi Na: 023 – 2614727 Barua Pepe: info@morogoromc.go.tz Tovuti: www.morogoro.go.tz Unapojibu taja:	Ofisi ya Mkurugenzi wa Manispaa, S.L.P. 166, MOROGORO TANZANIA
Kumb: Na: R.10/MMC – 24/Vol.XV/58 Tarehe: 12/12/2014	
<p>Mkurugenzi, Chuo Kikuu Huria cha Tanzania, Kituo cha Morogoro, S. L. P. 2062 MOROGORO</p>	
<p>Yah: KIBALI CHA KUFANYA UTAFITI NDUGU BETTY DAVID MNTAMBO</p>	
<p>Rejea somo tajwa hapo juu.</p>	
<p>Kibali kimetolewa kwa Mtafiti Betty David Mntambo kutoka Chuo Kikuu Huria cha Tanzania kituo cha Morogoro kuhusu “Jinsia na Kilimo cha mjini cha mboga mboga katika Manispaa ya Morogoro” kuanzia tarehe 15/12/2014 hadi tarehe 30/09/2015.</p>	
<p>Tafadhalii umpokee na kumpa ushirikiano stahiki.</p>	
<p><i>Mahende</i> J. P. Mahende Kny: MKURUGENZI WA MANISPAA MOROGORO</p>	
Nakala:	Betty David Mntambo S. L. P. 2062 MOROGORO

Appendix 8: Profile of gardeners

F (Fungafunga), and M (Mazimbu)

Household code	Household characteristics
F01	<p>Sex: Male Age: Man 29, brother 20 Marital status: Divorced Household composition: Divorced man living with his brother Plots ownership: Male plots Number of years in UA: 10 Nature of farmer: Migrant Livelihoods: Farming</p>
F02	<p>Sex: Male Age: Husband 65, wife 45, children 35, 27, 8, 9 Marital status: Married (monogamous) Household composition: Spouses living with their children Plots ownership: Male plots Number of years in UA: 15 Nature of farmer: Long time resident Livelihoods: Farming, selling snacks, bodaboda,</p>
F03	<p>Sex: Male Age: Husband 40, wife 32, children 20, 15, 10, 2 Marital status: Married (monogamous) Household composition: Spouses living with their children Plots ownership: Male plots Number of years in UA: 30 Nature of farmer: Migrant Livelihoods: Farming, Mama ntilie, tailoring, labourer in a garage</p>
F04	<p>Sex: Male Age: Husband 65, wife 45, children 35, 27, 8, 9 Marital status: Married (monogamous) Household composition: Spouses living with their children Plots ownership: Male plots Number of years in UA: 27 Nature of farmer: Long time resident (Morogoro rural) Livelihoods: Farming, selling crops in the market, carpentry</p>
F05	<p>Sex: Male Age: Husband 31, wife 25, child 2, others 21, 15, 17, 25 Marital status: Married (monogamous) Household composition: Spouses living with their children, cousin, sister in law, house servant Plots ownership: Male plots Number of years in UA: 16 Nature of farmer: Long time resident (Morogoro urban) Livelihoods: Farming, mama ntilie, shop(clothes)</p>
F06	<p>Sex: Male Age: Husband 49, wife 38, children 18, 10, 5 Marital status: Married (monogamous) Household composition: Spouses living with their children Plots ownership: Male plots Number of years in UA: 16 Nature of farmer: Long time resident (Morogoro urban) Livelihoods: Farming, buying and selling vegetables</p>
F07	<p>Sex: Male Age: Husband 45, wife 35, child 20 Marital status: Married (monogamous) Household composition: Spouses living with their children</p>

	<p>Plots ownership: Male plots Number of years in UA: 7 Nature of farmer: Long time resident (Morogoro rural) Livelihoods: Farming, bodaboda</p>
F08	<p>Sex: Male Age: Husband 50, wife 40, child 28, grandchild 6 Marital status: Married (monogamous) Household composition: Spouses living with their children, grandchild Plots ownership: Male plots Number of years in UA: 10 Nature of farmer: Long time resident (Morogoro rural) Livelihoods: Farming, buying and selling vegetables</p>
F09	<p>Sex: Male Age: Husband 53, wife 44, children 29, 9, 5 Marital status: Married (monogamous) Household composition: Spouses living with their children Plots ownership: Male plots Number of years in UA: 16 Nature of farmer: Long time resident (Morogoro rural) Livelihoods: Farming, genge, causal labour (waiter)</p>
F10	<p>Sex: Male Age: Man 24, brother 28 Marital status: Single Household composition: Man living with his brother Plots ownership: Co-owned plots (man with his brother) Number of years in UA: 3 months Nature of farmer: Long time resident (Morogoro rural) Livelihoods: Farming, buying and selling vegetables</p>
F11	<p>Sex: Female Age: Wife 35, Husband 50, Children 19, 15, 8, Non kin 20 (causal labour) Marital status: Married (monogamous) Household composition: Spouses living with their children, non kin Plots ownership: Female plots, co-owned plots (with her sister) Number of years in UA: 8 Nature of farmer: Migrant Livelihoods: Farming, welding (garage), casual labourer</p>
F12	<p>Sex: Female Age: Widowed 47, Boyfriend (25), Child 10, Cousin 10, 6 Marital status: Widowed Household composition: Widow living with her boyfriend, child and cousin Plots ownership: Female plots Number of years in UA: 11 Nature of farmer: Migrant Livelihoods: Farming, selling snacks</p>
F13	<p>Sex: Female Age: Husband 50, wife 47, children 24, 22, 10, 7 Marital status: Married (monogamous) Household composition: Spouses living with their children Plots ownership: Female plots, co-owned plots with her sister Number of years in UA: 22 Nature of farmer: Migrant Livelihoods: Farming, labour in garage</p>
F14	<p>Sex: Male Age: Husband 65, wife 47, children 25, 17, grandchild 12, cousin 14 Marital status: Married (monogamous) Household composition: Spouses living with their children, grandchild, cousin Plots ownership: male plots, co-owned plots with his wife Number of years in UA: 27 Nature of farmer: Migrant Livelihoods: Farming, employed (nurse)</p>

F15	<p>Sex: Male</p> <p>Age: Husband 35, wife 25, children 17, 13, 7, mother 78</p> <p>Marital status: Married (monogamous)</p> <p>Household composition: Spouses living with their children, mother</p> <p>Plots ownership: male plots</p> <p>Number of years in UA: 15</p> <p>Nature of farmer: Long time resident (Morogoro urban)</p> <p>Livelihoods: Farming, buying and selling vegetables</p>
F16	<p>Sex: Male</p> <p>Age: Husband 41, wife 35, child 17, sisters 16, 24</p> <p>Marital status: Married (monogamous)</p> <p>Household composition: Spouses living with their children, sisters</p> <p>Plots ownership: male plots</p> <p>Number of years in UA: 16</p> <p>Nature of farmer: Migrant</p> <p>Livelihoods: Farming, tailoring, teacher</p>
F17	<p>Sex: Male</p> <p>Age: Man 19</p> <p>Marital status: Single</p> <p>Household composition: Man living himself</p> <p>Plots ownership: male plots</p> <p>Number of years in UA: 3</p> <p>Nature of farmer: Migrant</p> <p>Livelihoods: Farming</p>
F18	<p>Sex: Female</p> <p>Age: Wife 59, husband 63, grandchildren 18, 13</p> <p>Marital status: Married (monogamous)</p> <p>Household composition: Spouses living with their grandchildren</p> <p>Plots ownership: Female plots</p> <p>Number of years in UA: 17</p> <p>Nature of farmer: Long time resident (Morogoro rural)</p> <p>Livelihoods: Farming, plumber, genge, bodaboda</p>
F19	<p>Sex: Male</p> <p>Age: Husband 45, wife 35, child 30</p> <p>Marital status: Living together (monogamous)</p> <p>Household composition: Spouses living with their child</p> <p>Plots ownership: Male plots</p> <p>Number of years in UA: 15</p> <p>Nature of farmer: Long time resident (Morogoro rural)</p> <p>Livelihoods: Farming, bodaboda</p>
F20	<p>Sex: Male</p> <p>Age: Husband 32, wife 25, child 2</p> <p>Marital status: Married (monogamous)</p> <p>Household composition: Spouses living with their child</p> <p>Plots ownership: Male plots</p> <p>Number of years in UA: 25</p> <p>Nature of farmer: Long time resident (Morogoro rural)</p> <p>Livelihoods: Farming, selling snacks</p>
F21	<p>Sex: Male</p> <p>Age: Man 34, spouses 45, 36, Children 3, 3</p> <p>Marital status: Single</p> <p>Household composition: Single man living with his brother, brother's wife and children</p> <p>Plots ownership: Male plots</p> <p>Number of years in UA: 15</p> <p>Nature of farmer: Migrant (Dar es salaam)</p> <p>Livelihoods: Farming, employed</p>

F22	<p>Sex: Male Age: Husband 55, wife 35, children 19, 12, 3 Marital status: Married (monogamous) Household composition: Spouses living with their children Plots ownership: Male plots Number of years in UA: 25 Nature of farmer: Long time resident (Morogoro rural) Livelihoods: Farming, selling snacks</p>
F23	<p>Sex: Male Age: Husband 46, wife 31, children 5, 2, 11 Marital status: Living together Household composition: Spouses living with their children Plots ownership: Male plots Number of years in UA: 24 Nature of farmer: Long time resident (Morogoro urban) Livelihoods: Farming</p>
F24	<p>Sex: Male Age: Husband 50, wife 40, children 6, 2 Marital status: Married (monogamous) Household composition: Spouses living with their children Plots ownership: Male plots Number of years in UA: 35 Nature of farmer: Long time resident (Morogoro rural) Livelihoods: Farming</p>
F25	<p>Sex: Female Age: Wife 48, husband 55 Marital status: Married (monogamous) Household composition: Spouses living alone Plots ownership: Female plots Number of years in UA: 1 Nature of farmer: Long time resident (Morogoro rural) Livelihoods: Farming, selling snacks, crop cultivation</p>
F26	<p>Sex: Female Age: Woman 36, child 11, 16 Marital status: Divorced Household composition: Woman living with her child Plots ownership: Female plots Number of years in UA: 10 Nature of farmer: Long time resident (Morogoro rural) Livelihoods: Farming</p>
F27	<p>Sex: Male Age: Man 21 Marital status: Single Household composition: Single man living alone Plots ownership: Male plots Number of years in UA: 1 Nature of farmer: Migrant Livelihoods: Farming</p>
F28	<p>Sex: Male Age: Husband 61, wife 45, children 25, 22, 20, 17, grandchildren 13, 10 Marital status: Married (monogamous) Household composition: Spouses living with their children, grandchildren Plots ownership: Male plots Number of years in UA: 13 Nature of farmer: Long time resident (Morogoro rural) Livelihoods: Farming, livestock keeping, tailoring, beauty saloon</p>

F29	<p>Sex: Male Age: Husband 52, wife 32, children 21, 17, 12, 12, 2, cousin 17 Marital status: Married (monogamous) Household composition: Spouses living with their children, cousin Plots ownership: Male plots Number of years in UA: 22 Nature of farmer: Long time resident (Morogoro rural) Livelihoods: Farming, selling vitenge</p>
F30	<p>Sex: Male Age: Man 30 Marital status: Single Household composition: Single man living alone Plots ownership: Male plots Number of years in UA: 2 Nature of farmer: Long time resident (Morogoro rural) Livelihoods: Farming, selling mineral water</p>
F31	<p>Sex: Male Age: Husband 30, wife 26, children 4, 2 Marital status: Married (monogamous) Household composition: Spouses living with their children Plots ownership: Male plots Number of years in UA: 4 Nature of farmer: Long time resident (Morogoro rural) Livelihoods: Farming, genge, crop cultivation</p>
F32	<p>Sex: Male Age: Husband 34, wife 26, children 8, 5, 1 Marital status: Married (monogamous) Household composition: Spouses living with their children Plots ownership: Male plots Number of years in UA: 10 Nature of farmer: Migrant Livelihoods: Farming, genge, shop, carpentry</p>
F33	<p>Sex: Female Age: Divorced 37, children 20, 14 Marital status: Divorced Household composition: Woman living with her children Plots ownership: Female plots Number of years in UA: 13 Nature of farmer: Migrant Livelihoods: Farming, selling crops (middlewoman)</p>
F34	<p>Sex: Male Age: Man 28, brother in law 20 Marital status: Single Household composition: Single man living with his brother in law Plots ownership: Male plots Number of years in UA: 1 Nature of farmer: Migrant Livelihoods: Farming, renting water pump, distributing chicken eggs</p>
F35	<p>Sex: Male Age: Husband 30, wife 26, child 2 Marital status: Married (monogamous) Household composition: Spouses living with their child Plots ownership: Male plots Number of years in UA: 16 Nature of farmer: Long time resident (Morogoro urban) Livelihoods: Farming, selling snacks</p>

F36	<p>Sex: Male Age: Husband 30, wives 27, 20, child 5 Marital status: Married (polygamous) Household composition: Spouses living with their child Plots ownership: Male plots Number of years in UA: 20 Nature of farmer: Migrant Livelihoods: Farming, selling snacks</p>
F37	<p>Sex: Male Age: Man 25 Marital status: Single Household composition: Single man living alone Plots ownership: Male plots Number of years in UA: 10 Nature of farmer: Long time resident (Morogoro urban) Livelihoods: Farming</p>
F38	<p>Sex: Male Age: Husband 25, wife 19, child 1 Marital status: Married (monogamous) Household composition: Spouses living with a child Plots ownership: Male plots Number of years in UA: 10 Nature of farmer: Migrant Livelihoods: Farming</p>
F39	<p>Sex: Male Age: Man 23 Marital status: Single Household composition: Single man living alone Plots ownership: Male plots Number of years in UA: 14 Nature of farmer: Long time resident (Morogoro urban) Livelihoods: Farming</p>
F40	<p>Sex: Male Age: Husband 37, wife 25 Marital status: Married (monogamous) Household composition: Spouses living alone Plots ownership: Male plots Number of years in UA: 15 Nature of farmer: Long time resident (Morogoro rural) Livelihoods: Farming, tailoring</p>
F41	<p>Sex: Male Age: Husband 27, wife 25, child 6, sister 15 Marital status: Married (monogamous) Household composition: Spouses living with their child, sister Plots ownership: Male plots Number of years in UA: 8 Nature of farmer: Migrant Livelihoods: Farming, genge</p>
F42	<p>Sex: Male Age: Man 17, Spouses 60, 50, spouses children 20, 30, 19, 26 Marital status: Single Household composition: Man living with his grandparents and uncles/aunties Plots ownership: Male plots Number of years in UA: 7 months Nature of farmer: Long time resident (Morogoro rural) Livelihoods: Farming, employed, bodaboda</p>

F43	<p>Sex: Female Age: Woman 52, children 27, 22, 19 Marital status: Widow Household composition: Widow living with her children Plots ownership: Female plots Number of years in UA: 6 Nature of farmer: Migrant Livelihoods: Farming, employed (nurse) teacher (son)</p>
F44	<p>Sex: Female Age: Woman 50, children 18, 24, 16 Marital status: Widow Household composition: Widow living with her children Plots ownership: Female plots Number of years in UA: 12 Nature of farmer: Long time resident (Morogoro rural) Livelihoods: Farming, employed (nurse), selling clothes</p>
F45	<p>Sex: Female Age: Woman 50, children 25, 23, grandchildren 17, 4, daughter in law 24, non kin 17 Marital status: Widow Household composition: Widow living with her children, daughter in law, non kin Plots ownership: Female plots Number of years in UA: 29 Nature of farmer: Migrant Livelihoods: Farming, employed (nurse, labourer at tumbaku), genge, selling snacks, selling clothes</p>
F46	<p>Sex: Female Age: Wife 50, husband 60, children 21, 14, grandchildren 14, 3, non kin 28 Marital status: Married (monogamous) Household composition: Spouses living with their children, grandchildren, non kin Plots ownership: co-owned plots (with her husband) Number of years in UA: 21 Nature of farmer: Migrant Livelihoods: Farming, employed (nurse), livestock keeping</p>
F47	<p>Sex: Female Age: Woman 56, children 39, 37, 24, grandchildren 20, 15, son in law 21 Marital status: Divorced Household composition: Woman living with her children, grandchildren, son in law Plots ownership: Female plots Number of years in UA: 24 Nature of farmer: Migrant Livelihoods: Farming, employed (afisa ustawi), genge</p>
F48	<p>Sex: Male Age: Husband 43, wife 23, children 18, 3 months Marital status: Married (monogamous) Household composition: Spouses living with their children Plots ownership: Male plots Number of years in UA: 15 Nature of farmer: Long time resident (Morogoro rural) Livelihoods: Farming, employed (guard)</p>
F49	<p>Sex: Female Age: Wife 37, Husband 40, children 18, 16, 7, 1, non kin 17 Marital status: Married (monogamous)/living together Household composition: Spouses living with their children, non kin Plots ownership: Female plots Number of years in UA: 31 (24 her mother) Nature of farmer: Long time resident (Morogoro urban) Livelihoods: Farming</p>

F50	<p>Sex: Female Age: Wife 36, Husband 52, children 21, 17, 12, 2, cousin 17 Marital status: Married (monogamous) Household composition: Spouses living with their children, cousin Plots ownership: Female plots Number of years in UA: 17 Nature of farmer: Long time resident (Morogoro rural) Livelihoods: Farming, selling vitenge</p>
F51	<p>Sex: Female Age: Wife 45, Husband 60, children 17, 16, 13, 10 Marital status: Married (monogamous) Household composition: Spouses living with their children Plots ownership: Co-owned plots (was his husband's plots) Number of years in UA: 30 Nature of farmer: Long time resident (Morogoro urban) Livelihoods: Farming, employed (guard, employed at petrol station)</p>
F52	<p>Sex: Male Age: Man 22, brother 17 Marital status: Single Household composition: Single man living with his young brother Plots ownership: male plots Number of years in UA: 6 months Nature of farmer: Migrant Livelihoods: Farming</p>
F53	<p>Sex: Male Age: Husband 30, wife 29, children 5, 1 Marital status: Married (monogamous) Household composition: Spouses living with their children Plots ownership: male plots Number of years in UA: 7 Nature of farmer: Long time resident (Morogoro urban) Livelihoods: Farming, tailoring</p>
F54	<p>Sex: Male Age: Husband 40, wife 30, children 20, 14, son in law 16 Marital status: Married (monogamous) Household composition: Spouses living with their children, son in law of other relatives Plots ownership: male plots Number of years in UA: 6 Nature of farmer: Long time resident (Morogoro urban) Livelihoods: Farming, middle woman (selling vegetables)</p>
F55	<p>Sex: Male Age: Husband 45, wife 41, children 24, 15, 13, 10, 7 months, nephew 33 Marital status: Married (monogamous) Household composition: Spouses living with their children Plots ownership: male plots Number of years in UA: 28 Nature of farmer: Long time resident (Morogoro rural) Livelihoods: Farming, selling clothes</p>
F56	<p>Sex: Male Age: Husband 28, wife 21, children 6, 8 months, sister in law 14 Marital status: Married (monogamous) Household composition: Spouses living with their children, sister in law Plots ownership: male plots Number of years in UA: 10 Nature of farmer: Migrant Livelihoods: Farming, selling clothes</p>

F57	<p>Sex: Male Age: Husband 72, wife 30, children 10, 2, daughter in law 14, sister in law 14, sister in law 16 Marital status: Married (monogamous) Household composition: Spouses living with their children, sister and daughter in laws Plots ownership: male plots Number of years in UA: 25 Nature of farmer: Long time resident (Morogoro rural) Livelihoods: Farming, selling clothes, casual labourer (at mama lishe)</p>
F58	<p>Sex: Male Age: Man 49 Marital status: Divorced Household composition: Divorced man living alone Plots ownership: male plots Number of years in UA: 10 Nature of farmer: Migrant Livelihoods: Farming, cook at FF</p>
F59	<p>Sex: Male Age: Husband 28, wife 20, children 7, 7, 6 months Marital status: Married (monogamous) Household composition: Spouses living with their children Plots ownership: male plots Number of years in UA: 11 Nature of farmer: Long time resident (Morogoro urban) Livelihoods: Farming</p>
F60	<p>Sex: Male Age: Man 24, mother 54, young sister 6 Marital status: Single Household composition: Man living with his mother and sister Plots ownership: male plots Number of years in UA: 4 Nature of farmer: Long time resident (Morogoro urban) Livelihoods: Farming, selling snacks</p>
F61	<p>Sex: Female Age: Wife 41, husband 45, children 24, 15, 13, 10, 7 months, nephew 33 Marital status: Married (monogamous) Household composition: Spouses living with their children Plots ownership: co-owned plots (with her husband) Number of years in UA: 7 Nature of farmer: Migrant Livelihoods: Farming, selling clothes</p>
F62	<p>Sex: Male Age: Man 29 Marital status: Single Household composition: Single man living alone Plots ownership: male plots Number of years in UA: 5 Nature of farmer: Long time resident (Morogoro rural) Livelihoods: Farming, selling potato chips</p>
F63	<p>Sex: Male Age: husband 38, wife 37, children 8, 4 Marital status: Married (monogamous) Household composition: Spouses living with their children Plots ownership: male plots Number of years in UA: 4 Nature of farmer: Migrant Livelihoods: Farming, casual labourer at FF</p>

F64	<p>Sex: Male</p> <p>Age: husband 41, wife 28, children 22, 13, 5, 3, sister 32</p> <p>Marital status: Married (monogamous)</p> <p>Household composition: Spouses living with their children, sister</p> <p>Plots ownership: male plots</p> <p>Number of years in UA: 5</p> <p>Nature of farmer: Long time resident (Morogoro urban)</p> <p>Livelihoods: Farming, carpentry, genge, labourer (petrol station), crop cultivation (tomatoes)</p>
F65	<p>Sex: Male</p> <p>Age: husband 54, wife 46, children 16, 18, 12, sister in law 27</p> <p>Marital status: Married (monogamous)</p> <p>Household composition: Spouses living with their children, sister in law</p> <p>Plots ownership: male plots</p> <p>Number of years in UA: 30</p> <p>Nature of farmer: Long time resident (Morogoro rural)</p> <p>Livelihoods: Farming, guard, selling snacks</p>
F66	<p>Sex: Male</p> <p>Age: husband 38, wife 30, children 8, 3</p> <p>Marital status: Married (monogamous)</p> <p>Household composition: Spouses living with their children</p> <p>Plots ownership: male plots</p> <p>Number of years in UA: 9</p> <p>Nature of farmer: Long time resident (Morogoro urban)</p> <p>Livelihoods: Farming, employed (tumbaku), tailoring</p>
F67	<p>Sex: Male</p> <p>Age: Man 33, Aunt 41, uncle 45, brothers/sisters 15, 13, 10, 7 months</p> <p>Marital status: Single</p> <p>Household composition: Man living with his aunt, uncle and cousins</p> <p>Plots ownership: male plots</p> <p>Number of years in UA: 3</p> <p>Nature of farmer: Migrant</p> <p>Livelihoods: Farming</p>
F68	<p>Sex: Male</p> <p>Age: Husband 30, wife 23, sister in law 15</p> <p>Marital status: Married (monogamous)</p> <p>Household composition: Spouses living with their sister (in law)</p> <p>Plots ownership: male plots</p> <p>Number of years in UA: 4</p> <p>Nature of farmer: Migrant</p> <p>Livelihoods: Farming, selling clothes, bodaboda, making hair (kusuka)</p>
F69	<p>Sex: Male</p> <p>Age: Husband 27, wife 24, children 4, 1 month</p> <p>Marital status: Married (monogamous)</p> <p>Household composition: Spouses living with their children</p> <p>Plots ownership: male plots</p> <p>Number of years in UA: 13</p> <p>Nature of farmer: Long time resident (Morogoro urban)</p> <p>Livelihoods: Farming, plumber, tailoring, bodaboda</p>
M01	<p>Sex: female</p> <p>Age: Woman 50, children 20, 25, grandchildren 10, 11, 10</p> <p>Marital status: Widow</p> <p>Household composition: Widow living with her children and grandchildren</p> <p>Plots ownership: female plots</p> <p>Number of years in UA: 20</p> <p>Nature of farmer: Long time resident (Morogoro rural)</p> <p>Livelihoods: Farming, casual labour (housekeeping, building construction)</p>

M02	<p>Sex: Male Age: Man 27, mother 45, brothers/sisters 30, 25, 35, 32 Marital status: Single Household composition: Single man living with his mother and brothers/sisters Plots ownership: Male plots Number of years in UA: 10 Nature of farmer: Long time resident (Morogoro urban) Livelihoods: Farming, casual labour</p>
M03	<p>Sex: Male Age: Husband 38, wife 19, children 8, 8months Marital status: Married (monogamous) Household composition: Spouses living with their children Plots ownership: Male plots Number of years in UA: 8 Nature of farmer: Migrant Livelihoods: Farming, casual labour (vegetable cultivation), selling roasted groundnuts</p>
M04	<p>Sex: Male Age: Husband 36, wife 33, children 9, 6 Marital status: Married (monogamous) Household composition: Spouses living with their children Plots ownership: co-owned plots (with her wife) Number of years in UA: 6 Nature of farmer: Migrant Livelihoods: Farming, livestock keeping, employed</p>
M05	<p>Sex: Male Age: Husband 30, wife 22, children 3, 1, sister in law 26 Marital status: Married (monogamous) Household composition: Spouses living with their children, sister in law Plots ownership: male plots Number of years in UA: 2 Nature of farmer: Migrant Livelihoods: Farming, middleman (selling vegetables)</p>
M06	<p>Sex: Male Age: Husband 28, wife 26, children 3, 1 Marital status: Married (monogamous) Household composition: Spouses living with their children Plots ownership: male plots Number of years in UA: 4 Nature of farmer: Migrant Livelihoods: Farming, employed (agricultural company), shop, mobile banking</p>
M07	<p>Sex: Female Age: Wife 41, Husband 45, children 21, 18, 16, grandchild 2, sister 37 Marital status: Married (monogamous) Household composition: Spouses living with their children, grandchild and sister Plots ownership: co-owned plots(with husband) Number of years in UA: 12 Nature of farmer: Migrant Livelihoods: Farming, casual labour (construction)</p>
M08	<p>Sex: Male Age: Husband 48, wife 37, children 19, 17, 11, 2 Marital status: Married (monogamous) Household composition: Spouses living with their children Plots ownership: male plots Number of years in UA: 30 Nature of farmer: Long time resident (Morogoro rural) Livelihoods: Farming</p>

M09	<p>Sex: Female Age: Woman 38, children 24, 22, 11 Marital status: Divorced Household composition: Woman living with her children Plots ownership: female plots Number of years in UA: 10 Nature of farmer: Long time resident (Morogoro urban) Livelihoods: Farming, carpentry</p>
M10	<p>Sex: Male Age: Husband 45, wife 42, children 20, 16, 10, mother in law 88 Marital status: Married (monogamous) Household composition: spouses living with their children, mother in law Plots ownership: female plots Number of years in UA: 25 Nature of farmer: Long time resident (Morogoro urban) Livelihoods: Farming, masonry</p>
M11	<p>Sex: Male Age: Husband 42, wife 31, children 12, 6, 1 month Marital status: Married (monogamous) Household composition: spouses living with their children Plots ownership: male plots Number of years in UA: 8 Nature of farmer: Migrant Livelihoods: Farming</p>
M12	<p>Sex: female Age: Wife 36, Husband 46, children 17, 13, 6, 1 Marital status: Married (monogamous) Household composition: spouses living with their children Plots ownership: female plots Number of years in UA: 11 Nature of farmer: Long time resident (Morogoro urban) Livelihoods: Farming, carpentry</p>
M13	<p>Sex: Male Age: Husband 43, wife 39, children 13, 2 Marital status: Married (monogamous) Household composition: spouses living with their children Plots ownership: male plots Number of years in UA: 14 Nature of farmer: Migrant Livelihoods: Farming, employed (nurse)</p>
M14	<p>Sex: Male Age: Husband 48, wife 36, children 17, 13, 8, 1, 3 Marital status: Married (monogamous) Household composition: spouses living with their children Plots ownership: male plots Number of years in UA: 10 Nature of farmer: Migrant Livelihoods: Farming, carpentry</p>
M15	<p>Sex: female Age: Woman 50, children 15, 12, 9, 4, 9, mother 72 Marital status: Divorced Household composition: Woman living with her children, mother Plots ownership: female plots Number of years in UA: 23 Nature of farmer: Long time resident (Morogoro urban) Livelihoods: Farming</p>

M16	<p>Sex: Male</p> <p>Age: Husband 40, wife 34, children 16, 10, 5</p> <p>Marital status: Married (monogamous)</p> <p>Household composition: Spouses living with their children</p> <p>Plots ownership: Male plots</p> <p>Number of years in UA: 20</p> <p>Nature of farmer: Long time resident (Morogoro urban)</p> <p>Livelihoods: Farming, casual labour (mansory), genge, housekeeping</p>
M17	<p>Sex: Male</p> <p>Age: Husband 51, wife 40, children 15</p> <p>Marital status: Married (monogamous)</p> <p>Household composition: Spouses living with their child</p> <p>Plots ownership: Male plots</p> <p>Number of years in UA: 11</p> <p>Nature of farmer: Migrant</p> <p>Livelihoods: Farming, employed (MOECO), housekeeping</p>
M18	<p>Sex: female</p> <p>Age: Wife 50, Husband 55, children 28, 22, 15, 13, 10</p> <p>Marital status: Married (monogamous)</p> <p>Household composition: Spouses living with their children</p> <p>Plots ownership: female plots</p> <p>Number of years in UA: 15</p> <p>Nature of farmer: Long time resident (Morogoro rural)</p> <p>Livelihoods: Farming, employed, selling fruits</p>
M19	<p>Sex: female</p> <p>Age: Wife 44, Husband 46, children 21, 15, 8, mother in law</p> <p>Marital status: Married (monogamous)</p> <p>Household composition: Spouses living with their children, mother in law</p> <p>Plots ownership: female plots</p> <p>Number of years in UA: 15</p> <p>Nature of farmer: Long time resident (Morogoro rural)</p> <p>Livelihoods: Farming, casual labour, selling (snacks charcoal vegetable, groundnuts), selling tree seedling</p>
M20	<p>Sex: Male</p> <p>Age: Man 26</p> <p>Marital status: Single</p> <p>Household composition: Single man living alone</p> <p>Plots ownership: male plots</p> <p>Number of years in UA: 4</p> <p>Nature of farmer: Long time resident (Morogoro rural)</p> <p>Livelihoods: Farming</p>
M21	<p>Sex: Male</p> <p>Age: Husband 29, wife 25, child 1</p> <p>Marital status: Married (monogamous)</p> <p>Household composition: Spouses living with their child</p> <p>Plots ownership: male plots</p> <p>Number of years in UA: 5</p> <p>Nature of farmer: Long time resident (Morogoro rural)</p> <p>Livelihoods: Farming, masonry</p>
M22	<p>Sex: female</p> <p>Age: Wife 40, husband 50, children 25, 14, 3, 12</p> <p>Marital status: Married (monogamous)</p> <p>Household composition: Spouses living with their children</p> <p>Plots ownership: female plots</p> <p>Number of years in UA: 5</p> <p>Nature of farmer: Long time resident (Morogoro urban)</p> <p>Livelihoods: Farming</p>

M23	<p>Sex: female</p> <p>Age: Wife 44, husband 45, children 24, 19, 13, sister in law 29, mother in law 60</p> <p>Marital status: Married (monogamous)</p> <p>Household composition: Spouses living with their children, sister in law, mother in law</p> <p>Plots ownership: female plots</p> <p>Number of years in UA: 8</p> <p>Nature of farmer: Long time resident (Morogoro rural)</p> <p>Livelihoods: Farming, selling snacks</p>
M24	<p>Sex: female</p> <p>Age: Wife 50, husband 65, children 23, 13, 3</p> <p>Marital status: Married (monogamous)</p> <p>Household composition: Spouses living with their children</p> <p>Plots ownership: female plots</p> <p>Number of years in UA: 6</p> <p>Nature of farmer: Long time resident (Morogoro urban)</p> <p>Livelihoods: Farming</p>
M25	<p>Sex: Male</p> <p>Age: husband 61, wife 50, children 30, 15, grandchildren 12, 8, 1</p> <p>Marital status: Married (monogamous)</p> <p>Household composition: Spouses living with their children, grandchildren</p> <p>Plots ownership: male plots</p> <p>Number of years in UA: 4</p> <p>Nature of farmer: Long time resident (Morogoro rural)</p> <p>Livelihoods: Farming</p>
M26	<p>Sex: Male</p> <p>Age: husband 40, wife 30, child 8</p> <p>Marital status: Married (monogamous)</p> <p>Household composition: Spouses living with their child</p> <p>Plots ownership: male plots</p> <p>Number of years in UA: 7</p> <p>Nature of farmer: Long time resident (Morogoro rural)</p> <p>Livelihoods: Farming, labour (tumbaku), carpentry</p>
M27	<p>Sex: female</p> <p>Age: wife 50, husband 61, children 30, 15, grandchildren 12, 8, 1</p> <p>Marital status: Married (monogamous)</p> <p>Household composition: Spouses living with their children, grandchildren</p> <p>Plots ownership: female plots</p> <p>Number of years in UA: 6</p> <p>Nature of farmer: Long time resident (Morogoro rural)</p> <p>Livelihoods: Farming</p>
M28	<p>Sex: male</p> <p>Age: Man 46, children 13, 14, 9, 6, 21</p> <p>Marital status: Widow</p> <p>Household composition: Man living with his children</p> <p>Plots ownership: male plots</p> <p>Number of years in UA: 1</p> <p>Nature of farmer: Migrant</p> <p>Livelihoods: Farming</p>
M29	<p>Sex: male</p> <p>Age: Husband 22, wife 19, child 2</p> <p>Marital status: Married (monogamous)</p> <p>Household composition: Spouses living with their child</p> <p>Plots ownership: male plots</p> <p>Number of years in UA: 2</p> <p>Nature of farmer: Long time resident (Morogoro urban)</p> <p>Livelihoods: Farming, casual labour (vegetable), tailoring, masonry</p>

M30	<p>Sex: male</p> <p>Age: Husband 35, wife 28, children 9, 13</p> <p>Marital status: Married (monogamous)</p> <p>Household composition: Spouses living with their children</p> <p>Plots ownership: male plots</p> <p>Number of years in UA: 7</p> <p>Nature of farmer: Long time resident (Morogoro urban)</p> <p>Livelihoods: Farming, selling vegetables on the street</p>
M31	<p>Sex: male</p> <p>Age: Husband 48, wife 28, children 4, 8, 2</p> <p>Marital status: Married (monogamous)</p> <p>Household composition: Spouses living with their children</p> <p>Plots ownership: male plots</p> <p>Number of years in UA: 23</p> <p>Nature of farmer: Long time resident (Morogoro rural)</p> <p>Livelihoods: Farming, holes (pit latrines), selling charcoal</p>
M32	<p>Sex: Female</p> <p>Age: Wife 37, Husband 43, children 17, 9, 4, 20, daughter in law 19</p> <p>Marital status: Married (monogamous)</p> <p>Household composition: Spouses living with their children, daughter in law</p> <p>Plots ownership: female plots</p> <p>Number of years in UA: 3</p> <p>Nature of farmer: Long time resident (Morogoro rural)</p> <p>Livelihoods: Farming, labourers (construction, welding), carpentry</p>
M33	<p>Sex: male</p> <p>Age: Man 47, child 12</p> <p>Marital status: Divorced</p> <p>Household composition: Man living with his daughter</p> <p>Plots ownership: co-owned plots (male plots)</p> <p>Number of years in UA: 3</p> <p>Nature of farmer: Long time resident (Morogoro rural)</p> <p>Livelihoods: Farming, selling charcoal</p>
M34	<p>Sex: Female</p> <p>Age: wife 35, husband 45, children 10, 3</p> <p>Marital status: Married (monogamous)</p> <p>Household composition: spouses living with their children</p> <p>Plots ownership: female plots</p> <p>Number of years in UA: 8</p> <p>Nature of farmer: Long time resident (Morogoro urban)</p> <p>Livelihoods: Farming, livestock keeping</p>
M35	<p>Sex: Female</p> <p>Age: wife 43, husband 40, children 15, 12, 3</p> <p>Marital status: Married (monogamous)</p> <p>Household composition: spouses living with their children</p> <p>Plots ownership: female plots</p> <p>Number of years in UA: 3</p> <p>Nature of farmer: Migrant</p> <p>Livelihoods: Farming, employed (guard)</p>
M36	<p>Sex: male</p> <p>Age: Husband 49, wife 40, children 20, 10, grandchild 3</p> <p>Marital status: Married (monogamous)</p> <p>Household composition: spouses living with their children, grandchild</p> <p>Plots ownership: male plots</p> <p>Number of years in UA: 7</p> <p>Nature of farmer: Long time resident (Morogoro urban)</p> <p>Livelihoods: Farming, labour (at mama ntilie)</p>