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Access to farming resources

This chapter is about households' access to farming resources and the gender differences in access patterns. Various resources across the five asset/capital categories – i.e. natural, physical, financial, human and social – were required for farming and accessed to varying degrees by the farming households, and by men and women within those households. Land and, to a lesser extent, water were among important natural assets for urban farming. Physical assets – which are considered here in terms of conventional farm inputs (see Prain 2006) – included fertilizers, pesticides, seeds, animal breeds, etc. Other assets included financial resources (financial capital), farmers' agricultural knowledge and information (human capital), and social connections and networks (social capital). As will be apparent in this chapter, these assets were interconnected in multiple ways with some providing the means to access others. Moreover, the level of access to the assets by men and women both reflected social norms and gender relations, but also the changes in the socio-economic context.

Access to land

Although its value as an asset in livelihood construction for urban households is considered less significant (Rakodi 2002a; Mandel 2004), land is no doubt the primary capital asset for urban farming households. "Urban farming requires some land space, irrespective of whether the farming system is soil-based or not" (Mubvami *et al*. 2003: 1). Yet inaccessibility to (adequate) land is arguably the most prevalent constraint to urban crop cultivation and livestock keeping in Kenya (Lee-Smith *et al.* 1987; Dennery 1996; Freeman 1991; Foeken 2006) as elsewhere in sub-Saharan Africa (Zalle *et al*. 2003; Brock & Foeken 2006; Simatele & Binns 2008; Lynch *et al*. 2001). This section describes the farming households' agricultural plots, and provides an overview of how the households

gained access to the plots. It also highlights households' tenure and use rights over agricultural plots and how these varied with gender.

The plots

The 160 farming households had access to a total of 200 plots, putting the average number of plots accessed by a household at 1.25. The majority of the households (81%) carried out urban farming on single plots. Only 31 households cultivated more than one plot, with two of them cultivating five plots each; the highest number for any household. Ninety one percent of the plots were located within Langas estate itself. Of these, 84% (N=181) were found within the farming household's compound and 16% outside the compound but within the estate. The rest (19 in all) were spread over nine other estates across the municipality.

It was more likely in male-headed households that the husband was the plot owner or the one responsible for renting or, through other means, securing access to land for farming. Out of the 162 plots farmed by male-headed households, women were responsible for the acquisition of only 21 plots, and 16 of these were acquired jointly with their husbands. About one-half of the 33 female household heads had themselves acquired the plots they farmed. The rest carried out farming activities on plots acquired by their late husbands (in the case of widows) or by another family member.

The higher access rate to urban plots by men in male-headed households can be attributed as much to men's relatively better economic status compared to women's, as to cultural norms that exclude women from inheriting land – and indeed other properties from their parents. Although land ownership through inheritance was not common in Langas, with many interviewees having moved there only recently, interviews with two men who inherited land from their parents and three widowed women who lived on plots acquired by their dead husbands were revealing. Whereas the men in question said they owned the land, the women referred to the land as their husbands'. Although many widows, upon their husbands' demise, took full control of their husbands' plots and enjoyed all use rights over the plots even when they had grown-up sons, they did not usually seek legal transfer of ownership of the plots. They tended to hold the land in trust for their sons instead.

The higher levels of non-ownership of land among women can also be attributed to undervaluation of women's contributions to overall household well-being, and to cultural practices that socialize women into believing that land and 'major' investments are a preserve of men. It was clear in some cases that women had played an important role in purchasing land, either directly by contributing money or indirectly by taking responsibility for smaller household expenditures thereby enabling their husbands to accumulate savings for land purchase.

Granted, women's fragmented domestic expenditures may appear insignificant compared to the lump sum cost of land and are therefore usually not factored into the property ownership equation. Yet even where women had directly contributed towards land purchase they were not necessarily enjoined in ownership; joint ownership was simply presumed on account of marriage and especially having children. Sonkoro's story clarifies this point. After receiving Kshs. 45,000 in lumpsum from a rotating savings and credit association (ROSCA) in September 2008, he added the money to his wife's savings and bought a plot, which he registered in his name alone. Asked why he left out his wife's name despite her contribution, he reasoned that his action "does not exclude her from owning the plot. In any case the plot belongs to her children."[1] Similar explanations for excluding women from land ownership were widespread:

> Although the plot is in my name, it is also hers because she is my wife.
>
> (Njoroge, 23 May 2009)

> This plot is mine but of course my next of kin is my wife.
>
> (Mhubiri, 30 May 2009)

> I am the owner of the two plots. When I was buying the plots, I knew I was buying them for the family and my wife is my successor. When I am gone it is her children who will benefit.
>
> (Baba Daddy, 7 June 2009)

Such attitudes seem to underline the view that married women cannot own land in their own right and that men's monopoly over land is somehow incontestable. This view was so entrenched in the cultural structure that women seemed not only resigned to it but sometimes also perpetuated it. One interviewee recounted his wife's role in the transactions involving his plot as follows:

> (…) after negotiations to purchase the plot, it is my wife who undertook the necessary transactions for the plot. I gave her the money to pay the plot seller. She only brought me the agreement to sign. She is the one who decided that the plot should be transacted in my name as the head of the family (…) I would not have minded if she had chosen to include her name. After all she deputizes me and she is the one who takes care of the plot.
>
> (Wandera, 30 May 2009)

Although such concessions over land entitlements by women to their husbands may readily be associated with the less-educated women and especially those economically dependent on their husbands – as indeed was the case with Wandera's wife, Auma – in reality, the trend was prevalent among educated and economically independent women as well. Chebet's story demonstrates this. With post-graduate education and training, Chebet worked as a civil servant in the Ministry of Health until her early retirement in 1988 occasioned by public service restructuring. Subsequently, she worked for a non-governmental organization until 1997 when she finally retired to concentrate on urban farming. She kept

[1] Interviewed on 22 May 2009.

dairy cows, and sheep, and grew vegetables. Accredited by the Kenya Dairy Board as a milk handler having undergone training on the same, Chebet operated a milk kiosk on her farm. In addition to own-farm production, she received and pasteurized additional milk from other farmers. The farm and her business earned her 'good money', of which she was personally in full control. Chebet's husband worked in another town and was not a regular co-resident of the household. A self-proclaimed strong advocate of gender equality, Chebet once pulled out of a women group because, as she put it "whereas I advocated women emancipation and autonomy, the other women were busy submitting to their husbands." Yet she never contested her husband's monopoly over the ownership of land, only rationalizing the status quo thus:

> Our Langas plot was bought by my husband. I did not make any contribution. However, that has never affected my use rights over the plot. If anything, it is me who uses the plot and whatever I do is for the benefit of my children. Ownership of land is not so important; when you die you can't go with it. So long as I am allowed to use it and help my children I don't care about the rest.
>
> (Chebet, 23 May 2009)

With regard to size, the agricultural plots varied considerably, ranging from 5 square feet to more than two acres. The biggest plot measured 6,000 m^2 or 1.5 acres and the average size was 460 m^2. On average, female-headed households cultivated smaller plots (average size of 365 m^2) than male-headed households (480 m^2). The former were also less likely to cultivate plots outside Langas estate. Among the 19 plots located in other estates in the municipality, only one was cultivated by a female-headed household. Yet accessing land in multiple locations has important implications for household food situation. It enables households to take advantage of diverse ecological conditions of different geographical locations, and spreads the risk in case of crop failure, destruction or theft.

The farmers did not seem to have much of a choice in terms of how much land to cultivate. Most plot owners cultivated whatever space was available around their dwellings. On the other hand, tenants relied on the goodwill of their landlords and cultivated whatever space the landlord allowed; although some tenants may have practiced farming on their landlord's plots without the latter's express permission. Thus, although all the participating households had access to land of some kind, the land constraint was nonetheless readily apparent from the expressed desire for extra space for farming among an overwhelming majority (91%, N=200) of the respondents. The land constraint also manifested in the conversions of all manner of spaces around and in-between dwellings, and in such improvisations as the planting of crops in sacks, buckets and tins. As to how they would utilize additional space should they access any, most respondents in-

Photo 7.1 *Sukuma wiki* grown in-between structures in Langas

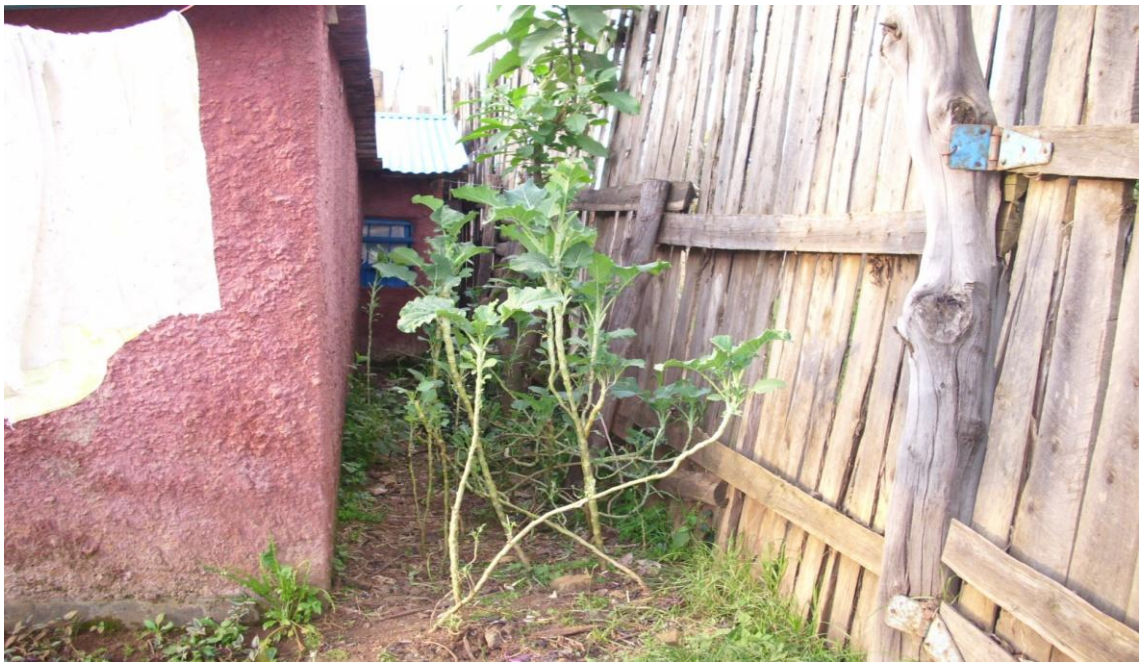

Photo 7.2 Vegetables grown in buckets and sacks in an urban farmer's backyard

dicated their wish to expand the scale of production and/or diversify agricultural activities. While basic food crops – particularly maize and vegetables – cultivated for home-consumption dominated the respondents' wish lists, a strong income motive was also expressed. In other words, from the perspective of the urban farmers of the urban farmers, enhanced access to more land would improve the food situation and income levels of their households.

The main handicap to enhanced access to (adequate) land, as identified by 92% of those who desired extra space for urban farming (N=182), was a lack of financial capital. Others did not have information about where to get land (4%), or lacked connections to facilitate its acquisition (2%). Only 18 respondents (or 9%) said they did not wish to have additional space for urban farming. This small minority predicated their position on various reasons. Six of them simply could not afford to cultivate an extra plot,[2] four saw urban agriculture as an unimportant livelihood activity, while one respondent was discouraged by official and legal restrictions on agricultural activities in the town.

Tenure and use rights over land

With regard to tenure and use rights over land, 76% (N=200) of the plots were self-owned by the farming households. These self-owned plots were found among 124 households. Notwithstanding municipal council planning regulations and urban agriculture restrictions, the farming households largely enjoyed freedom of access to and use rights over such plots. However, as shall become apparent below, intra-household inequalities in access and use rights between men and women were reported. On the other hand, access to the 48 plots that were not self-owned was dependent upon financial capital and/or social connections. Such plots included 30 open spaces around farming households' rented dwellings that were used for farming mostly with the consent (express or tacit) of the plot owners. While some of these plots were used for agriculture at no extra charge over and above the rent paid for the dwellings, in other cases the tenants were required to pay for the plots. Some households also used plots under their care that belonged to a friend or relative of a household member (11 in all), or to an institution (four plots). Three households rented agricultural plots outside their compounds.

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[2] One farmer in this category said he would prefer to intensify agricultural production on the available space instead should he access financial resources. A recent retiree of a multinational company, the farmer possessed two plots measuring a total of $2^1/_2$ acres. At the time of the survey, the farmer cultivated a variety of crops including *sukuma wiki*, bananas and cassava in his home garden measuring 0.5 acres. On the second plot, which was located in a different estate, he cultivated maize. In both cases, the farmer lamented poor returns and contended that he would venture into intensive horticulture and, probably, dairy goat farming once he received his retirement benefits.

As would be expected, a household's continued access to, and freedom of use over land belonging to someone else was not always guaranteed or open-ended, but rather dependent upon the whims of the landowner. Onyancha's story illustrates how some urban farmers grappled with loss of access to, and diminishing farming space on such land as well as restrictions on its use.

> Onyancha (31 years old) and his wife Moraa (27) cultivated a plot belonging to a church of which they were members. The couple moved to stay on the church compound in a small room adjacent to a temporary church building in 2005, where they served as caretakers of the church compound and property. During the first interview with the couple in November 2007, they had grown a wide variety of crops including onions, *sukuma wiki*, cabbages, tomatoes, Irish potatoes, green pepper, *suja*, *saga* and pumpkins on a portion of the plot measuring approximately 220 m^2. The garden was intensively farmed and well-tended. They had just harvested maize and beans. The garden was very important for the couple as both a source of food and income. Moraa operated a kiosk in the neighbourhood where she sold groceries. She used to get part of the supplies from the garden.
>
> By the time of the second interview in May 2009, the plot that the couple had cultivated previously had reduced in size by about one third from approximately 220 m^2 to about 150 m^2. Plans were supposedly underway for the church to start assembling construction materials on site in readiness for putting up a permanent building and as such more space needed to be created on the plot where the materials would be assembled. Besides, Onyancha noted that the church had asked him not to grow maize anymore on account that, on maturity, the crop obstructed the church and made it difficult for the would-be worshippers to see it. He had therefore resorted to planting only short crops. He was planning to prepare his plot for planting cowpeas, pumpkins, *saga* and potatoes. Onyancha expressed fears that he might not be able to do any farming on the plot the following year (2010) once construction commenced and, more so, upon completion. Moreover, his wife's kiosk, like many other roadside kiosks in Langas, had been pulled down by the municipal council and Onyancha was worried that he might not be able to find an alternative shelter for his wife's business, which was the main source of income for his household. After the kiosk was pulled down, the wife went to their rural home in Kisii where she would be for some time.
>
> When I visited the place again in June 2010, the church had not commenced construction. However, Onyancha was not home and the plot was unattended. I found a small group of women organizing the church hall for the following day's church function. One of the women, supposedly a church leader, said that Onyancha had gone to the rural home where his wife had been for several months, but that he would return. Asked whether he was still farming on the plot, the woman replied thus: "the young man should have known from the beginning that this was a temporary place for him and he should have organized himself to find an alternative plot to do his farming. We want this place to be open so that people can know what is going on here."

The women who cultivated land that was singularly acquired by their husbands could also be considered among those with tenuous use rights over urban agriculture plots. Their situation was captured by a male participant in a focused group discussion who contested women's supposed role as key players in urban food production when he observed that "if the man does not want any farming to be done on his plot, the woman won't farm."[3] However, as in the case of Chebet referred to in the preceding section, non-ownership of land for many women did

[3] Focused group discussion held on 31 August 2007.

not necessarily deny them access to or limit use rights over their husbands' plots for farming. On the contrary, and as Chapters 9 and 10 will demonstrate, many women enjoyed considerable freedom of access to, and use of the plots for farming and exercised greater control over the proceeds. Nonetheless, it was apparent that most women remained alive to the fact that ultimate authority over land lay with their husbands and were often constrained to seek their husbands' permission before using the land for agriculture. In a few cases permission was denied if the man wanted to put the land to alternative use:

> We have a big space in this compound and I once suggested that we plough and grow vegetables but my husband declined. He said he plans to buy more cows that will need more space (…). In future I plan to keep some chickens and cows (…). I also want to own something so that I won't depend on him for everything as I do now.
>
> (Nekoye, 21 June 2009)

Nekoye's situation underscores the importance of access to land for urban agriculture for women as a means of achieving autonomy and enhancing their agency. Only in rare cases did women use household land for urban agriculture as they chose or insist on using it against their husbands' advice. When they did, it was more likely because of one or a combination of various factors: the husband was not a regular co-resident in the household, had a more important source of income elsewhere, or had no immediate alternative use for the land. It was also likely that the woman was a significant contributor to household sustenance with enhanced bargaining power, or farming was so critical for household survival that they were prepared to defy their husbands. As will be demonstrated in Chapter 9, men did sometimes tolerate such agency by women and in time, even supported their wives' efforts including allowing them greater access to household land for farming.

Apart from a few exceptional cases such as the one involving Mama Daddy that has been referred to above, men generally enjoyed unlimited use rights over land to which their households had access. It should be recalled that men owned (or met the cost of leasing) most of the plots. As Nekoye's situation referred to illustrates, when men's interests conflicted with those of their wives over the use of land, the former's interests often prevailed. And if women had any chances of negotiating access to land for urban farming and to the proceeds from agricultural activities, the chances were more limited when it came to using land for other productive activities, most notably housing, which was generally a monopoly of men (see Muhonja's case below). This was largely because agriculture was treated more as a household survival strategy and, most importantly, as a transitional activity that could easily be relinquished if an alternative and more profitable use was to be found for the land. On the other hand, housing was considered a long-term investment and implied permanent use rights over land, which most

men seemed unwilling to cede to women. In any case, investing in housing required relatively higher levels of financial capital to which the majority of women had little access.

> Muhonja belonged to a women group that was formed for purposes of accessing credit from a micro-finance institution. After saving through the group a total of Kshs. 5,000, she applied for and received a loan of Kshs. 50,000. She used the money to put up four semi-permanent rental houses on 'their' Langas plot to add to the 15 that her husband had built earlier. She also belonged to a ROSCA consisting of 40 members in which they contributed Kshs. 500 each, weekly. When she received her payout from the ROSCA, she used part of the money to complete her houses and invested the rest in a grocery business. Not only did Muhonja consult and secure the support of her husband before embarking on the housing project, she had also earlier contributed towards the purchase of the plot.
>
> Because of the high demand for housing in the estate, Muhonja's houses were occupied immediately on completion earning her Kshs. 700 each per month. In the initial months she personally collected and used rent from her four houses and her husband continued to collect and use rent from his 15 houses. However, soon the husband demanded to collect rent from Muhonja's houses as well. She protested but eventually gave up the houses and decided to concentrate on urban agriculture and the grocery business. Some of her grocery stock originated from her home garden. She could make up to Kshs. 200 per day, most of which she dedicated to household expenditure. Muhonja noted that the 'good thing' with urban farming and the grocery business was that her husband did not interfere.
>
> (Muhonja, 2 June 2009)

Muhonja's case illuminates skewed power relations at the household level that limited women's access to resources. Thus, although many women desired to own property of their own as a means of reducing their dependence on men, ownership of property could not necessarily enhance their use rights, let alone guarantee control over the same. This is particularly the case with land, control over which epitomizes men's masculine identity and paternalistic status in society. It is for this reason that many married women did not even consider buying personal land as a top priority. The few who did tended to consider ways of keeping such holdings secretive because, as one such woman observed, "once I tell him (the husband) about the plot, it ceases to be mine".[4] In this respect female household heads could be considered 'luckier' as they exercised full control over household plots and in most cases made all the decisions regarding the use of those plots. It may also explain why a higher proportion of female-headed households than married women had personally acquired land. As was indicated above, however, female-headed households accessed smaller plots compared to those (potentially) accessible to married women.

[4] Shimuli, interviewed on 27 June 2009.

Access to water

The majority of the farming households in Langas accessed water within a short distance of their dwellings and for most of them (87%, N=160) the water sources were reliable all-year-round. Shallow wells were the commonest water sources, followed by piped water. Seventy percent of the households relied on shallow wells for water, with 87% (N=112) of these having wells within their own compounds, while 13% accessed them in the neighbourhood. Piped water was found within compounds of 31% of the households, while 19% accessed it in the neighbourhood. Just over one-third of the households had multiple water sources on their plots, mostly wells and piped water.

Many households used tap water mainly for drinking and cooking, while water drawn from the wells was put to other domestic purposes. Although access to well water was largely cost-free, the water was considered – and indeed has been proven (Kimani-Murage & Ngindu 2007) – to be less safe for drinking and cooking. It may be surprising however, that well water was not widely used for crop irrigation despite its widespread and all-year-round availability and ease of access. Only 12% of the farming households used well water to irrigate their gardens. In any case, such irrigation was in most part not full-time but rather restricted to only a few stages of the crop, mainly during transplanting.

Some households did not (always) use water from the wells for irrigation, ostensibly because drawing water manually was cumbersome. Several households involved in crop cultivation for income preferred irrigating with tap water instead, apparently because the returns to irrigated gardens more than compensated for the cost of tap water. The relatively low water tariffs relate to the fact that the water supply system in Eldoret is based on gravity flow rather than the more expensive pump-based system (Owuor & Foeken 2009). However, using tap water for irrigation was prohibited by the municipal council and therefore potentially risky for those involved. A female respondent from a prominent vegetable farming household in Langas complained about harassment by municipal council officers who, on several occasions previously, had threatened to take unspecified punitive action against her household for allegedly irrigating crops with ‘stolen’ municipal water.

Farmers whose participation in crop cultivation was not primarily based on the income motive were less inclined to use tap water (which they considered to be expensive) or to irrigate at all. Prohibitive municipal regulations and water bills were not the only reasons for non-use of tap water for irrigation. Sonkoro remarked that he would have wished to irrigate his plot to maximize returns during the dry weather but that he needed a powered water pump which he could not afford. As to why he did not consider using tap water, he explained that “if you use

tap water you may reduce the water volume and cause water shortages for neighbours. This could bring about conflict."

Overall, the majority of the farmers adapted their farming systems to rainfall seasonality. Successive cropping was particularly common. It entailed cultivating different crops at different times of the year depending on their adaptability to seasonal variations. Intercropping and mono-cropping were also practiced. The former involved intermixing of more than one crop on a plot and the latter entailed cultivation of a single crop on a plot or a portion of it. Often the farmers practiced both systems in succession as a way of diversifying crop cultivation to enhance household food security and income. That is, they grew either single crops or a number of crops during different seasons, or on different portions of their plots. Mama Sella's account exemplifies this strategy:

> We plant various types of vegetables including *sukuma wiki*, *suja*, *saga* and spinach in January using tap water. We have a well but it is tiresome and cumbersome to draw water from it. (…) In April we plant maize which produces about three sacks for our own consumption. We clear the field of maize towards the end of September to plant cowpeas. We don't plant the entire plot at once. We plant a few rows every two weeks so that the whole garden does not mature all at once. We also leave a section for planting other vegetables like *suja* and *saga* in January. We start harvesting cowpeas in January until mid-March when we clear the plot once again in readiness for the next maize planting season in April. In a normal season cowpeas earns us up to Kshs. 1,000 per week for 6 to 8 weeks.
>
> (Mama Sella, 30 may 2009)

Access to financial capital

As the primary means by which most productive assets and inputs required for agricultural production may be accessed and solutions to most problems experienced by farmers resolved, financial income is an important capital asset in urban agriculture. Yet many urban farming households in Langas generally had limited access to financial resources not only for investment in urban agriculture, but also for overall household well-being. The various extension services providers identified access to financial support and credit as one of the major issues over which urban farmers sought advice and assistance. Financial constraints partly explain why only few households engaged in high value agricultural enterprises (e.g. dairy farming) that required relatively high levels of initial financial investment. It has already been noted that a lack of financial resources also constrained farmers from accessing more land to expand their scale of production, diversify production and optimize productivity of available spaces by investing in appropriate modern intensification techniques and farming practices. Since female-headed households were overrepresented among the poorest category of households (see Chapter 3), it can be construed that they would have had compara-

tively more difficulties accessing financial capital necessary for agricultural investment.

Only four respondents – three women and one man – reported having received external financial support for urban agriculture in form of credit. This relates, in part, to the general absence of micro-credit facilities specifically tailored for urban farmers; existing micro-credit institutions focused more on non-farming business enterprises. Moreover, the farmers were also not organized into farmers' groups, a prerequisite for accessing assistance from farmers' support programmes like the Eldoret Catholic Diocese's Agriculture and Food Security Programme (see below). In any case, even the micro-credit institutions generally provided credit through organized groups. In the latter case, women were the main beneficiaries since they were more involved with groups based on social networks of solidarity and mutual aid. Such groups provided an important infrastructure for women to access credit from not only formal microfinance institutions but also from internally generated savings (see Chapter 8). Thus the fact that only three women reported accessing credit for investment in urban agriculture reflects the fact that credit accessed through social networks was rarely (re)invested in urban agriculture, even though urban agriculture formed an important basis for women's participation in social networks (see Chapter 8). This further underlines urban farmers' limited regard for urban agriculture as an important business that required financial investment to boost productivity and profitability. Among the few people who (re-)invested their credit in urban agriculture was Auma. After receiving a lumpsum payout from a ROSCA in April 2009, Auma and her husband decided to purchase a chaff cutter machine, which they deemed necessary for mitigating scarcity of animal feeds during the dry spell.

Among important household sources of financial resources for agricultural investment included personal savings and income from non-farming livelihood activities. It was apparent in Chapter 6 that the costs of initial investments in urban agriculture – including purchase of land and inputs – were mostly borne by men. While for many men such investments were considered more as a means of facilitating their wives' involvement in a minor but important source of household livelihood, they themselves would eventually take more interest in the activity and re-channel more resources to urban agriculture once their non-farming income earning opportunities diminished (see Chapters 8, 9 and 10).

As was further demonstrated in Chapter 6, although many women participated in non-farming income-generating activities to supplement their husbands' livelihood sources, men generally had better access to finances than women owing to the former's higher participation levels in the informal labour market, the type of activities they engaged in, and their greater spatial mobility and flexibility with which they deployed their labour. Furthermore, many women exercised little

control over their incomes in terms of how the income could be spent and/or invested.

Another important source of income for urban farming households was the sale of urban agriculture products. Sale of livestock was a particularly important way of raising 'quick money' to attend to urgent financial needs. Sheep, pigs, chickens and, to a lesser extent, cows were the most important liquid assets among the livestock. In fact, this was the main reason why many households kept livestock in the first place. There were also many instances where households sold livestock in order to raise money to invest in other forms of urban agriculture. It was particularly common for one type of livestock to be sold in order to purchase another. This was an important way of building and upgrading assets as well as diversifying household livelihood sources. For instance, when Obachi[5] turned to farming after losing his formal employment, he started by keeping pigs. He later sold some pigs to buy a dairy cow to provide milk for his family and to generate some income as well. Redempta,[6] a single woman, started in the mid-1990s by keeping chickens and ducks. She later (in 2000) sold part of the stock to invest in sheep. By 2007 her stock of sheep had grown to 30, part of which she planned to 'convert into a dairy cow' in order to save on the money she used to spend on milk.

As will be demonstrated in Chapters 9 and 10, income from crop cultivation was in most part controlled by women. Although the ownership of livestock was generally open to men and women, men tended to own large livestock while women mostly owned small livestock. And unlike men who would readily proclaim ownership of their livestock, women who owned large livestock were more restrained from publicly claiming such ownership, especially if the livestock constituted an important household asset. The following comments by women respondents are instructive:

> Although I am the one who bought the animals, I do not regard them as mine. It is not right to do so in our culture.
>
> (Auma, 30 May 2009)

> I contributed towards buying the sheep we own. But if anyone asks me who the owner is, I will say it is my husband.
>
> (Naliaka, 1 August 2009)

Such comments illustrate how social norms that define appropriate wifely behaviour and conduct can constrain women's self-advancement and limit their bargaining power within the household. Moreover, by refraining from asserting ownership over their property as is socially expected of a 'good wife', women's contribution remains largely invisible at the community level as well. Of particu-

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5 Interviewed on 6 June 2009.
6 Interviewed on 26 may 2009.

lar relevance here is the fact that in some instances cultural norms seemed to also limit women's freedom to sell large livestock over which they had ownership rights (see Chapters 9 and 10). In other words, large livestock held greater significance as liquid assets for men than for women. And although the latter enjoyed more freedom over the sale of small livestock, such livestock generated more limited income.

Land has been touted in literature on Africa as important collateral for accessing credit from financial institutions and as a source of gender inequalities on the basis that it is predominantly owned by men. However, although most of the household plots in Langas were owned by men, the plots were not titled and therefore could not serve as collateral. Thus, plot ownership by itself did not advantage men over women in terms of providing the means for accessing financial resources.

Access to agricultural knowledge and information

High and sustainable agricultural productivity require appropriate agricultural knowledge and information essential for the performance of agricultural activities and tasks, adaption and optimal application of inputs and technologies, and for effective management of agricultural enterprises. However, consistent with research findings from other urban settings in Kenya (e.g. Foeken & Mwangi 2000; Foeken & Owuor 2000), and in other sub-Saharan African countries as well (Hope *et al*. 2009; Kiguli *et al.* 2003; Thornton 2008; Toriro 2009), the present study showed that urban farming households had limited and unequal access to agricultural knowledge, information and skills. This is despite the fact that agricultural support and extension services were available in Eldoret and that, as Foeken's (2006) study has shown, professional support does make a difference.

Farmers' education and information forums

The Ministry of Agriculture and Livestock Development, the Catholic Diocese of Eldoret, and private players such as FARMCHEM were among important agricultural extension service providers in the town.

- The Ministry of Agriculture and Livestock Development[7]

The ministry operated an elaborate extension services programme in Uasin Gishu district, of which Eldoret town is the administrative headquarters. The ministry had established six agricultural extension services working units, one for each

[7] Based on interviews with: Agribusiness Development Officer, Ministry of Agriculture and Livestock Development, Uasin Gishu District, 3 July 2007; District Beekeeing/Marketing Officer, 23 July 2007; Divisional Crops Officer, Kapsaret Division, 22 August 2007; Locational Extension Officer, Pioneer Area, 22 August 2007.

administrative division. The district is divided into six divisions, all of which converge in the town. The ministry further established information desks in various areas of the municipality where farmers could access agricultural information and advice on crop cultivation from extension officers on scheduled days (at least twice every month). Occasionally crop cultivators could also be provided with inputs for free.[8] An information desk was established in Langas in 2006, and another one was located at the Kapsaret Divisional office within the town's CBD. The veterinary department was responsible for the provision of extension services and support to livestock farmers, which it did in close collaboration with the department of agriculture. Because both departments of agriculture and livestock were under-staffed and under-resourced, the extension services and technical advice and training were provided on a demand-driven basis i.e. farmers were supposed to go to the extension officers and not the other way round, and farmers were mostly encouraged to mobilize and seek such services in groups.

The annual agricultural shows organized by the ministry's Agricultural Society of Kenya (ASK) at Eldoret showground were other important educative forums for farmers in the town. In addition, various institutions had set up stands on a more or less permanent basis at the showground from which interested farmers could receive information and training on various aspects of farming.[9]

• The Catholic Diocese of Eldoret[10]

Although the diocese's Agriculture and Food Security Programme did not deal with urban farmers *per se*, it covered parts of the municipality. There were two farmers' groups enlisted in the programme in Langas parish; although both groups operated on urban fringes outside of the study area. In any case, the programme did not discriminate against any interested farmers within its spatial jurisdiction – which included the entire municipality – so long as they were mobilized into groups and fitted within the existing programmes and parish structures.[11] Under the programme, farmers were trained in various aspects of modern farming and supported to acquire appropriate farming technologies and build capital assets. The trainings were tailored to the felt needs of the farmers' groups and were conducted in groups, mostly through on-plot demonstrations and occasional field tours.

Where more specialized training was needed, especially for courses and skills that required certification such as Artificial Insemination (AI), selected group

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[8] For instance, in August 2007 extension officers supposedly distributed cowpeas and beans seeds from Kenya Agricultural Research Institute for demonstration.

[9] They include Agricultural Development Corporation, Kenya Seed Company and Moi University.

[10] Based on interview with: Programme Officer, Agriculture and Food Security Programme, Catholic Diocese of Eldoret, 21 August 2007.

[11] The programme used parish structures to mobilize farmers into groups, although membership to the Catholic Church was apparently not a prerequisite.

members would be sponsored for such training. After training, the beneficiaries were expected to train other members of their groups. The diocese would then contribute towards facilitating such groups to utilize the new skills and technologies in improving their agricultural production. For instance, if members of a group experienced problems accessing AI services, a member of the group would be sponsored for AI training as an inseminator. After the training, his/her group would require a semen tank to be able to access AI services. Often the diocese and the concerned group would share the cost of training and/or that of the semen tank.

• Role of private companies: the case of FARMCHEM[12]

Other important avenues for farmer education included demonstration plots established by private institutions, such as FARMCHEM's regional office in Eldoret. A private company that dealt in seeds and agricultural chemicals, FARMCHEM had established a small demonstration garden measuring approximately 80 m^2 around its offices. The garden contained a variety of crops, including *sukuma wiki*, cucumber, tomatoes, maize, carrots and spinach. The purpose of the garden was to demonstrate the quality and productivity of FARMCHEM seeds when the crops are maintained as recommended and the right chemicals applied. At the time of the survey, the garden was a spectacular view of flourishing crops that constantly attracted passersby, who often stopped by to inquire about the seeds, fertilizers and crop husbandry responsible for the impressive crops, especially *sukuma wiki*. The garden attendant revealed that some town residents had sought his assistance in establishing vegetable gardens for them, noting that "When people see how well our *sukuma wiki* has done and the size of the plot, they are encouraged and most of them say that if they could plant such *sukuma wiki* on their small plots, they would greatly save on the cost of vegetables."[13]

Access to extension services and advice

Despite the existence of farmer educational avenues and forums, only a small proportion of the respondents (5%, N=200) had accessed agricultural training, and extension services and advice. The Ministry of Agriculture's information desks were reportedly underutilized by urban farmers, especially women, although the existence and scheduled programmes of the information desks were widely publicized. As the extension officer in charge of the Langas desk explained:

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[12] Based on interviews with: Customer Service Representative, FARMCHEM Regional Office, and demonstration plot attendant, 31 August 2007.

[13] Demonstration plot attendant, FARMCHEM regional office, 31 August 2007.

> On average we receive between six and eight farmers per day. A few come back after a while asking us to visit them and see what they are doing and how they are progressing (…). Usually very few people come to us for advice even if you announce in chief's *barazas* and put up posters informing the public about the dates for our information desk. Maybe people are very busy. Mainly it is men who come to the information desk. Women are not as inquisitive as men about what is happening around them (…). They seem to be so busy with household chores.[14]

Besides the supposed pre-occupation with other activities – and with household responsibilities in the case of women – the limited demand for agricultural extension services may also be explained in terms of the farmers' view of urban agriculture as an insignificant activity undeserving of serious attention.[15] This may relate to the generally limited scale of production as well as to the farmers' ignorance about improved farming techniques and technologies that could lead to higher productivity. Asked whether he required any technical advice or any assistance for that matter, one respondent noted thus:

> I do not see any need of looking for extension officers. I have never experienced any serious problems with my crops. If pests attack my crop, I know which chemicals to apply. I don't need to seek any advice. Besides this is only a small project that does not warrant such efforts.
>
> (Musyoki, 19 May 2009)

Indeed, even the few farmers who received training and technical assistance were sometimes similarly constrained by cultural backgrounds and/or low literacy levels from making the most of such training and assistance. As an officer of the Catholic Diocese of Eldoret observed:

> When you tell a farmer that it makes more economic sense to grow passion fruits as opposed to maize they cannot believe you (…). People believe in growing maize without realizing that they are foregoing more profitable ventures. They are also not able to understand the technical aspects of AI (artificial insemination).[16]

The legal framework for urban agriculture did not augur well for wider reach and effectiveness of extension services either. The restrictions imposed by the municipal council on farming and occasional harassment of urban farmers engendered uncertainties about the future of urban agriculture among urban farmers (see Chapter 5) that may have limited the farmers' interest in or ability to fully utilize extension services. Similarly, some (potential) extension service providers may have held back or scaled down their activities for fear of confrontation with the municipal council bearing in mind the EMC officer's caution (see Chapter 5) that if there were any organizations providing extension services to farmers in the town then such organizations were acting in violation of the existing by-laws.

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[14] Locational Extension Officer, Pioneer Area, 22 August 2007.
[15] Divisional Crops Officer, Kapsaret Division.
[16] Programme Officer, Agriculture and Food Security Programme, Catholic Diocese of Eldoret, 21 August 2007.

And whereas others did offer assistance to farmers regardless, it can be presumed that such efforts would have been more effective had the EMC legal framework been facilitative of urban agriculture in general, and of a coordinated and structured extension services programme in particular. And as has already been noted, some farmers either considered the scale of their agricultural activities as not worth of expert attention, or their own knowledge and experience as adequate.

The group and demand-driven approaches to extension services favoured by the providers also limited accessibility of the services. As was shown in Chapter 4, farmers' groups were rare in Eldoret. Except for the two groups mentioned earlier in this chapter, there were no other known groups operating within the municipality, and certainly there was none in the study area.

Limitations related to farmers' access to structured extension services meant that the farmers relied largely on traditional knowledge and skills and/or informal networks for agricultural information. Many men and women cited their rural farming backgrounds – i.e. the fact that their parents practiced farming in which they also participated – as both the motivation for taking up urban farming, and the basis for their agricultural practices and choices. Several farmers' accounts also pointed to friends, neighbours and family members as other sources of agricultural information. A few other farmers claimed to have gained some farming knowledge and skills in primary school, through the mass media,[17] or by reading agriculture-related literature.

The upshot is that without expert agricultural advice and information, the majority of farmers might have ended up in some cases adapting poor and inappropriate farming practices. For instance, an officer in the veterinary department[18] explained the dangers inherent in a form of 'collective grazing' that was commonly adapted by livestock (mostly cattle) keepers in the town who could not afford to individually hire herders to look after their animals or to buy market feeds. The practice involved day-by-day 'freelance' herders moving from one livestock keeping household to another offering to graze animals at a negotiated day's fee. They would then take away animals from several client households which they would graze around town and in the evening return the animals to the owners. Whereas this practice alleviated labour shortages for such livestock keeping households, it was fraught with health risks related to transmission of diseases both among the animals and between the animals and humans. The practice is also said to cause the problem of in-breeding and cross-breeding due to uncontrolled mating. Also commenting on urban crop cultivators' failure to real-

[17] One farmer reported that he learnt about organic pest control techniques through a radio programme, which he applied on his plot.

[18] District Beekeeping/Marketing Officer, Uasin Gishu District, 23 July 2007.

ize optimal yields from their urban plots, a representative of FARMCHEM noted as follows:

> Farmers want their *sukuma wiki* to be as good as those in our demonstration garden. Often that never happens. They don't use the right inputs. They buy poor quality seedlings from roadside nurseries and plant them anyhow.[19]

There was also little evidence of farmers investing in urban-specific intensification techniques aimed at optimizing the productivity of their limited farming spaces or improving environmental sustainability. For instance, only a few farmers practiced container and sack gardening. Irrigation, zero-grazing, and caged chicken production were rare, while green houses were completely absent in the study area. Exotic livestock and high value crop varieties were also uncommon.

Gender differences in agricultural knowledge and skills

Since the large majority of farmers relied on traditional knowledge and skills, and on informal networks for agricultural information, any differences in levels of agricultural knowledge and skills between men and women may be explained in terms of gender division of responsibility, and relative levels of spatial mobility and formal education. Social norms and gender roles have been known to define division of labour in traditional agricultural production, designating specific activities and tasks as the responsibility of men and women. Thus, men and women from farming backgrounds would be expected to be more knowledgeable about, and more able to undertake and make decisions about different activities and tasks related to the traditional division of labour. Spatial mobility also underpinned the informal social networks through which urban farmers accessed agricultural information. Men's mobility and dominance of the public space also exposed male farmers to agricultural knowledge and information that was otherwise unavailable at the household level or in the immediate neighbourhood accessible to women. It has already been mentioned that women were the least likely to utilize information desks for extension services and technical advice partly because of their domestic work burdens. The role of mobility as a differentiating factor in men's and women's levels of access to agricultural knowledge and information were also implied, for example, by a female respondent who explained her husband's role in accessing and applying agricultural inputs as follows:

> It is he (the husband) who moves around and goes to town time and again so he knows where to purchase the inputs. He is also the one who understands which inputs are required and when and how they should be applied. He has always done so. As for me, I would not even know where to begin.
>
> (Mama Pita, 17 July 2009)

[19] Interview with Customer Service Representative, FARMCHEM, 31 August 2007.

Also implied in the comments above are differences in literacy levels between men and women, which shaped decision-making and division of labour in urban agriculture to the extent that men's higher literacy levels (see Chapter 3) enhanced their amenability to, and comprehension of, more technical agricultural information. They had a higher likelihood of being able, for example, to read and understand instructions related to the appropriate use of the various inputs sourced from the market.

Access to inputs

Urban farmers in Eldoret derived a number of inputs – especially organic inputs – from the local environment. Manure was an important form of organic fertilizer. It was used by 61% of the crop cultivating households, two-thirds of which sourced it from their own plots, one in every five households obtained it from friends and neighbours, and 7% purchased it from suppliers.[20] Crop residues – mainly maize stalks – were also re-used on plots by just over one-third of the farming households. A similar proportion of farmers relied on local seeds and seedlings for crop cultivation. Besides locally available inputs, crop cultivating households also used agricultural inputs purchased from the market. Approximately one-half of the households used chemical fertilizers, improved seeds, and pesticides and insecticides.

It seems, from Table 7.1, that female-headed households were overrepresented among users of local or organic inputs as well as chemical fertilizers, while improved seeds were used to more or less the same extent by both male- and

Table 7.1 Access to inputs for crop cultivation, by gender of household head

Input	Male-headed (n=114)	Female-headed (n=25)
Local/organic		
Manure	59	79
Crop residue	34	40
Local seeds/seedlings	33	44
Market purchased		
Chemical fertilizer	51	60
Chemical pesticides	51	24
Insecticides	18	8
Improved seeds	54	56

[20] Respondents from the remaining households did not specify the source of the manure used on their households' plots.

female-headed households.[21] On the other hand, chemical pesticides and insecticides were applied by male-headed households to a greater extent than by female-headed households (see also Foeken 2006). This could be attributed to prohibitive costs, given women's relatively lower income levels. It could also have been as a result of the women's limited knowledge regarding the use and application of chemical pesticides and insecticides, due in part to their lower literacy levels.

Locally available inputs used by livestock keeping households included animal fodder derived from their own plots, and from other people's plots and open fields. A few cattle keeping households grew animal fodder (mostly Napier grass) on their plots, and others used crop residues – especially maize stalks and leaves – as animal feed. Although prone to contamination, garbage heaps and dumpsites within municipal estates also provided important feeding grounds for urban livestock. Pigs were also fed on urban waste – especially food remains from restaurants and food kiosks. The use of ethno-veterinary medicines was also reported. Besides locally available inputs, many livestock keeping households accessed market-purchased inputs of one kind or another. Of these, veterinary drugs and feed supplements were the most widely used. Table 7.2 shows that the various inputs for livestock keeping were used to more or less the same extent by male- and female-headed households.

Table 7.2 Access to inputs for livestock-keeping, by gender of household head

Input	Male-headed (n=90)	Female-headed (n=27)
Local inputs		
Crop residues	17	15
Urban waste	27	39
Market-purchased inputs		
Improved breeds	8	4
Veterinary drugs	49	50
Ethno-vet. Medicine	8	4
Feed supplements	41	42

The livestock kept were mostly of the traditional variety; in all, improved livestock breeds were raised by only 7% of the livestock keeping households. Although less productive, the former were not only cheaper to acquire but were also considered by the farmers to be more adaptable to local circumstances and less

[21] Although data on the quantities of the inputs accessed was not captured, it is probable that there might have been differences in this respect between the two household categories.

costly to maintain. Besides accessibility of inputs, the choice of livestock and the system under which they were raised also depended on the municipal council's regulations and their enforcement in practice (see Chapter 5). Despite Eldoret Municipal Council (EMC) restrictions against roaming animals, livestock was confined throughout in just about one half of all livestock keeping instances (48%, N=196). The remaining instances involved some form of free range owing to the small size of plots on the one hand, and to a lack of financial capital to afford (adequate) market feeds, on the other hand. Often farmers combined various systems either simultaneously or at different times, and relied on both locally available feeds and market feeds. For instance, as was illustrated by Mhubiri's case in Chapter 5, in order to guard against their pigs being confiscated or killed by EMC, some pig farmers confined their animals during the day and released them at night to scavenge for food away from the authority's view.

Access to social capital

While the role of urban agriculture in building social capital among urban farming households was more evident (see Chapter 8), social capital as a resource in urban farming was less so but nonetheless important. The value of social capital as a resource in urban agriculture can be construed from its role in enabling farming households to access other capital assets as has been alluded to in the preceding sections of this chapter. It should be recalled that 11 households undertook urban agriculture on plots that belonged to friends, relatives and institutions to which they gained access through social connections. It was also noted that social networks of solidarity did enable a few farmers like Auma and her husband to access credit for investment in urban farming. Social capital particularly enabled urban farmers to access organic fertilizers, local seeds and other locally available inputs. As will become apparent in Chapter 9, women were the key decision-makers with regard to sharing such inputs with neighbours and members of their social networks.

Livestock farmers also relied on social connections to access animal fodder on other people's plots. For instance, because of Ezekiel's good relations with his neighbor, Henrieta, he was able to access Napier grass on the latter's plot, which considerably lessened his burden of looking for animal fodder for his dairy cows in the municipality's open spaces. In return Ezekiel shared milk with Henrieta, who had sold her family's dairy cows to foot her late husband's medical bills. Pig farmers too relied on social connections to access urban waste from food kiosks and restaurants, and from grocers and grocery stalls in the town. As shall become apparent in Chapters 9 and 10, informal social networks constituted important sources of agricultural knowledge and information. Men's extensive networks

particularly led to farming households' adaptation of new farming activities and practices. It is through social networks, for example, that Auma's husband, Wandera, learnt about the significance of keeping dairy cows; so was the case with Waswa's decision to cultivate strawberries.

Other constraints to urban farming

Urban farmers encountered various other problems and constraints, besides those related to access to resources (see Appendix 7.1). Cited by two-thirds of the respondents, pests and diseases was by far the most prevalent problem experienced by crop cultivating households, and more so by female-headed households. It should be remembered that female-headed households, perhaps because of their relatively poorer economic status (see Chapter 3), applied pesticides and fungicides to a lesser extent than male-headed households. Other important ecological problems included inadequacy and unreliability of rainfall, and poor land quality. The former was perceived as a problem due to reliance on rain-fed agriculture which made agricultural activities sensitive to rainfall variability. It is noteworthy that a higher proportion of female household heads mentioned poor land quality as a problem, perhaps because of limited access to chemical fertilizers.

Another significant problem was theft of crops, which was mentioned by one in every five respondents. Compared to other Kenyan urban contexts (see Foeken 2006; Foeken & Mwangi 2000; Freeman 1991), this suggests a lower incidence of the problem. However, this is because the present study focused predominantly on backyard farming, while the other studies included open-space plots as well, which are more susceptible to theft if not guarded. It is noteworthy that theft of crops was also perceived as a problem by a higher proportion of women, especially female household heads, than men. Not only were women involved more in the choice of crops to be cultivated and in taking responsibility for the crops, they also exercised greater control over the use of crop products and income (see Chapter 9 and 10). As such, women were more directly affected by the loss of crops. Generally, theft was mostly done on a small scale for consumption purposes. This was common with vegetables, especially *sukuma wiki*, but also with green maize. Children were commonly mentioned as the primary culprits in the theft of green maize. For this reason, some farmers resorted to planting maize as a means of deterring their children from straying into their neighbours' plots even if maize cultivation was not the most productive use to which the plot could be put. As Njeri explained:

> We grow maize because when the season for green maize comes, children normally crave it and if you don't have it on the plot they may be tempted like other children to go into other people's maize and steal. And you can't even think of buying it on the market because it is usually very expensive. So we are forced to grow maize although it is unprofitable and a

> waste of space to grow maize for food. I harvest only six *gorogo* (i.e. approximately 12 kg in all) from the plot. But if I were to grow vegetables instead, I would get enough money to buy more than three sacks of grain (about 270 kg).
>
> (Njeri, 19 May 2009)

Besides theft, some farmers with unfenced gardens also complained about destruction of crops by livestock. Marketing of crop produce did not seem to be a problem for most farmers. Not only was there a ready market for the produce, often within their neighbourhoods, many farmers realized only limited surplus that could be sold.

As with crop cultivation, pests and diseases was the most prevalent constraint experienced by livestock keepers, and it seemed to concern women and especially female household heads a little more (see Appendix 7.2). It should be remembered that the proportion of livestock keepers was slightly higher among female-headed households than male-headed ones. Furthermore, chickens, which were some of the most commonly affected livestock, were more associated with women. Since some livestock keepers were also concerned about a lack of financial capital and the high cost of inputs, they mostly resorted to rearing traditional breeds which were considered to be less susceptible to diseases and more resistant.

Other problems perceived by respondents as constraints to livestock keeping included conflict with neighbours, labour shortages, and theft of livestock. Animals straying into other people's plots and destroying crops was the main source of conflict, although pig farmers additionally faced complaints about bad odour and nuisance caused by pigs. As a problem, conflict with neighbours was mostly experienced by women, perhaps because women were the ones mostly available at home and therefore the most likely to be confronted by complainants. Shortage of labour was also perceived as a problem, especially among cattlekeeping households. Labour shortage related both to household composition and households' inability to hire external labour due to lack of financial resources. But as Mudavadi[22] explained, the unreliability and lack of commitment of such labour discouraged livestock keepers from looking outside their households for labour.

> Mudavadi came to realize how difficult and burdensome it was to keep four cross-breed dairy cows when the herdsman he had hired to look after the animals abandoned his job one morning, forcing Mudavadi to cancel all other engagements in order to take over most of the work, including grazing the animals in open spaces and searching for animal fodder from people's plots. Unable to trust any other person with the job, he subsequently sold the three cows and instead bought one pure breed dairy cow, which he found to be not only more manageable labour-wise, but it also produced more milk and over longer durations.

Considering that the keeping of large livestock was mostly multi-tasked and labour intensive, it is not surprising that female household heads – mostly be-

[22] Interviewed on 1 July 2009.

cause they did not have adult males in their households nor financial resources to hire external labour – would be more affected. While the proportion of respondents who cited theft of livestock was small, during the post-election violence – which occurred after the survey fieldwork – many livestock keepers lost their livestock to marauding gangs (see Chapter 4).