Ibaren Konsultants

Urban and Peri-Urban Livestock Keeping Among the Poor in Kampala City

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Executive Summary

Livestock Production among the Urban and Peri-Urban poor is a sector that has not received the due attention it deserves. Livestock keeping in urban and peri-urban Kampala City has grown over the years. While livestock have always been kept within Kampala City area, this practice gained significance with the onset of substantial economic hardships in the early 1970's. Growth has since reflected the economic cycles Uganda has gone through as more people participate in a bid to offset gap between wages and felt needs. The growth of urban/ peri-urban livestock keeping has also been an entrepreneurial response to period of rapid urbanization that saw the increase in demand for livestock products.

While Kampala City Council has officially recognized the importance of the contribution of urban and peri-urban livestock keeping to the livelihood of its residents, there is evidently a legislative gap while the Council seeks to re-orient itself to the new position. A participatory consultative process that captures the perspectives of the poor livestock farmers is needed to ensure that the legislation and guidelines are implementable and will improve the productivity and the livelihood of the poor households. There is a need for networking and for institutions that will represent the poor urban and peri-urban livestock keepers in the consultative and other development fora.

Both rich and poor households participate in livestock keeping with Kampala City. The poor face unique challenges due to the lack of resources and therefore limited access to services and supplies. The poor participate in livestock keeping as they realize better incomes from sale of livestock products than from crop production per unit area. They are also able to benefit from by-products like manure. Livestock provide moblizable savings for critical periods/needs, and productivity can be targeted to meet peak festive season market demands.

There are gender/ social patterns of participation in livestock keeping in Kampala City: most livestock keepers are from the Baganda tribe, which dominants Central Uganda. While most of the households that are involved in livestock keeping are male headed, women carry the brunt of livestock activities. Children participated in livestock management, but owned only rabbits and chicken. Widows and the retired make up a significant proportion of the livestock keepers, underscoring the social safety net role of livestock keeping in Kampala City.

Most livestock keepers entered into the enterprise through their own savings but relatives and NGO's were also sources of stock. Zero grazing, tethering, paddocking and communal grazing were the main production systems. Costs of labour, feed and medical treatment dominated production budgets. Livestock keepers made use of available/ alterative feed sources such as crop resides, kitchen waste, roadside grasses and garbage heaps to supplement commercial feeds. Farmers resorted to indigenous treatment to offset the high cost of veterinary treatment. Major constraints were feed availability and quality, disease, access to technical services, shelter provision, high production costs and space. Manure disposal especially for pigs was also a major constraint.

Poor livestock keepers have little influence on, and access to productive services such as credit, animal health services, information, training and extension, all of which are generally oriented to the rich. Animal health services leave a lot to be desired with major constraints being expensive drugs, and service, distance to stockists, adulteration of drugs and limited access to qualified veterinary personnel especially veterinary doctors.

Neighbours and friends and radio are the major information channels. Parents also play an important information role. Radio therefore provides an important media dissemination avenue for research and extension services. While participation still remains low, the trend indicates that more and more livestock keepers are being trained over the years.

Opportunities exist for poor urban and peri-urban livestock keepers. The economic climate provides for increase in farm gate markets, and for the development of small-scale cottage

industries and provision of auxiliary services. The rapid urbanization also provides opportunity for exploration of non-traditional livestock products.

There remain research needs, however, it is evident that there are knowledge gaps that can be addressed immediately through dissemination of information, and via training or demonstration sessions.

The main challenges therefore are (i) how can poor livestock keepers be provided with the appropriate knowledge and skills in order to optimize the social and material benefits that can be derived from livestock keeping (ii) how can the poor livestock keepers be empowered to influence policy to enable them access productive resources and services?

CONTENTS

Table of Figures

List of Tables

List of Appendixes

Urban and Peri-Urban Livestock Keeping Among the Poor in Kampala City

Chapter 1. Justification for the Study

Kampala City, the capital of Uganda is experiencing rapid growth as the main urban centre in Uganda. The city's population, with an annual growth rate of 4.9 % doubled from 774,241 in 1991 to close to 1.5 million in 2000 (Atukunda 1999, Rakodi 1997). In the 1970's Kampala, like other urban centres in Uganda experienced reverse migration due to severe economic hardship (Rakodi 1997). This trend was reversed in the 1980's and continued through the 1990's (Rakodi 1997). This growth is marched with the expansion of urban and peri-urban agriculture and livestock keeping evidenced by the presence of gardens and roaming livestock (Jamal and Weeks 1993). It is estimated that up to 70% of eggs and poultry meat meeting the demand of urban dwellers in Kampala originates from urban and peri-urban livestock holdings (Maxwell and Zziwa 1997).

However, although the Kampala City landscape manifests the realities of livestock keeping, city authorities and planners until 1995 did not acknowledge the presence of this food security and income generating strategy. Legislation and law enforcement therefore worked against urban and peri-urban livestock keeping. Since 1995, the Kampala City Council (KCC) has officially recognized urban agriculture and livestock keeping, and the Kampala Structural Plan, the main implementation document of the KCC, has incorporated elements of urban and peri-urban agriculture. However, livestock keeping still apparently lags behind with little literature documenting similar strides as have been made in supporting urban agriculture.

Some of the livestock produce originating from urban and peri-urban Kampala comes from middle to upper class holdings ranging from small-scale backyard to large commercial holdings. These livestock keepers receive or can access government and private veterinary services and supplies, and either receive approval of and or do not experience harassment from city planners (Waters-Bayer 1995)

However, Maxwell and Zziwa (1997) noted that 72% of those practicing urban and peri-urban farming are in the low-income bracket i.e., the poor. Many of these are also classified as the "the rural landless" as they migrated to urban and peri-urban areas due to land shortage in the rural areas. This category of livestock keepers is not able to access government and private services, and are either forbidden or ignored. However with the deteriorating economic conditions and rapid urbanization, this category of livestock keepers continues to expand (Waters-Bayer 1995).

Gender issues are evident within the poor livestock keepers especially issues concerning women who comprise the majority of the poor urban and peri-urban practicing agriculture and livestock keeping (Maxwell and Zziwa 1997). Women have the key role of ensuring food security in their homes.

This scoping study was undertaken to generate information to provide guidance for the development of research to improve urban and peri-urban livestock production among these poor livestock keepers many of whom do not have the option to re-migrate to the rural areas, or stand a better chance of survival in the urban and peri-urban areas of Kampala City.

Chapter 2. Approaches and Methodology

2.1 Introduction

The Terms of Reference (ToR) for this study stipulated that a limited survey would be taken of representative communities i.e., poor livestock keepers in the urban and peri-urban areas of Kampala City. Both grey and official literature was to be sourced for appropriate information. The research team approached this as a "scoping" study that would document the status of the poor livestock keepers, highlight knowledge deficiencies, and identify research opportunities of both reactive and predictive nature.

2.2 Study Area

Definition of urban and peri-urban zones around a city is perhaps the biggest source of contention among researchers on urban and peri-urban issues (Mougeot 1999). Criteria cited by various researchers to demarcate the boundaries of urban areas include population sizes, density thresholds, official city limits, municipal boundaries etc. (Mougeot 1999).

The definition of peri-urban areas, that are on the fringe of rural zones, is even less standardized (Mougeot 1999). Criteria vary from defining peri-urban areas in terms of combinations of farm and non-farm activities, i.e., the zone where this combination can be maximized, or as areas that suffer land shortage, and urban pollution (Mougeot 1999) Other researchers define peri-urban areas as those that have growing land market pressures and changes in agricultural production (Mougeot 1999). The outer limits of peri-urban areas are also defined by a number of criteria including maximum distance from which farmers can supply perishables to the urban centres on a daily basis and the distance urban residents could travel to their farms on a daily basis (Mougeot 1999).

Kampala City Council apparently does not make any distinctions between urban and peri-urban Kampala. However, for the purposes of this study, the urban zone of Kampala City/district was demarcated as the inner 5-km radius, and peri-urban as a hinterland of a distance of 5 - 10 km outside its perimeter. Kampala district has four divisions, which are administrative zones, but only four were covered i.e., Nakawa, Central, Makindye and Kawempe. These divisions were selected randomly along an East to West transect.

2.3 Research Tools

2.3.1 Secondary Data and Literature Review

Background information was derived from both published and unpublished sources. This information was obtained from a variety of institutions dealing with livestock, public health, policy and the environment.

2.3.2 Interview of Key Informants

The key informants who were best able to inform on particular topics were identified and interviewed. These included among others livestock keepers, the appropriate departments of Kampala City Council, Local Councils at divisional and village level (i.e., LC III and LC I), veterinary and agricultural professionals, agricultural research and training establishments, NGO's/CBOs, micro-finance and rural credit institutions working among the poor in the city etc.

2.3.3 Household Questionnaire

A household questionnaire was designed to survey the key issues pertaining to household involvement in livestock keeping in urban and peri-urban Kampala. The questionnaire covered issues relating to family structure, land ownership, principle sources of household income and issues affecting livestock production and management (See appendix 1). A total of 184 farmers were interviewed from four of the divisions of Kampala District i.e. Nakawa, Central, Makindye and Kawempe.

2.3.4 Focused Group Discussions

Two focused group discussions were conducted with urban livestock keepers using participatory rural appraisal techniques to identify, verify and further explore key issues. This provided a forum for discussing issues relating to livestock production some of which were rather sensitive and could not be broached during the questionnaire administration. In order to derive different points of view, the groups were structured to comprise of farmers, local leaders and extension workers. Another objective of the focus group was to identify and discuss general trends in livestock production over the years in Kampala district. During the Participatory Rural Approach (PRA) discussions, farmers ranked their constraints and gave suggestions for research and development topics (Appendix 2). In both cases more than 50%of the participants were women.

2.3.5 Interviews for the Veterinary Input Suppliers, District Veterinary Officials, and Divisional Production/ Animal Production Officers

A checklist targeting the veterinary service providers and suppliers was administered to various appropriate categories including traders who supply drugs, veterinary services, extension workers, NGO's and local council staff (see Appendix 3).

Chapter 3. Kampala City

3.1 Urban and Peri-urban Areas of Kampala City: Boundaries and Demography

Kampala City, which is located in central Uganda close to the shores of Lake Victoria, is the capital of Uganda. The start of the city dates back to 1350 when it was known as the Kibuga, the seat of the Kabaka (traditional King) of the Buganda Kingdom (Atukunda 1999). The Kibuga become a host to Colonial settlement in 1890 when the first European explorers and missionaries came to Uganda (Atukunda 1999). It is however, apparent that Kampala grew separate from the Kibuga as in 1964-1966 the United Nations and World Bank Mission recommended that the two be merged to form the Greater Kampala effectively expanding the city area by more than twice its size from 75 square km to 198 square km or close to 0.08% of the country (Atukunda 1999). Kampala is the largest urban settlement in Uganda, standing at 13 times the next urban centre, Jinja, and accounting for approximately 42% of the urban population (Atukunda 1999). The prominence of Kampala may be diminishing due to the devolution of power to the districts which has encouraged the growth of other urban centres.

Kampala is also the largest local government administrative unit. Kampala district is sub-divided into five divisions: Rubaga, Kawempe, Nakawa, Makindye and Central division Appendixes 4 – 9). Nakawa and Makindye divisions are the largest covering 46.5 sq. km and 40.7 sq. km respectively, and Central division is the smallest with an area of 14.7 sq. km (MFPED – UPPAP 2000). The five divisions are further sub-divided into a total of 99 parishes and 811 villages (Atukunda 1999).

Kampala is located in a fertile hinterland characterized by hills with steep slopes and an extensive wetland system which has been greatly encroached upon (Atukunda 1999). Kampala has a bimodal rainfall pattern with the total rainfall of between 1500-2000 mm falling in March to May and August to December, with short dry spells in between (Atukunda 1999).

The population of Kampala has grown and shrank in response to economic pressures. Until the late 1960's there was a positive influx of migrants into the city. However, significant reverse migration was experienced in the 1970's due to the economic crisis which resulted in mass civil service decapitation and retrenchment, cutbacks in transfers, rapid increases in food and other commodity prices, and a general weakening of the social safety net (Maxwell et al. 1998, Rakodi 1999). The 1980's saw a return of inward migration, a trend that continued through the 1990's, with an annual growth rate of 4.9 compared to 3.0 in the 1960's to early 1980's (Rakodi 1999). Three other urban centres in Uganda reported higher annual growth rates than Kampala City i.e. Masaka 5.0, Mbale 6.1, and Entebbe 6.6 for the period 1980-

1988, while the average annual growth rate for all urban centres was estimated at 5.0 (Rakodi 1999).

The current population of Kampala depicts a diurnal pattern with the population swelling to 1,500,000 during the day, and falling by as much as 500,000 at night when people move into the outskirt residential and rural areas (Atukunda 1999). The population of Kampala City grew from 300,000 people in 1968, and doubling by 1991 to a population of 750,000 (Atukunda 1999). The population distribution according to the 1991 population and housing census is 24%, 23%, 20%, 18% and 15% respectively for Makindye, Rubaga, Kawempe, Nakawa and Central divisions.

The 1991 population and housing census report indicates that the Kampala population is young with 40.3% of the population below 15 years, and 67% below 24 years. Out of the 67%, 20.37% are pre-school age, 19.64% are of primary school age, and 29.99% comprise the youth population. 34% of the total population is economically active. This indicates that (i) there is a high level of dependency due to a large proportion of the population below 15 years of age, and (ii) youth and children contribute to the workforce. According to the 1991 population and housing census report, Kampala City was estimated to have 182,439 households of which 30.95% were female headed, and 69.05% male headed. The average household size stood at 4.2 persons.

Appleton (1998) indexed the major primary sectors in which the household heads in Uganda were involved. Food crop production was the major primary activity of household heads in Uganda with 44% of the household heads falling in this sector. Other major sectors included cash crop production (27.1%), trade (6.7%), government services (5.6%), those not working including pensioners (4.8%), manufacturing (3.4%), miscellaneous services (2.1%), non-crop agriculture, which includes livestock keeping (2.0%), transport/communication (1.9%), construction (1%), hotels (0.9%), mining (0.2%) and public utilities (0.1%).

A survey carried out by Maxwell and Zziwa between 1988 and 1989 found that 36% of all Kampala households were involved in some kind of urban agriculture or livestock keeping, with women making up most of the farmers (Maxwell and Zziwa 1992, Atukunda 1999). The 1991 population and housing census report indicates that 3.4% of all households in Kampala are dependent on livestock production. The most common form of livestock production was poultry rearing (Maxwell and Zziwa 1992). Indeed the urban, peri-urban livestock enterprises meet close to 70% of the poultry product needs of Kampala City dwellers (Maxwell and Zziwa 1992).

3.2 A Brief Historical and Evolutionary Background of Livestock Keeping in Kampala City

Bigsten and Kayizzi-Mugerwa (1992) commented, "*In Kampala, where besides the city centre most empty spaces are covered by perennial crops, one gets the feeling that the rural sector is overtaking the city instead of the reverse*. Livestock scavenging on refuse dumps and "road-runners" or urban chicken are a common sight in Kampala City. These statements highlight the reality of urban and peri-urban livestock keeping in Kampala City.

The phenomenon of urban and peri-urban livestock keeping in Kampala City is however not a recent development. Amis (1992) and Bibangambah (1992) assert the invasion of Kampala City by subsistence agriculture and livestock keeping is symptomatic of economic collapse, which has presented itself in cycles since the independence of Uganda in 1962. Uganda experienced severe economic crisis in the 1970s and 1980's through to 1985 due to poor governance and wars which affected the whole country including urban centres like Kampala City. Gutkin (1974) and Rakodi (1997) noted that before the crisis periods of the 1970s and 1980s few urban dwellers in African cities were able or willing to grow their own food, mostly relying on rural food supplies. Urban agriculture and livestock keeping thus became a strategy of survival for urban households during the crisis period. However, Rakodi (1997) noted that today, beyond the crisis periods of the 1970s and 1980s, urban and peri-urban agriculture and livestock keeping is flourishing and indeed rising and is still critical to the food security of many urban households. This could reflect the impact of structural adjustment policies such

as massive retrenchment of a large percentage of the civil service, devaluation of the Uganda shilling against the dollar, increase in the cost of imported inputs etc. increasing the number of households dependent on producing their own food including livestock products (Rakodi 1997).

Smith and Olaloku (1998) however present another reason for the apparent upward trend in urban and peri-urban livestock keeping. They postulated that it is also a response to market demands to meet the rapid urbanization. Livestock production meets specialized food requirements of city dwellers and contributes to the national food security (Smith and Olaloku (1998). The growth of urban and peri-urban livestock keeping in Kampala City can be thus be attributed to households strategizing during economic hardship as well as a response to market demands.

Figure 3.1. captures the times when livestock keepers surveyed during this study entered into livestock keeping. The peak entry points in the 1970s and 1980's reflect the peak crisis periods in Uganda. The rise in number of entrants into livestock keeping in 1990, and the continued high entry through the 1990s could reflect a rapid rise in urbanization due to inward migration to Kampala City. Rapid urbanization increases market demand for livestock products. The rise in numbers of persons entering into livestock keeping could also mirror a response to the negative effects of structural adjustment programs that were imposed during the late 1980s, and whose impacts were most evident in the early to mid- 1990's. ILO-JASPA (1992) reported that between 1991 and 1994, up to 80,000 civil servants, i.e., 26% of the civil service, was retrenched.

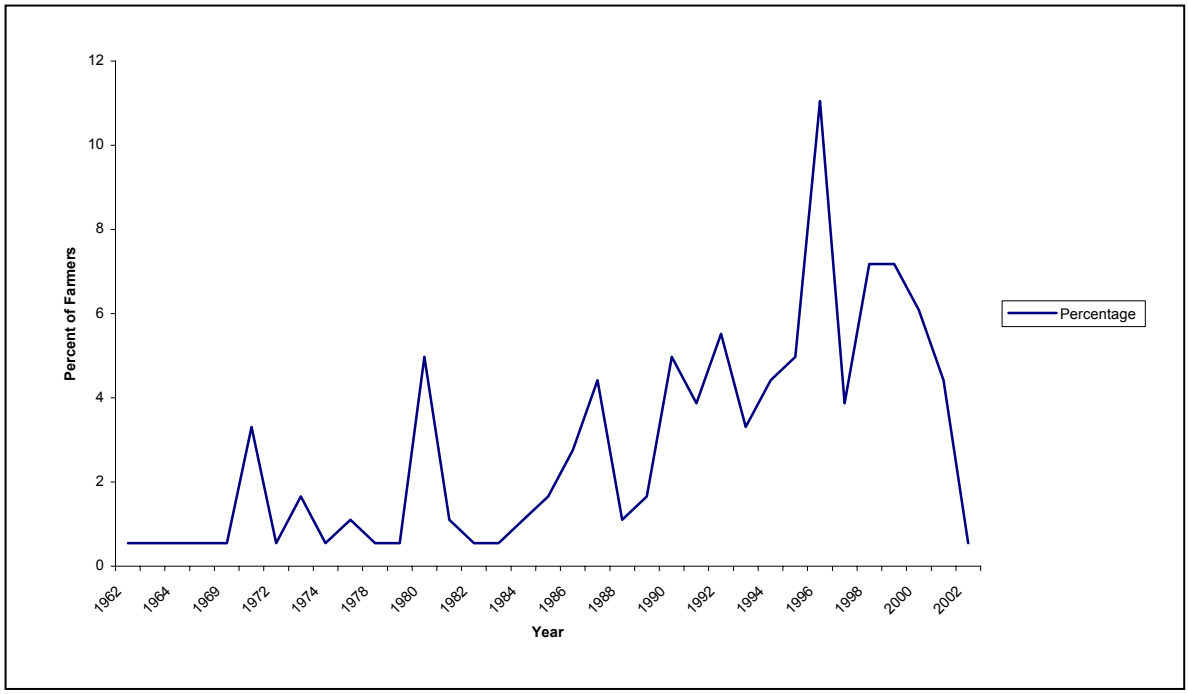


Figure 3.1. Percentage of farmers who entered into livestock keeping over the years. The trend of entry reflects the peak economic crisis periods in Uganda early 1970's, and early 1980's which were characterized by civil strife. The peak in the late 1980's may reflect the effect of the Structural Adjustment Plans, and the rise in entry points in the 1990's the rapid urbanization of Kampala City

There is scarce literature and data on livestock keeping in Kampala City. A study conducted by Maxwell and Zziwa between 1988 and 1989 and documented in their report (1992) found that 36% of all households were involved in some type of agricultural and or livestock production. Women prevailed as the dominant producers. A large majority i.e., 63.3 percent of those farming produced for self-consumption, only 7.3% were engaged in commercial production, and nearly one in four i.e., 23.3 % produced both for home consumption and sold some of their produce to supplement income. Poultry keeping, for eggs and meat, was the

most common type of livestock production, contributing 70% of poultry product needs of Kampala City. Involvement in urban and peri-urban agriculture and livestock keeping cut across socio-economic classes with 3 % of the households surveyed falling in the high income bracket, 24 % in the middle income bracket with a the greater percentage of the households i.e., 72.3% falling in the low income bracket. Maxwell and Zziwa (1992) found that urban and peri-urban agriculture and livestock keeping was primarily part of a survival strategy among the low-income bracket, but also contributed to the survival of the middle-income population.

The significance of agricultural and livestock production among the urban and peri-urban poor can not be underestimated. Food looms large in the household budgets of the urban and peri-urban poor. Rakodi (1997) reported that food came to dominate the budgets of the urban and peri-urban dwellers in the 1980's. The number of poor households participating in urban and peri-urban farming warrants support of this survival strategy. Waters-Bayer (1995) also reports an interesting phenomenon in African countries struggling with the impacts of Structural Adjustment Programmes of which Uganda is one. Waters-Bayers (1995) observes that while small scale livestock keeping is on the upward trend in cities, commercial/ large-scale livestock is on the decline due to the high costs of imported inputs and the downward trend in "luxury" markets as city populations resort to buying the cheaper farm gate produce. This emerging trend also emphasizes the need to support the poor urban and peri-urban livestock keepers.

In Kampala City, until recently, urban and peri-urban livestock production was in contravention of legal city statutes (Atukunda 1999). Of the total households surveyed by Maxwell and Zziwa 27%reported some form of harassment by city law enforcement officials. In 1995, Kampala City Council recommended changing the status of urban and peri-urban agriculture and livestock keeping from illegal to legal with accompanying regulations to promote the practices. This recommendation was formalized in the city's long-term plan, the Kampala Structural Plan (Atukunda 1999), however, implementation has been the biggest challenge. Consultations for sectors were made with the DVO Kampala and other organizations made submissions for livestock production to KCC. The urban livestock strategic plan has not yet been finalized and made public.

3.3 Contribution to Household Economy and Food Security

3.3.1 Household Economy

The contribution of livestock keeping to household welfare can be compared to the performance of other major sectors in terms of their contribution to poverty and poverty alleviation. Literature for sectoral performance for Kampala City is not available. However, in a national study, Appleton (1998) disaggregated poverty statistics from 1992 and 1995 for household heads by economic sector. Household heads were assigned to the sector of their primary activity. Livestock keepers fell under a sector designated by Appleton as non-crop agriculture, but here designated as the livestock sector.

In 1992, most household heads in Uganda (70%) were in the crop sector with 47.2% in food crop, and 23.5% in cash crop growing (see figure 3.2 and table 3.1). Only 2.6% of the household heads were in the livestock sector. Other major sectors included: government 6.8%, trade 6.7%, while 4.3% of household heads were not working. The livestock sector, although considerably small, was therefore the sixth largest economic sector in 1992.

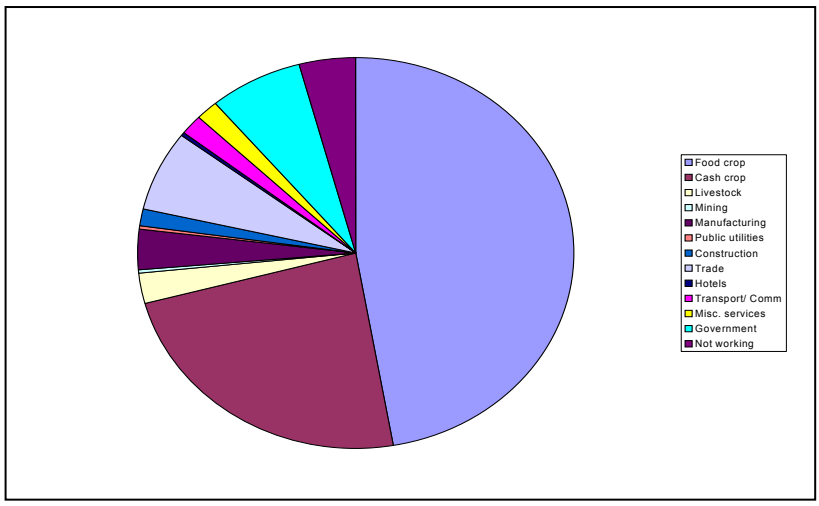


Figure 3.2: The national population share of household heads in each major economic sector in 1992. (Adapted from Appleton 1998)

Table 3.1. indicates that in 1995 the national share of household heads whose primary occupation was livestock keeping shrank by 23% from 2.6 in 1992 to 2.0. this evidences movement out of the livestock sector. In the same period the food crop sector shrank by 6.5% from 47.2 in 1992 to 44.1 in 1995. The government sector also recorded a massive drop by 17.6%. The share of household heads not working grew by 11.62%, and the manufacturing sector recorded considerable growth by 161% from 1.3 in 1992 to 3.4 in 1995. The trade sector recorded no growth remaining at 6.7%.

Table 3.1 Poverty by Sector of Household Head for 1992 and 1995

Sector	Pop. Share	Mean CPAE	P0	P1	P2
1992					
National	100	7091	55.6	20.3	9.92
Livestock production*	2.6	6947	51.7	21.2	10.62
Food crop	47.2	5711	64.1	24.5	12.30
Cash crop	23.5	6087	59.6	20.5	9.63
Mining	0.1	8471	43.4	8.4	3.49
Manufacturing	1.3	8211	46.3	16.0	7.65
Public utilities	0.1	9203	43.3	5.7	1.72
Construction	1.3	11311	38.3	10.6	4.00
Trade	6.7	12384	26.4	7.8	3.41
Hotels	0.5	9911	26.6	7.7	2.86
Transport/ Communication	1.5	10309	31.9	11.2	5.33
Miscellaneous services	1.7	13534	27.7	10.0	4.75
Government services	6.8	11161	33.5	10.1	4.24
Not working	4.3	6835	59.8	24.4	12.58
1995					
National	100	8313	45.6	15.1	6.96
Livestock production	2.0	8773	41.0	13.4	6.38
Food crop	44.1	6184	58.3	20.7	9.94
Cash crop	27.1	8069	40.5	10.5	4.01
Mining	0.2	6044	0.9	0.5	0.22
Manufacturing	3.4	11167	14.2	3.5	1.25
Public utilities	0.1	15007	0.0	0.0	0.0
Construction	1.0	10083	16.9	2.8	0.68
Trade	6.7	14377	16.7	3.7	1.33
Hotels	0.9	12036	8.8	1.2	0.18
Transport/ communication	1.9	15337	12.5	3.2	1.09
Miscellaneous services	2.1	11747	20.1	4.7	1.76
Government services	5.6	12755	26.2	7.1	2.68
Not working	4.8	7975	62.1	29.0	16.58

CPAE = Consumption per adult equivalent
* Appleton (1998) designated this sector as non-crop agriculture
Where: The Foster-Greer-Thorbecke, $P\alpha$ statistic is used. It is defined as: $P\alpha \equiv 1/n\ \Sigma i = 1,n\ \{max[z-ci,0]/z\}^{\propto}$. Where n is the number of individuals in the population, z is the poverty line, ci is the welfare measure (consumption per adult equivalent); and $\propto$ is a parameter. P0 is the headcount – the proportion of people living below the poverty line. Most often the index used by policy makers as it is easy to interpret. However it is insensitive to changes in the welfare of the poor that do not take them above the poverty line. P1 is per capita aggregate poverty gap i.e., the mean shortfall of the welfare of the poor from the poverty line, expressed as a proportion of the poverty line and averaged across the population as a whole. It is one measure of the minimum cost of eliminating poverty through perfect transfers, but is insensitive to transfers amongst the poor e.g. from the less poor to the very poor. P2 is sensitive to transfers. Discussions here are based on P0. Taken from Appleton 1998

In 1992, the food crop sector was the poorest with 64.1% of those in this sector falling below the poverty line with a consumption per adult equivalent (CPAE) of 5711 against the national average of 7091. The livestock sector was ranked 4th poorest with 51.7% of the livestock keepers below the poverty line and a CPAE of 6947. The best performing sectors were trade 26.4%, hotels 26.6%, and miscellaneous services 27.7%. The government services sector performed modestly with 33.5% below the poverty line.

In 1995, the national poverty rate fell by 17.98% from 55.6 in 1992 to 45.6. Although the livestock sector was still ranked as the 4th poorest in terms of proportion of the household heads living below the poverty line, the proportion of the poor in this sector fell by 20.69% to 41.0. The sector that recorded the highest improvement in terms of reduction in proportion of household heads below the poverty line P0, was the Public utilities sector (74.8%) (Figure 3.3). Other sectors that performed strongly for this criteria were transport and communication 55.2%, manufacturing 39.7%, trade 36.7%, hotels 36.1%, cash crop 32%. Government services sector performed slightly above the 8th ranked livestock sector, with a 21.79% reduction in proportion of poor living below the poverty line. For this criteria in general the non-farming activities made greater strides even though Uganda is agricultural based. The proportion of those households below the poverty line increased in the non-working sector by 3.8%, and in the mining sector by a large 71%. (Appleton queried the validity of the mining figures due to the small sample size).

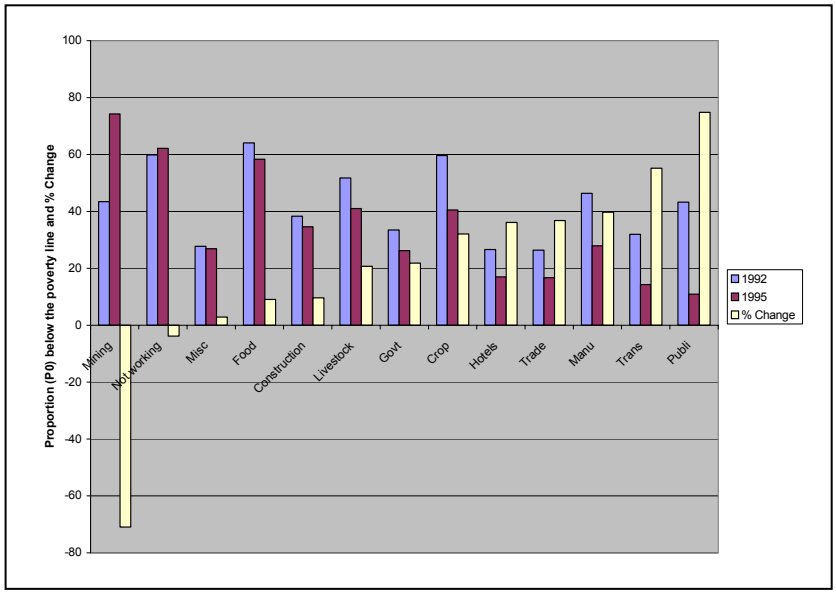


Figure 3.3. The proportion of household heads living below the poverty line for each of the major economic sectors in 1992 and 1995, and the percentage change over the same period (1992-1995). Adapted from Appleton, 1998.

Appleton further decomposed the national change in poverty into the effects of changes in poverty within the sectors (Table 3.2). This provides an indication of how the improvement in a given sector contributed to the national improvement in poverty between 1992 and 1995.

Table 3.2 Sectoral decomposition of changes in poverty between 1992 and 1995 relative to the poverty line

Sector	P0	P1	P2
Livestock production	2.8	3.9	37.6
Food crop	27.1	44.9	44.7
Cash crop	44.8	3.9	3.7
Mining	-0.3	-0.1	0.0
Manufacturing	6.6	5.1	5.0
Public utilities	0.3	0.1	0.1
Construction	0.5	0.6	0.5
Trade	6.4	5.2	4.7
Hotels	0.5	0.3	0.3
Transport/ communication	2.6	1.5	1.3
Miscellaneous services	0.1	0.0	0.1
Government services	4.9	3.8	3.6
Not working	-1.0	-3.8	-5.8

(Taken from Appleton 1998)

The cash crop sector accounted for over 44% (Figure 3.4.) of the national improvement in poverty (Appleton 1998). However, while some sectors had performed better than the livestock sector in terms of reduction in headcount of poor household heads, the livestock sector made the sixth largest, though modest contribution to the reduction of national poverty. Households with heads who were not working had a negative contribution towards the improvement in national poverty statistics, as did those in the mining industry.

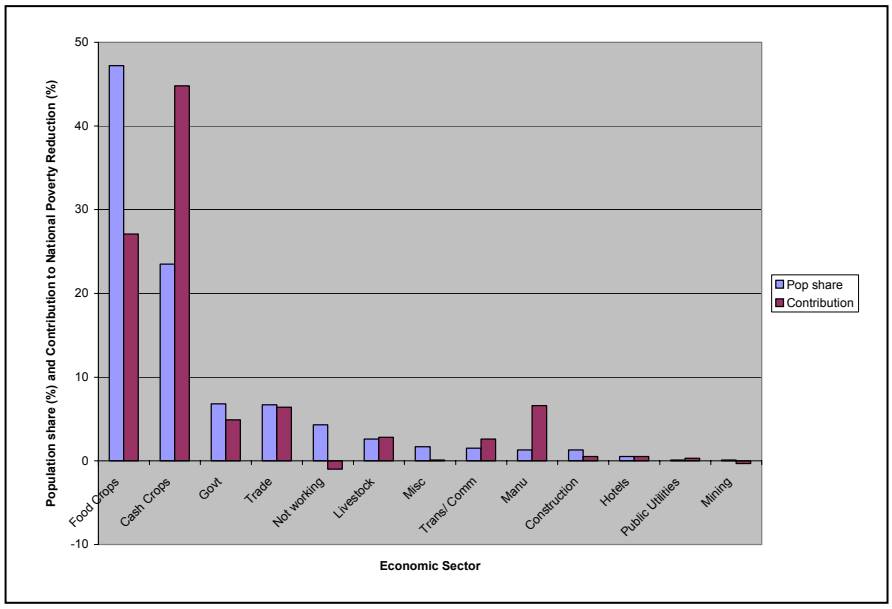


Figure 3.4. The contribution of the sectors to the improvement in national poverty between 1992 and 1995 in relation to the size of the sector in 1992. Adapted from Appleton, 1998

The livestock sector is small, with a national share of 2.6% in 1992, with 3.4% of the households in Kampala City in 1991 recorded as being dependent on this sector. Over the period 1992 through 1995, poverty decreased modestly in the livestock sector though other sectors performed better. The contribution of the livestock sector to improving the national poverty statistics is also modest. While the above conclusions have been drawn based on national statistics, they provide useful indicators for urban and peri-urban livestock keeping in Kampala City.

These statistics must be examined in the light of the fact that 40% of the women household heads cited livestock keeping as their primary activity, with 41% getting their main income

from livestock keeping. Also 33% of those livestock keepers with no education, and 27% of those with only a primary education cited livestock keeping as their primary activity. These are vulnerable groups whose opportunity to join other sectors may be limited by lack of resources and education level.

3.3.2 Food Security

Food security incorporates measures of availability and access to adequate food of good quality at all times by a household. Food security is traditionally a female domain in Uganda. The national food poverty line is 11463 Uganda shillings (1993 rates), however, food prices are markedly higher in some areas of Uganda, particularly urban areas (Appleton 1998). Mean consumption per capita are given in Table 3.3. below.

Table 3.3 Adjusted comparison of mean consumption per capita as calculated in official reports from the Integrated Household Survey in 1992 (10000 households), and from monitoring surveys (5000 households) in 1993, 1994, and 1995. Estimates for a survey carried out between March and November 1997 are also given (Uganda shillings/ per month)

Region	1992	1993	1994	1995	1997
For the whole country	11574	13195	15221	17499	20541
For rural areas	9547	10116	12470	14303	17210
For Urban areas	25869	34092	34334	37194	42024

(Adapted from Appleton, 1998)

In general the predicted food share in Central urban is less than for the nation and for Central rural areas, and food poverty lines are higher. However, one in every eight Kampala City dwellers was below the food poverty line (Table 3.4).

Table 3.4 Poverty lines for Central urban and rural in comparison to the national average (1993 prices)

Region	Predicted food share	Poverty line (national prices)	Food poverty line (nominal)	Poverty line (nominal)
Central urban	0.490	17374	14837	22409
Central rural	0.609	15947	13971	19435
National (average)	0.566	16443	11463	16443

(Adapted from Appleton 1998)

Appleton (1998) in a national study found in 1992 that 38.1% of the household heads in the livestock sector were below the food poverty line making the livestock sector the third poorest in reference to the food poverty line (Table 3.5). The poorest sector was those who were not working with 43.4% below the food poverty line, followed by the food crop sector with 43.8% below the food poverty line.

Table 3.5 Poverty defined relative to the food poverty line by sector of household head

Sector	Pop. Share	Mean CPAE	P0	P1	P2
1992					
National	100	7091	35.3	11.1	4.85
Livestock production*	2.6	6947	38.1	11.9	5.17
Food crop	47.2	5711	42.8	13.9	6.28
Cash crop	23.5	6087	35.9	10.7	4.42
Mining	0.1	8471	9.0	3.4	1.73
Manufacturing	1.3	8211	26.7	7.8	3.62
Public utilities	0.1	9203	11.0	1.8	0.29
Construction	1.3	11311	17.4	3.4	0.91
Trade	6.7	12384	12.0	3.4	1.43

Sector	Pop. Share	Mean CPAE	P0	P1	P2
Hotels	0.5	9911	14.0	2.5	0.72
Transport/ Communication	1.5	10309	19.6	6.1	2.34
Miscellaneous services	1.7	13534	17.0	5.2	2.27
Government services	6.8	11161	16.3	4.4	1.66
Not working	4.3	6835	43.4	14.5	6.49
1995					
National	100	8313	26.2	7.6	3.23
Livestock production	2.0	8773	22.6	7.1	3.21
Food crop	44.1	6184	36.3	11.2	4.85
Cash crop	27.1	8069	17.7	4.0	1.38
Mining	0.2	6044	0.9	0.5	0.22
Manufacturing	3.4	11167	14.2	3.5	1.25
Public utilities	0.1	15007	0.0	0.0	0.0
Construction	1.0	10083	16.9	2.8	0.68
Trade	6.7	14377	6.1	1.2	0.36
Hotels	0.9	12036	8.8	1.2	0.18
Transport/ communication	1.9	15337	12.5	3.2	1.09
Miscellaneous services	2.1	11747	20.1	4.7	1.76
Government services	5.6	12755	12.1	2.5	0.79
Not working	4.8	7975	51.1	19.5	9.83

(Adapted from Appleton 1998)

The proportion of household heads below the food poverty line in the livestock sector was reduced by 40.68% to 22.6% in 1995 (Figure 3.5). This improvement was sixth ranked among the sectors with the public utilities sector making a 100% improvement, and the mining sector a 90% improvement between 1992 and 1995. Other sectors that performed strongly are cash crops with a 50.7% change, trade 49.2%, and manufacturing 46.8%. Two sectors recorded increases in the numbers of household heads below the food poverty line i.e., those not working by –17% and those in the miscellaneous services sector by –18.2%.

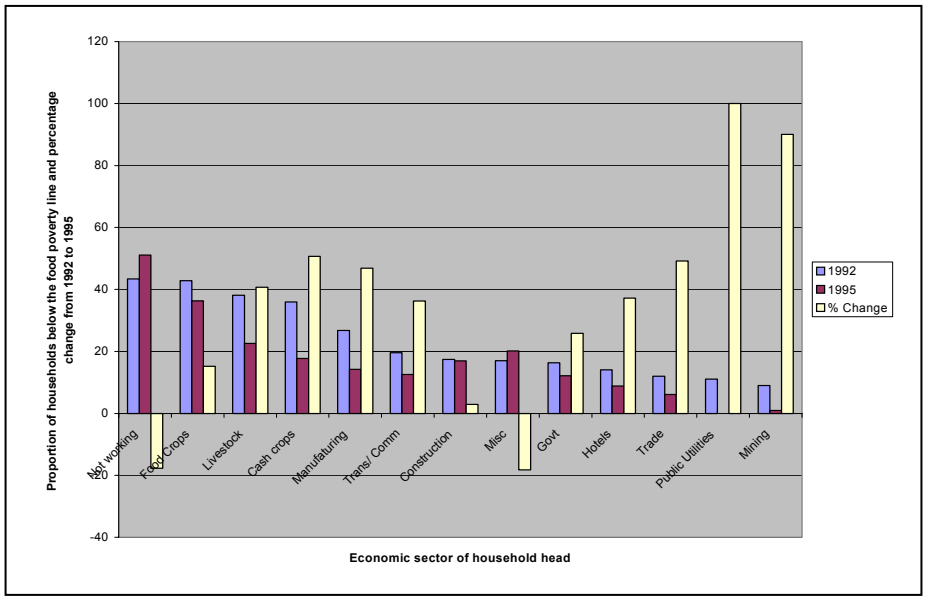


Figure 3.5. The proportion of household heads by major economic sector living below the food poverty line in 1992 and 1995, and the change (%) over the same period. Adapted from Appleton 1998.

Indicators for the proportion that each sector contributed to reducing the national food poverty level between 1992 and 1995 show that the livestock sector made the fourth largest, though modest contribution, Table 3.6 and Figure 3.6 below.

Table 3.6 Sectoral decomposition of changes in poverty between 1992 and 1995 relative to the food poverty line

Sector	P0	P1	P2
Livestock production	4.5	3.7	3.2
Food crop	34.0	38.0	41.6
Cash crop	47.2	45.6	44.3
Mining	0.1	0.1	0.1
Manufacturing	5.0	4.5	5.3
Public utilities	0.1	0.0	0.0
Construction	0.1	0.2	0.2
Trade	4.3	4.2	4.5
Hotels	0.3	0.2	0.2
Transport/ communication	1.1	1.2	1.1
Miscellaneous services	-0.6	0.3	0.5
Government services	3.1	3.8	3.7
Not working	-3.6	-6.2	-8.9

(Adapted from Appleton 1998)

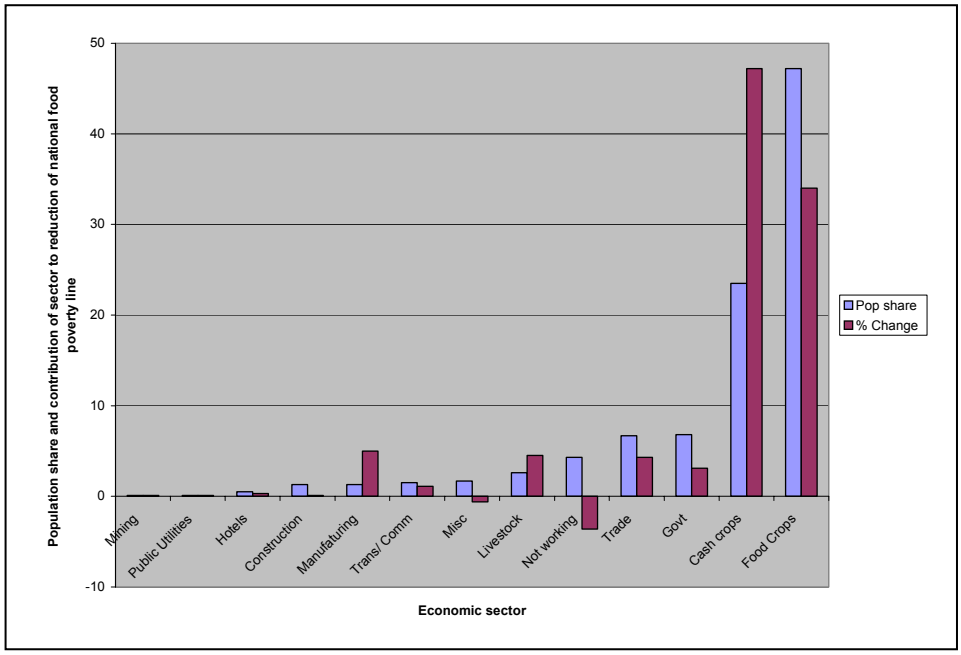


Figure 3.6. The population share of household heads by economic sector and the contribution of the improvement in sectors to the reduction those below the national food poverty line. (Composed from Appleton 1998)

Food security takes into consideration both quantity and quality measures. A study by Maxwell et al. 1998 highlighted the contribution of urban agriculture (including livestock keeping) to prevention of malnutrition in Kampala City. The study sampled 300 households from seven sections of Kampala City, and included upper, middle and low-income households. Nutritional determinants focused on child indicators i.e., measurements were taken on children under five years old. The households were surveyed twice, and additional data on market prices, availability of food, etc. were taken. Some households underwent an in-depth purposive study to elucidate the behaviour of lower and middle class urban households and women in terms of employment, food access, time allocation and childcare.

The results of the study indicated that women reported that the economic crises triggered off their participation in urban agriculture, due to an increase in the cost of living and secondly it left them responsible for providing food for their families but without the means to do and yet in many cases they had no access to their husbands income (Maxwell et al. 1998). Farming

therefore provided the food for the families and income for other needs. However Maxwell et al. (1998) noted that many women participated in farming activities secretly or at least made their output seem marginal to defray the chances of their husbands reducing their contributions to the household.

The study by Maxwell et al. 1998 also found that in households that farmed, there was no difference in height for age of children across high, medium and low income households. The difference was however significant where low-income households were not farming (Maxwell et al. 1998). The study also found that farming was associated with increased maternal times allocated to direct childcare which directly impacted on child nutritional status (Maxwell et al. 1998).

Chapter 4. Urban and Peri-urban Livestock Keepers in Kampala City: Household Characteristics and Livestock Ownership Demographics

4.1 Introduction

Reference in literature to urban and peri-urban livestock keeping in Kampala City is scarce; most studies undertaken in the city focused on urban agriculture, often not disaggregating for livestock production data from the rest of the agricultural data. Literature on the status of the poor livestock keepers is even harder to come across. This section will combine available literature and statistics (both grey and official) with findings of the survey conducted and from information collected during focused group discussions and interviews with key informants.

4.1.1 Poverty in urban and peri-urban Kampala

In 1992, Uganda was ranked as having the sixth lowest national income with 56% of Ugandans below the poverty line (World Bank 1994, Appleton 1998). Although the poverty level fell to 46% in 1996, poverty is still wide spread in Uganda. Poverty rates were much lower in urban areas than rural areas, but there was nevertheless a significant 29% of the urban population below the poverty line, and one out of every eight urban dwellers was below the national food poverty line which was determined as 11463 Uganda shillings in 1993. In Kampala City, one in every five people i.e., 20% of the population, lived below the poverty line in 1996 (Appleton 1998).

4.1.2 Location of urban and peri-urban poor livestock keepers in Kampala City

The distribution of low income or poor people in urban Kampala city is not uniform. As in most cities, there are “wealth” zones, with some areas almost exclusive to high or middle-income households, and others with a larger percentage of low-income households. No poverty zoning maps of Kampala City exists in literature. However, it was noted during the survey, that in general, the poor tend to stay towards and within the valleys whereas the affluent residents of the city live towards the hilltops.

In each of the divisions certain parishes are known to have a high concentration of lower income households: in Nakawa division these include the urban slum areas of Kiswa, Nakawa, and Naguru I parishes, in Central division the parishes of Kisenyi I, II and III, and Nakivubo parish, in Makindye division these include Katwe I and II, Kibuye I and II parishes, and Wabigalo, in Rubaga division Nakulabye and Ndeeba parishes and in Kawempe division Nakulabye, all of which are some of the highest populated areas in each of the divisions.

The distribution of the peri-urban poor (in the 5-10 km zone outside the urban centre) is not as clearly demarcated as the concentration of the urban poor. It is apparently easier to demarcate the wealthier or upper class areas. The peri-urban poor are generally scattered in the remaining peri-urban parishes. In Makindye division the upper class parishes include Ggaba, Kansanga, Kabalagala, Nsambya estate, Kisugu, Buziga and parts of Bukasa parish. In Nakawa division the upper class parishes include Naguru II, Ntinda, and Mbuya I. In

Rubaga division Namirembe and Rubaga parishes, in Kawempe division upper class households dominate none of the parishes. Central division has no peri-urban areas, but wealthier households are concentrated in Nakasero I, II, and III, Kololo I, II, III and IV, and Kamwokya I parishes.

4.1.3 The surveyed households

While the above wealth/poverty zone demarcations are based on observation and are therefore subjective, they were used to guide the selection of areas from which the poor households were selected for the mini survey and for the focused group discussions. Only four divisions were covered i.e., Nakawa, Central, Makindye and Kawempe. These divisions were selected randomly along an East to West transect. A total of 184 households were surveyed of these 11% were from urban areas, and 89% from peri-urban areas. 55% of the households surveyed were from Nakawa division, 7% from Central, 23% from Makindye and 16% from Kawempe division.

4.1.4 Why Livestock Keeping?

The major reason the urban and peri-urban poor gave for participating in livestock production is that livestock keeping is a more viable enterprise than crop production given the limitations of space. Also many of the livestock keepers do not own the land, and can be forced to move due to rent issues. The livestock keepers also produce with a target season such as the Christmas festivities in mind. Livestock keeping, especially of small stock gives them the flexibility to be productive within their limitations.

4.2 Household and Farm Characteristics of Poor Urban and Peri-urban Livestock Keepers

4.2.1 Household Characteristics

(i) Respondents:
Of the 184 households surveyed, 42% had respondents who were male, and 61% were female. Whereas most respondents were the household heads, a number of them were adults present at the household at the time of the interview, and deemed capable of responding to the questionnaires.

(ii) The Household head:

(a) *Origin of household heads:* The survey found that 89% of the household heads were from Central Uganda, a region dominated by the Baganda, a Bantu tribe. 5% were from Eastern Uganda, another 5% from southwestern, 1% from West Nile, 1% from the middle of the country and none from Northeast and Northern Uganda. Jamal and Weeks (1993) reported that increase in urban and peri-urban agriculture and livestock keeping within Kampala's boundaries was mainly a Baganda phenomenon, as the Baganda are the dominant ethnic group in Kampala city and control most of the land. Maxwell and Zziwa (1992) cited land tenure/ land issues as the main factor controlling participation in urban farming.

(b) *Sex and Marital Status of household head:* 80% of the households were male headed, and only 20% were female headed (Table 4.1). Most of the household heads were married i.e., 78%, 15% were widowed, 4% divorced or separated, and only 3% were single. 91% of the male household heads had one wife, 6% had two wives, 1% had three wives and 2% had four wives. Most of the female household heads were widows (65%)

Table 4.1 Sex of household head versus martial status of household head (%)

Marital Status	Married	Widowed	Divorced	Single	Total
Male	95.14	2.07	0.69	2.07	80.00
Female	10.81	64.86	18.92	5.41	20.00
Total	78.02	14.84	4.40	2.75	100.00

11% of the women were married, but claimed that they and not their husbands were the *de facto* household head. While the perception of "household head" was not discussed in depth with respondents, in another study on the contribution of women to livestock keeping in the Teso Farming System Region in Eastern Uganda, there was a similar discrepancy between number of households that had a male figurehead, and those in which the female respondents reported as "male-headed". On questioning this discrepancy, some of the female respondents asserted that they saw themselves as the household head even though they had husbands, they claimed that they and not their husbands provided the main household income and food security (Oluka et al. Unpublished data).

(c) *Age of household head*:
The age ranges for the household heads surveyed are presented in Figure 4.1.

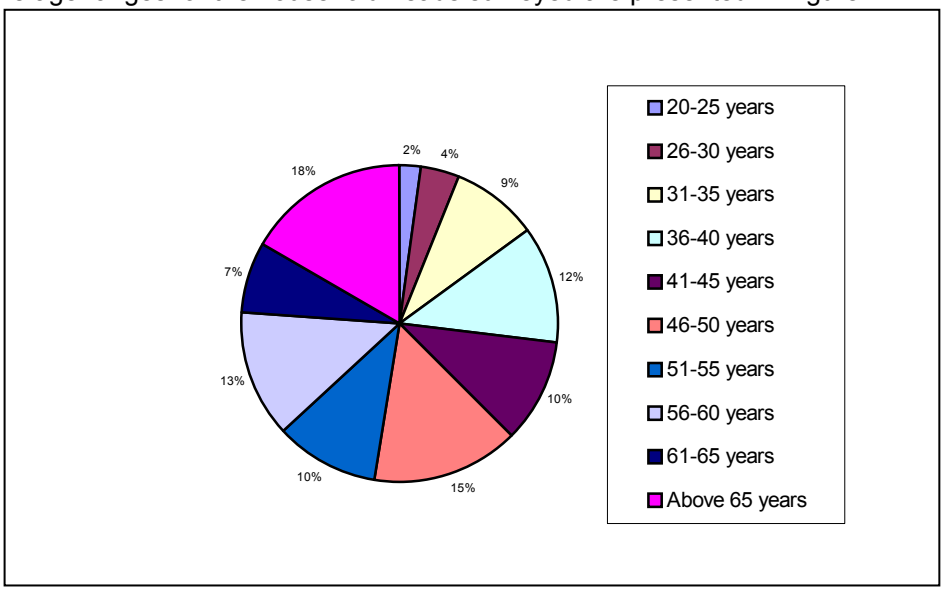


Figure 4.1 Age of Household Head

In general, most of the household heads (69%) are in the middle age bracket i.e., 31-60 year old bracket. Only 3% of the household heads are 30 years and below. A significant 24% of the household heads are above 60 years of age. The retirement age from active participation in the civil service in Uganda is 55 years of age.

(d) *Highest Level of Education Attained by Household head:* Generally most of the household heads had some form of formal education. 25% had primary education, 35% had attained secondary education, and diploma/certificate holders comprised 20%. 15% had a degree, and only 4% had not had any education at all (Figure 4.2.)

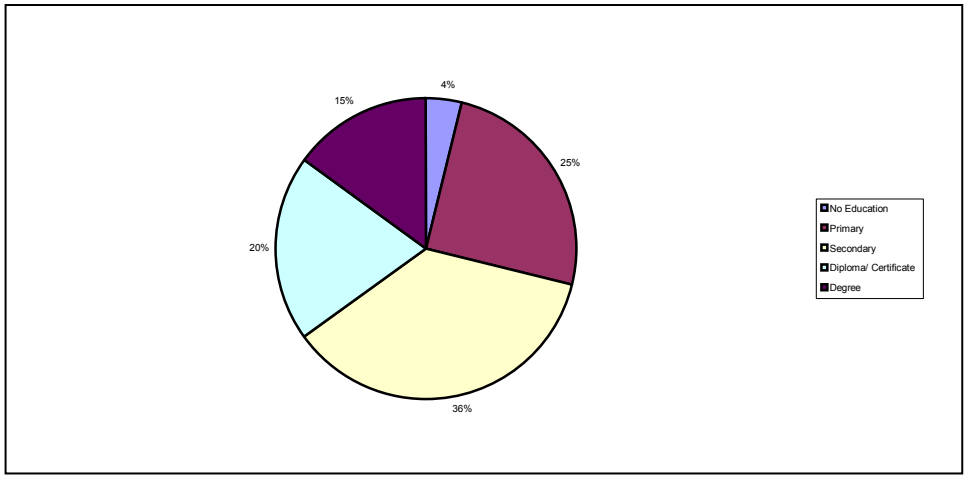


Figure 4.2 The Highest Level of Education Attained by the Household Heads in the Study

There was a significant relationship between the sex of the household head and the highest level of education attained by the household head (Figure4.3.).

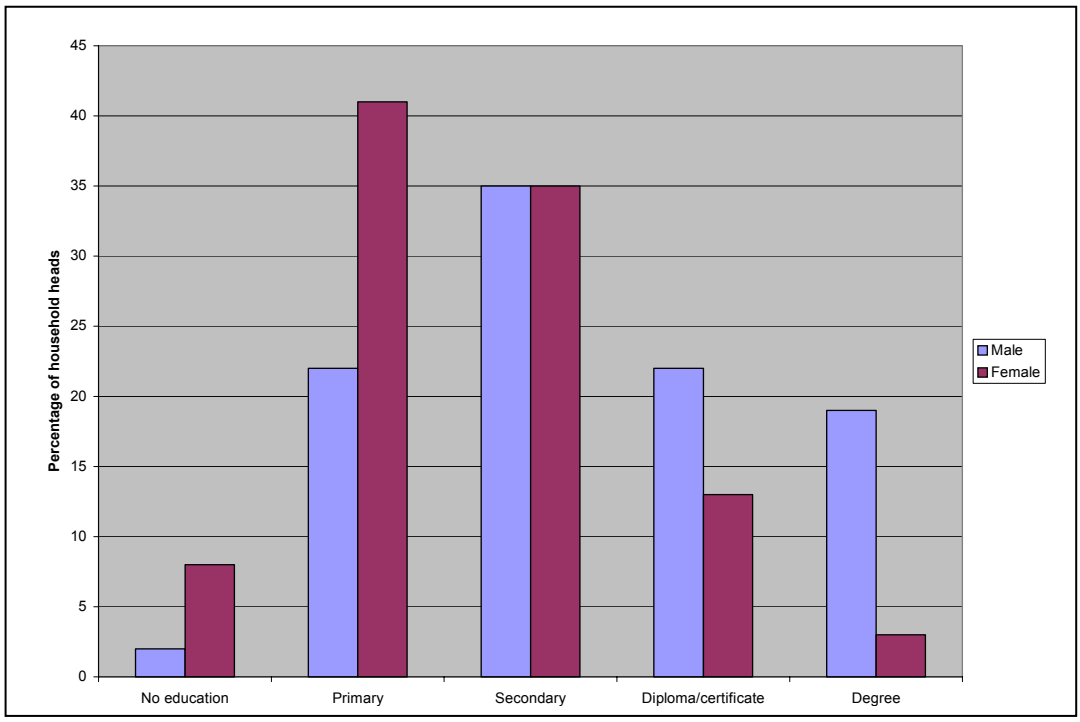


Figure 4.3 Highest Level of Education Attained by Household Head

While most of the men and women had either primary or secondary education, male household heads had generally attained higher education levels than women. Most of the household heads with no education were women: 3.33% of the total household heads, and 8.11% of the women. While 19% of the men had university degrees, only 3% of the women had attained a degree.

(e) *Primary and Secondary Activities of Household Heads:* Most of the household heads were primarily occupied in the formal sector (35%), business/self-employed (32%) and with only 19% citing livestock keeping as their primary activity (Figure 4.4.). Livestock keeping was however cited as a primary activity more than mixed farming (11% of respondents) and crop growing (only 3% of the respondents).

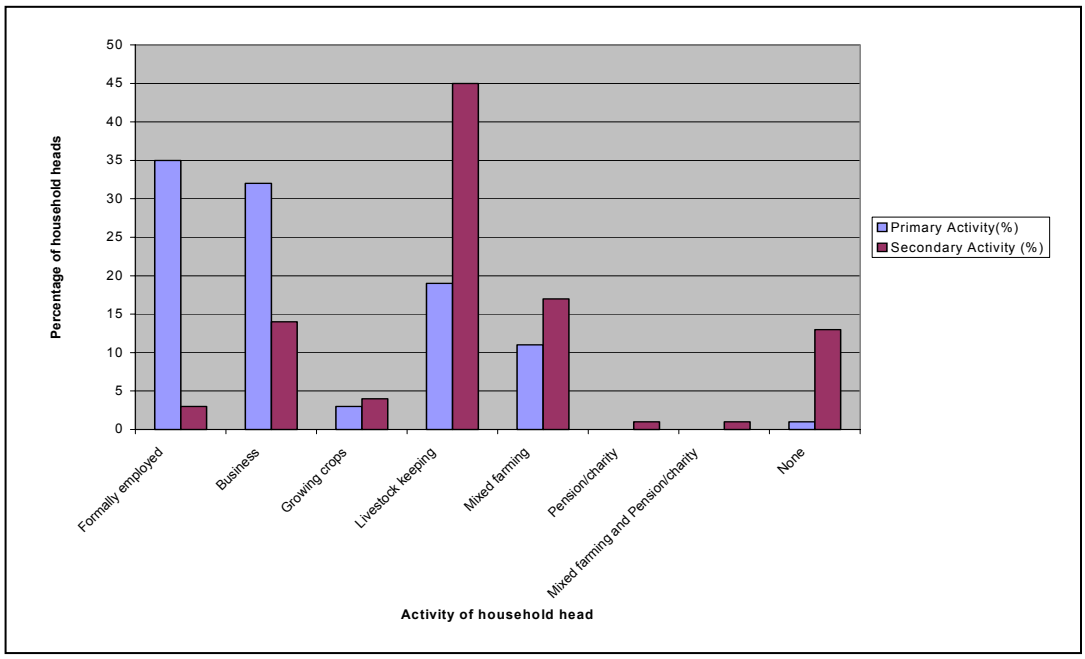


Figure 4.4. The Major Primary and Secondary Income Generating Activity of the Household Head

Livestock keeping was overwhelmingly cited by 45% of the household heads as their main secondary activity, with the next most cited secondary activity being mixed farming (17%).

Trends for the primary and secondary sources of income for the households surveyed closely reflected the primary and secondary activities of the household head, (Figure 4.5.).

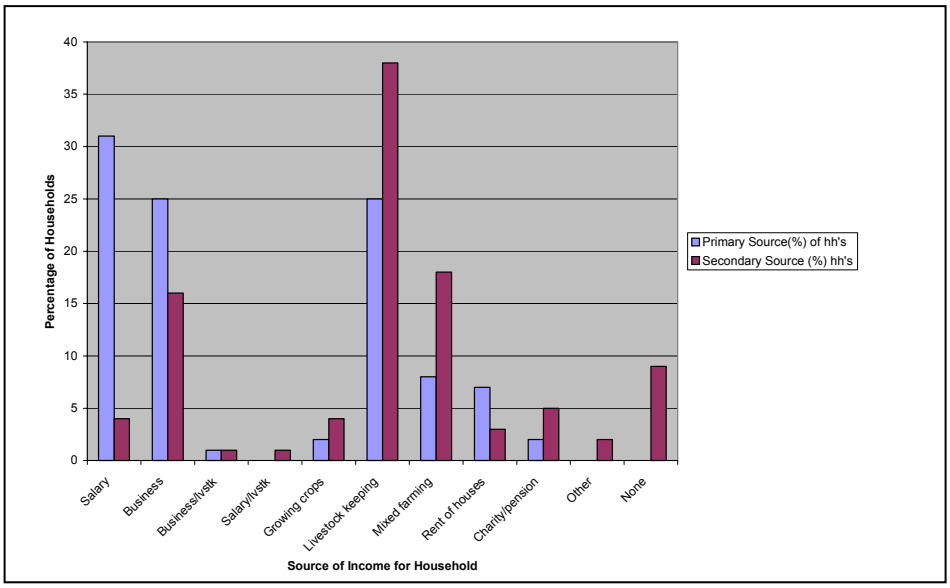


Figure 4.5. The Main Primary and Secondary Sources of Income for Household Head

While 31% of the households depended on the salary of the household head, and another 25% depended primarily on business profits, a significant 25% of households surveyed depended on livestock production to provide their primary source of income.

A significant 38% of the households rely on livestock production for their secondary source of income, other important sources of secondary income being mixed farming (18%) and

business (16%). 4% cited salary, 4% growing of crops, and 5% of the households derive their secondary source of income from charity or pensions.

These data indicate that a large percentage of livestock keepers are firstly employed in the formal and business sector, but they value the income from livestock production to supplement their salaries and business profits. Maxwell and Zziwa (1992) noted that people in the formal sector kept livestock to reduce food expenditures as the gap between their real wages and the cost of living widened.

There were however significant gender differences (age, sex and education) for primary and secondary activity and income source. Figure 4.6. below, indicates that for the young adults between 21 and 30 years of age, business/ trading was the primary activity with 64% involved in some form of business. Business is usual a high risk venture and requires innovation and flexibility. For those household heads in the middle age bracket 31-60 years some form of formal employment was the primary activity occupying between 33-50% of those in this bracket. For those household heads above 60 years of age (retirement age ranges from 55 to 60 for different sectors) the primary activity was either livestock keeping (28%) or mixed farming (28%). This could indicate that livestock keeping is an important/gainful livelihood option for retirees.

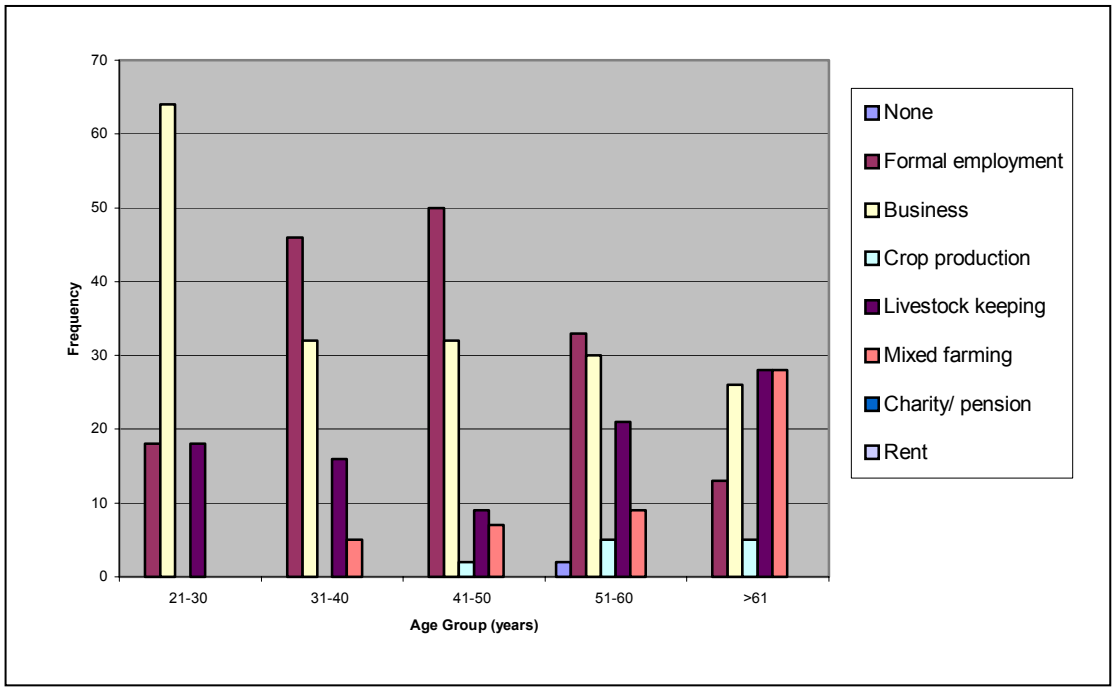


Figure 4.6. Age Group of Household Head Vs. Primary Activity of Household Head

An analysis of the relationship between the age of household head and secondary activity revealed that across age groups except for those above 60 years of age, all the household heads cited livestock keeping as their major secondary activity. The household heads above 60 years cited mixed farming (25%) as their major secondary activity. 22% however did cite livestock keeping as their major secondary activity.

An analysis of the relationship of primary activity to sex of household head revealed that 39% of the male household heads cited formal employment as their primary activity, with business a close follow on with 32% of the men involved. The predominant primary activity for female household heads was livestock keeping (40% of female household heads) followed by some form of business or trading. For both sexes trends in primary source of income reflected primary occupation: 34% of the men derived primary source of income from formal employment, and 25% from business, while 42% and 22% of women derived their major source of income from livestock keeping and business, respectively.

There was also an appreciable relationship between highest level of education of the household head and the primary activity of the household head. For those household heads with no education, a primary or secondary level education, the primary occupation was business: 50%, 36% and 45% respectively. Livestock keeping came as a strong second for those with no education or only a primary education, occupying 33% and 27% of the household heads in these education brackets, respectively. Household heads who had attained higher education levels where primarily occupied in the formal sector: 58% and 75% for diploma/certificate and degree level, respectively. Only 13.89% and 7.14% of those with diplomas/certificates and degrees, respectively, cited livestock keeping as their primary activity.

(iii) The Household

(a) *HIV/AIDS status of households:* only ten respondents replied to this highly sensitive question, and therefore meaningful analyses could not be conducted. Of those who responded, 40% (4) were affected by HIV/AIDS, and 60% (6) were not. There was an equal proportion of male and female-headed households affected. The current prevalence of HIV/AIDS is 6 – 9% of the national population. The prevalence rate in the urban and peri-urban areas is higher than the rural areas standing at 10 – 12%, (Ministry of Health, 2001). HIV/AIDS has been identified as one of the most severe negative influences on livestock and crop production. HIV/AIDS is especially debilitating for poor households who cannot afford medical care, or nutritional foods to avert the side effects of the disease. Women and girls are particularly vulnerable due to their subservient position in the poor households and their lack of independent means.

4.2.2 Family characteristics

(a) *Family size*: The sizes of households ranged from those with one member to above 35 members (Figure 4.7). Most households however had between 1-15 household members i.e., 91% of the households. With 13% in the 1-5 range, 44% in the 6-12 members range, and 34% in the 11-15% range. Only one household had more than 35 household members. The 1991 population census recorded the mean family size in Kampala City as 4.2 family members.

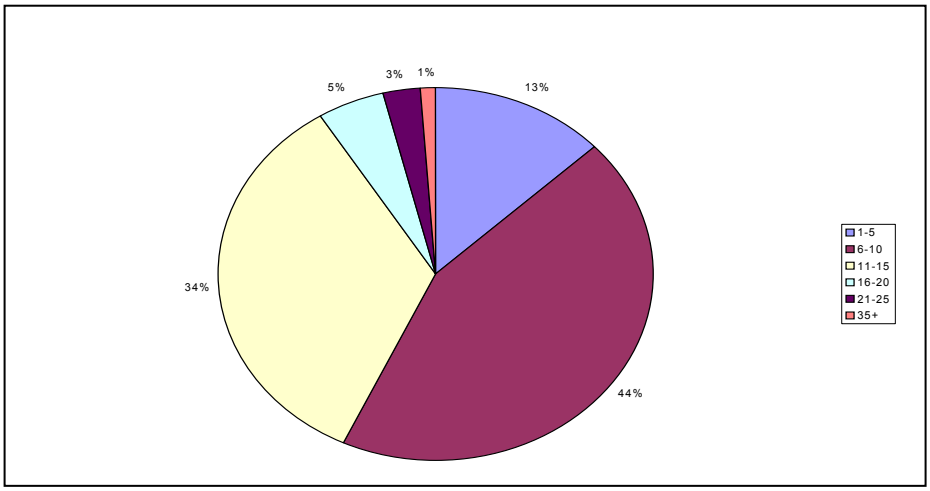


Figure 4.7. Family Size Ranges of Livestock Keepers

(b) *Family structure*:
Most of the households has one or two persons within each age bracket (Figure 4.8). There was at least one adult female in all the households.

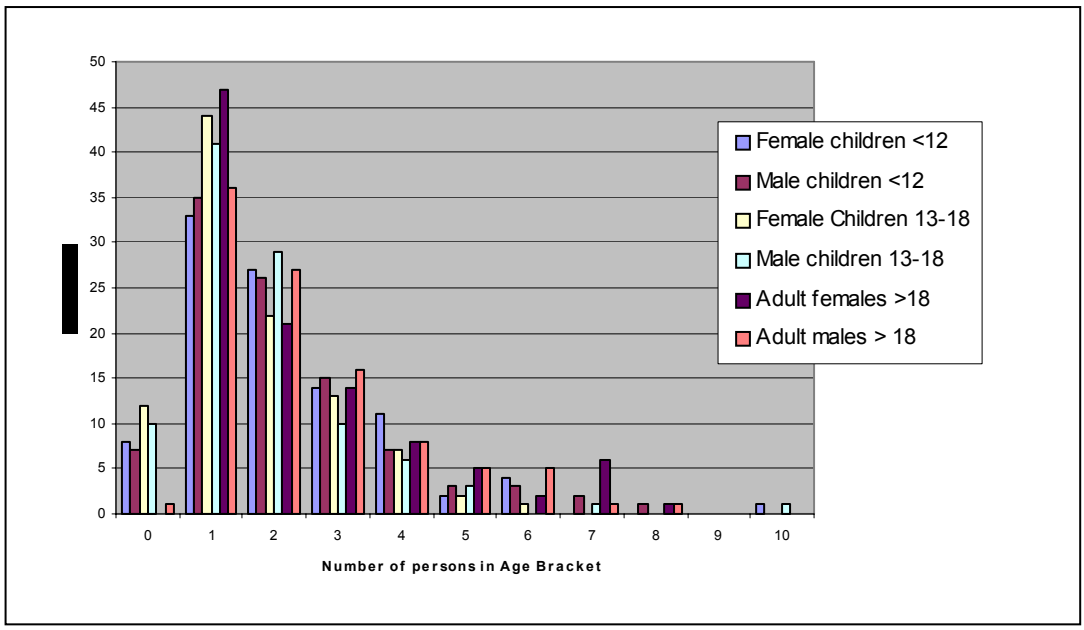


Figure 4.8. The structure of the household surveyed

4.2.3 Farm Characteristics

(a) Land tenure: The tenure system for the majority of livestock keepers is registered freehold or mailo land (61.86%) whereby the owner holds the parcel of land in absolute ownership with a legal land title. Leasehold land held as "kibanjas" i.e., rented from the landlords was the land tenure system for 27.84% of the livestock keepers. A small number of livestock keepers, 5.15% had land under customary tenure, and the remaining 5.15% utilized land that belonged to Kampala City Council. The city council has no authority over the use of mailo land or 'kibanjas' making it difficult for it to plan/limit activities in certain parts of the city.

Land holding size: Figure 4.9. shows the land holding size in acres. In general land size holdings were small, although a third had holdings of one acre and more, most households (n = 65, 37.36%) had holdings of 0.25 acres and less.

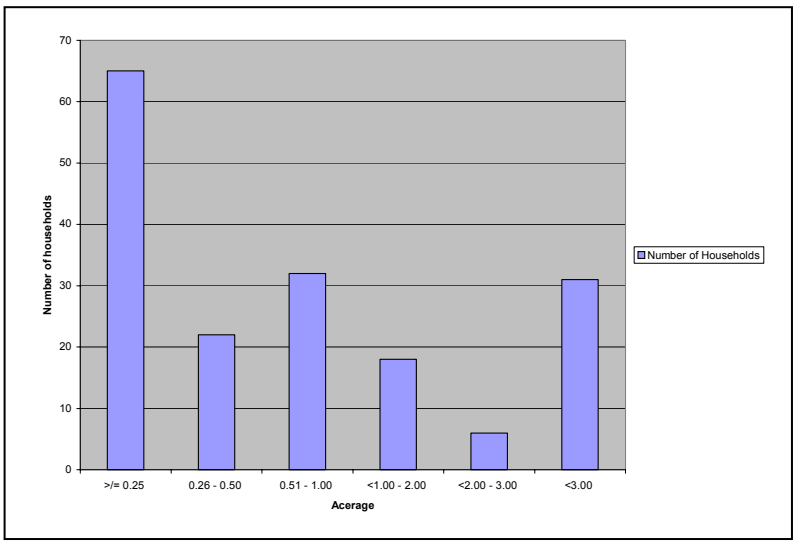


Figure 4.9. Size Range of Land Holdings Utilized by the Livestock Farmers

(b) Land fragmentation: This is a problem in many densely populated parts of Uganda affecting management of land and livestock enterprises. However, in this study it was found that 81.82% of the households had their land in a single piece, indicating

low fragmentation and therefore an opportunity for better and focused management of livestock.

(c) Distance of land area from household: 97.62 % of livestock keepers walk less than 15 minutes to their piece of land. Only 2.38% walk for more than 15 minutes to reach their plots.

4.3 Livestock Types, Numbers and Ownership Demographics

4.3.1 Introduction

In 1986-1987 the Ministry of Agriculture, Animal Industries, and Fisheries conducted an agricultural sector survey on the numbers of cattle, pigs, sheep and goats in Kampala district. No data were collected on poultry. The data are presented in Table 4.2. The survey found that pigs were the most numerous livestock followed by cattle and goats. A total of 5986 households i.e. 3.4 % of the households were found to be dependent on livestock production, 48.9% of these were located in Nakawa division.

Table 4.2 Kampala District Livestock Population.

Sub-county	Human Population	Households		Cattle		Pigs	Sheep	Goats
		No.	Dependent on Livestock	Indigenous	Exotic			
Central	134873	22577	192	1604	702	3253	856	909
Kawempe	144344	27781	461	1245	435	3316	3038	1219
Makindye	225897	19277	576	805	453	1893	205	326
Nakawa	128495	24378	2929	1670	731	2152	460	1584
Rubaga	254892	42847	129	770	210	1558	462	828
Kampala	1106881	177436	5986	13630	4990	25724	6999	10291

Source: Agricultural Sector Survey 1986-987, Ministry of Animal Industries and Fisheries Planning Department, EEC/WFP/DDC, Dec. 1987.

4.3.2 Cattle: Types, Numbers, and Ownership Demographics

Local and improved cattle: Local/ indigenous cattle breeds included the Ankole and Sanga, the exotic included Holstein, Friesian and Jersey, and crosses were constituted of various degrees of local and exotic.

Only 21.2% of the households (n=39) kept local livestock as compared to 60.3% (n=111) who kept improved cattle (see Figure 4.10). Most households that had cattle kept between 1 and 4 animals: i.e., 81.1% of the households keeping improved livestock, and 64.1% of those keeping local livestock.

It was found that men keep 64.22% of the improved cattle, and 29.36% by women, and 6.42% were jointly owned by the man and woman. 57.89% of the local cattle are kept by men, while 34.21% are kept by women, and 7.89% are jointly owned. In the PRAs the reason given for this trend was that the men had money and consequently owned more property.

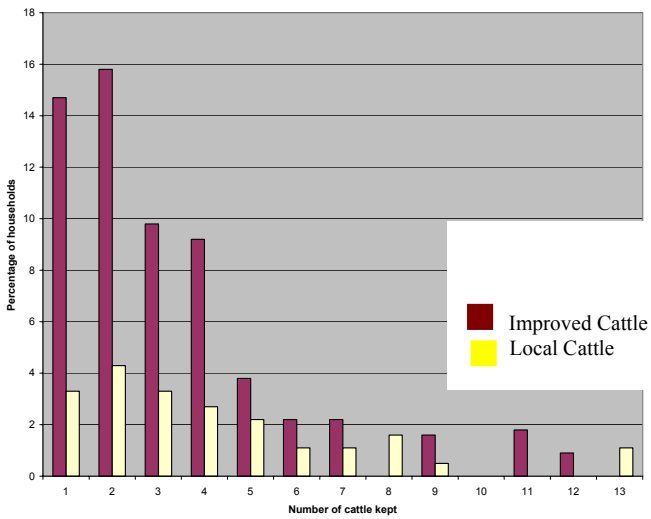


Figure 4.10 Number of Cattle Kept

Most of the people who owned improved cattle are between 21 and 30 years of age (Table 4.3), while those owning local cattle are mostly between 21 and 50 years of age.

Table 4.3 The age group and education level (as percentages) of the people owning cattle

Age Group Years	Improved Cattle	Local Cattle	Education level	Improved Cattle	Local cattle
13-20	11.11	3.23	**Primary**	44.0	55.88
21-30	31.48	25.81	**Secondary**	31.19	32.35
31-40	12.04	25.81	**Diploma**	9.17	2.94
41-50	17.59	16.13	**Degree**	4.59	2.94
51-60	15.74	16.13	**No education**	9.17	5.88
61-70	7.41	9.68			
Above 70	4.63	3.23			

** Figures in table are in percentages*

Most of the people owning cattle had some form of education. 44% of those keeping improved livestock had at least primary education, while 56% of those keeping local cattle had attained the same standard. At least a third of those keeping both the improved and local livestock had secondary education.

Most cattle owners (for both local and improved) cited cash generation and food/subsistence as the main reasons for owning cattle. The manure obtained was also considered important for both improvement of soil fertility and for biogas production. During the PRA discussions, it was noted that only the wealthy farmers had biogas units as the poor could not afford them though they did appreciate its benefits.

4.3.3 Goats: Types, Numbers and Ownership Demographics

About a third (26.0%) of the households surveyed kept local goats which were of the Mubende breed, but only 3.4% (6 households) kept improved goats which were mostly crossed of the Mubende breed, and Boer goats, or pure Boer or Toggenberg milk breeds. Most farmers with improved goats kept four animals (33%), but the range was from 3-13 animals. The survey found that men owned 62.50% of the improved goats, and women 25% while the remaining 12.5% were co-owned by men and women.

Of the 48 households that had local goats, 75% owned between 1-4 goats (16.67%, 27.08%, 20.83%, and 10.42% respectively for 1,2,3 and 4 goats). However the range was 1-15, with 4.17% owning 15 goats, and 4.17% owning between 12 and 14 goats. Women owned 50% of the local goats, and men 34.62%. 15.38% of the local goats were co-owned by women and men. Women were more involved in local goats because of their low management costs.

Most improved goats were owned by people in the 41-60 age bracket, while ownership of local goats was spread across most age groups (Table 4.4). Most of the people owning both improved and local goats, had attained either primary or secondary education.

Table 4.4 Age Group and Education Level of Persons Owning Goats

Age Group Years	Improved Goats	Local Goats	Education level	Improved Goats	Local Goats
13-20	16.67	16.22	**Primary**	33.33	51.22
21-30	16.67	27.03	**Secondary**	66.67	26.83
31-40	-	13.51	**Diploma**	-	4.88

Age Group Years	Improved Goats	Local Goats	Education level	Improved Goats	Local Goats
41-50	33.33	18.92	**Degree**	-	4.88
51-60	33.33	16.22	**No education**	-	9.76
61-70	-	8.11			
Above 70	-	-			

** Figures in table are in percentages*

4.3.4 Sheep: types, numbers and ownership demographics

Few households owned sheep, with only 3 households (2%) reporting ownership of improved sheep, and 8 households (4.3%) owning local fat/ short tail East African sheep. Households owned between 1 and 3 improved sheep, but most households kept only one local sheep. Both men and women owned improved sheep equally i.e. 50% each. However two-thirds (66.67%) of the local sheep are owned by men. During the PRAs, it was brought out that the numbers of sheep reared was smaller than that of goats because among the Baganda, the dominant tribe in Kampala, sheep are a *totem* or clan symbol and therefore eating them is a taboo for some clans. Sheep are therefore, mainly kept by Moslems for whom they are important as sacrificial animals for *Idd Aduha* ceremonies.

Most of the local sheep were owned by young people – less than 30 years old (Table 4.5) while older people, above 40 years old, owned all the improved sheep. All the improved sheep were owned by people with only a primary education.

Table 4.5 Age Group and Education Level of Persons Owning Sheep

Age Group Years	Improved Sheep	Local Sheep	Education level	Improved Sheep	Local Sheep
13-20	-	40.00	**Primary**	100.00	40.00
21-30	-	40.00	**Secondary**		40.00
31-40	-	-	**Diploma**		-
41-50	50.00	20.00	**Degree**		20.00
51-60	50.00	-	**No education**		-
61-70	-	-			
Above 70	-	-			

** Figures in table are in percentages*

4.3.5 Pigs: types, numbers and ownership demographics

14.13% of the households owned improved pigs that included large white, landrace and black saddle back breeds, while 12.50% owned local pigs of non-descript breeds. The number of improved pigs owned varied from 1 to 27 pigs, with 15.38% owning 1 or 2 pigs, 50% owning 3-7 pigs, 8% owning 10, another 8% owning 15, and 15.4% owning between 20 and 27 pigs.

Of the 23 households that had local pigs, most owned 3 pigs (21.3%), with 47.82 %owing between 1 and 3 pigs. However, one farmer owned 25 pigs and another had 37.

Women tended to own more pigs than men. For both the local and improved pig breeds, women own 50% of the stock, while men owned 35%. There was co-ownership of the remaining 15% of the pigs. According to findings from the PRAs the investment and management costs for pigs were lower, therefore women could afford pigs. Furthermore, the fact that they were smaller meant that they were easier for women to handle. In addition, pigs could be raised close to the homestead. It was also mentioned in the PRAs that Moslems and Seventh Day Adventists do not raise pigs as this goes against their religious beliefs. There is also a general stigma against keeping pigs, as people tend to think of them as dirty animals.

Pigs were owned by people in all age groups, and mostly by those with a primary or secondary education (Table 4.6).

Table 4.6 Age Group and Education Level of Persons Owning Pigs

Age Group Years	Improved Pigs	Local Pigs	Education level	Improved Pigs	Local Pigs
13-20	12.50	5.00	**Primary**	54.17	33.33
21-30	37.50	35.00	**Secondary**	25.00	57.14
31-40	4.17	15.00	**Diploma**	8.33	4.76
41-50	29.17	20.00	**Degree**	4.17	4.76
51-60	12.50	20.00	**No education**	8.33	
61-70	4.17	5.00			
Above 70	-				

** Figures in table are in percentages*

4.3.6 Poultry: types, numbers and ownership demographics

50 households (27.17%) owned improved poultry/ chicken that were either layers such as Rhode Island Red, and broilers such as the Hubbard breed. Ownership varied widely ranging from 2 birds to 1,750. Keepers of improved poultry tended to have 100 birds and more with only 5.43% (n=10) of the farmers keeping less than 100 birds. 7.6% (n=14) kept between 100 and 185 birds, 7.06% (n=13) had between 200 and 280 birds, 2.7% (n=5) had between 300 and 360, 2.17% (n=4) had between 500 and 650, and only 1.6% (n=3) had between 1000 and 1750 birds.

Of the households that owned improved poultry, 41.67% had layers, 14.58% had both layers and broilers, 41.66% had broilers, and only 2.08 % (n=1) kept layer cocks.

49 households (26.63%) kept local poultry of non-descript breeds that included chicken, ducks and turkeys. Chickens made up 95.35% of all the local poultry kept. Only one household each reported owning ducks and turkeys. 79.07% of the households owning local poultry (n=34) had 4 chickens, and while 16.2% had between 1 and 3 chicken each.

The survey found that ownership of poultry; especially improved stock was a female dominated enterprise with women owing 75% of the improved birds, and 51.43% of the local poultry. Men owned 20.83% of the improved poultry, and 31.43% of the local breeds. Men however owned all the ducks and turkeys. The reasons given for women having a greater stake in poultry production than men were the same as those given for piggery, i.e., lower capital/ investment costs and ability to handle.

All age groups owned poultry, and most poultry owners had attained either a primary or secondary education (Table 4.7).

Table 4.7 Age Group and Education Level of Persons Owning Poultry

Age Group	Improved Poultry	Local Poultry	Education level	Improved Poultry	Local Poultry
13-20	10.64	10.34	**Primary**	38.64	39.39
21-30	27.66	27.59	**Secondary**	47.73	54.55
31-40	25.53	27.59	**Diploma**	11.36	3.03
41-50	17.02	13.79	**Degree**	-	-
51-60	17.02	10.34	**No education**	2.27	3.03
61-70	2.13	10.34			
Above 70	-	-			

** Figures in table are in percentages*

4.3.7 Rabbits: types, numbers and ownership demographics

Rabbits are rare livestock species in Kampala city with only 5 (2.7%) people keeping improved breeds of rabbits, and 6 (3.3%) keeping local breed rabbits out of the 184 households surveyed. The range in numbers of improved rabbits kept was from 1 – 26, however 80% (n=4) kept between 1 and 8 rabbits. Only one household had 26 rabbits. The range in numbers of local rabbits kept was narrower i.e., 3 – 14, with 33.34% keeping 3 or 4 rabbits, 50.01% keeping 6 to 9 rabbits, and 16.67% keeping 14 rabbits.

Men dominated the rabbit keeping enterprise especially the keeping of improved rabbits i.e., men kept 71.43% of the improved rabbits, and 66.67% of the local rabbits. However, children participated in the keeping of rabbits, raising 16.67% of the local breeds.

Most of the rabbit keepers (81.81%) purchased rabbits from their own savings, 9.90% of the rabbits were obtained from relatives, and 9.90% from NGO/CBOs.

The local breed rabbits were owned by people between 13 and 50 years and with only a primary education (Table 4.8). Both young and old people, with primary to diploma education levels owned improved rabbits.

Table 4.8 Age Group and Education Level of Persons Owning Rabbits

Age Group	Improved Rabbits	Local Rabbits	Education level	Improved Rabbits	Local Rabbits
13-20	25.00	16.67	**Primary**	40.00	100.00
21-30	25.00	22.22	**Secondary**	20.00	-
31-40	-	22.22	**Diploma**	40.00	-
41-50	-	22.22	**Degree**	-	-
51-60	25.00		**No education**	-	-
61-70	25.00				
Above 70	-				

** Figures in table are in percentages*

4.4 Contribution of Livestock Keeping to Household Economy and Food Security

4.4.1 Household Economy

The contribution of incomes from livestock keeping can be assessed at micro and macro economic levels. At the micro-economic level, it can be assessed in terms of contribution to household welfare or economy. Where the household economy can be defined as the sum of ways in which the household gets its income, its savings and asset holdings, and its consumption of food and non-food items (Seaman et al. 2000). This study indicated that a significant 25% of households surveyed depended on livestock production to provide their primary source of income, and 38% relied on livestock production for their secondary source of income. The population and housing census of 1991 indicated that 3.4% of households in Kampala City were dependent on livestock production.

40% of the women household heads cited livestock keeping as their primary activity, with 41% getting their main income from livestock keeping. Also 33% of those livestock keepers with no education, and 27% of those with only a primary education cited livestock keeping as their primary activity. These are vulnerable groups whose opportunity to join other sectors may be limited by lack of resources and education level.

4.4.2 Food Security

Women, who are traditionally in charge of food security in their households, make up the smaller proportion of livestock keepers in this study i.e., only 20% of the household heads were women. However this may not indicate the actual participation of women in livestock keeping, but could have a bearing on their access to products and income generated from livestock keeping. The Figure 4.11. below indicates that far more female household heads cited livestock keeping as their primary activity i.e., 40% compared to 13% of the men.

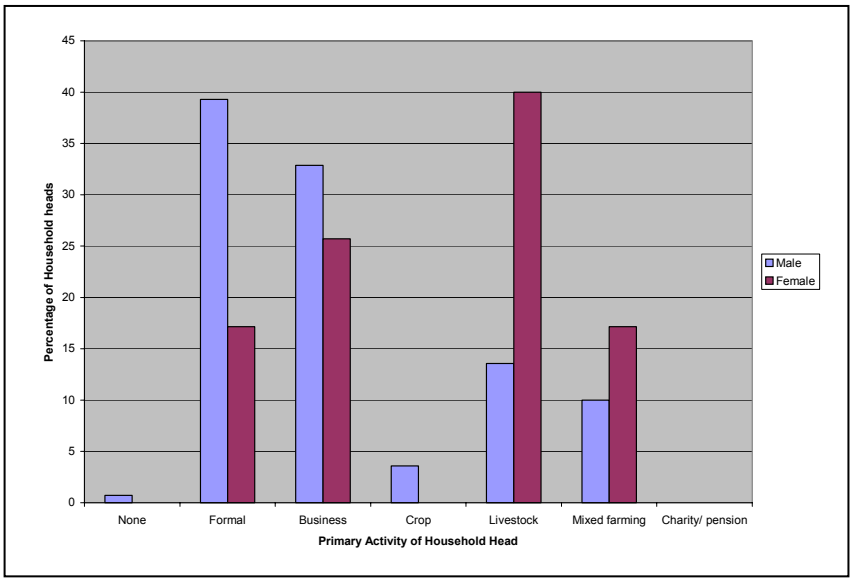


Figure 4.11 Relationship between sex of household and primary activity of household head

Figure 4.12. highlights the fact that a large percentage of female household heads i.e., 41.67% cited livestock keeping as their primary source of income, compared to only 20.98 % of the male household heads.

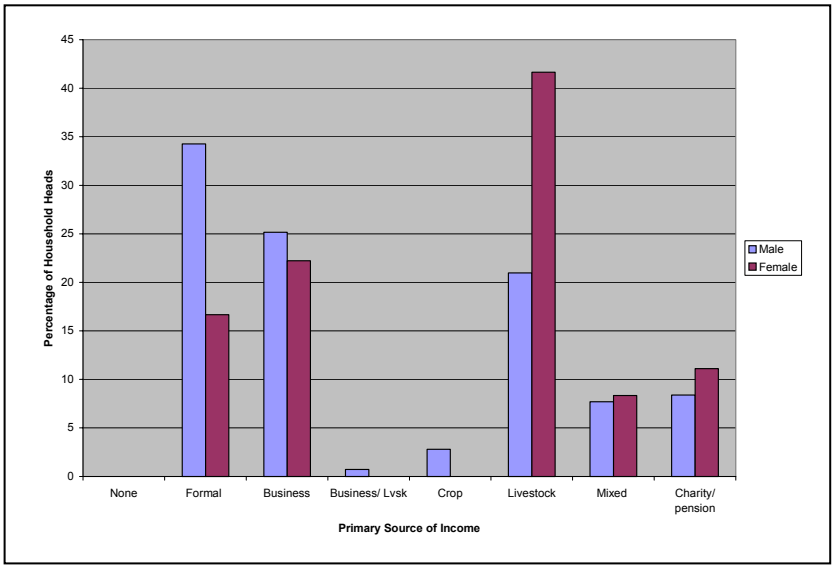


Figure 4.12 Relationship between sex of the household head and primary source of income

4.4 Rural roots: The Livestock Keeping Tradition and Support Linkages

4.5.1 Rural roots

57.50% of the livestock keepers had rural roots, i.e., they had lived in the rural parts of their districts of origin before migrating to Kampala City, 11.67% had lived in other urban centres. 30.83% were from within Kampala City area.

4.5.2 The Livestock Keeping Tradition

82.32% reported that their parents reared livestock before them, 17.68% reported that their parents had not kept livestock. 69.02% households reported that their parents had kept cattle (Figure 4.13) 46.73% goats, 14.67% sheep, 38.04% poultry, and only 1.63% households reported that their parents had kept rabbits.

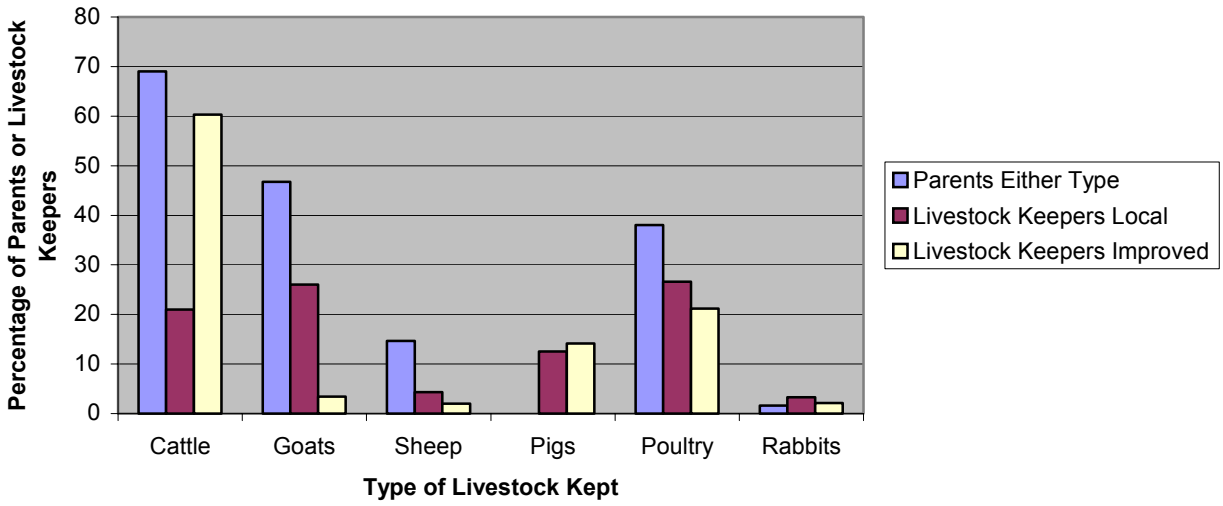


Figure 4.13 A comparison of the livestock types kept by the livestock keepers and their parents

While the study did not elucidate the breeds of the different livestock species kept by the parents, the trend in the choice of livestock kept was similar for the parents and the livestock keepers, except for sheep. More parents kept sheep compared to the present generation livestock keepers. Sheep are kept by older people in the present generation. Sheep are generally considered to be ceremonial animals.

There is still little knowledge of rabbits, and low appreciation for rabbit meat reflected in the fact that both the past and present generation do not keep rabbits in any significant numbers.

4.5.3 Rural Support Linkages

There has been a strong premise that many livestock keepers in the urban and peri-urban areas get an appreciable supply of their livestock from their rural relatives. However this presumption was not validated in this study (Figure 4.14). For all livestock species apart from goats, livestock keepers received less than 10% of their stock from relatives in rural areas, purchasing most of their stock with their own savings. However, a quarter of the respondents cited relatives as the source of their goats.

While relatives were not the main source of livestock, they were the second most important source for all livestock other than improved pigs.

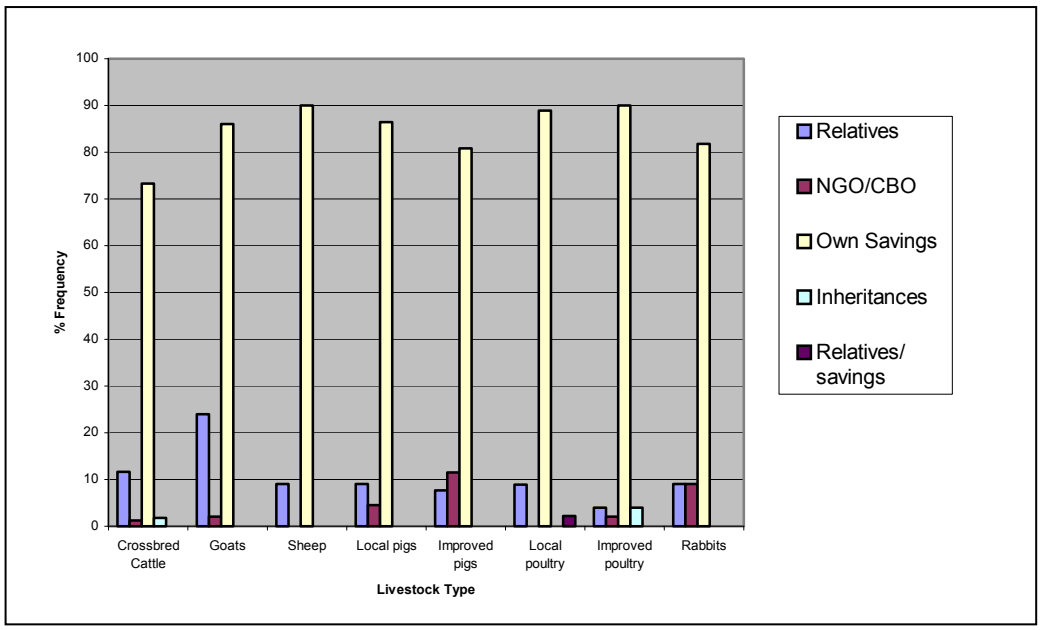
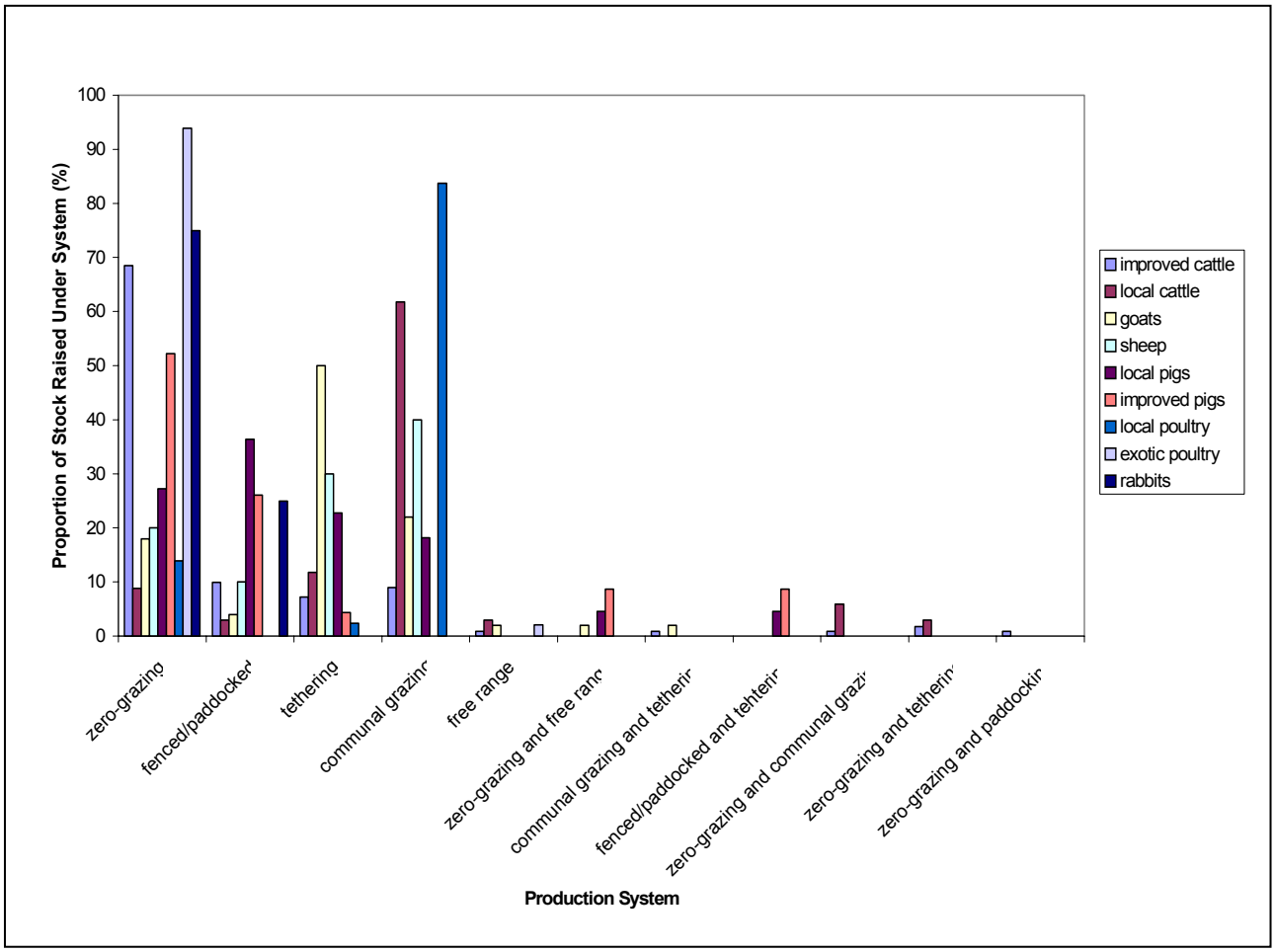


Figure 4.14 Source of Livestock for Poor Urban and Peri-Urban Livestock Keepers

Chapter 5. Livestock Husbandry Practices, Strategies and Services in Urban and Peri-urban Areas of Kampala City.

5.1 Production Systems

The following are the production systems used in livestock production by the poor urban and peri-urban livestock producers (see figure 5.1. below).



5.1.1 Cattle

5.1.1.1. Zero-Grazing

The zero-grazing system involved full time confinement of the cattle in stalls/sheds where all the feed and water they require is brought to them. In some cases there was a small paddock for exercise. However, this depended on the space the livestock keeper had.

Reasons why farmers opted for zero grazing include:

(i) Reduced risk of infection of stock by ticks and thus less chance of stock getting tick borne diseases like East coast Fever and Babesiosis.

(ii) Reduced risk of intestinal obstruction, a condition that is many times fatal and mainly occurs due to accidental ingestion of plastic bags when free ranging stock feed at rubbish dumps.

(iii) Less chance of / avoidance of conflicts arising with neighbours and authorities when animals cross into other person's compounds/gardens and destroy property or interfere with road traffic.

(iv) Cost-benefit ratio of using zero grazing as opposed to other methods was more or less the same making zero grazing viable option.

(v) There was a possibility of producing biogas as was done by some of the wealthier or more knowledgeable farmers.
(vi) It was less stressful on the animals and management was often easier.
(vii) Farmers found it easier to control the quality of feed consumed by the animals.

The disadvantages noted were:
(i) Higher investment costs particularly for the cattle shed.
(ii) The extra effort and cost required to obtain enough forage and/or water for the cattle. This was especially an extra load where the farmer did not have enough land to grow adequate pasture or have a water source on the farm.
(iii) More cow dung was collected per animal and disposal could be a problem.
(iv) It was difficult to maintain good hygiene in the cattle shed.

Housing: The housing systems for zero grazed dairy cattle ranged from a tree shade under which they were tethered in the night, to properly constructed cattle sheds with biogas production units. The system of housing adapted depended on the affluence of the farmer. Most high-income farmers tended to have well constructed units with a cemented floor that were easier to maintain and clean while the low income farmers had badly constructed and poorly maintained zero-grazing units that were often murky or muddy and foul smelling.

5.1.1.1. **Communal Grazing**
Most of the local cattle were communally grazed. Under this system, a herdsman took the cattle of several owners and was responsible for grazing and looking after the animals throughout the day and returning them to their owners at dusk. The herdsman was also often responsible for milking the cows. In some cases the herdsman provided additional services, such as cleaning the sleeping area of the animals, at an extra cost. Although it was mainly the responsibility of the herdsman to find grazing for the animals, where possible the farmers/ livestock owners would also water the animals and give them additional feed consisting of foodstuff waste like banana or potato peels when they were returned home at the end of the day.

Advantages of the communal grazing system as cited by farmers were:
(i) A large number of animals could be maintained under this system, as there was no direct limitation of space. Animals were taken to graze to up to 5 km outside the city boundary and into the neighbouring Wakiso District.
(ii) The herdsmen took over the burden of looking after and grazing the animals during the day, leaving the livestock owners free to pursue other activities. Most elderly farmers who were unable to take their cattle to graze employed herdsmen to do this.

The disadvantages mentioned were:
(i) Conflicts that arose with neighbours and the city council authorities when animals wandered into other peoples gardens and ate or trampled crops, destroyed private property or interfered with traffic on the main roads
(ii) High costs mainly consisting of herdsman's fees of Uganda Shs. 5,000/= per month per animal totalling an average of 30,000/= to 50,000/= shillings per month depending on the herd size and the additional services the herdsman provided. This fee was exclusive of the free 0.5-1litre of milk the herdsman was entitled to from each animal per day.
(iii) Increased susceptibility of stock to tick borne diseases, liver flukes, encountering buveera (plastic bags) and suffering intestinal obstruction; and other conditions associated with feeding off rubbish heaps and drinking water directly from swamps.

Housing: Free roaming cattle were kept in kraals during the night. Poorer farmers built their kraals from old logs and thorny shrubs, while the better off farmers constructed their kraals from barbed wire and treated fence posts. Both kinds of kraals tended to be murky and muddy during the wet season and dusty during the dry season.

5.1.1.2. **Tethering**

Small numbers of both local and improved cattle were tethered within or near the homestead and also along the roadside as long as there was enough grass for grazing. Supplementary feeding of mainly household waste was given to the animals either during grazing or when they were returned home in the evening. This system was at times combined with either zero-grazing or communal grazing systems in which case the animals were confined during the morning and let out in the afternoon.

Farmers mentioned the following advantages of tethering:

(i) Effectively utilized household waste, i.e. banana and sweet potato peelings
(ii) As animals were confined to a particular area, the farmer was able to collect animal dung and make effective use of it as manure.

As with communal grazing, a disadvantage associated with tethering was when animals broke loose and wandered into neighbour's gardens and destroyed crops and /or wandered onto roads and disrupted traffic.

Housing: Under the Tethering system cattle tended to be tied under trees during the night to avoid them roaming and destroying neighbour's crops. Few numbers of animals were involved and there was minimal investment in housing.

5.1.1.3. **Combined Production Systems**

Some farmers employed a combination of the above systems, which depended on the resources they had at hand. For example, when it is difficult to obtain feed and/ or water for confined animals, they may be communally grazed or when the herdsman was not well the animals might be tethered. Mixed systems were also employed when a farmer had different types of livestock. For example, the improved breeds were often confined around the homesteads whereas the local cattle breeds could be allowed to join the communal herd.

In general, improved breeds were raised under the zero grazing, paddocking and tethering systems. A few of the improved breeds were communally grazed and one farmer had his on free range (see figure 5.1 above). The latter were however cross breeds with about 75% local blood.

Local cattle on the other hand, were primarily raised under the communal grazing system (see figure 5.1).

5.1.2 Goats and Sheep

Half of the goat keepers raised their goats by tethering. The rest were either mainly communally grazed or zero-grazed. Sheep were either allowed to join communal herds or tethered (see figure 5.1.). Sheep are more adapted to grazing whereas goats are mainly browsers. The goats were mainly tethered to avoid destruction of neighbour's crops.

5.1.3. Pigs

Improved pigs were mainly zero grazed (housed or kept with in paddocks or fences) while the local breed of pigs were either zero grazed, tethered, or communally grazed i.e. left to roam freely. The piglets were often allowed to roam freely in order to scrounge for additional food. The exotic breeds and/or their crosses on the other hand were housed and management was as in the zero-grazing system. (see figure 5.1.)

It was observed that the local breed of pigs kept on a free range system were associated with the low-income farmers with a large land area. Thus they tended to be found in the peri-urban areas of the city. These pigs tended to be smaller in size with lower growth rates due to a high worm burden.

Housing: Pig sties were simple structures made from poles with some roofing (old iron sheets, grass, polythene sheets or papyrus mats) for shelter against sunshine and rain. The structures had earthen floors and more often than not, no space was provided for a dunging area. The simple structures were usually placed within a shady area in the garden. The floors were generally found to be murky and muddy with the condition exacerbated by the pigs' snouting.

Most farmers keeping improved and/or exotic breeds of pigs provided some form of building for their pigs. These pigsties ranged from simple makeshift structures shared by many pigs to clean individual penned shelters with concrete floors and corrugated iron sheets roofs. The latter were more common among the wealthier farmers who were better able to manage their units. The incidence of worms was reduced in this case.

5.1.4 Poultry

Most of the local chickens (85%) were reared under the communal systems. 95% of the improved stock, i.e. layers and broilers were reared under housed conditions using the deep litter systems. Most farmers recognize this as the only system for exotic poultry management. The constraints in the latter case involve the investment costs and dust when many birds are kept. Ventilation can be poor especially under squeezed conditions (e.g. small walled in compounds).

Housing: Local birds kept under the communal system slept in trees or small enclosed pens constructed on or raised off the ground. Most pens were made from old tin boxes with a hole cut into the side to serve as both an entry/ exit as well as a ventilator. Most units also had a wooden roof to guard against rain. Some farmers allowed their local birds to sleep in adjacent rooms or even in the same house with the family members.

In many cases the poultry housing was not properly or specifically constructed with a tendency to convert buildings meant for other purposes (e.g. stores, motor garages, residential housing) to poultry rearing. This causes poor ventilation with poor management attributes. A few farmers however, had housing specifically constructed for poultry.

5.1.5 Rabbits

Rabbits were raised under zero grazing or penned conditions. Rabbits housing was mostly pens raised off the ground on stakes. Sometimes the rabbits were allowed to run around freely within the homestead especially if the compound was enclosed. Another system of production was allowing the rabbits roam freely within a fenced off (low mud or brick wall) area. In most cases the units were located close to the kitchens.

5.2 Livestock Husbandry Practices and Strategies

5.2.1 Feeding Practices and Feed Sources

Among Kampala's poor livestock keepers the main items used to feed livestock were grasses, household waste, and some commercial feed. The use of these feeds varied in importance among the different livestock. Scores on the relative importance of items and feed were obtained during the PRAs with farmers as is illustrated below (see figure 5.2 below). In most of the cases, combinations of different types of feed were given to livestock . This was a management strategy aimed at averting the risks associated with scarce bulk feed and/or expensive feed. The type of feed given also depended on the level of intensification.

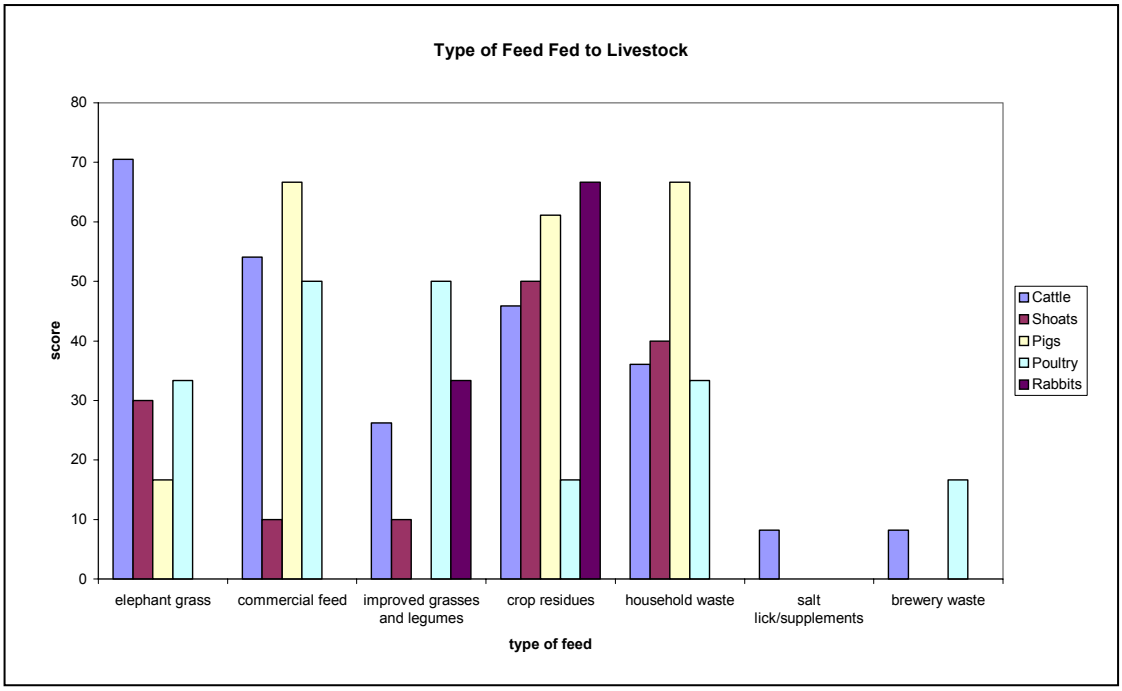


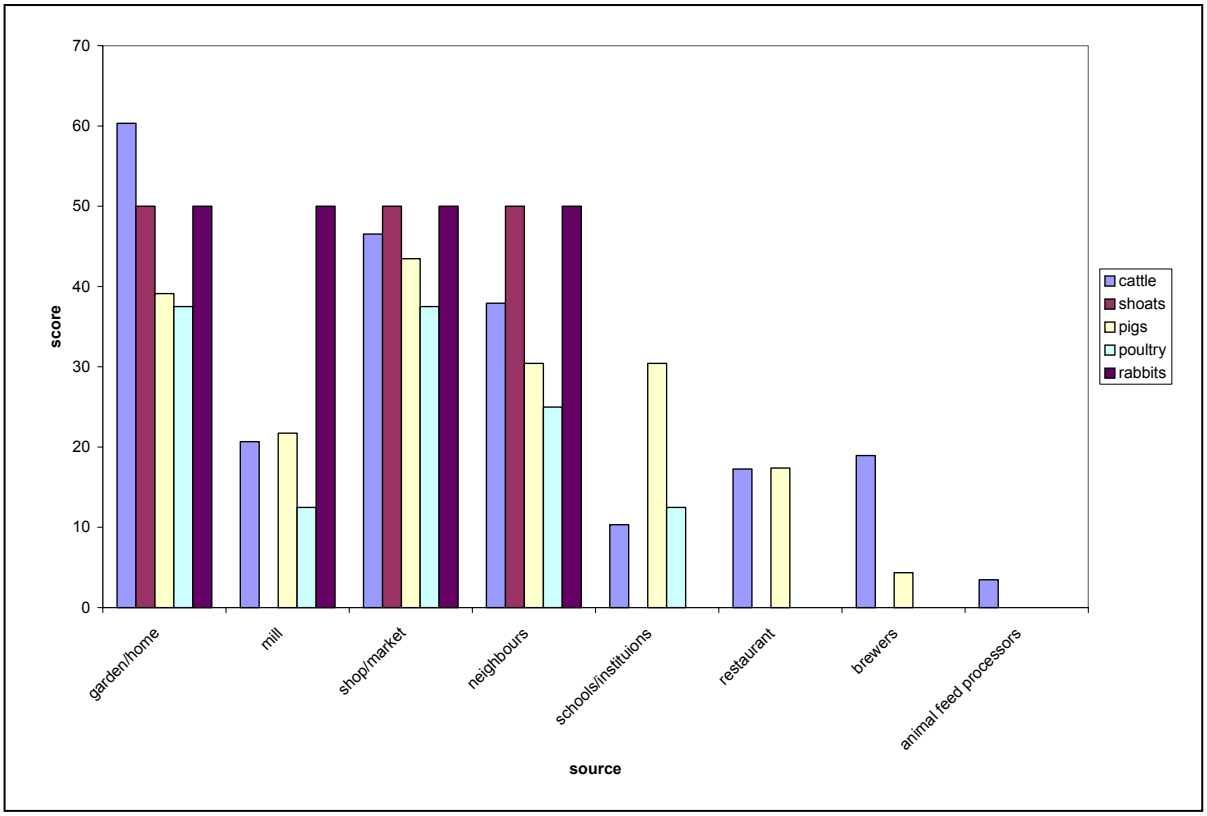
Figure 5.2 Types of Feed Fed to Livestock

Elephant grass has been listed as a separate input in figure 5.2. because it was observed during the study that there are different varieties used by farmers. These include the improved types and the wild or indigenous forms that grow by the roadside or at homesteads. Most of the farmers did not distinguish between the two types in their responses. Improved grasses comprise grasses like Guatemala grass and *Serratia* sp. The legumes include principally leguminous fodder trees like Luciana and grackle.

The crop residues mainly comprised of sweet potato vines. Household waste was mainly of raw food – banana and sweet potato peelings, spoilt bananas or vegetables and spoilt foodstuffs considered unfit for human consumption.

Figure 5.2 indicates that livestock owners relied heavily on feeds that were either residues or wastes so profitably utilizing these products. Reliance on commercial / industrial products that had direct / high costs was limited.

Source of Feeds: The most important source of feeds for livestock other than the communally grazed animals was the home garden (see figure 5.3. below)



Elephant grass was the most common grass fed to both improved and some local livestock. Important sources included the unimproved varieties found along the roadside. The grass was cut, collected and transported by the farmer, herdsman and/or hired person. Some people had started up small businesses cutting this elephant grass from the roadside, bundling it up in standard sizes and selling it by the roadside. Most farmers bought 1 – 2 bundles per cow per day at the cost of Uganda Shs. 1,000 – 2,000/= per bundle. Some farmers with land also grew small plots of elephant grass for sale whether or not they had livestock themselves.

In a similar way, there were also persons who had started up small businesses based on collecting and sorting food waste from restaurants, schools and other such institutions within the city, packing the food and selling it per bag (standard bag is the 70kg-100kg sac). The cost per bag ranged from Ug. Shs. 1,500/= to 2,500/= per bag. Some farmers bought the household waste directly from the restaurants.

Within the city poor livestock keepers also fed their livestock brewery waste. This waste was purchased from the makers of home made finger millet or sorghum beer locally known as *ajon or malwa. A* 20 litre basin or debe of beer waste was purchased at a cost of Ug. Shs. 500/=.

5.2.1.1. **Cattle**

The main feedstuffs fed to cattle in descending order of importance were elephant grass, commercial feed (concentrates), improved grasses/legumes, crop residues, household wastes, brewery wastes and salt lick as a supplement (see figure 5.3. above). All feeds were given in combination with one or more of the others. In most cases the diet comprised a mixture of elephant grass/grazing or some other pasture, banana peels and some concentrate especially if the animals were zero grazing.

The grasses, crop residues and foodstuff waste were obtained from home, the markets, schools / institutions and / or restaurants. Farmers who could not afford the commercially available compounded concentrate feeds bought mill waste and fed this mixed with / without brewers waste to the cattle. Concentrate was purchased from shops dealing in animal

supplies. In many of the small retailer shops it was possible to purchase the concentrate by the kilo rather than by the wholesale sac of 70kg as packaged by the manufacturer. This provision made it easier for the poor farmers whose cash flow was limited to cope.

Communally grazed cattle fed on whatever edible grasses they came across during grazing. However, some of them were given supplementary feed consisting mainly of crop residues and household waste at the end of the day when they were returned home.

5.2.1.2. **Goats and Sheep**

Goats and sheep were primarily fed of crop residues (banana and sweet potato peelings) and some household waste as a supplementary feed. The rest of their food is made up of the grass they eat while they are tethered or out grazing. Free range goats also scavenge rubbish heaps for household waste.

The main sources of feed for shoats are at home, the markets and waste from the neighbours. Peels and other household waste from the neighbours for goats are often free because small quantities are involved.

5.2.1.3. **Pigs**

Local Pigs are fed crop residues and household waste that included left over food (unlike the ruminants that are mainly given the pre-cooked waste, e.g. spoilt bits of potato, vegetables, etc). They were also fed some elephant grass. Local pigs were also given spoilt or over ripe fruit and vegetables. It was noted during the study that many farmers did not give their pigs cooked swill. The piglets were often let free to run around and scrounge for whatever else they could pick around to eat.

Improved pigs were fed elephant grass and household waste. At times farmers purchased premixed concentrates (commercially manufactured feed). However most farmers preferred to make their own blend of home made concentrate by mixing maize bran, brewer's waste, and sunflower seed cake and anthill soil. A few other farmers who could afford it also added fish meal and mineral / vitamin supplements to their home mixed concentrates. The composition of the mixtures varied depending on the affordability. A number of farmers used anthill soil as a source of minerals for the pigs.

Maize bran and sunflower seed cake for the concentrates are purchased from mills and shops. Elephant grass is obtained form the farm or roadside and household waste from the home, markets, schools / institutions and restaurants (see figure 5.3. above).

5.2.1.4. **Poultry**

A free-range system was used for local poultry allowing them to scavenge around the homestead or neighbourhood for food. In addition they were given household waste (starchy staple and vegetable leftovers; spoilt flour, cereals and legumes). The main sources of feed for local birds are the homestead and sometimes neighbours through scavenging (see figure 5.3.).

Exotic birds on the other hand were fed mainly commercial feeds that were either purchased mixed or as separate ingredients then mixed at home by the farmer . The ingredients used were similar to those in pig farming. However fish meal and mineral/vitamin supplements were considered to be essential ingredients in poultry feed, unlike as in pig feed where they wee non-essential. Green leaves especially *Amaranthus sp.,* yam leaves and Russian comfrey were fed to layers to enhance yolk color and to keep the birds busy in order to avoid vices like pecking. These items were grown at the homesteads. Other uncooked vegetable waste was occasionally fed to the birds. The main sources of feed for these birds were

foodstuff waste from the household and commercially processed feed purchased from stockists.

5.2.1.5. **Rabbits**

Rabbits were mainly fed weeds and grasses from around the homestead such as duck weed and the above mentioned crop residues and household waste. These items were obtained from the home, neighbours and sometimes schools and institutions or the market.

5.2.2 Labour

Poor urban and peri-urban households largely employed family labour is in livestock rearing . Thus for 52.17% of the livestock keepers, labour is not a constraint, but for 47.83% it is. This is a fairly large proportion. Consequently 54.40% of the farmers need to hire labour. Of the farmers who hire labour, 88.57% of the labour hired is full time and 11.43% is part time.

Labour is hired for milking (38.57%), collecting feed and water (30%) and grazing / herding (28.57%). While wealthier households tended to house their poultry, in the less fortunate areas the local birds are kept free range. There is a similar trend for goats that are tethered in the peri-urban areas, and raised free-range in the urban areas.

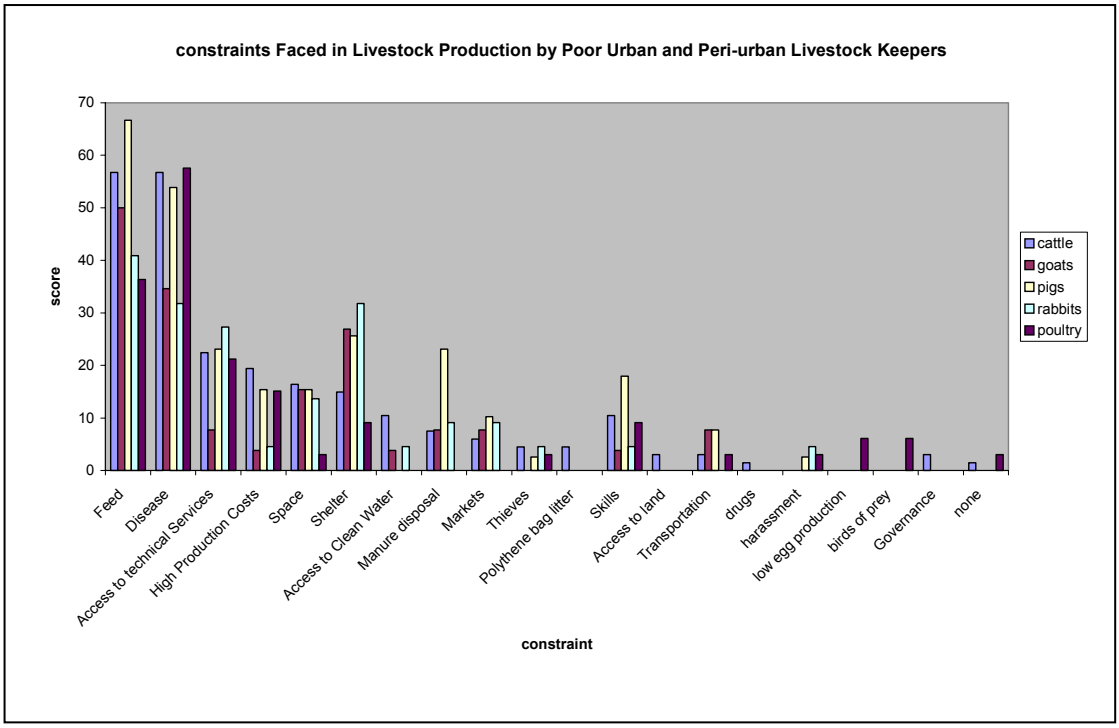
5.2.3 Records and Record Keeping

The main records kept by farmers were on reproduction, i.e. insemination dates, egg collection.

Some farmers did not keep records because they did not feel it was necessary or they could not be bothered. Some thought they had too few animals to have records. Others had no specific reason for not keeping records. A few mentioned that they had had no knowledge of record keeping let alone the need for keeping records. One lady mentioned that she stopped keeping records when she lost her favourite cow that had been given to her by the Young Women's' Christian Organization (YWCA).

5.2.4 Constraints and Copping Strategies

The livestock keepers were asked to rank their constraints during the PRAs see figure 5.4.



The major constraints faced by livestock keeper are listed in Table 5.1. below together with the farmers coping strategies.

Table 5.1 Constraints and Coping Strategies of Cattle Keepers

Constraints	Coping Strategies
1. Lack of space	- tethering animals and / or zero-grazing depending on capital available - shift to small animals such as goats - buy or transport feed from outside the farm - reduce the number of cattle on farm by selling off unwanted calves as soon as possible and transferring some to the rural areas/ villages - communal / group grazing
2. Diseases and cost of treatment of diseases/conditions. (common diseases East Coast Fever, mastitis, hoof diseases, worm, diarrhoea, and babesiosis)	- employ control measures, e.g. regular application of acaricides against tick borne diseases - if possible restrict movement of animals in search of food (prefer to raise them in confinement) - use of local herbs to treat / control disease - picking up of polythene bags littered around where animals graze to prevent incidences of gastric obstruction due to ingestion of the bags - seek / consult veterinarians - loss of teats due to mastitis; farmer changes animal - institute / improve hygiene - farmers diagnose and / or treat the animals themselves
3. Feed Costs and Supply	- feed quantities are regulated and or reduced - rely more on locally available feedstuffs, notably crop residues, household waste and wild elephant grass - feed mixing at home: commercially

Constraints	Coping Strategies
	produced bran mixed with maize bran and banana or potato peels - purchase extra feed from outside farm to meet deficiencies. - Communal grazing - Dry season grass can difficult to get thus use bicycle and hire children to cut it from along roadside - Plant grass
4. Transport	- Resort to cheaper / more flexible means of transport means like *boda boda* (motorcycle taxi) to transport household waste and grass to farm as they are cheaper than pick-ups trucks - use bicycle for purposes of ferrying grass from the various sources
5. Waste/manure	- manure heaped in a corner of the shelter or kraal - a pit is dug and manure buried in it - waste/ manure dried and burnt - manure given away to friends or sold to crop farmers,
6. Lack of market for Products (mainly milk) Poor market sometimes especially during the rainy season when production is high in the up-country cattle production areas	- unsold milk offered to family and friends
7. Lack of technical advice	- depend on information obtained from family - obtained information from neighbours, other farmers, friends, and radio programs
8. Reproductive problems	- sought veterinary assistance to deal with dystocia and retained placentas, conditions requiring expert attention - farmers use artificial insemination on animals - animals that were repeat breeders were given a better nutrition plane. - sought veterinary assistance to deal with abortions associated with East Coast Fever.
9. Problems of access to clean water (a farmer lost a cow to dehydration)	- purchase and fetch water themselves - Hire labour to fetch water
10. High turn over and cost of herdsmen	- No remedy for high costs - remedy high turn over of herdsmen by trying to pay them on time - supplement pay with milk and other products
11. High Production costs	- Utilise feeds available in homestead/ farm - Mix feed at home - Utilize family labour as much as possible
12. Theft of livestock	- Fence in animals - Some farmers hire watchmen thus incur an additional expense - Check permits for livestock movement - Owners involve local councils and butchers to ascertain source of stock at abattoirs / slaughter points

Constraints	Coping Strategies
13. Low milk yields	- Seek veterinary assistance - Sell off the animal

Findings from the PRA discussions with farmers and veterinary workers indicated that the major disease conditions that affected cattle were East Coast Fever, mastitis, hoof conditions, wounds, worms, diarrhoea, babesiosis and eye infections most commonly resulting from physical injury, e.g. due to sharp objects piercing eyes during feeding from dumps or in tall grass areas. Obstruction of the digestive tract as a result of accidental ingestion of plastic bags (kaveeras) by cattle was also a fairly common problem (*kaveera problem*) especially for cattle that fed at rubbish dumps and particularly for exotic cattle. Farmers noted that when left to graze on their own, the exotic cattle were less discerning of plastic bags than the local cattle. Thus Incidences of kaveera obstruction were much lower for indigenous cattle as compared to exotic cattle. Even though farmers picked up plastic bags littered on their premises, more were often blown in from around the neighbourhood. Hence, even confined cattle could become predisposed.

Accidental ingestion of toxic plants was also a threat to animals regardless of livestock keeping system used. Tethered and communally grazed animals were particularly predisposed because it was hard for the herdsman to regulate their feed. Penned stock could become affected if the attendant accidentally or ignorantly mixed the toxic plants with the feed. Common toxic plants cited were *Lantana camara* and *Oxalis* sp. Pappilomas on the udder of milking cattle were also common.

Most of the livestock keepers however, expressed concern that they were unable to correctly diagnose the commons conditions that affected their animals and they lacked knowledge on prevention and control. Consequently, when they were short of cash and could not pay for professional services, they were at a loss as to how they could effectively handle, control and/or give first aid in such situations.

Major constraints associated with reproduction were the high frequencies of repeat breeding when artificial insemination (AI) was used. AI was also expensive. Farmers pay Ug. Shs. 20,000/= at each insemination. A number of farmers had consequently resorted to using bulls even though they were aware of the risk / potential for disease transmission. Farmers had also noted that when they used AI they tended to get more bulls. Cases of dystocias and abortions also increased. However according to the veterinarians these conditions were often associated with poor nutrition and the general disease status of the animals many of which had chronic infections of the above and poor timing of heat. The veterinary staff also noted that farmers had poor heat detection practices / skills.

Availability of water per se was not listed as a major constraint. However farmers reported that constraints were in high cost and poor quality of water. . Farmers had to buy water by the jerry can from communal standpipes or ferry it from wells. water at puddles, swamps or other open sources where communally grazed livestock drunk from was of a poor quality thus predisposing the livestock to water-borne conditions such as the liver flukes.

5.2.3.2 Goats and Sheep

The farmers ranked their constraints, and discussed the coping strategies they applied for goat and sheep keeping as presented in table 5.2 below.

Table 5.2 Constraints and Coping Strategies of Goat and Sheep Keepers

Constraint	Coping Strategy
High cost and lack of access to quality / adequate feed.	- Farmers feed goats and sheep foodstuff waste, mainly consisting of peels - also purchase dry maize for goats and sheep - ask neighbours for their foodstuff waste
Lack of proper shelter	- goats and sheep were tethered and outside

Constraint	Coping Strategy
	where they would spend the night.
Disease	- commonest disease problems were worm infestations for which dewormers are purchased and administered or local herbs e.g. omululuza (Vernoia sp.) used as a substitute for high cost commercial dewormers - veterinary assistance is sought for respiratory diseases - as costs of treatment may be high farmers sometimes sell off a goat in order to purchase medication for treating the rest of the animals.
Lack of access to water	- most farmers reported that watering of goats is a new practice to them. goats are usually expected to meet their own water needs from pools and other available sources.
Lack of access to technical advice - no training programs on goat management	- n/a
Lack of/ poor skills and management methods	-free ranging of goats got a number got injured or killed in motor accidents. Goats were not as careful as cattle when crossing the roads. - goats also more destructives, sometimes chewed at neighbours items other than the food in their gardens
Harassment by neighbours and authorities (neighbour poured hot water on one farmers animals)	-
Lack of space	- sold off the kids as soon as they were mature enough - allow animals to free range
Theft of animals	- check livestock movement permits - ask local councils and butchers to ascertain source of stock
Reproductive problems (Uncontrolled breeding because goats allowed to freely move within the neighbourhood and dystocia especially of parent stock	

The main goat diseases affecting goats in Kampala were worms and respiratory conditions.

5.2. 3.3. **Pigs**

During the PRAs, farmers ranked constraints to pig production and the coping strategies they applied as in Table 5.3 below.

Table 5.3 Constraints to pig production, and Coping Strategies applied by Pig Keepers

Constraint	Coping Strategy
High feed costs	- feed household waste, purchase feed ingredients and mix ingredients themselves at home - cost of supplements are high thus use anthill soil, roasted and ground

Constraint	Coping Strategy
Lack of space	- sell off the piglets as soon as possible - limit the number of breeding stock
Shelter problems cost of construction	- improvise as much as possible and build cheap housing with local materials available around the homestead
Disease (common diseases include African Swine fever , worms and Mastitis-Metritis-Agalactia Syndrome	- purchase and administer dewormers - pay for veterinary services for treatment of other conditions
Limited access to good quality water	- give pigs waste household water to drink - pay for water - hire people to fetch water
Limited access to technical advice - no technical advice received	- rely on neighbours, friends, family , radio, TV and newspapers for information
Lack of management skills - no training especially for their level of management	
Manure disposal problems - few farmers use pig manure because of the religious influences	- dig pit and bury manure - pile manure in corner
High labour costs	- children assist in the rearing of pigs
Lack of capital	- start small and build up enterprise - compromise / lower quality and standards in order to cut costs e.g. use less feed, build poor shelter structures
High production Costs	- utilize local / feed resources on farm - utilize family labour

5.2.3.4. **Poultry**

Poultry farmers ranked the constraints to poultry raising as presented in Table 5.4 below, and discussed the coping strategies they applied to overcome these constraints.

Table 5.4 Constraints and Coping Strategies of Poultry Keepers

Constraint	Copping Strategy
High feed costs and poor quality feed	- purchase and mix ingredients themselves - cost of feed supplements high farmers use roasted and ground anthill soil, and ash that are much cheaper (i.e. free) as a substitute
Lack of shelter and space. crowding in housing lead to suffocation of one farmers stock. Vermin (rats) often a great constraint Poor ventilation	- use of hired attendant to check on birds on 24-hour basis. - saves in order to meet costs required for expansion and to improve housing unit - improve housing unit in phases in line with financial capabilities - no coping strategy for poor ventilation
litter disposal problems (dung beetles)	- dung beetles in litter sorted with veterinary help - improve hygiene
Disease (common disease conditions include Gumboro disease, New Castle Disease, Diarrhoeas: fowl typhoid, bacillary white diarrhoea, coccidiosis;	- vaccinate birds. however, most local birds were not vaccinated thus prevailing viral diseases affected them. - practiced good hygiene and tried to keep houses dry. farmers had noted that the

Constraint	Copping Strategy
cancers and avian influenza	incidence of disease was highest during the rainy season. - sought veterinary services - local herbs for treatment (i.e. for local birds). local herbs used are *bombo* (castor oil) and marijuana (poppy sp..) these were obtained from homesteads, neighbour's gardens or picked wild at no charge. - combated coccidiosis and avian influenza by reducing stocking density in house
Lack of access to technical advice	- sought advice from veterinary staff - in addition obtained advice on aspects of management and health from dealers of animal drugs and supplies and suppliers of day old chicks - obtained information from neighbours, family, friends, radio and newspapers.
Lack of skills	- attended training seminars offered by manufacturers of animal feeds and suppliers of day old chicks -
Manure disposal problems - associated with intensive forms of production	- fertilized gardens - sold it to other farmers or gave it out free
Low production (Poultry bought have short laying period)	- sold off stock often for no profit or even at a loss - improved feed quality or changed company from which one bought feed. However this was still no guarantee for improved productivity
Transportation costs	- utilized low cost means of transport - bought feeds / supplies locally on retail basis which is more expensive than buying wholesale.
Lack of capital	- borrow , save, expand in stages
High production Costs (includes costs of day old chicks	- n/a
Dishonest suppliers. One farmer was sold cocks instead of layers. Other farmers sold poor quality feeds	-. sold off birds off but still lost - change supplier

5.2.3.5. **Rabbits**

Rabbit farmers ranked the constraints to rabbit farming as in Table 5.5 below, and outlined the copping strategies they applied to overcome these constraints.

Table 5.5 Constraints and Coping Strategies of Poultry Keepers

Constraint	Coping Strategy
Lack of feed	-Utilize foodstuff waste from the homestead - purchase foodstuff waste from restaurants
Shelter problems	- construct hatches out of available materials
Theft	- building close to house
Lack of access to good quality water	-

Constraint	Coping Strategy
Lack of production skills	- attend trainings conducted by NGO's
Lack of technical advice	- rely on information from neighbours, family, radio, and newspapers.
Disease (coccidiosis)	- seek treatment from local veterinary staff or purchase and administer drugs themselves
Manure disposal problems	- In crowded areas dung was thrown in rubbish dumps - Utilize as much manure as possible in gardens
Lack of space	- Farmers built tiered housing for poultry, and some kept poultry within human housing
High transportation costs	- Cheaper means like boda boda (motor cycles) and wheelbarrows were hired to provide operational transport
Lack of capital	-
High production costs	- Costs of production were cut by utilizing family labour, seeking advice from neighbours and friends, utilizing household waste as feed

5.3 Trends Regarding Livestock Husbandry

5.3.1 The General Trend

According to the PRA findings and consultations with district extension staff, the management practices and type of livestock kept have over the last ten years tended towards the more intensive forms of production and improved stock. This was attributed to the reduction in available free land for agriculture and the increase of built up land for industries and residences plus the increasing pressure to supplement income from other activities. Household needs must now be met from smaller pieces of land. Thus there was consequently a gradual shift from crop production to livestock production as farmers found it possible to obtain more significant gains from tending livestock than crops, particularly the food crops. In Kampala district plantains are the main food crop and they require a lot of land to sustain a families needs. Sweet potatoes and some cassava were also grown. Food crop production over the years is increasingly becoming restricted to the peri-urban areas. Furthermore, the requirement by Kampala City Council to confine animals necessitated that more intensive methods be practiced.

5.3.2 Feeds and Feeding

Farmers noted that it was becoming increasingly difficult to find forage and fodder for livestock. A greater proportion of feeds have had to be purchased and even grass that grows wildly by the roadsides has become a commercial item, with enterprising people chopping and selling it to farmers. Some owners of undeveloped plots within the city had also started charging livestock keepers a monthly fee of shs.5,000/= upwards per herd to let herdsmen use these plots to graze livestock. This monthly grazing fee when added to the costs of hiring a herdsman as well as the extra benefits like milk that herdsmen were entitled to made the overall cost of livestock production high for most farmers. Given the fact that most farmers

generally had between 1 and 3 heads of cattle, it was apparent that they were not experiencing economies of scale. .

Foodstuff waste from, households, restaurants, schools and other institution that was previously given to livestock keepers free of charge was also increasingly being commercialized. A bag of banana peels sold for about 2000 Uganda shillings.

There is an annual disproportionate increase in the cost of feed concentrates and supplements in relation to the price of livestock products thus as the years have gone by, it has become increasingly difficult for the small farmers to break even if they purchase all their feed requirement which often constituted a significant proportion of the production costs. Furthermore, the feed quality was highly variable. This was particularly true for poultry and pigs. It required that farmers expand their enterprise to reduce unit cost or mix their own feed, the latter being the cheaper option. The ingredients commonly used as mentioned in 5.1 were maize bran, sunflower seed cake, soya bean cake, cotton seed cake, bone meal, fish meal (mukene, *Rastrineobola* sp.), vitamins, and anthill soil (roasted and ground). However, during the PRAs a number of the farmers (60%) were not sure of the actual proportions of the different ingredients needed for feed for particular stock and species. Misinformation was evident, for example, in the northern part of Kampala a mix farmers had obtained form fellow farmers constituted of 4 kg of each ingredient, off balancing the actual nutrient requirements of the livestock.

5.3.4 Diseases

The trend over the years indicates that the cost of disease control and treatment is steadily rising. For example, it now costs a prohibitive UG. Shs. 90,000/= on average to treat a case of East Coast Fever. Costs of disease treatment and control increased when government removed subsidies on agricultural inputs in the late 1980's. In the previous years, veterinary services on herd health notably vaccinations were conducted regularly and were free of charge. The veterinarians reportedly visited farmers more regularly. However, the situation has since changed since it became government policy to privatize veterinary services. Currently the only services offered by government are vaccinations for communicable diseases that are threats to take on epidemic proportions, i.e. Rinderpest, Contagious Bovine Pleuro-pneumonia and Foot and Mouth Disease. Other diseases that are considered to be less threatening are treated at the cost of the farmer.

Since the liberalization of the marketing of animal drugs in the early 1990's, has been a progressive increase in the incidence of adulteration, sale of fake and expired drugs. During the PRAs farmers reported that some of them had purchased cooking oil or used engine oil instead of acaricides, cassava flour instead of powdered anti-biotics for poultry. . In such cases, the farmers did not know whom to turn to for redress. Even where some of the farmers were aware of the criminal nature of such actions, the procedure and process to get redress were too long and costly for the poor.
The farmers also mentioned that they required more knowledge on the diseases likely to affect their stock and what preventive and control measures they could undertake.

5.3.5 Water Sources on Farm

Most of the farmers had a water source for their animals within or near their homesteads. The major sources of water are piped water, wells and protected springs (see figure 5.6. below).

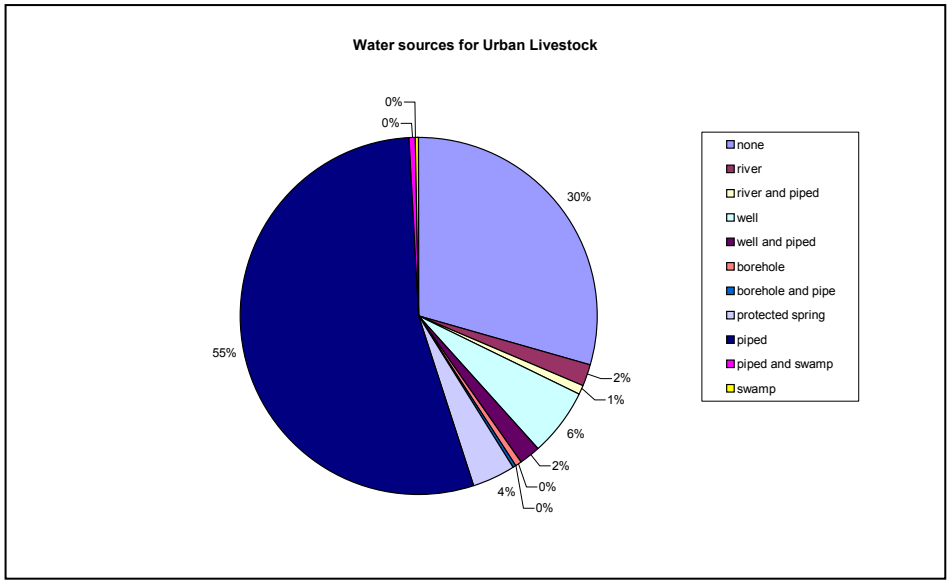


Figure 5.6 Water sources for urban livestock found on or near the homesteads of the livestock keepers

In general the cost of obtaining water for watering livestock ranges from nothing (no cost) to 50,000/= per month averaging about Ug. Shs. 8,187/=.

However, within the poorer and more densely populated parts of the city, there was a shortage of water, mainly due to the big number of people per service point. Harvesting rainwater using plastic or galvanized iron water tanks was a possible solution to solve water shortages but for many livestock keepers the initial capital investment needed to buy these tanks was too high. As mentioned in *Chapter 4*, the poor tended to live towards the valley in the city. Thus, springs and wells were available to them where water could be obtained free of charge if one fetched it themselves. These played an important primary and alternative source but these were often crowded as a great proportion of residents in the poor areas depend on communal sources for household water.

Farmers reported that water from wells, springs and streams contained algae, (*Microcystis* sp.) locally known as nkonge which caused illness to their animals. The watering points for animals were further downstream after the points where water for human consumption and other household needs was drawn. Thus livestock were exposed to water contaminated by soap, waste, and other pollutants which compromise water quality and favour the growth of algae. Farmers were also wary of spring and swamp water because these also harbour liver flukes that affect livestock.

Some herdsmen were careless when they took the animals to water at communal points or by the swamps. There were no watering pans made for the stock by the watering points thus the animals drunk directly from the water sources and a number of animals sustained injuries as they struggled with each other to drink water. There was over crowding, disorder and conflict at the watering points. The pig farmers, particularly those who tethered their animals, gave their pigs soapy water left over from dish or cloth washing to drink. They believed this soapy water improved the pig's digestion. Goats were hardly ever deliberately watered. Some farmers had never seen their goats drink water., Generally the farmers believed that goats required very little water and that goats met most of their water needs from their food.

Chapter 6. Processing, Marketing and Gift-giving of Livestock and Livestock Products

6.1 Cattle

6.1.1 Milk Production and Marketing

91.11% of the cattle are hand milked. 8.89% are machine milked. A crossbreed cow on average gave between 6 to 15 litters of milk per day.

The price range of milk per litre is Ug. Shs300/= to 800/= per litre. Most farmers (88.3%) however sell it at Ug. Shs. 500/= to 600/= per litre. 57.63% of the milk is sold at farm gate, 25.42% is sold directly to the neighbours as regular customers and 15.25% is taken to the trading centres for sale. Selling points in the trading centres include small shops, or specific clientele. Most of the milk though was for home consumption (see figure 5.6).

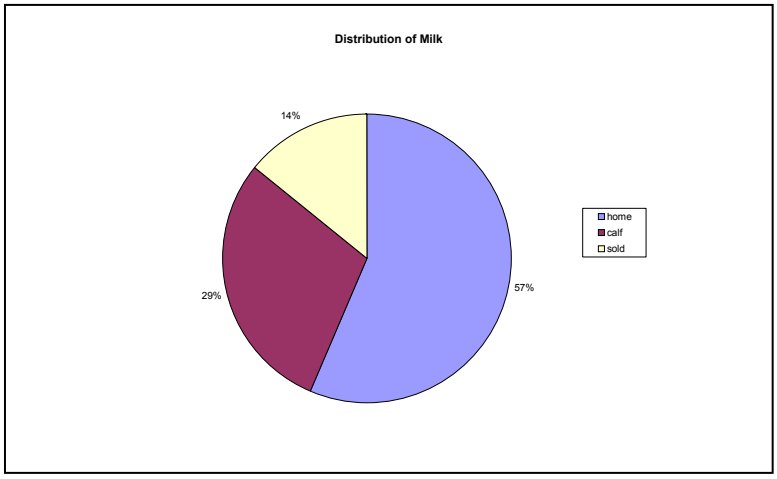


Figure 6.1 Disposal and distribution of Milk

Live animals were sold. An adult local cow sells for between Ug. Shs. 100,000/= to 140,000/=. A cross breed goes for about Ug. Shs. 500,000/= and an exotic animal (Friesian) from Ug. Shs. 800,000/=. The live animals are sold to fellow farmers and to butchers if they are to be sold for meat. Occasionally they are sold directly at the city's abattoirs. See table 5.6

6.1.2 Cattle Products Given Out as Gifts

Of the cattle products given out as gifts, 60.00% is of milk and 40.00% of meat. The milk given out as a gift is mainly given to members of the extended family who lived in town. This was particularly the case when the keepers had children/grandchildren, old relatives (notably the parents), sick or are less well off. In some cases milk was given out when there was excess supply or on festive occasions. Milk was also occasionally given to the neighbours, friends and persons who supplied household waste for the cattle feed. The household waste was sometimes obtained free. Friends who had come to visit after a long time would also be given milk as a gift.

Live cattle are given as gifts among extended family members and close friends primarily as contributions towards dowry payments.

6.2 Goats and Sheep

6.2.1 Production and Sales

Goat sales mainly occurred during festive seasons, at the beginning of the school terms (to raise school fees) and also whenever there was an emergency as in when a family member fell ill and there was no cash at hand. During festive seasons like Christmas time the price for goats was high and could even be as much as shs 40,000 for a mature one. Otherwise during the rest of the year the price for goats and sheep ranged between Ug. Shs. 20,000/= to 30,000/= per head.

Sheep were mainly sold at the Moslem festival of *Idd Aduha*. During the festive seasons theft of shoats was at its peak. Most shoats were sold at the farm gate and often to people in the neighbourhood. See table 5.6

6.2.2 Goat and Sheep as Gifts

Not many goats are given out as gifts. Only one lady farmer gave her daughter a goat as a gift to start off life with.

6.3 Pigs

6.3.1 Production and Sales

Pigs were also sold to obtain money for school fees and other pressing needs. There was a steady market for pigs because of the increasing demand for pork. Some farmers sold the piglets between Ug. Shs. 5,000/= and 10,000/= for the local ones and Ug. Shs. 15,000/= to 25,000/= for the exotic breeds. Mature pigs for slaughter were sold between Ug. Shs. 40,000/= and 60,000/=. The estimated weight for such animals was 60kg. Most of the pigs were sold at the farm gate to butchers and are few are sold to fellow farmers.

6.3.2 Pigs as Gifts

Piglets were given out as gifts to the owner of the boars that mate the sows.

6.4 Poultry

6.4.1 Production and Sales

Most poultry products sold are from exotic birds. A table bird whether dressed or undressed, sells for between Ug. Shs. 3,300/= to 4,000/= per bird. Eggs sell for Ug. Shs. 2,500/= to 3,000/= per tray (30 eggs) depending on the size of the eggs. The price of an off-layer is Ug. Shs. 2,500/= to 2,700/= per bird. Sales are also mostly done at the farm gate or in the neighbourhood. In the case of eggs, the farmer might be supplying a few local shops with eggs. See table 5.6

6.4.2 Poultry and Poultry Products as Gifts

Poultry and poultry products are given out as gifts to relatives and friends. A live bird and / or eggs may be given to visiting good friends and to relatives and friends as a token of friendship, as a congratulatory gesture for an achievement, and when someone was sick. Off layers were also given out as gifts because they did not have a high market price.

6.5 Rabbits

6.5.2 Production and Sales

In the early 1990's rabbit production was promoted as a commercial activity favourable for urban settings. However, most of the farmers gave it up due to expensive parent stock and a lack of market. The average cost for a New Zealand White doe was Ug. Shs. 15,000/=.

6.5.3 Rabbits as Gifts

Rabbit rearing has largely been left to children especially the boys while the parents concern themselves with the bigger livestock. Most of these boys acquire their first batch of rabbits from their friends.

Although farmers noted that the costs of production for all the livestock species were increasing thereby reducing the profit margins, they still managed to get some cash from the sale of livestock products particularly milk and eggs. This cash was used to purchase day-to-day household requirements like salt, sugar and soap. Thus cash flow at home is improved. This was especially important for them because they did not have adequate incomes to cater for the daily and monthly household needs.

Some farmers did not give out livestock products as gifts because:

(i) Farmer required all the income from animals for school fees and other needs
(ii) Farmers considered the enterprise as purely a business enterprise
(iii) Farmers did not think they are wealthy enough to give out gifts

6.6 Livestock Services for Poor Livestock Keepers

6.6.1 Veterinary Services

Most of the veterinary services (58.82% of respondents) were provided for by private veterinarians. Government veterinary staff (district extension staff and Makerere University staff) provided 32.35% of the services. In the past these services were either at no cost or at a subsidized rate, but now are charged to the farmer since government removed all subsidies for veterinary services in the late 1980's and further liberalized provision of these services. 5.88% of the farmers administered treatment themselves because of the high costs of using veterinary staff.

A few farmers obtained services from NGO's who provided free veterinary services to their beneficiaries for fixed periods. For example the Christian Children's Fund CCF provided a zero grazing cow as well as free veterinary services and treatment for a period of one and a half years.

Most of the farmers purchase livestock drugs from dealers in the city centre (see figure 5.7.). This is because there were few animal drug shops in the suburbs. 21.91% of the farmers had access to a drug stockist within their neighbourhood, while 78.09% did not. A few farmers used traditional remedies. 73.96% of the livestock keepers mentioned that they could obtain all their needs from the available stockist.

6.6.1.1 Constraints in Obtaining services Related to Animal Health

The farmers identified the following constraints listed in descending order of importance in the table 6.1 below.

Table 6.1 Constraints related to animal health as ranked by farmers in descending order of importance

Constraint	Remarks
Expensive drugs	Farmers rely on local herbs Animals with complicated problems are slaughtered
Expensive veterinary services	Poor farmers rely on services from veterinary assistants and scouts who charge less than veterinary doctors Poor farmers only consult veterinary doctors for extreme conditions and when there is no other option obtain technical advice from attendants of animal drug shops and from suppliers of drugs.
Drug stockists not easily accessible/ distant	- Drug stockists are usually very far away and most of the drugs and veterinary services have to be obtained from the city.
Adulteration of drugs by stockists	Unscrupulous stockist adulterate drugs in order to increase their profit margin from drug sales. Farmers do not get value for their money, and efficacy of the drugs is compromised so animals may die.
Few qualified veterinary doctors	There are few qualified veterinary doctors and veterinary assistants offer the majority of veterinary services.
Lack of / high cost of transport	Farmers incur transport costs in travelling to the city centre for drugs and supplies. Farmers must also cover the transport costs of veterinary staff either in form of cash for fuel or public transport. Transport problems also affect services for which timeliness is critical e.g. artificial insemination and treatment of animals.
Expired drugs	In some cases, drug stockists and vendors sell expired drugs and even relabeled such that even though farmers were cautious and read the labels they could still be duped into buying the expired drugs
Slow response by veterinary service providers	Response time of veterinary doctors to a call slow, due to the fact that there are few in number and over burdened. Transport problems and poor communication also cause slow response.
Untrustworthy / unethical veterinary doctors	Some doctors and veterinary staff did not follow professional ethics and were out to exploit farmers and to make as much money as possible. Thus they might underdone or recommend treatment that was not necessary
Lack of knowledge / skills and lack of access to information.	Many farmers lacked knowledge on diseases likely to affect their animals and how to prevent and control them. Farmers also unaware of method of spread of some of the common diseases like swine fever, Newcastle disease, tuberculosis etc

6.6.2 Information Sources, Extension Services and Training

Information sources

The major sources of information on livestock production practices for poor livestock production practices for urban and peri-urban livestock keepers was neighbours / friends. (See figure 6.2)

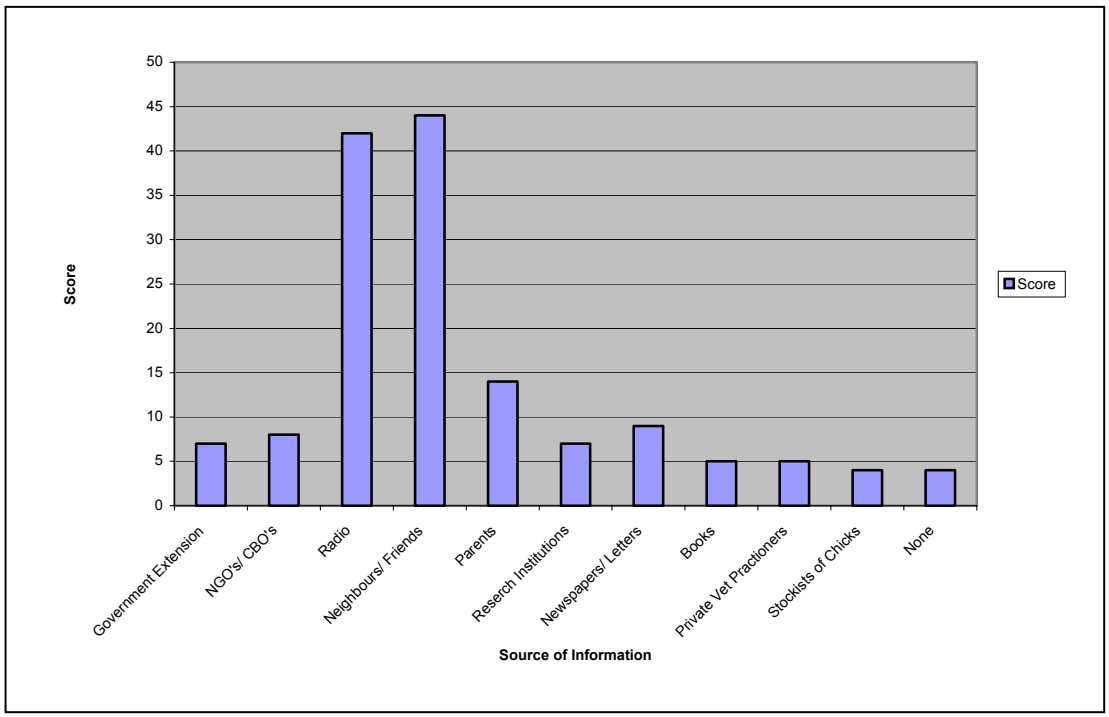


Figure 6.2 The Major Sources of Information for Poor Livestock Keepers

Radio was ranked as the second most important source of information underscoring the importance and influence of the media, and the opportunities of reaching urban and peri-urban farmers via radio.

Print media materials (newspapers) and books scored low as a source of information as did government extension and research institutions. Livestock referred to their parents, many of whom were rural based as their third most important source of information. NGO's and CBO are also ranked low as source s of information.

6.6.3 Formal and Informal Training

Livestock keepers utilized both informal and informal training channels to improve their skills. Livestock keepers cited workshops, field visits, exchange visits and visits to research institutes as some training informal opportunities. Workshops and exchange visits were arranged by the extension service providers, notably NGOs / CBOs and government staff. As were the visits to research institutes. Few of the poor farmer s had the confidence to seek out assistance from the research facilities on their own and they also lacked the ability to arrange the logistics for such visits.

6.6.4 Field Days and Training Courses

Although announcements for field day demonstrations and agricultural shows are publicly made, and venues are open to the public, only 22% of the poor livestock farmers have ever

attended a field day, and only once since they started keeping livestock. Figure 6.2 below indicates the trend in attendance of field days over the years.

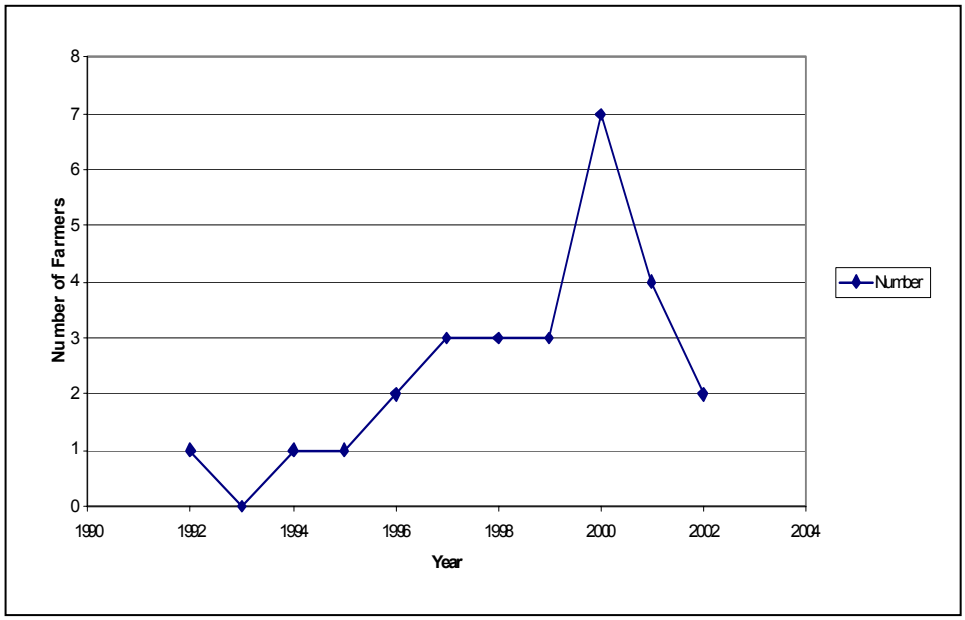


Figure 6.3 The tend in field day attendance by livestock farmers. The figure for 2002 is up to March 2002.

Only 37% of the livestock keepers had attended training courses on livestock production. The frequency of attendance for the majority of livestock keepers was one course ever since they started livestock keeping. Only one of the farmers had attended a sequential training course i.e. four courses over a year, sponsored by the Indian government in collaboration with the Young Women's Christian Association (YMCA).

Another farmer attends annual training courses organized separately by UgaChick, Nuvita and Quality Chemicals. Most of the training courses are for short periods and are conducted in the form of day workshops and seminars. This training schedule takes into consideration the working and family duties of the farmers. Over the years more livestock keepers have participated in training courses and workshops (see Figure 6.4 below).

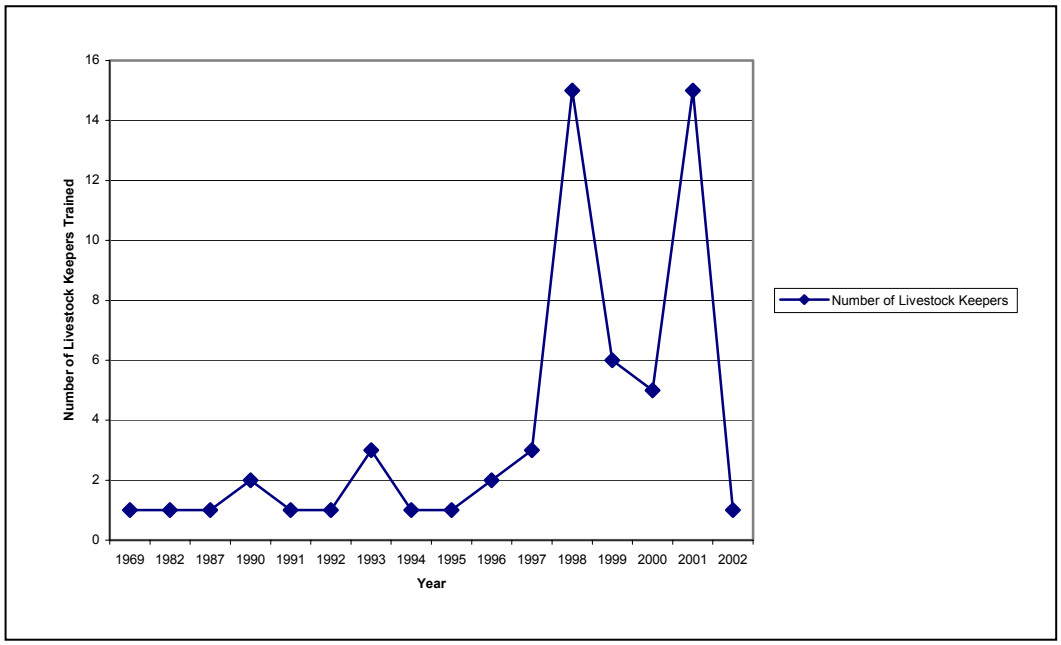


Figure 6.4 The trend in attendance of training courses by livestock farmers. Figures for 2002 are up to March 2002 only

Most of the training on livestock keeping is sponsored and organized by the church, private feed or veterinary pharmaceutical dealers/ agents and NGO's/ CBOs (see figure 6.5 below). The churches and NGO's often facilitate the government staff to do the actual training by providing transport, training materials, venue and allowances. The private companies have their own professional staff who conduct the programmes. In this case, the government staff are often only invited as participants and / or observers.

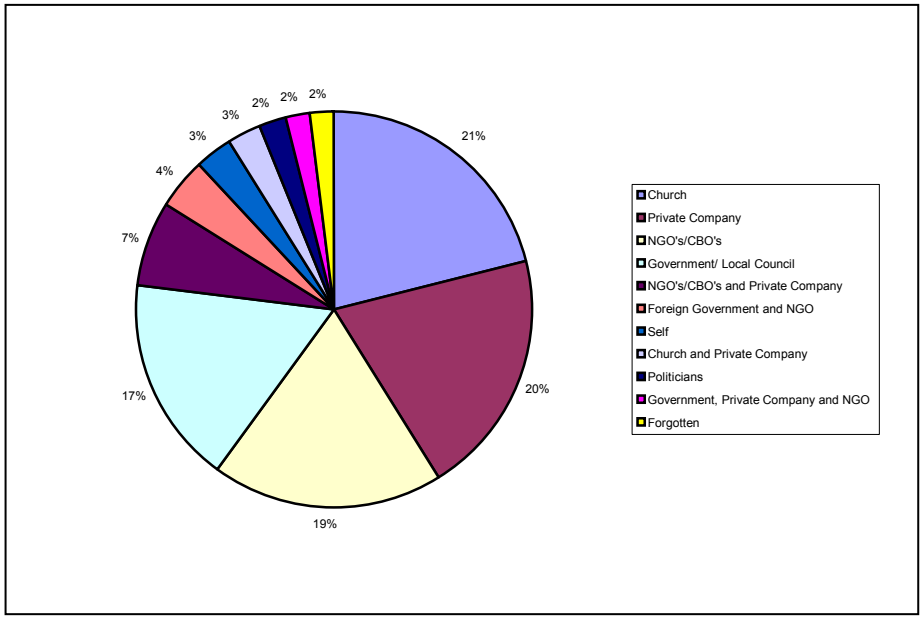


Figure 6.5 Sponsorship of livestock training programs

The Table 6.2 below lists the organizations that facilitate (provide resources for / sponsor) and implement (do actual training) of training courses for livestock keepers.

Table 6.2 Organizations that facilitate and implement training for livestock keepers in Kampala City area

Organization	**Training roles**
Government and its parastatals/ local authorities	
Government and local councils including Kampala City Council	-Facilitation and actual training
Indian government	-Facilitation, longer term
DANIDA	-Facilitation
Diary Development Authority	-Facilitation
Makerere University	- Training
Church Based Organizations	
Send a Cow, Uganda	-Facilitation and actual training
Christians Children's Fund	-Facilitation
Cardinal Nsubuga TC	-Facilitation
Other Non-Governmental Organizations	
Uganda National Farmers association	-Facilitation
Young Women's Christian Association (YWCA)	-Facilitation
Young Men's Christian Association (YMCA)	-Facilitation

Organization	Training roles
Uganda Veterinary association	-Facilitation and actual training
Private Sector	
UgaChick	-Facilitation and actual training
Sekalala Enterprises	-Facilitation and actual training
Quality Chemicals	-Facilitation and actual training
NUVITA	-Facilitation and actual training
BOCOMO (SA)	-Facilitation and actual training
Coopers Uganda LTD	-Facilitation and actual training
Kagodo Farmers	-Facilitation and actual training

Much of the training focused on cattle management and commercial poultry production (See Figure 6.6 below). Hardly any training on goats was provided in the past year and no training has ever bee n provided on piggery. Between 1996 and 1998 there had been training on rabbit keeping. However this ended because of problems in marketing rabbits. The subjects covered in the training programmes attended by the livestock farmers are presented in Figure 6.7 below.

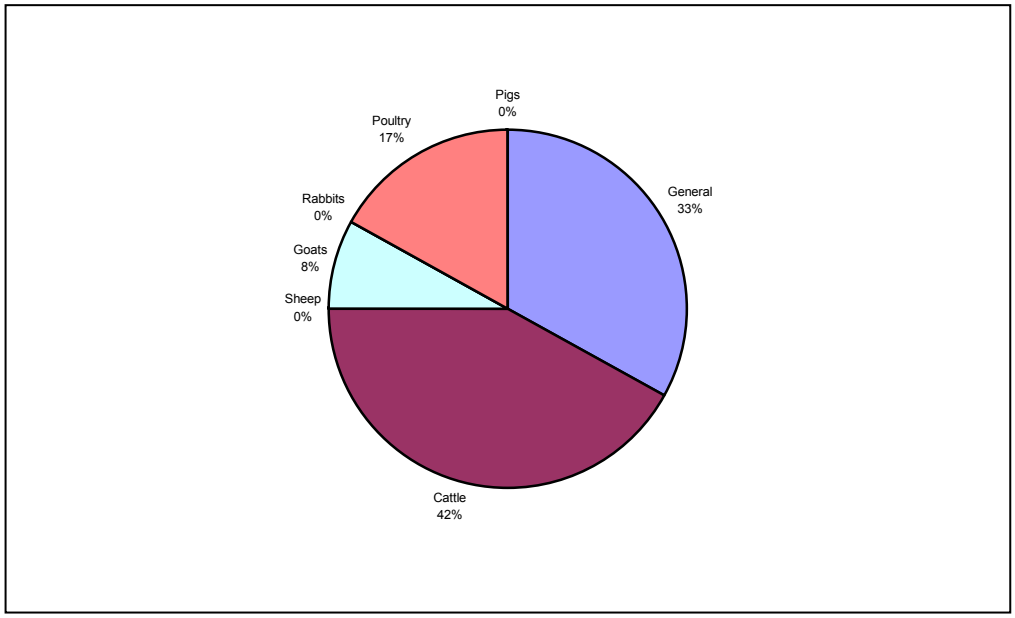


Figure 6.6 The Proportion of Training that Targeted the Different Livestock Species

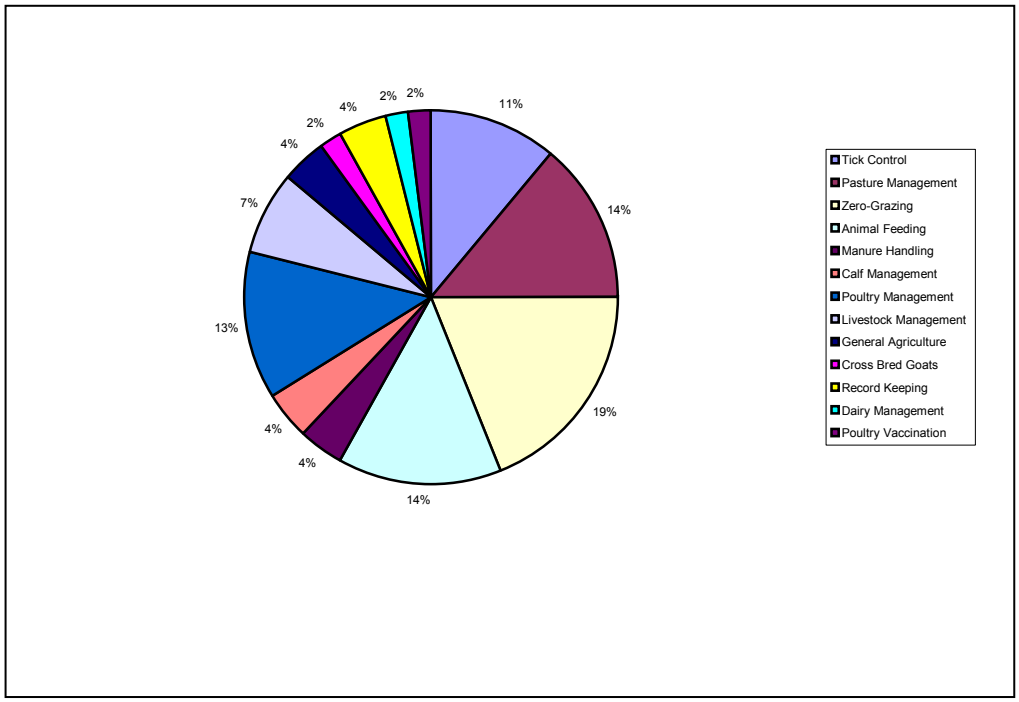


Figure 6.7 The Subjects Covered in the Training Programmes Attended by Livestock Farmers

6.6.5 Extension Services

Extension services are meant to provide on-going support to livestock keepers on a regular basis. Only 16.67% of the farmers had been visited by extension workers while the majority (83%) had not (Figure 6.8). The visits were mostly at the convenience/ schedule of the extension worker or when the extension workers were contacted. Only 4% received extension services on a regular basis (2% received monthly visits, 1% bi-monthly visits and 1% bi-annually).

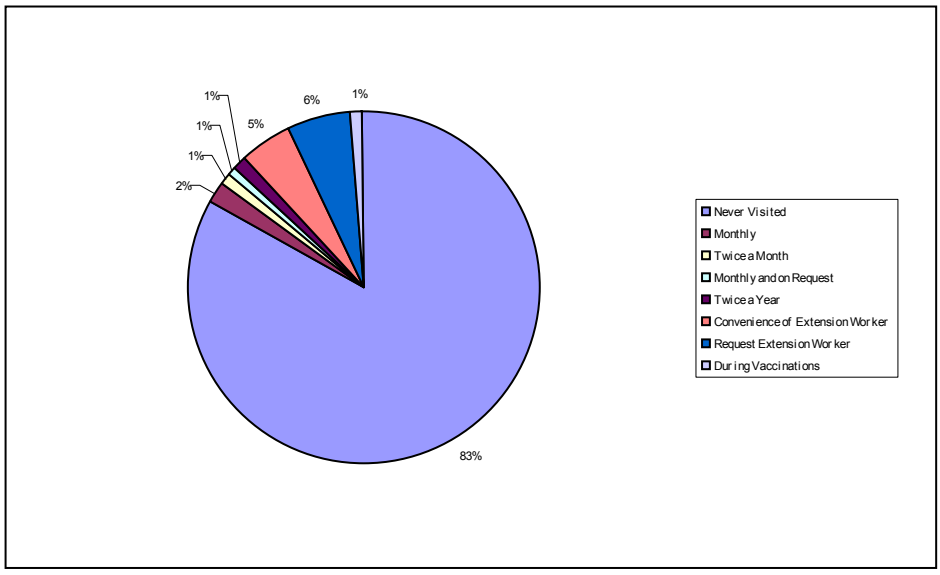


Figure 6.8 Frequency of Visit By Extension Workers

Farmers felt that extension workers did not visit them as they were not aware of the presence of the farmers, and in other cases, the farmers felt they had gained enough experience not to require an extension visit.

The greater proportion of poor livestock keepers (85%) obtain additional information when private veterinary practioners visited to treat their animals. These veterinary staff include doctors, assistants and scouts.

Chapter 7. Institutional Support For Poor Livestock Keepers In Urban And Peri-Urban Areas Of Kampala City

7.1 Institutions Which Represent The Needs And Aspirations Of Poor Livestock Keepers

City authorities notably Kampala City Council (KCC) have since 1998 recognized and indeed incorporated plans to encourage urban agriculture. However the supporting legislation, infrastructure and mechanisms for livestock keeping have yet to be put in place. Currently, the pre- 1995 laws that are restrictive / prohibitive are still in effect. The lack of a well-defined legislative framework has combined with the effects of liberalization of the economy to further marginalize poor livestock keepers. Liberalization of the economy saw the removal of provision of subsidized services and supplies.

Non-governmental Organizations (NGO's) like Send A Cow, Heifer Project International, Land O' Lakes, TASO (The AIDS Support Organization) and Christian Children's Fund (CCF) have also provided technical and material support to poor livestock farmers in and around Kampala. TASO and CCF focused on disadvantaged families that have been affected by HIV/AIDS. While these organizations cover livestock their main objective is to help the non-working parents and orphans obtain a livelihood.

These institutions tend to focus on their 'designated focus groups' and do not necessarily target poor livestock keepers. The poor livestock keepers do not feel confident enough to go and seek out advice/assistance from these groups on their own initiative. Often if they do they are not assisted, as they are not in the target group or area of activity.

No institutions were therefore found in the Kampala City area that represented the needs and aspirations of poor livestock keepers per se.

7.2 Training Facilities/ Institutions

Many organizations have offered training facilities to farmers countrywide. While KCC and the Ministry of Agriculture, Animal Industry and Fisheries (MAAIF) provide general information on livestock husbandry and hygiene including manure disposal, other organizations provide tailor made training geared towards a specific field to which assistance is being provided. Seminars have been organized for farmers on specific topics of interest. MAAIF has trained AI technicians and farmers on aspects of better heat detection.

Makerere University Faculty of Veterinary Medicine provides technical training to extension farmers on specific areas of interest, at a cost to either the farmers or organization requesting for such a service (see previous chapter)

Private consultants and service-provider give training to farmers at a cost. Training may be done in a bid to promote and encourage farmers to engage the services of these firms. Some farmers who have expressed need for specific training have not been able to achieve their aspirations due to the prohibitive costs of training. A few organized groups though have managed to accomplish group training with assistance from MAAIF and other NGO's.

7.3 Credit Institutions

Banks and NGO's make the bulk of source of credit for the poor livestock farmers. However, the poor farmers accessibility to credit has been limited by their lack of security and high interest rates. The majority of poor urban livestock farmers have accessed capital from family savings; inheritance or none interest levying organizations. Credit support is limited to NGO's that give material and or monetary support payable on trust upon commencement of productivity of the enterprise. Send A Cow and Heifer Project International donate dairy heifers to beneficiaries whom they insist must give out their first female offspring to the organization, to be forwarded to another beneficiary.

Private service providers also extend credit to farmers through provision of services whose payment is deferred until commencement of production of the livestock enterprise. Uganda Feeds Ltd for example provides farmers with poultry feeds on credit, and payment is then effected when the birds begin laying and eggs are sold.

Only 10 of the 184 livestock keepers sampled had obtained loans to start off, improve and/or expand their livestock production. Only one of the farmers had taken credit from a relative. Table 7.1 below indicates sources of credit for the remaining nine farmers.

Table 7.1 Sources of Credit Obtained by the Livestock Farmers

Credit Institution	Nature of Institution	Year Obtained
MED, Bina	Micro finance	
Uganda Commercial Bank (UCB) Rural Development Scheme	Commercial Bank/Uganda Government	1990, 1998
Medinet	Micro finance	
Biyinzika	Poultry Breeder and Animal Feed Manufacturer/Employer	
FINCA	Micro finance/Saving Scheme	
Women Trust Bank	Micro finance	2001
Entandikwa Credit Scheme	Uganda Government	
Local Priest/Church	Church	

FINCA saving scheme is comprised of members saving the money with the organization from which they can obtain a 100,000/= loan for every 30,000/= saved. The other farmers mentioned no other securities required to receive the loan. The loans were mainly obtained for poultry production, i.e. for egg production. One farmer obtained the loan for broilers, two obtained cattle, and one, pigs. Other than stock the loans enabled the farmers get feed for the animals. The farmer, who obtained the loan from Biyinzika, also his employer, got it in kind.

Eight out of the ten farmers had received training on credit management. The farmer who received a loan from a relation, that who received one from Buyinzika and the one from MED, Bina had not received any training.

The servicing of loans from the micro finance institutions is done on a weekly basis regardless of whether or not a farmer's livestock have started being productive.

The CCF, however, allowed farmers pay back their loans in kind. Under this scheme, farmers given improved zero grazing animals have to pay UG. Shs. 500,000/= as soon as the cow has had a calf. Thus the farmer gives 2 litters of milk per day until he/she had paid up the equivalent of 500,000/=.

The Send-a-Cow or Give-a-Cow project that maintain a revolving calf scheme required farmers to pay a membership fee of Ug. Shs. 10,000/=.

The problems associated with credit are:

(i) Borrowing from some micro-finance institutions is by groups. Thus if a member of one's groups defaults on their loan in the stipulated period, the others cannot get more loans and they are all equally penalized as a group for being defaulters.

(ii) The farmers felt it was not realistic to ask a livestock producer to service their loans on a weekly basis even when the stock had not yet started production.

(iii) If they lost their animals, no consideration was given to them in terms for loan repayment.

(iv) Where marketing of the product was a problem the repayment of the loan become more difficult.

All ten farmers had repaid their loans although only four reported that they had had no problems at all in repaying the loans. The four had obtained loans from UCB, m/s Biyinzika and the Government Entandikwa Credit Scheme.

7.4 Policy Institutions

No policy institutions were identified that specifically targeted developing policy recommendations for urban and peri-urban poor livestock keepers. However the government of Uganda has applied resources to develop policies to support the livestock sector. These policies are in line with overarching government targets of poverty reduction, diversification, liberalization and privatization all of which support a move from subsistence to commercial production. Key policy documents include;

i. The Plan for Modernization Of Agriculture (PMA)
ii. The Poverty Eradication Action Plan (PEAP)
iii. The National Cattle Breeding Policy
iv. The Diary Development Policy

Support documents include;

i. A study report: Strengthening the Uganda Beef Producers Association
ii. Government interventions to promote production, processing and marketing of selected strategic exports.
iii. A concept paper on the strategies for the establishment of animal disease free zones in Uganda to promote animal related exports.

Chapter 8: Policy Issues Pertaining to Livestock Keeping in Urban and Peri-urban Areas of Kampala City

8.1 Past and Current Legislation Pertaining to Livestock Keeping

Legislation concerning livestock keeping in urban and peri-urban areas of Kampala City is under review with by laws and regulations being revised to allow zonation and specific production systems with appropriate practices (Atukunda 1998). While livestock keeping has gained significant prominence in Kampala City over the last thirty years due to economic influences, government Acts, dating as far back as 1922, are still in effect e.g., the Animal Straying Act. Indeed, most of the prevailing legislature was last reviewed in the early 1960's and therefore does not reflect the current realities. Kironde (1992) noted that most of these colonial regulations and by-laws are excessive, unenforceable or inappropriate to local conditions. Examples of acts that need reviewing include: The Public Health Act, The Cattle Grazing Act, The Cattle Traders Act and The Animal Straying Act.

The Kampala City Council (KCC) is recognized as the major implementing authority in relation to regulation of livestock production in urban and peri-urban Kampala. Till 1995, KCC prohibited and restricted livestock keeping with city officials often reported as harassing the livestock keepers in an effort to implement the official KCC policy. In 1995, after presentation of key findings by researchers on urban and peri-urban agriculture, KCC official changed its position and recognized the existence and the benefits of urban agriculture. KCC has since included elements of urban agriculture in the Kampala City Structural Plan its man development plan. KCC solicited the District Veterinary Office, the Public Health Department in the Ministry of Health and other concerned departments to submit recommendations to support its new position. These recommendations are yet to be published and made public.

The farmers were aware of the following regulations regarding livestock production within Kampala City:

(i) Animals must be confined in either the owner's premises or properly tethered and kept away from public utilities like roads. A herdsman must accompany any animal in transit.
(ii) Movement outside the confines of the city can only be done with a permit. Likewise all abattoir/butchers must have permits for the animals they intend to sell or have brought for slaughter.
(iii) Housing for humans should not be shared with of animals
(iv) Animals under quarantine should not be moved until cleared
(v) Areas where animals are kept should be clean.
(vi) The management of livestock should not cause conflict with ones neighbours or destruction of their property.
(vii) Animals kept should be fed and not tortured.

Most of the regulations were tabled as by-laws emanating from the Animal Act, the Public Health Act and other relevant acts.

Of all the regulations mentioned, the first listed was most well known to farmers, with close to 60% of the farmers citing it. This was because a number had suffered from the consequences of allowing their animals to roam. Radio announcements are also occasionally aired over radio warning livestock keepers against letting their animals roam freely in the city. A few farmers only knew the rest.

The farmers indicated that some of the regulations were a question of common sense such as the one requiring a herdsman to accompany animals in transit. However, the livestock keepers noted that other regulations were unfair; such as the by-law that stipulates that livestock owners have to pay for damages when an animal was knocked down or killed in someone else's compound.

The farmers and local leaders showed awareness of the values of certain regulations. . Loitering interfered with traffic; meant animals might run into other people's gardens and other such damage. The movement permits were to control theft of livestock. However, the farmers felt that sometimes the local leaders were not consistent in the implementation of this rule when an animal was suspected stolen depending on the political affiliations of the persons concerned on either side of the conflict/ complaint.

Within KCC, issues regarding urban and peri-urban livestock keeping are under the social welfare department which liaises closely with the Public health department of Ministry of Health. The link with the district Veterinary office is not as strong raising concerns on enforcement and regulation of public health concerns that are under the jurisdiction of the veterinary department. The KCC social welfare department runs programmes for poor households.

8.2 Land Tenure Issues

Land is a key resource in livestock in livestock production. Maxwell and Zziwa (1992) cited land tenure issues as the main concern for urban farmers. Maxwell and Zziwa (1992) also cited the dominance of ownership of land by the Baganda, a Bantu tribe. This raises questions of access to land by poor persons and households originating from other areas/ tribes of Uganda.

There are generally five forms of land tenure in effect in Kampala City:

(i) Mailo or registered freehold in which the owner holds the land in absolute ownership with a legal land title
(ii) Leasehold land is where the land has been leased to the individual by the Uganda Land Commission as provided for in the 1975 Land Reform Act for 49 or 99 years
(iii) The Customary or Public Type Ownership in which individual ownership is not recognized but rather only the right of possessing and using the land subject to the superintendency of the clan, community or public land
(iv) Kibanja form of tenure: the holder operates on freehold or mailo land without an ownership title, but may or may not pay rent and retain a legal right to land use
(v) Squatter tenure: the holder operates land without an ownership title and without paying rent, and retains no legal right of land use. Usually the squatter settle on the land without permission from the owner.

The Kampala City authorities do not have much jurisdiction or control over land that the city does not own

8.3 Public Health Considerations

8.3.1 Animal Waste

Waste from livestock production, especially dung/ litter and urine and their disposal are major public health concerns. They principle use of the by products are to fertilize crops in the livestock keepers homesteads. Excess is given out to friends and neighbours. A few farmers composted manure with vegetative material/ waste. A small number dealt with the excess by drying and burning. Some sold it off, while others used it in pasture production. A couple of farmers made biogas from the waste.

Waste disposal was a constraint in 24.48% of the cases. Accumulation was mainly associated with the intensive forms of production. There are seasons when sales of manure are low such as during the dry season. The smell and flies that consequently come up are a cause of discontent among neighbours and the flies predispose communities to diseases associated with poor sanitation. This is exacerbated in the densely populated poor parts of the city where most of the poor live.

8.3.2 Zoonotic Diseases

Generally farmers were unaware of the public health concerns associated with keeping livestock in confined places and in proximity to human beings other than for the unpleasant/ foul odours and flies. Only one of the farmers in the focused group discussions knew about tuberculosis and its route of transmission through cattle and how boiling milk could control it, information he got from a radio program.

In general, hygiene and disease control measures in handling and housing livestock were not adhered to. Livestock keepers also did not observe stated by-laws and regulations in handling of livestock products such as meat and milk. The veterinary personnel tended to focus on animal health issues, without tying them to human health implications.

8.3.3 Public Nuisances

The Public Health Act cites a number of nuisances that are directly or indirectly related to livestock keeping including the dangers of poorly constructed and or maintained structure such as housing and sheds, waste disposal areas, restraining structures, milking and storage buildings etc.

Over grown pastures/ grass areas were also cited as nuisances that could cause injury or harbour vermin of potential danger to man and animals. The Act also declares as a nuisance animals that were kept so as to be offensive or injurious to health. The law stipulates that notice will be given to the either the owner or the occupier and will result in prosecution if no corrective action is taken. Farmers acknowledged that while many of the stipulations in the Act made sense, some were impracticable to apply in the prevailing conditions/ environment. Generally the farmers had no clear knowledge on public health other than the need for cleanliness

8.3.4 Withdrawal Period After Drug Therapy

It was noted during the PRAs that hardly any farmers recognized that for the different drugs they had to implement withdrawal periods nor the reasons why it was so. For those who did, they explained that they could not afford to discard any of their animal products. It was only done when the product was obviously negatively affected and could not be sold, e.g. in cases of mastitis or blue pork.

They were aware however, of the fact that they should not sell sick animals for table and meat had to be inspected and stamped as cleared, from the abattoir before sale. Some however, got away with it depending on how unscrupulous a butcher was. Small animals however, often escaped inspection as most were slaughtered locally.

8.4 Environmental and Animal Welfare Issues

The main environmental issues associated with livestock production among the poor were related to housing, stocking densities and space. Improper architectural farm planning and the tendency to keep more animals beyond the carrying capacity of the area showed implications on quality of air due to pollution by dust especially where poultry were kept in large numbers in small premises. The presence of vermin was evident. The trend by farmers to sell their larger livestock only at times of disaster (drought, urgent need for money e.g. for school fees) also encourages manure build-up and over-crowding at the farms.

Neighbours also related animal welfare issues to housing, management and harassment of animals and their owners.

Chapter 9. Challenges and Potential of Livestock Keeping in Urban and Peri-urban Areas of Kampala City

9.1 Introduction

Livestock farming among the urban and peri-urban poor is challenging. The poor raise livestock in a highly competitive environment against both commercial urban and peri-urban producers and rural producers who have certain advantages over them. However, the continued growth of urban and peri-urban livestock production in Kampala City also indicates that some elements of the urban environment favour livestock production as a survival, income-generating enterprise.

9.2 Key Limitations and Challenges

The key limitations and challenges to urban and peri-urban livestock keeping are:

1. Space: The area around the homesteads is small. This offers a challenge to farmers to utilize the space for housing animals, growing fodder and at the same time ensure that the environment does not degenerate into a public health hazard
2. Housing:
3. Feed costs and availability: There is a limited availability of fodder and pasture during the dry season. Feed intake is reduced and this is reflected in the reduced milk production, yet this is the period when the farm gate price for mils goes up. Therefore, there is a need to educate farmers on the benefits of forage conservation to cater for the dry season. For poultry, the dry season spells are associated with high grin prices.
4. Feed quality, including quality of feed ingredients: Because of the fluctuating supply of raw ingredients needed for the mixing of commercial feeds, feed quality tends to deteriorate in periods of scarcity. Suppliers who maintain quality tend to increase prices of commercial feeds.
5. Costs of veterinary services: The cost of veterinary inputs and services is generally high and prohibitive for many farmers. This is attributable mainly to the high taxes levied on imported veterinary and farm inputs
6. Quality of veterinary services including the ethics of the service providers: Because of the low numbers of veterinary and para veterinary personnel covering Kampala and its suburbs, the quality of the service rendered to the farmers is low. This situation was exacerbate by the massive retrenchment exercise recommended by the Structural Adjustment Programs prescribed by the World Bank that saw the forced retirement of many veterinary personnel. Those staff that took up private practice levied higher service rates to offset the advantages of those who remained within the government service
7. Distance and response time of service providers: There was a long time between the reporting of a case to a veterinarian and attendance to the case, especially by veterinary doctors. This was a result of there being to few veterinary staff and or lack of reliable transport or other amenities to respond to the situation. This situation presents a dilemma to both the farmers and the veterinary staff. The latter were unable to articulate the constraint to the farmers for fear of appearing unprofessional.
8. Access to input capital and more favourable forms of credit. The high interest rates, the lack of acceptable security and the level of investment have discouraged poor urban and peri-urban livestock farmers from accessing credit facilities. This has meant they the farmers have to rely on family or personal savings to build their business ventures.
9. Lack of research and service provision tailored to the specific circumstances: it was evident that research and service provision were not targeted to the unique circumstances and needs of poor urban and peri-urban livestock keepers.
10. Lack of support institutions: no institutions representing the needs, challenges and aspirations of poorer livestock keepers were found in Kampala City area
11. Lack of well defined and publicized supportive legislature and policies: clear regulatory legislature and implementing authorities and structures need to be put in place.
12. Poor networking among poor urban and peri-urban livestock keepers: while the poor livestock keepers cited neighbours as their main source of production information, there was a lack of the dynamic networking exemplified by group formation. The poor

livestock keepers therefore do not benefit from the influence and synergy that groups wield. Organized groups could enable poor livestock keepers take advantage of government policies and programs such as the Plan for Modernization of Agriculture, and the National Agricultural Advisory Service.

9.3 Key Strengths and Potential

1. Market shifts that favour livestock production by the poor: Liberalization and the impact of the structural adjustment programs has resulted in an increase in demand for farm gate products. Many commercial livestock producers have closed out due to the high costs of imported feeds and health products
2. Space limitations that favour returns (per unit area) from livestock over crop production: With the increase in population pressure in Kampala, the urban agriculture trend is leaning more towards intensified livestock production which requires less land, and promises high returns per unit area utilized
3. Employment opportunities for auxiliary service providers: The livestock enterprise offers opportunity for innovative job creation e.g. the sale of kitchen waste sale of cut roadside grass, collecting and utilization of manure, water provision (fetching/ transportation) etc.
4. Production of non-traditional animal precuts: As urbanization increases in Kampala City, the market for non-traditional animal products is raising e.g., ice-cream, yogurt, cheese, cooked egg dishes, roast pork, goat or chicken sold at open air, road side venues and drinking joints. This has increased the market for livestock products
5. Provision of a social safety net for vulnerable groups: the number of persons from the most vulnerable social cadres such as children, widows, retired people etc participating in livestock keeping indicated that this enterprise is recognized as a security net for the poor and marginalized providing much need income and a form of security. Livestock keeping has the potential to contribute to families with members affected by HIV/AIDS as a means of improving their health status and thus reducing dependence on expensive drugs
6. Opportunity for response to low cost/ high impact interventions: the large skill and knowledge gaps that are evident can be effectively addressed by low cost/ high impact interventions for significant improvement of the livelihood of the poor livestock keepers. The popularity of radio as a means of acquiring information means that the media channel can be used to effectively reach poor livestock keepers.

9.4 Knowledge Deficiencies and Research Opportunities

9.4.1 Technical Issues

9.4.1.1 Animal Health

1. Diseases that affect livestock: Farmers require more knowledge of the disease likely to affect their stock within their unique conditions. What cost effective preventive and control measures can be developed and employed by livestock keepers?
2. Local Therapies and Remedies: What is the level of indigenous knowledge among farmers with regard to local remedies, their preparation and administration? How effective are these therapies? Can a viable alternative treatment market be developed for indigenous therapies and drugs?
3. Service delivery especially by veterinary doctors: How can veterinary and other services for poor livestock keepers be improved in the prevailing climate of privatization of services and removal of government subsidies? Can a veterinary network that is mutually beneficial to both the vets and clients be instituted and made to function efficiently and sustainably?

9.4.1.2 Animal Reproduction and Breeding

1. Breed Identification and Selection: The livestock farmers indicated a desire to know more about breeds and their relative advantages, and to know how to select breeding stock
2. Control of Breeding in the Free-range and Tethering Systems: How can farmers control breeding under the free-range and tethering systems, especially for goats

3. Infertility Control: What are the causes of infertility, and how can infertility be control or minimized?
4. Artificial Insemination (AI) Issues: Why is there a high incidence of repeat breeding among the cattle of poor livestock keepers? Is it an issue of nutrition, disease, skills in heat detection or are the AI services provided of poor quality?
5. Introduction of New Breeds: What new breeds would be beneficial for the urban/peri-urban conditions poor livestock keepers' function in? What issues need to be addressed to ensure beneficial returns and sustainability? How can farmers be appropriately sensitized?

9.4.1.3 Feeds and Feed Production

1. Provision of Cost Effective Bulk Feed: How can the bulk of feed be provided cost effectively? Do farmers need to be taught pasture and fodder production? What teaching methods would be most suitable?
2. Preparation of Animal Feed: Farmers require more knowledge on how to prepare/ mix feed ingredients/ feeds. What ratios of the different ingredients are needed for the different stock types? How can the feed be made more palatable for the different species? How should feed be stored to maintain its quality?
3. Alternatives to Commercial Mineral and Vitamin Supplements: What alternatives to commercial mineral and vitamin supplements are available to farmers? Can the utilization and administration of indigenous mineral and vitamin sources be improved?
4. Water Quality and Provision: What impact does soapy water have on the health of pigs: on their digestion and on the digestibility of feeds? What are the water needs of goats?

9.4.1.4 Housing and Management of Livestock in Confined Spaces

1. Provision of Housing; What sort of housing and management methods should be adopted given the limited amount of space available to livestock farmers, the costs of building materials and construction, and the implications on animals and public health?
2. Space Management: How can space management be optimized? Which animal species, enterprises and management options are compatible and complementary?
3. Watering of Communal Livestock: How can water management and harvesting at communal sources be improved to take into account the needs of communally grazed livestock?

9.4.1.5 Training, Extension and Information Packaging

1. Training Needs: What are the training needs of poor urban and peri-urban livestock keepers? Which topical areas need special attention, will result in the most impact and benefit? Who should receive the training, the livestock owners or those taking care of the animals?
2. Training Methodology: What methodology should be used to make training effective? Is specialized training needed for the different gender groups? How often should farmers be trained?
3. Role of, and Access to NAADS: What role will the National Agricultural Advisory Services play in improving the livelihood of poor urban and peri-urban livestock keepers? How can the livestock keepers access NAADS services?
4. Information Packaging and Access: How best can information be packaged for poor urban and peri-urban livestock keepers? How can the livestock keepers access research institutes and research results/ innovations for their benefit?

9.4.1.6 Small-Scale Processing of Animal By-Products

1. Value Addition: What small-scale cottage industries based on livestock products can be developed by poor livestock keepers? What market issues need to be addressed to support these industries?
2. Waste/ by product processing: How can waste/ by products be processed into income generating products/ services?

9.4.1.7 Public Health Issues

1. Zoonotic Disease Awareness: How can the awareness of poor urban and peri-urban livestock keepers of zoonotic diseases and their consequences be improved? How can service providers mainstream sensitization on zoonotic diseases as part of their routine services?
2. Zoonotic Disease Impact, Management and Control: What is the incidence and impact of zoonoses in the livestock keeping neighbourhoods? What management, control and policy recommendations need to be put into place?
3. Drug Residual Effects and Management: How can the awareness of the effect of, and the need for observance of a drug therapy withdraw period be imparted to poor urban and peri-urban livestock keepers? How can the negative impacts on cash flow be managed during the withdraw period?
4. Manure Management and Effects: How can awareness of manure management and impacts be raised among poor urban and peri-urban livestock keepers? What cost effective, sustainable options exist for management of manure?

9.4.2 Socio-Economic Issues

9.4.1.8 Institutional Support, Policy and Interest Groups

1. Impact of Macro-Economic Policies: What are the impacts and implications of macro-economic policies such as the Structural Adjustment Plans, the Poverty Reduction Strategic Plan, The Plan for Modernization of Agriculture, The National Environmental Policy, the National Gender Policy etc., on poor urban and peri-urban livestock keepers? Are their needs/ aspirations presented in these policies?
2. Support from Government Research Institutes and Extension Service: Do research institutions and extension services target poor urban and peri-urban livestock keepers? How can this support be improved?
3. Recognition and Support from Kampala City Council and the Local Councils: What level of recognition and support do KCC and the local councils accord poor urban and peri-urban livestock keepers? What by-laws are needed to support and safeguard the interests of poor livestock keepers? How can these be implement in a sustainable manner? What structural provisions (human resource and infrastructure) can the councils provide? How will they be managed?
4. Support from Micro-finance/ Credit and Savings Institutions: How can micro-finance and other credit and savings schemes be tailored to suit the peculiar circumstances of the poor livestock keepers in Kampala City? Given that input costs are high, is it possible to have schemes that hire out farm equipment, such as sprayers that farmers do not use on a daily basis?
5. Livestock Sector Development Policies and Strategic Plans: Do the livestock sector policies and strategies include the needs and aspirations of poor urban and peri-urban livestock keepers? How can this category of livestock keepers be represented on livestock sector development fora? What are the implications of livestock sector development policies and strategies?
6. Support from Civil Society Organizations: How can NGO's / CBOs and other civil society organizations be brought to recognize and target the poor urban and peri-urban livestock keepers and advocacy and lobby on their behalf?
7. Urban/ peri-urban Livestock Keepers Support/ Interest Groups: What are the opportunities, challenges and benefits of forming support or interest groups among the poor urban and peri-urban livestock keepers? How can these groups be sustained, what roles will they play. What recognition and power will they wield in the development of urban and peri-urban livestock production.

9.4.1.9 Systems Cost-Benefit Analyses

1. Cost-Benefit Analyses of Keeping the Different Types of Livestock: Which livestock types are most beneficial for the urban/ peri-urban poor to raise?
2. Management Systems Analyses: What are the cost-benefit realities of keeping livestock under the different management systems? How do current recommended systems align to the needs/ aspirations of poor urban and peri-urban livestock keepers?
3. Impact of Market Liberalization and Export Diversification on Livestock Production in Kampala city: What impact does these strategies and others have on costs and

benefits of livestock production? (Currently, the export of maize has negatively affected the prices of maize-based feeds).

9.4.1.10 Gender, Social Safety Nets, and Networking

1. Gender Issues: How does gender segregation in livestock ownership affect the more vulnerable gender cadres such as women, children, the disabled, the elderly, the non-educated or poorly educated, the poorest of the poor? Do services and support systems reflect gender realities/ biases? Does co-ownership of livestock benefit women and girls? What are the livelihood implications of women keeping secret their involvement in livestock keeping from their husbands or other men in the household? How can this phenomenon be dealt with? What are the implications for a growing number of women claiming household headship even while their husbands are still alive?
2. Social Safety Net: What social safety net role does livestock production play in the lives of poor urban and peri-urban dwellers such as widows, retired people, those with HIV/AIDS, single women, single mothers, the rural landless and other vulnerable groups? How can this social safety net be recognized and supported?
3. Entry Point Issues: What are the main challenges/ bottlenecks to entry into livestock production in urban and peri-urban Kampala? What are the implications for tribal dominance in livestock keeping on poor individuals/ households from other tribes/ regions? What livestock enterprises can the landless/ those with limited access to land take part it? (Auxiliary services?). What entry point opportunities exist for vulnerable households?
4. Rural Linkages: How do urban/peri-urban and rural livestock production compete or complement each other? What information is passed between rural and urban/peri-urban livestock keepers?

Chapter 10. Summary and Recommendations

10.1 Summary

Livestock keeping in urban and peri-urban Kampala City has grown over the years. While livestock have always been kept within Kampala City area, this practice gained significance with the onset of substantial economic hardships in the early 1970's. Growth has since reflected the economic cycles Uganda has gone through as more people participate in a bid to offset gap between wages and felt needs. The growth of urban/ peri-urban livestock keeping has also been an entrepreneurial response to period of rapid urbanization that saw the increase in demand for livestock products.

While Kampala City Council has officially recognized the importance of the contribution of urban and peri-urban livestock keeping to the livelihood of its residents, there is evidently a legislative gap while the Council seeks to re-orient itself to the new position.

Both rich and poor households participate in livestock keeping with Kampala City. The poor face unique challenges due to the lack of resources and therefore limited access to services and supplies.

There are gender/ social patterns of participation in livestock keeping in Kampala City: most livestock keepers are from the Baganda tribe, which dominants Central Uganda. While most of the households that are involved in livestock keeping are male headed, women carry the brunt of livestock activities. Widows and the retired make up a significant proportion of the livestock keepers, underscoring the social safety net role of livestock keeping in Kampala City.

Livestock keeping is a major activity and income source especially for the female-headed households, and those headed by retired men. Across gender cadres, livestock keeping is one of the most important secondary activities and income earners, scoring higher than crop production.

Livestock keepers successfully produced off small plots of less than 0.25 through to 3 acres. The farmers managed their enterprises either continuously through the year, or targeted peak market seasons such as religious and other festivities.

There is a significant trend away from keeping indigenous or local livestock toward keeping of improved or exotic stock especially for cattle and chicken. However, there still exist knowledge gaps in breed selection, breeding management and the general management of the improved breeds.

Women are still marginalized, keeping mostly small stock while men dominate the keeping of cattle. Many women also keep secret from their husbands and other males in their households, their participation in livestock keeping due to negative/ oppressive attitudes from the men. Up to 11% of the married women claimed household headship citing inability of their husbands to provide for, or make household decisions. These women claimed that the household burdens fell on them.

There is a heritage mapping to livestock keeping with most livestock keepers following the tradition of their parents. Parents continue to influence management of livestock through information and advise. While the urban/peri-urban livestock keepers tend more towards improved breeds, they keep similar livestock types as their parents except for a significant decrease in sheep rearing. Rabbit rearing is still not widely practiced nor is rabbit meat accepted.

Most livestock keepers entered into the enterprise through their own savings but relatives and NGO's were also sources of stock. Zero grazing, tethering, paddocking and communal grazing were the main production systems. Each system has different demands on the farmers.

Costs of labour, feed and medical treatment dominated production budgets. Livestock keepers made use of available/ alterative feed sources such as crop resides, kitchen waste, roadside grasses and garbage heaps to supplement commercial feeds. Farmers resorted to indigenous treatment to offset the high cost of veterinary treatment.

Major constraints were feed availability and quality, disease, access to technical services, shelter provision, high production costs and space. Manure disposal especially for pigs was also a major constraint.

Trend analysis indicates that urban/peri-urban livestock keeping is intensifying, with many urban farmers shifting from cropping to livestock production. There is also a trend towards purchase of commercial feeds as forage and fodder becomes scarce. Cost of disease control and treatment is rising with the removal of government subsidies and introduction of liberalization.

Most livestock products are wither consumed within the household or sold at farm gate. The remaining products are sold at neighbouring trading centres. While eggs and milk are given as gifts, gifts of live animals are rare except for marriage and other festive ceremonies.

Animal health services leave a lot to be desired with major constraints being expensive drugs, and service, distance to stockists, adulteration of drugs and limited access to qualified veterinary personnel especially veterinary doctors.

Neighbours and friends and radio are the major information channels. Parents also play an important information role. Radio therefore provides an important media dissemination avenue for research and extension services. Livestock keepers utilized both formal and informal training, with the trend indicating that more and more livestock keepers are being trained, attending training over the years.

The extension service is erratic and mostly dependent on the timetable of the extension workers. It is therefore non-responsive and not targeted to meet the needs of the urban/peri-urban livestock keepers.

There is very weak, almost non-existent institutional support targeting poor urban and peri-urban livestock keepers. Nor organization presently represents the interests of the poor urban and peri-urban livestock keepers. Savings and credit facilities do not tailor their services to fit the realities of these farmers.

The current policy framework does not specifically target poor urban and peri-urban livestock keepers. There is evidence that macro-policies have felt positive and negative impacts on livestock production among the poor in Kampala City.

The present functional legislature is mostly outdated and unrealistic in the light of the conditions in which the poor urban and peri-urban livestock keepers live. Most livestock farmers are ignorant of the legislature except for that which is enforced directly, or heralds harassment. There are consequent public health problems due to this ignorance.

Opportunities exist for poor urban and peri-urban livestock keepers. The economic climate provides for increase in farm gate markets, and for the development of small-scale cottage industries and provision of auxiliary services. The rapid urbanization also provides opportunity for exploration of non-traditional livestock products.

The participation of a significant number of households in livestock production in Kampala area warrants the development of networks and interest groups that will clearly articulate the needs, challenges and aspirations of urban/peri-urban livestock farmers. The introduction of the National Agricultural Advisory Services provides an opportunity for the poor livestock farmers to have their extension needs met. This however requires good networking among the livestock farmers.

There remain research needs, however, it is evident that there are knowledge gaps that can be addressed immediately through dissemination of information, and via training or demonstration sessions.

10.2 Recommendations

1. Full Recognition and Definitive Legislative and Policy Support. Government and city authorities should accord urban and peri-urban livestock keeping full recognition with accompanying definitive legislative and policy support.
2. Participatory Planning and Implementation: Urban and peri-urban livestock keepers should participate in consultative policy development fora as a distinct interest group with the agricultural and livestock sectors. Planning by city authorities should include the perspectives of urban and peri-urban livestock farmers.
3. Institutional Support: A definitive legislative and policy framework should translate into institutional support led by government and the city authorities. Other institutes that are needed to support the urban and peri-urban livestock keepers include civil society, savings and credit, research, extension and training organizations and institutes.
4. Filling of Knowledge Gaps: Knowledge gaps are prominent bottlenecks to immediate improvement in the productivity of poor urban and peri-urban livestock keepers. These knowledge gaps have also contributed to the current mostly negative public health status of livestock keeping in Kampala City. These knowledge gaps should be clearly identified and articulated and addressed.
5. Strategic and Demand Driven Research: Both demand drive/responsive research of a reactive nature and strategic/predictive research is needed to support livestock production by poor urban and peri-urban city dwellers. The research should consider both the constraints and the opportunities in proving technological, socio-economic and policy interventions.
6. Lessons Learned – Documentation: There is a scarcity of documentation on urban and peri-urban livestock keeping especially among poor city dwellers. Experiences, perspective and lessons learned are a wealth of information that has not been captured in any literature widening the information gap.
7. Networking With Other Cities: It is evident that other cities and urban centres in Uganda, East Africa, Africa and around the world are grappling with similar situations, and some have made significant strides towards recognizing and supporting urban livestock keeping. Kampala can learn through networking.

Chapter 11. Conclusion

Livestock keeping is a reality in urban and peri-urban Kampala City. The enterprise has grown in response to economic pressures and rapid urbanization. Livestock keeping has socio-economic roles, providing income, employment, as well as acting as a social safety net, a source of food security, and providing for the diversified livestock product needs of urban dwellers. The urbanization trends in Kampala City towards continued inward migration, expansion of business and industrial centres into former residential areas, and ownership of smaller and smaller land holdings will result in a decrease in urban crop farming as farmers shift to intensified livestock keeping ventures.

Poor urban and peri-urban livestock keepers are a distinctive interest group with specific research and extension needs. Definitive legislature and policy are needed to provide functional guidelines and a supportive framework. Institutional recognition and support are needed to meet these needs. There is great potential for improvement in the service industry catering for the livestock farmers.

Networking and formation of support and pressure groups (lobbying and advocacy) will provide fora for clear articulation of the needs and aspirations of poor urban and peri-urban livestock farmers. These groups will also provide platforms for self-determined participation. This will ensure recognition and response form government, city authorities, institutions and the service industry.

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Appendixes

Appendix 1. Household Questionnaire

SCOPING STUDY OF URBAN AND PERI-URBAN LIVESTOCK KEEPERS

Questionnaire

Name of enumerator……..Date……

A. HOUSEHOLD AND SOCIO-ECONOMIC CHARACTERISTICS

(Household location)
County ……..
Sub-county/Division…….
Parish/Ward……..
Village……

GPS Code: …….. Latitude…… ºN……..ºS
Longitude……ºE……ºW
Altitude ……masl

1. (a) Name of respondent……
   (b) Sex of respondent…
   1- Male
   2- Female

2. (a) Age of household head ……years
   (b) District of origin of household……..
   (c) Marital status
   1- Married
   2- Widowed
   3- Divorced
   4- Single
   (d) Highest level of education of the household head ……..
   1- Primary school
   2- Secondary school
   3- Diploma
   4- Degree
   5- Other (specify)

3. (a) Sex of household head ……
   1-Male
   2-Female
   (b) If the household head is male, state the number of wives……..
   (c) If the household is a child, find out whether the family was affected by HIV/AIDS
   Yes/no

4. Size and composition of family
   Female children (< 12 years)……
   Male children (< 12 years)……
   Children male (13 – 18 years)……
   Children female (13-18 years) …….
   Adult males (> 18 years)……
   Adult females (> 18 years) (include wives)……

5. (a) Primary activity of the household head (*in all cases, if formally employed, please specify type of employment)*……..

   (b) Secondary activity…….

   © Primary source of income in this household……..
   (d) Other sources of income in this household ……

B. FARMING CHARACTERISTICS

(Land resources)

6. Do you farm part-time or full time?
   1- Part-time
   2- Full- time

7. (a) What is the size of your farm?…….acres (I Football pitch/field approx. = Iacre)

(b) How much land do you
1- Own……..acres
2- Rent……..acres
3- Others (specify)……acres

- ***note type of tenureship e.g. kibanja, customary, mailo, city council land, etc.***

(c) If renting, how much do you pay per month/year/or stated time of contract?……..

(d) Is it all in one piece? *Tick what is applicable to you*
1- Yes
2- No

(e) If fragmented, what is the biggest piece you have……acres

(f) How long does it take you to walk to that place from your homestead?
1- Less than 15 minutes
2- 15 – 30 minutes
3- More than 30 minutes

(g) How much land is allocated to each of the following below
1- Livestock ……acres
2- Cultivated or established pastures……..acres
3- Food crops……..acres
4- Cash crops…… acres
5- Fallow……acres
6- Others (specify)……acres
7- Residence……..acres

8. Since when have you been keeping livestock……..

9. (a) Did your parents keep livestock
1- Yes
2- No

(b) If yes, what type of livestock did they keep?

(c)Where did you live before you came to Kampala?
1- District *(Name of District)* ……
2- Urban areas/Town
3- Rural areas

10. (a) Do your relatives and friends bring you livestock that you have kept?
1- Yes
2- No

(b) If yes, specify the type of livestock

11. (a) Give the types of livestock kept, who keeps them and the purpose of keeping/rearing them

Livestock Type	**Number**		**G***	**Age**	**Highest Level of Education *** **	**P****	Activity **performed**
	Improved	**Local**					

G* = Gender: (Men = **M** / Women = **W**)
P = Purpose**: (**1**= Cash generation, **2** = Food-Subsistence, **3** = Source of manure, **4** = Culture/ Social status, (*please purpose for keeping livestock in order of importance starting with the most important)*
Activities performed: **1**= Feeding, **2**=Milking, **3**= Disease control, **4**=Tethering, **5**=Cutting grass, **6**=Grazing
Levels of Education *: 1 -** Primary school, **2 -** secondary school, **3 -** diploma**, 4** - degree, **5 -** other (*specify*)

11. (b) Is labour a constraint?
1- Yes
2- No

11. (c) Do you use hired labour on your farm?
    1- Yes
    2- No

11. (d) If yes, for what activities do you hire labour ?
    1- All farm activities
    2- Milking
    3- Feeds and water collection
    4- Grazing
    5- Others (Specify)

11. (e) Types of livestock management

Type of livestock	**Number**	**Source of livestock***	**Type of management****
Cattle			
Goats			
Sheep			
Pigs			
Poultry			
Rabbits			
Other (*specify*)			

*__1__- Relatives, __2__-NGO/CBO (specify), __3__- Own savings, __4__-Inherited, __5__-Bought/purchased
**__1__ - Zero grazing, __2__- Fenced/paddock , __3__- Tethering, __4__- Communal grazing
Others (specify)

11. (f) If you bought the livestock, specify source:

Type of livestock purchased	*Source*

11. (g) If you have more than one management system, which one do you prefer?

……

11. (h) Give reasons for your choice.
    1. ……
    2. ……..
    3. ……..
    4. ……..

11. (I) What type of breeding do you use for your cattle?
    1- Natural
    2- Artificial
    3- Both

12. (j) Which method do you prefer and why?
……
……
……..

11. (k) What method of milking do you use? *(cattle and dairy goats, please specify)*

1- Hand milking
2- Machine milking
3- Both

11. (l) Production and sales

Breed of type of livestock	**Number of animals**	**Units per day**	**Sales per day**
Cows			
Jersey			
Cross breed			
Local breeds			
Friesians			
Others			
Goats			
Sheep			
Poultry			
Chickens			
- eggs			
- table birds (broilers)			
- local birds			
- ducks			
- turkeys			
Rabbits			
Other (*specify*)			

11. (m) How much milk do you allocate to each of the following per day?

1- Home consumption…….litres/day
2- Calf feeding……..litres/day
3- Selling……..litres/day
4- Others (Specify)……litres/day

11. .(n) Do you give out any livestock products as a gift?

1- Yes
2- No

11. (o) If **yes**, specify the type of livestock and under what circumstances you give them out as gifts.

……
……

11. .(p) If you **do not** give any out as gifts, why not?

……
……

11. (q) Where do you sell your livestock products?

Livestock Product	**Price per unit**	**Where sold** *(if not sold, please record as not sold and if possible give reason)*

C. STOCKISTS / DRUG SHOPS / SERVICES

12. (a) Where do you obtain your drugs and veterinary services?

12. (b) Are there any drug shops / stockists in this village (LC I)?

12. (c) What is the distance (km) traveled to the drug shops?

12. (d) Do they have all the inputs you need ? *yes/no*

12. (e) List the problems encountered in accessing inputs and veterinary services.

1. ……
2. ……
3. ……..
4. ……..
5. ……

13. Give constraints / problems affecting your livestock keeping
(1-Specify whether local or improved breeds).
(2-Specify the diseases).

Livestock Type	Constraints	Copping strategy

Constraints include:

1=Feeding, **2**=Shelter, **3**=Disease, **4**=Governance, **5**= Access to clean water, **6**=Representation (voice), **7**=High production costs, **8**=Management,
9=Manure disposal, **10**=Markets, **11**=Skills, **12**=Access to technical advice,
13=Space, **14**=Harassment, **15**=Access to land, **16**=Transportation
Others (specify)

E. PARTICIPATION IN LIVESTOCK TRAINING AND EXTENSION PROGRAMS

**** note gender tendencies to attending training/or training programs organised specifically for women and/or youth***

14.What are your major sources of information on livestock production?

1=Government extension staff		**2**=NGOs (Specify),	
3=Radio,		**4**=Neighbor / Friend,	
5=Parents,		**6**=Training workshop,	
7=Research Institution,		**8**=Exchange visits / Field visits	
9=Visiting researchers,		**10**=Newspapers / Newsletters,	
11=Others (Specify)			

15.Have you ever attended any livestock farmers' field day?

1- Yes (*if **yes**, where, when, what was the topic and who was the sponsor)*

……

2- No *(if **no**, why not)*

……

16. (a) Have you ever attended any farmers' training[1] course on livestock keeping?

1- Yes
2- No

If yes, then fill in table below:

Training course Attended	Year	Provider /sponsor *	Topic**	Gender focus? ***

* Providers, **1=** NGO **2=** Government/local council **3=CBO** e.g. church, etc.)

**State the types and areas of training offered

1- Tick control
2- Pasture management
3- Zero grazing
4- Animal feeding
5- Manure handling
6- Calf management
7- Poultry management
8- Others (Specify)

*** Gender: **M** - male, **F** - female, **B** - both

17 (a) Are there any extension[2] services offered for livestock keeping?

1- Yes
2- No

17. (b) If yes, state the providers, (Specify NGO or Program)

17. (c) Do extension workers visit your farm?

1- Yes
2- No

17. (d) If **yes**, how often?

1=Never visited, **2**=Every month, **3**=Once every three months,
4=At anytime of their convenience, **5**=Only when visited, **6 =** when contacted, **7** =Others (Specify)

17. **(**e) If **no**, why not?

……
……

17. (f) Do private veterinary doctors/assistants staff visit your farm?

17. (i) If yes, how often and under what circumstances? (Use codes above)

F. FEEDS

18. (a) Do you give supplementary feeds to your livestock/

1-Yes
2-No *(if not, why not?)*

……

[1] Training refers to specific (topical) learning process organized in a class-like format involving trainer(s) and many participants (learners) and usually takes a longer duration per contact.

[2] Extension is an informal out of class exchange of information between extension agents and farmers, and takes a short duration per contact.

18. (b) If yes, what are the main supplementary feeds given to the different types of livestock?

Type of livestock	Types of feeds*	Source
Cows		
Goats		
Sheep		
Pigs		
Rabbit		
Poultry		

***Types of feeds: 1-Elephant grass, 2-Commercial feeds,**
3-ImprovedGrasses&Legumes, 4-Crop residues, 5-Household wastes
6- Others (Specify)

19. (a) Do you have water on your farm?
    1- Yes
    2- No

19. (b) If **yes**, what is the source(s) and cost(s)?
    1- River/stream
    2- Well
    3- Borehole
    4- Protected spring
    5- Piped water
    6- Other (Specify)

20. (c) If **no**, specify water source and cost of obtaining water per month.

G. ORGANISATIONS / PROGRAMS WHICH SUPPORT LIVESTOCK PRODUCTION

21 (a) Are there any programs / organisations which provide support to livestock production in this area?
    1- Yes
    2- No

21 (b) If **yes** , name them and specify the support provided ***(* note gender focuses/biases, etc.)***

Name of program/Organisation providing support	Name of organisation/program/committee in which you are a member	Membership fees	Is it a local/International organisation	What are your roles/activities as a member	What are the main activities of the organisation	What benefits do you obtain from the organisation

H. CREDIT ACCESS FOR LIVESTOCK KEEPING (***note gender)***

22. (a) Have you secured any loan for livestock keeping activities?
    1- Yes
    2- No

22. (b) If yes, from who and for what activities and when did you secure the loan?

22. (c) Specify whether the sources were formal or informal

(**Formal sources include:** Banks, co-operatives, NGOs, and other programs)
(**Informal sources include:** Money lenders, traders, intermediaries, rotating savings, credit associations, friends and relatives).

22. (d) Did you receive training on the management of credit? Yes/no
    1- Yes
    2- No

22. (e) Has the loan benefited you?
    1 - Yes. If **yes**, in what manner has obtaining the loan benefited you?

    2 - No. If **no**, why has the loan not been of benefit to you?

22 (f) Mention problems faced while accessing or paying back the credit? *(accessing/paying back/managing the loan)*

I. CAPITAL INVESTIMENTS

23. What equipment and structures do you have on the farm? (Indicate whether the structure is owned by male or female)

24. Do you keep farm records?
    1 - Yes. If **yes,** Name them

    2 - If **no**, why not?

J. BY-PRODUCTS

25. (a)Name the by-products from your farm

25. (b) How do you dispose of the by-products?

25. (c) Are there some people or organizations, which buy the animal wastes?

25. (d) If yes, specify them.

25. (e) Is disposing animal wastes a constraint? (yes/no)
(Enumerator should observe the level of cleanliness of the area and note issues like smells, flies, dust, level of noise, etc that might affect public health and/or cause conflict with the neigbours)

26. Which crops do you grow on your farm? Do you fertilise any with the manure form your animals?

27. Are you aware of any regulations/by-laws on livestock keeping?
    1-Yes
    2-No

28. If yes, which ones and by who?
e.g KCC/LC1.

Appendix 2. Focused Group Discussions

A] **BACKGROUND AND SOCIO-ECONOMICS**

1. Who are the keepers of livestock? Are there any factors showing a correlation for who they are and what livestock they keep? *e.g. age, sex, tribe, socio-economic status in the village, land size and location (e.g. in swamp, by trading center, etc), etc.*

2. How do you acquire livestock?
   e.g. Personal saving, inheritance, gifts, friends, etc

3. What benefits do you derive from livestock?
   e.g. food, pleasure, social status, income, manure, etc.

4. What are the advantages and disadvantages of keeping livestock? *(also compare with crop production). - income, public health, etc.*

5. What constraints do you face and affect the type of livestock you own? *Land size, ability to afford feed, social including gender relations, trends over the last 20 years etc.*

B] **TECHNICAL ISSUES**

1. Management systems used and why
2. Production patterns and cycles. *E.g. do you have all/some types of livestock right through the year or at specific seasons, are your production patterns constant year round, trends, etc.*
3. Public health. *Noise, smells, conflicts with neighbours, flies, dust, waste, awareness of communicable diseases from livestock kept and has any one ever suffered from them (e.g. TB, brucellosis, worms, etc), trends*
4. Issues relating to feed and feeding. *Include issues on labour, costs, availability, access to, gender, trendsetc.*
5. Issues related to watering *Include issues on labour, costs, availability, access to, gender, trends etc.*
6. Issues related to animal health and access to services, inputs to manage health. Disease patterns and trends
7. Knowledge, training and extension/advisory services

Note: Constraints and coping strategies in all cases

C] **POLICY AND GOVERNMNET/NGO SERVICES**

1. Name NGO's/CBO's that offer services including training and credit, in animal production. Are they adequate, suitable, what changes have occured
2. What government services are offered, are they adequate, what changes have occured

Appendix 3. Interviews for the District Veterinary Officials, Divisional Production and Animal Production Officers and Veterinary Input Suppliers

Checklist for DVO and Divisional Production/animal Production officers.

1. Institutional capacity and financing.
    - How many personnel and what cadre of personnel do you have
    - Are you annual budgets adequate to implement your work plans
    - What facilities do you have to enable you reach the farmers

2. What is the livestock population of Kampala/division

3. What management systems are under use and are there any trends in use depending on gender, wealth status, educational background, employment, etc.

4. What are your programs and areas of focus for this year and the last year?

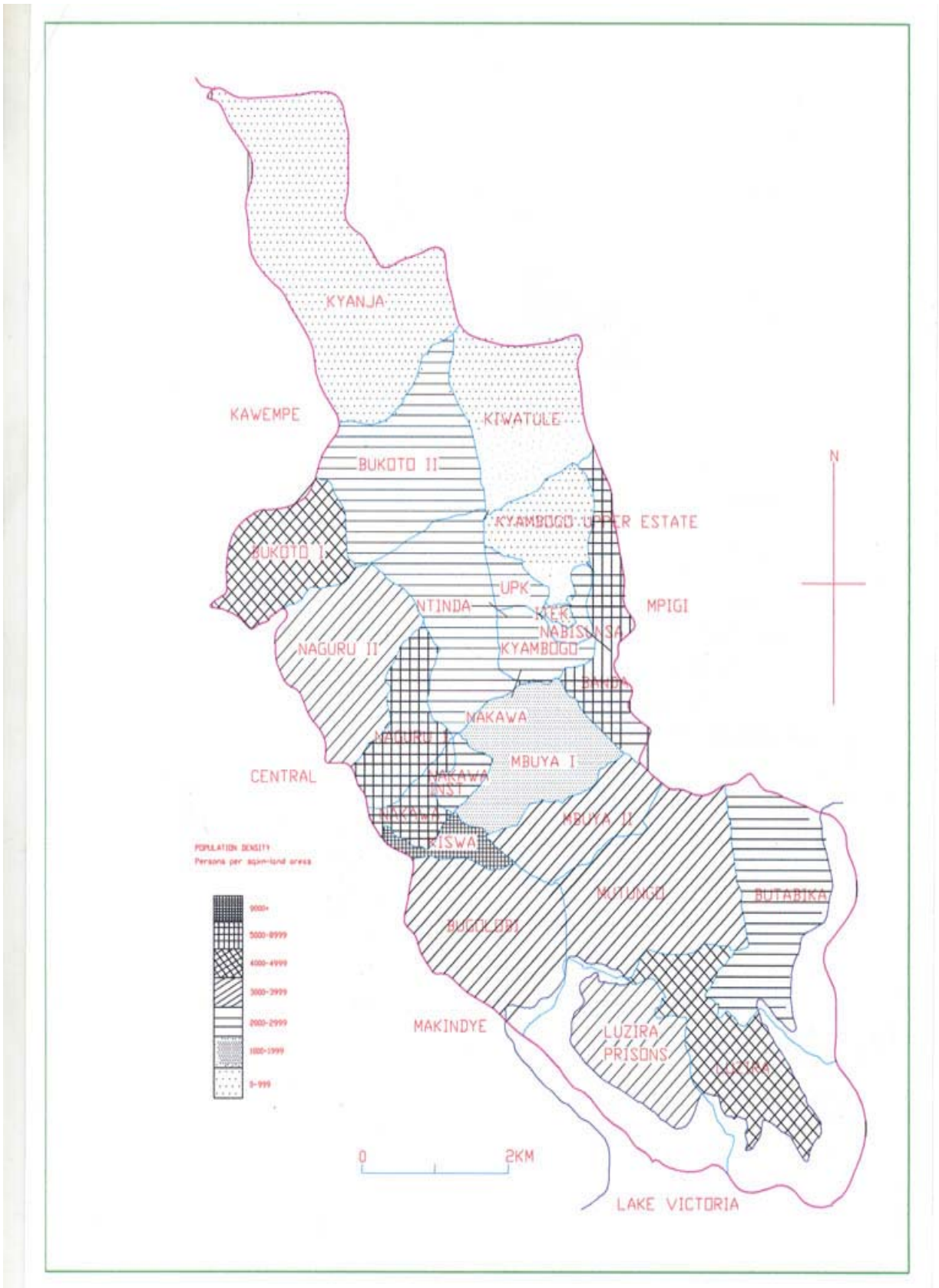
5. Which NGO's/CBO's offer assistance to livestock keepers in the district? What sort of services do they offer? Whom do they target? Do they do advocacy work for poor livestock keepers?

6. What laws and by-laws affect livestock production in Kampala?

7. Does Kampala have specific policies, etc designed to meet the needs of livestock keepers, especially the poor? Whom do you consider as the poor?

8. What are the trends over the last 20 - 30 years in the types of livestock kept, characteristics of urban livestock keepers, diseases, management systems, policies and by-laws and constraints in urban livestock keeping within kampala.

Appendix 4. Kampala District: Nakawa Division



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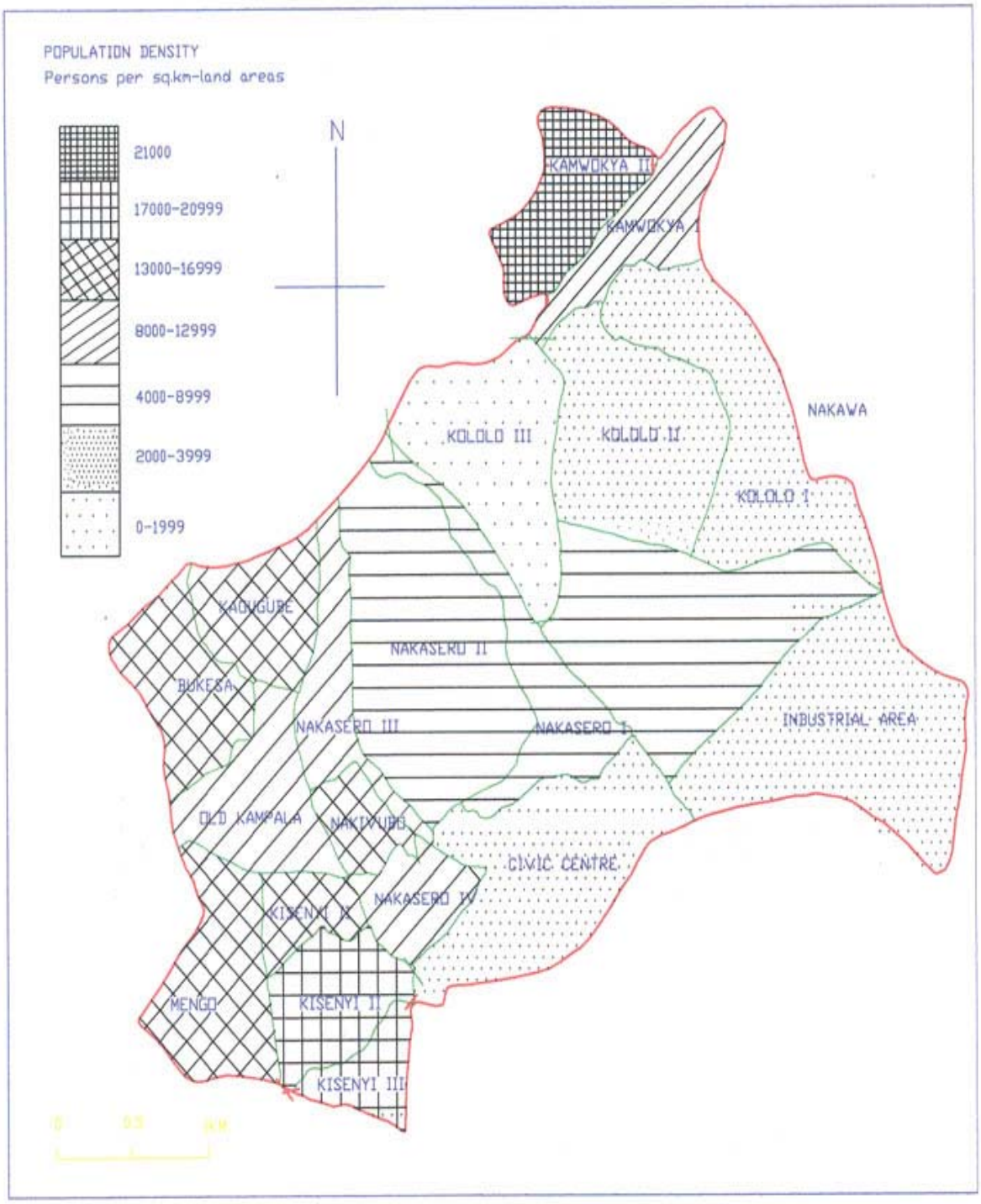
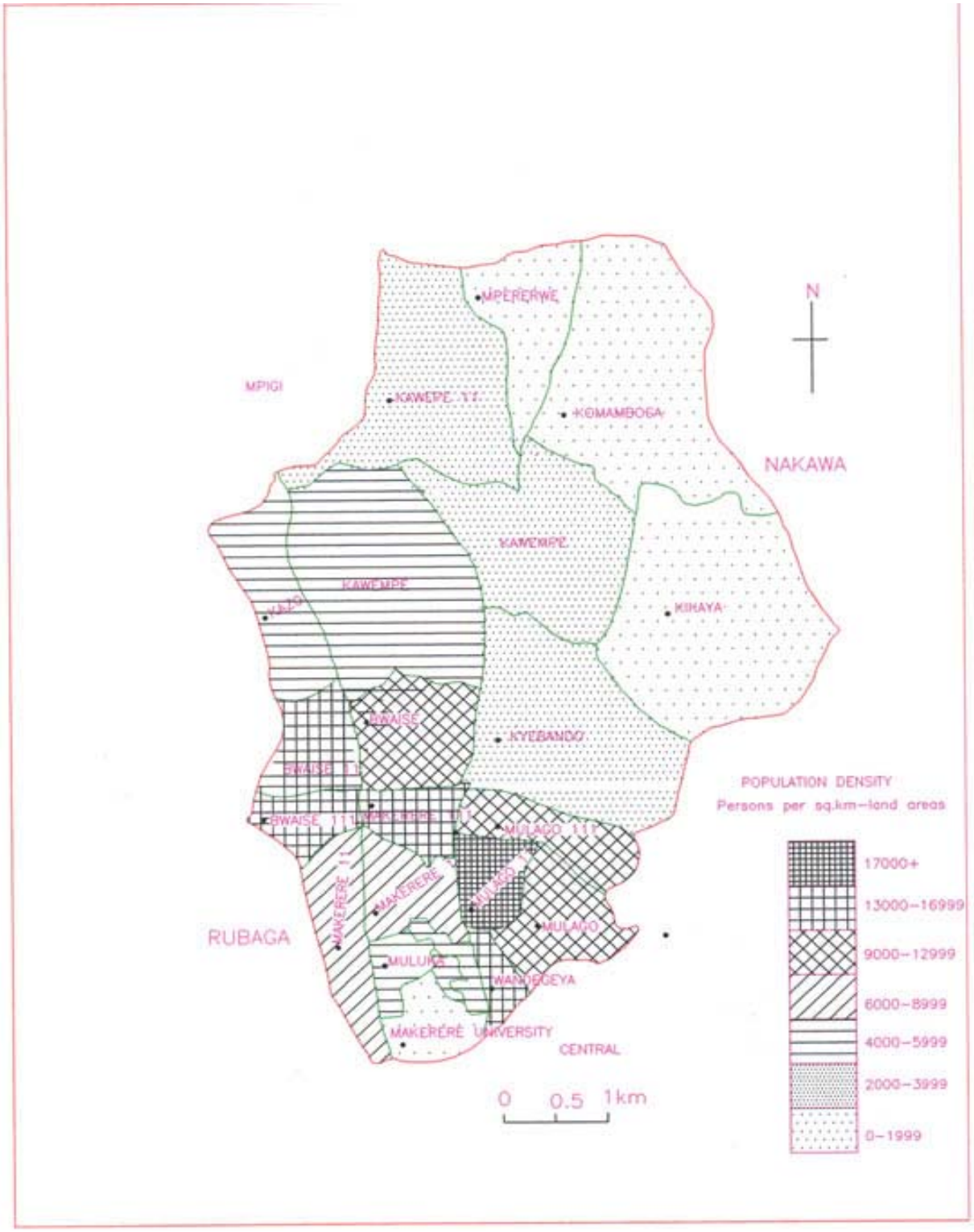
Appendix 5 Kampala District: Central Division



Housing and Population Census, 1991, Government of Uganda

Appendix 6 Kampala District: Kawempe Division



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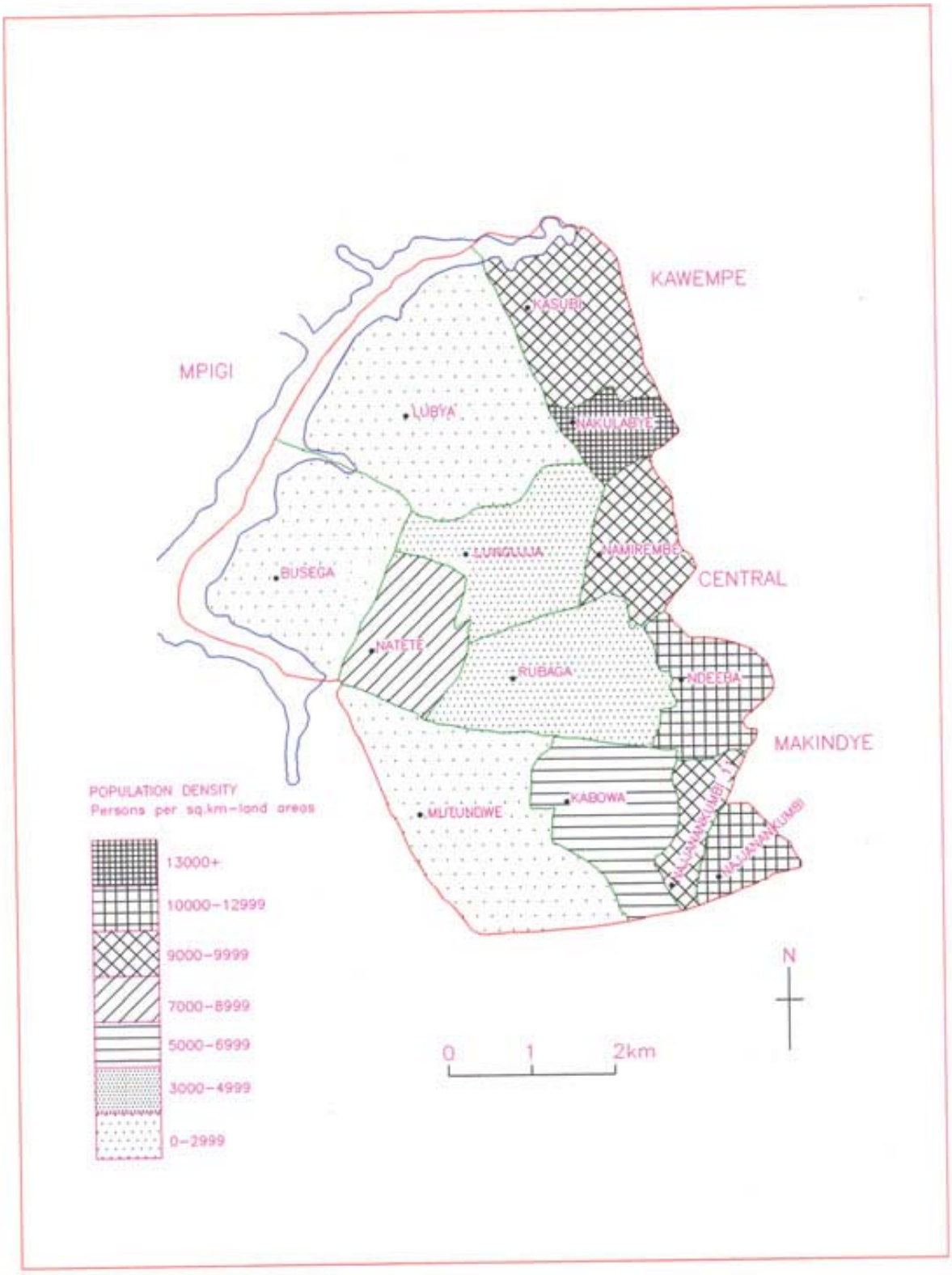
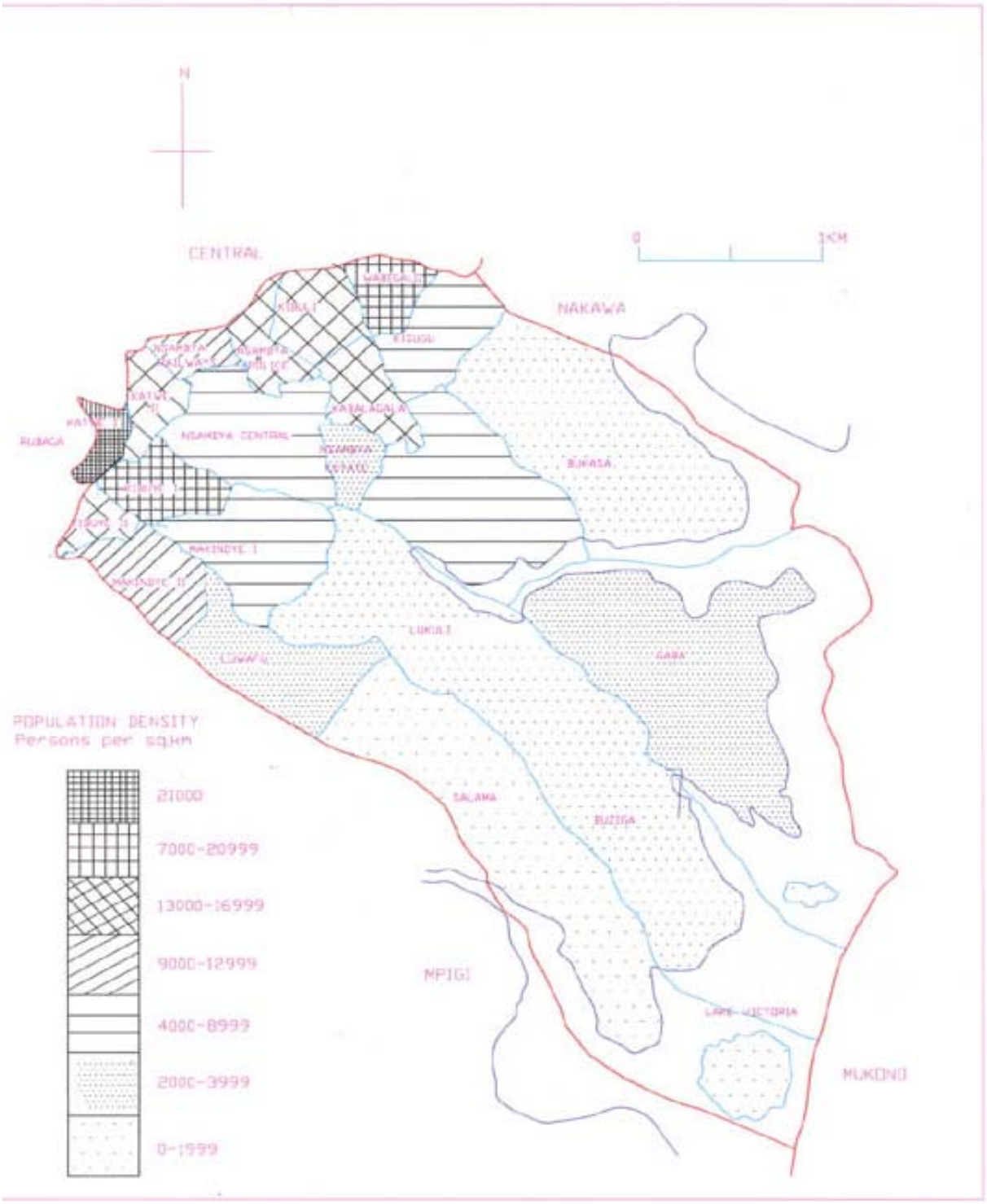
Appendix 7 Kampala District: Rubaga Division



Housing and Population Census, 1991, Government of Uganda

Appendix 8 Kampala District: Makindye Division



Housing and Population Census, 1991, Government of Uganda

Appendix 9 Kampala District: Urban and Peri-urban Areas