

The Delivery of Veterinary Services to the Poor: Preliminary findings from Kenya

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Summary

This report offers the preliminary findings from the fieldwork in Kenya for the DFID-funded study *R7359: The Delivery of Veterinary Services to the Poor*. The overall aim of the research is to develop a targeting methodology for poor livestock keepers, analyse the role of livestock in food and livelihood security and to explore parameters important to the delivery of animal healthcare to the poor. To gain a comprehensive understanding of livestock and poverty, the study utilised a simplified livelihood approach. Data collection activities centred on the Livestock Poverty Assessment methodology (LPA), which is comprised of 14 participatory methods and a semi-structured survey. Over 30 communities and 600 individuals participated in the research.

The initial results of the LPA demonstrate that livestock were proportionally more important to the livelihood security of the poor than the better off. Indeed, livestock-related activities were the most prevalent amongst the poorest subset of study participants. By examining the role of livestock in social capital, the study found that social capital is related to an individual's core livelihood strategy. Moreover, the dynamics and role of livestock as a form of social capital appear to be changing, particularly amongst pastoralists. Gifts of livestock most often functioned as a means of gaining social approbation via participation in public ceremonies and were less frequently utilised as a risk mitigation strategy. Not surprisingly, the poor were most often involved in relationships of patronage, rather than reciprocity, in livestock gift-giving.

In regard to the delivery of veterinary services, three key parameters were evaluated: access, acceptability and affordability. The assessment revealed that overall, access to veterinary services rather than affordability appears to be the primary constraint. Indeed, households living in close proximity to donor or NGO sponsored livestock drug stores tended to expend closer to 'ideal' levels of animal healthcare than those living further away. However, values toward animal healthcare are complex. Few herders and farmers were spending close to the estimated 'ideal' on livestock drugs and the majority of expenditure was on curative rather than preventative treatments. Although apparently willing, the ability of the poor to pay for treatments appears to be a limiting factor. Knowledge regarding livestock health was poor, further contributing to the overall low uptake of veterinary goods and services. Both access and the quality of advice regarding the use of livestock drugs were considered problematic.

Finally, the study utilised discourse analysis techniques to examine values regarding poverty to determine the effectiveness of targeting methods, such as wealth ranking. The analysis found that poverty is not viewed simply as a lack of assets. Rather, the type and quality of asset and the moral characteristics and relationships of the persons involved are equally important. Furthermore, poverty is generally believed to be a reversible state, which can be mitigated by hard work. The finding supports community perceptions of the 'deserving' and 'undeserving' poor. As such, two potential biases may occur in the use of wealth ranking as currently practised. First, communities may not allow the voices of the 'undeserving' to be heard. Alternately, by targeting those who are perceived to be resource wasters, projects and programmes may be unintentionally sabotaging community approval thereby jeopardising the overall uptake and impact of projects.

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INTRODUCTION

Historically, in most developing countries, the poor have not been the primary clients of veterinary services (Heffernan and Sidahmed, 1999; LID, 1998). Indeed, the prevailing wisdom has been either that livestock were insignificant to the livelihoods of the poor or such small numbers were kept that the provision of services was economically infeasible. In recent years, two broad policy shifts have generated greater interest in poor livestock keepers. First, The New Poverty Agenda, with its attendant focus on rural livelihoods, has recognised the contribution of livestock to the social and economic well-being of the poor (Carney, 1998; LID, 1999; Heffernan and Sidahmed, 1999). Second, donor-led policy has supported the rationalisation and privatisation of government veterinary services as the ability of governments to provide goods and services has declined (de Haan and Bekure, 1991; Umali *et al.*, 1992). The drive toward privatisation has created an increased interest in all livestock keepers, rich and poor, as potential clients.

Today, a large number of actors are involved in the provision of veterinary services to the poor varying from donors, governments, NGOs, and traditional healers to the herders and farmers themselves. The scope of projects also varies widely from small-scale, community-based interventions to national and international programmes. However, a recent review of over 600 projects concludes that the majority of animal healthcare projects are not having the intended impact on the poor (LID, 1999). Reasons offered include the lack of a poverty focus, inappropriate targeting and the development of technologies that were unsuitable and/or not delivered (LID, 1999). Overall, these factors were attributed to weak organisational structures and the lack of strong, pro-poor institutions. As LID (1999) notes:

...many of the organisational failures...can be attributed to the nature of the institutional frameworks of those organisations, which commonly do not support client-focused delivery of services.

However, given the aforementioned premises, the above conclusion may not be sufficient to explain the disappointing impact of many interventions. Perhaps more fundamentally, as clients of veterinary services, the poor pose challenges, which are often unrecognised. According to recent estimates there are approximately 1 billion households in developing countries dependent upon livestock for food and economic security (LID, 1999). Nevertheless, there is little additional information regarding who the poor are and what their needs are in regard to animal healthcare (Heffernan and Sidahmed, 1999). As mentioned above, the targeting of poor livestock keeping households is problematic. Present methodologies for targeting, such as wealth ranking, may not accurately reflect community values regarding the poor, as will be discussed in section III. Indeed, many participatory appraisal techniques are either inappropriate to livestock keeping or biased in their assumptions (Misturelli and Thomson, 2000). Thus, the lack of poverty focus of many animal health projects and programmes may be more of a reflection of the poor development of targeting methodologies rather than organisational failure.

Second, little information exists as to the factors that are necessary to improve the sustainability of livestock-based livelihoods. It is often assumed that livestock keepers are vulnerable, however the evidence remains elusive as to how and under what

conditions their livelihoods are at risk. In order to develop technologies to enhance the livelihood security of poor herders and farmers, a basic understanding of the relationships between the different factors important to livestock keeping is needed. Furthermore, with regard to animal health, little information is available as to the processes driving consumer behaviour. Hence, knowledge of livelihood parameters and the factors influencing the uptake of veterinary services may be more important to the successful development and adoption of appropriate technology than the organisational structures for delivering such technologies.

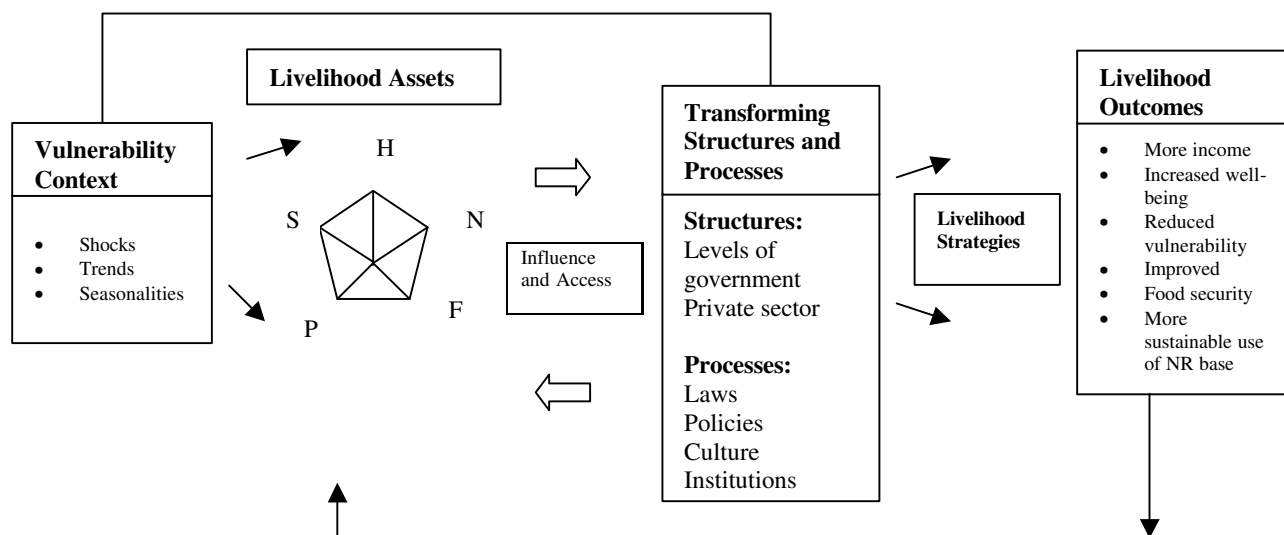
Therefore, the overall objectives of the study are threefold: first, to create a methodology to target poor livestock-keeping households; second, to outline the factors important to the security of livestock-based livelihoods and third, to evaluate the key parameters necessary for the uptake of animal healthcare projects by the poor. The study also utilised the tenets of Action research. Action research is defined as ‘a systemic enquiry that is collective, collaborative, self-reflective, critical and undertaken by participants in the enquiry’ (McCutcheon and Jurg, 1990). Hence, during each phase of the research cycle a period of critical reflection ensued. In particular, the study reflected upon biases present in the application of participatory methods. Thus, the project attempts to offer a both a process and a product.

The fieldwork will take place in three countries Kenya, Bolivia and India. The following report details the initial findings from Kenya and is divided into three major sections. The first section presents the analytical framework of the study and outlines the methods used, whereas, the second section discusses the preliminary results of the fieldwork and offers recommendations for future stages of the study. In the final section, the outcome of the action research is presented. In this case, notions of poverty and well-being are evaluated using discourse analysis techniques to assess the reliability of wealth ranking.

SECTION I: THE ANALYTICAL FRAMEWORK

Although a variety of frameworks can be utilised to assess poverty among livestock keepers, the project elected to utilise a Sustainable Livelihoods (SL) approach for the following reasons. First, as a target group, poor livestock-keepers represent a dynamic spectrum varying from those where livestock comprise only a small portion of their livelihood activities to those in which livestock are the main component. The SL approach was deemed one of the few analytical frameworks, which could capture this large diversity. Second, a framework was required that could also incorporate a wide variety of livestock production systems. As the outcome of the study is an assessment of the sustainability of livestock-based livelihoods, differences in production systems must be accounted for at the macro and micro level. Hence, the SL framework allows comparisons of the vulnerability or sustainability of livestock-based livelihoods in the wide variety of production systems present in the three countries involved in the study. Figure 1 outlines DFID’s framework to evaluate sustainable livelihoods.

FIGURE 1: DFID'S SUSTAINABLE LIVELIHOOD FRAMEWORK



(adapted from Carney, 1998)

The figure portrays the five capital assets on which a household depends: human capital, physical capital, social capital, financial capital and natural capital. In brief, access to all five types of capital is required for a sustainable livelihood. However, 'transforming structures and processes' influence access, which includes the government and private sector and the laws, policies and institutions therein. The transforming structures and processes also impact the 'vulnerability context' or shocks, trends and seasonalities in which the livelihood activities of an individual, household or community occur. Consequently, livelihood assets, the vulnerability context and transforming processes and structures all play a role in the livelihood strategies that households and communities pursue. The results of the strategies are termed 'livelihood outcomes' which, according to DFID includes more income, increased well-being, reduced vulnerability, increased food security and a more sustainable natural resource base (DFID, 2000).

As Carney (1998) notes the livelihood framework is intended to be utilised as follows:

- i. [to] define the scope of and provide the analytic basis for livelihood analysis.
- ii. Help those concerned with supporting SRL to understand and manage the complexity of rural livelihoods.
- iii. Become a shared point of reference for all concerned with supporting livelihoods (whether in DFID or in partner organisation), enabling the complementary of contributions and the trade-offs between outcomes assessed, and
- iv. Provide the basis for the development of a set of concrete intermediate objectives that DFID should pursue with its partners as a means to support the development of SRL.

However, a number of criticisms may be levelled against the approach. First, it is unclear from the diagram at what level interventions such as projects and programmes should best occur. Second, although holistic, the compartmentalised nature of the structure often makes it difficult for practitioners to determine the relationships between the assets important to sustainable livelihoods. For example, livestock have both a social and financial role in livelihood security, however the complexities of this relationship are not amenable to analysis via the current framework. An additional problem with the pentagon is that all of the capital assets are viewed as having the same initial value, which is clearly not reflective of the reality many poor people face. For example, for destitute pastoralists after drought, natural capital (the rangeland), social capital (kin networks and 'stock associates') and financial capital will be of greater importance than human and physical capital. Consequently, it may be claimed that the pentagon fails to offer an adequate analytical model since it neither indicates the relationships between assets nor offers a means to evaluate the importance of assets to the households or groups at hand.

The framework also fails to account for the influence that the environment (both natural and extrinsic i.e. social, political and economic) has on a household's livelihood choices and outcomes. Although the diagram displays the 'vulnerability context' and 'transforming structures' feeding into the assets, it neglects to recognise that fundamentally, a person's livelihood is the product of the environment in which it occurs. As such, the influences are not a separate phenomenon but rather form the context in which a household's livelihood takes place. The framework further ignores the enabling and disabling factors to capital asset acquisition such as the influence of power and gender.

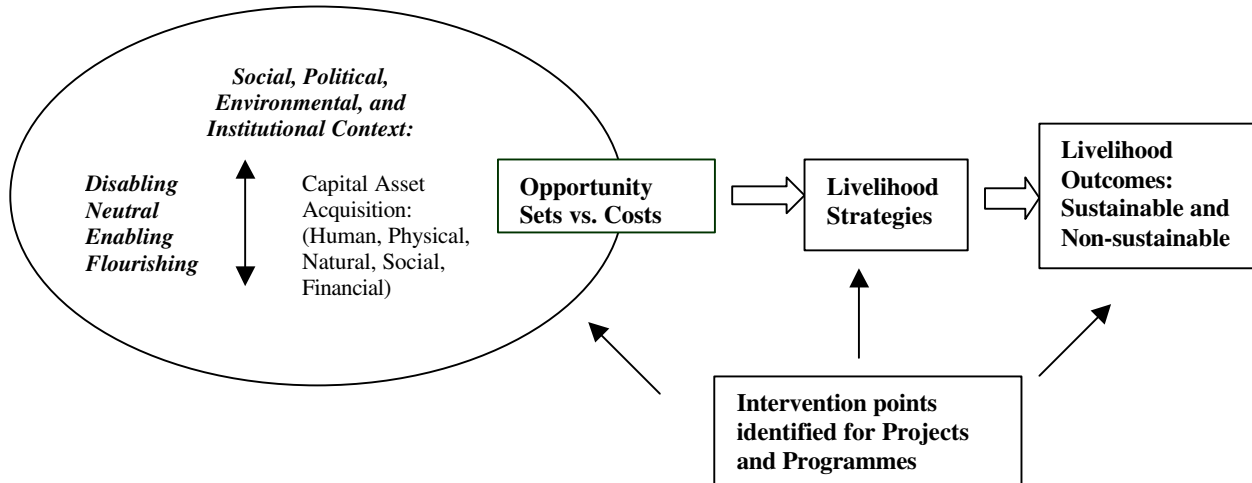
Equally, while attempting to offer a linear progression, the diagram appears to confuse the impact of processes and structures on the attainment of livelihood assets. Although transforming processes and structures obviously influence the acquisition of livelihood assets, a poor community or household's ability to acquire those capital assets does not generally change the processes and structures. According to Carney *et al.* (1999), the linkage is intended to illustrate empowerment: 'if people have better access to assets they will have more ability to influence structures and processes so that these become more responsive to their needs'. However, to be valid, a framework unlike a model should not be predictive or make assumptions regarding potential influences.

Finally, the pentagon is intended to allow practitioners to plot access to assets, however, a method for measurement is not offered. Consequently, 'a shared point of reference' between 0 assets and sustainability is not possible. Although it may be argued that as each part of the pentagon has an equal measure, the presence or absence of assets will highlight some 'intermediate objectives'. However, as mentioned above, within a particular context, one type of capital may be more important than another. Furthermore, attempts to plot assets in this manner may be prone to bias as either evaluations represent a subjective notion from an outside assessor or if the clients themselves plot their assets, 'subject-related or cultural biases' may occur which reflect the agenda of the individuals involved. Thus, in order to develop 'a set of concrete intermediate objectives which DFID should pursue with its partners' some form of rank or weighting criteria is required. Therefore, rather than assisting 'those concerned with supporting SRL to understand and manage the

complexity of rural livelihoods' the current framework may be accused of oversimplifying certain complexities in an effort to objectify and quantify others. As Carvalho and White (1997) note 'the basic subject matter is no longer objective data to be quantified but meaningful relations to be interpreted'. Consequently, a less prescriptive and more relational framework is needed.

As such, the study elected to utilise the following simplified livelihood framework.

FIGURE 2: A SIMPLIFIED SL APPROACH



As the diagram illustrates, by situating the availability of capital assets squarely within the context in which they occur, the framework is less prescriptive and more inclusive of all factors which influence the attainment of assets such as gender and power dynamics. Furthermore, by ranking capital asset acquisition as disabling, neutral, enabling or flourishing, a shared point of reference is possible for the individuals and organisations utilising the framework and indeed for the households and communities themselves.

A disabling environment, in this context, does not allow individual households to meet subsistence requirements. Whereas, in a neutral environment, households may meet basic needs but not much else. Conversely in an enabling environment households are able to exceed subsistence requirements and achieve sustainability in at least one aspect of their livelihood strategies. Finally a flourishing environment is one in which individuals and households may achieve a higher level of well-being and are no longer vulnerable to poverty. In this manner, a progression of indicators may be developed for the specific social, political, economic and natural environment of interest. Obviously, the stakeholders themselves must identify the criteria for assessment. By utilising the simple ranking, the complexities of different types of environments are readily apparent (Box 1).

BOX 1: THE RANKING FRAMEWORK: AN EXAMPLE

Complex Emergencies

During complex emergencies, all five capital assets may be unavailable to households, hence the individual and overall classification is *disabling*. Whereas, under post-drought rehabilitation conditions with the advent of rain, natural capital i.e. fodder and human capital may be available (both *enabling*). However, access to financial capital (livestock) and social capital (networks based upon livestock) may remain unstable or poor for some time to come (both *disabling*). Physical capital (livestock markets) may also be depressed after a wide-scale disaster (also *disabling*). As the situation improves, livestock markets may begin to function again hence, physical capital may become *neutral* but overall livestock and non-livestock related livelihoods remain depressed. Financial capital in this scenario would remain *disabling*.

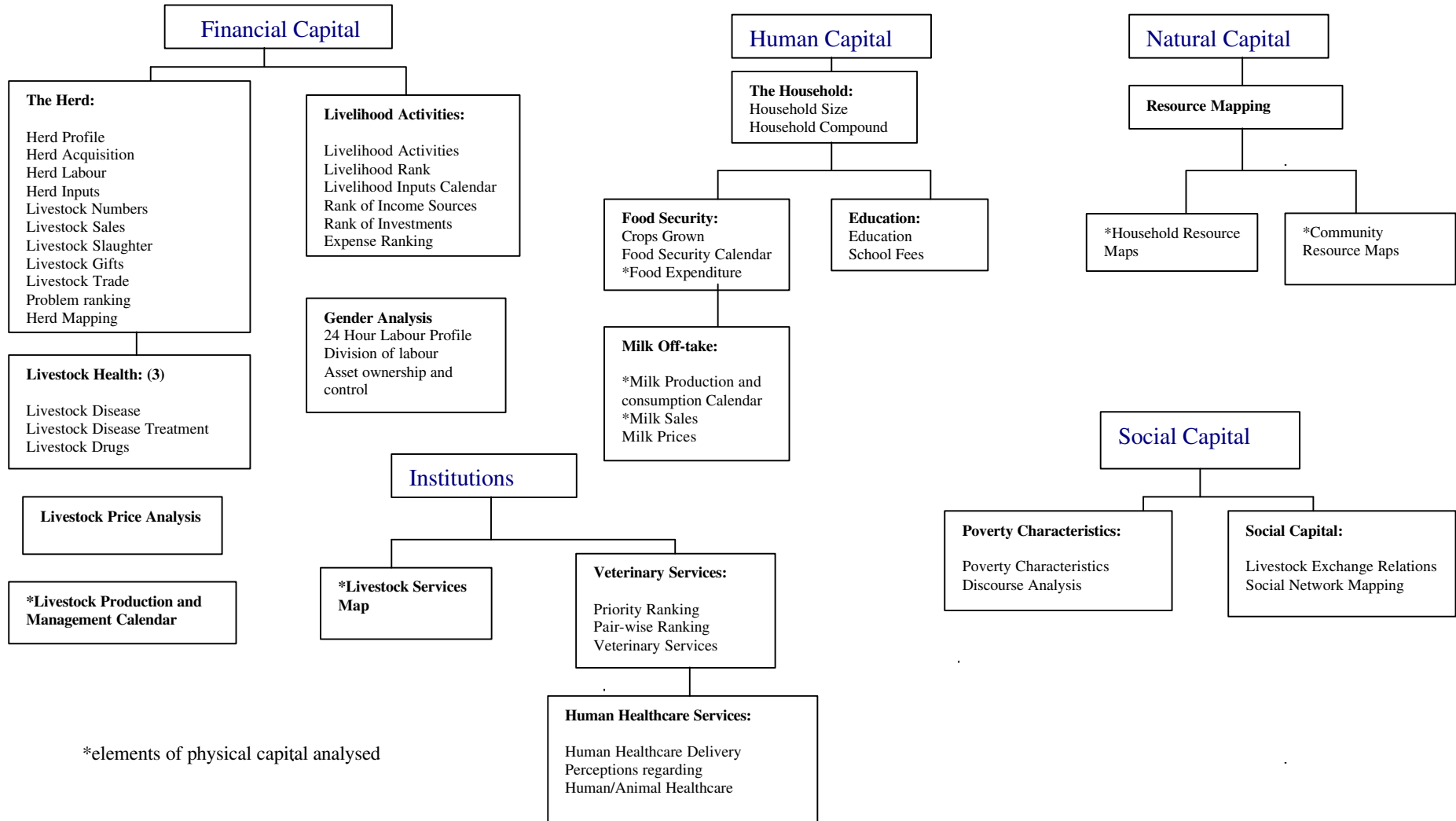
Furthermore, the framework enables distinctions to be made between environments where only one capital asset may be adequate for livelihood security to those that require a variety of assets. For example, in some environments the availability of sufficient financial capital will allow herders and farmers to either diversify income sources or purchase sufficient inputs to ensure livelihood sustainability. Whereas in other environments, increased access to financial capital alone will not guarantee livelihood security. For example, projects offering credit for livestock and veterinary drugs may enable households to obtain food and economic security within a certain environment. In other contexts, due to lack of marketing outlets and/or insecure land tenure regimes, credit alone will not be sufficient to ensure positive livelihood outcomes.

After ranking the environment, opportunity sets and costs may be evaluated. In every environment, there will be a variety of livelihood activities that may be pursued i.e. the opportunity set. However, all livelihood activities also have an opportunity cost, which may or may not be acceptable to the individuals involved. Therefore, prior to instituting a project or programme, opportunity sets and costs must be determined. Use of the above framework will also enable projects to easily identify *initial* intervention points from the assessment of livelihood outcomes. Thus, to perform a livelihood analysis a four-step process is required. First, the overall environmental context should be determined, next the capital acquisition ranked, followed by an evaluation of opportunity costs and sets. Finally, the livelihood strategies and outcomes, which arise from these opportunity sets, may be assessed. By viewing the capital assets as a basket of goods whose availability and access is directly related to the environment in which they occur, a more simplistic and relational framework emerges.

Within the context of the research, the framework was utilised to determine the focus of the field activities. Consultations with stakeholders yielded the following results. At the time of the study, in Kenya, rainfall was generally adequate throughout the country, hence natural capital was overall ranked as enabling. At the household and community level, natural capital was analysed in relation to the natural resources use and availability. Furthermore, physical capital i.e. infrastructure ranged from enabling

in some districts to disabling in others. However, rather than assessing physical capital in a non-relational manner, the study incorporated the consequences within the context of the other assets. For example, livestock marketing cannot be separated from financial capital and the economic gains derived from the sale of off-take. Consequently, as noted in figure 3, elements of physical capital were analysed in the assessment of financial, natural and human capital. Therefore, the study focused primarily on the access and influence of human, financial and social capital on the lives of poor livestock-keepers and the role of physical capital therein. Furthermore, given the sectoral nature of the study, the institutional analysis centred on veterinary services. Figure 3 details the structure and methods utilised to assess asset availability.

FIGURE 3: INDICATORS AND METHODS USED TO ASSESS ASSET AVAILABILITY



2. METHODS

Data in Kenya was collected at the national, district, community and household levels. During the course of the study over 600 individuals in approximately 30 communities were consulted. The study developed the Livestock Poverty Assessment methodology (LPA) to assess livelihood parameters among poor livestock-keepers. Core data collection techniques include stakeholder meetings, focus groups, key informant interviews and semi-structured individual interviews. Fourteen different participatory methods were utilised both to collect primary data and triangulate information. In addition, a household-level survey was implemented which combined both quantitative and qualitative elements. The following sections outline the LPA framework.

2.1 Data Collection Activities

At the national level, stakeholder meetings were held with key policy makers to investigate the current policy environment in Kenya with regard to animal health. The researchers met with representatives from the government, bilateral, multilateral donors and NGOs involved in the delivery of veterinary services. Over 20 organisations were consulted. Key stakeholders were primarily asked for their opinions on the success and failure of past and present livestock projects, the legislative environment and the future of animal healthcare delivery in Kenya.

Although stakeholder meetings were held and preliminary data collected in eight districts, study activities concentrated on six districts. The final selection of districts was based upon three criteria: poverty levels, livestock population and dominant livestock production system. The incidence of poverty in each district was evaluated utilising the Kenya Poverty Eradication Plan (GoK, 1997a). Whereas, the concentration livestock and hence livestock-keepers was assessed utilising individual District Development Plans (GoK, 1997b,c,d,e,f). To avoid production system bias, the districts chosen represent four major livestock production systems: pastoralist, subsistence farming, peri-urban, and urban. Equally, an attempt was made to assess a wide variety of poor livestock-keepers within each production system e.g. pure pastoralists vs. more settled or destitute communities. The following details the study districts:

1. Samburu District, located in Northern Kenya, is populated predominantly by Samburu and Turkana pastoralists. Livestock production centres on extensive cattle and smallstock systems. The study assessed communities of both ethnic groups.
2. Garissa District in North Eastern Province is inhabited mainly by Somali pastoralists. The study concentrated on refugee populations in peri-urban areas.
3. Machakos District in Eastern Province is home to subsistence agrarians. Cattle production systems varied from exotic to traditional systems.
4. Kariobangi is one of the largest slum areas of Nairobi and is home to a diverse mix of people who originate from a variety of districts across the country.

Livestock systems included backyard poultry, pig and smallstock production with lesser numbers of cattle, turkeys and rabbits being raised.

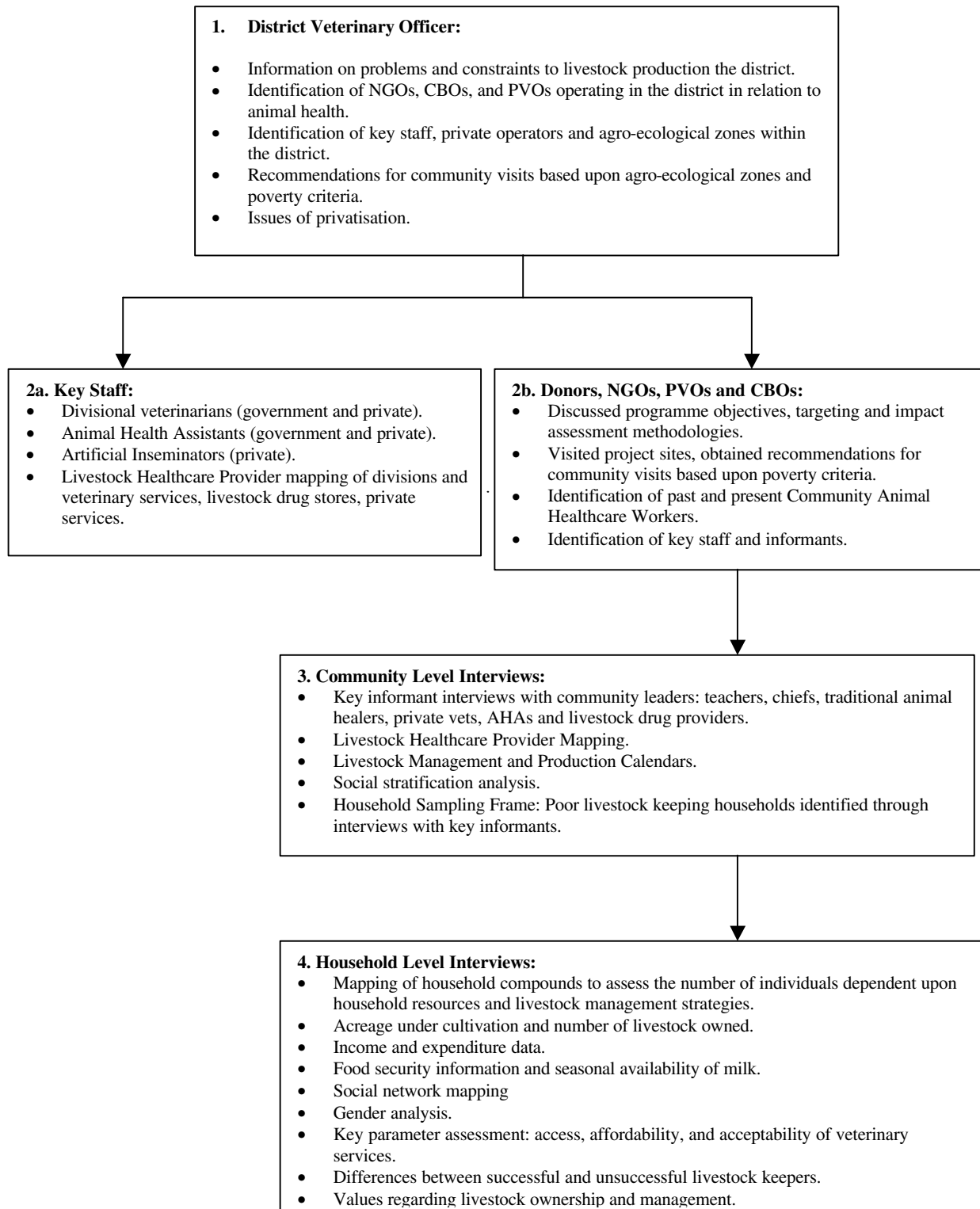
5. Baringo District in Rift Valley Province is home to a mix of agro-pastoralist and subsistence farming groups: the Pokot and Tugen peoples, which inhabit differing agro-ecological zones. Households from both groups participated in the study.
6. Kajiado District, also in Rift Valley Province, is principally occupied by Maasai pastoralists. Both native and non-native peoples are demarcating Land in large areas of the district for commercial agricultural and other purposes.

In each district, a series of chain interviews were performed to gather information at the institutional, community and household level. The following section details the sequence of the interviews.

2.2 Chain Interview Sequence

The first stage of data collection activities in each of the above districts began with the District Veterinary Officer. Information on the agro-ecological zones, levels of poverty and NGO activity in each district was obtained. Next, interviews were held with key government, NGO, CBO and PVO staff. Issues and methods regarding project implementation were discussed and site visits to projects were organised. To avoid biases in community selection, both NGO and government sources were consulted. In the third stage of the data collection sequence, stakeholder meetings were held with the communities involved. Key informants and issues for further discussion in focus groups were identified at this time. Finally, data was collected at the household level. Individual interviews were held with over 360 households. A semi-structured questionnaire was administered which combined participatory mapping and ranking techniques with both evaluative and quantitative questions. At each stage of the study, a variety of different participatory techniques were evaluated for their applicability to livestock and the utility of the information generated. Figure 4 outlines the chain interview sequence in greater detail.

FIGURE 4: DISTRICT LEVEL CHAIN INTERVIEW SEQUENCE



The following section further describes the methods utilised at the community and household level.

2.3 Community Level Methods

At the community level, the objective of the study was to gain an understanding of the viability of social networks, informal and formal institutions that are available to poor livestock-keeping households. Historical trends and how communities respond to periods of stress were also assessed. Furthermore, the study gathered information on community-derived notions of poverty and social differentiation and exclusion in order to develop a method to identify poor livestock keeping households. Finally, three key parameters essential to the uptake of veterinary services to the poor were evaluated: access, affordability and acceptability. Box 2 details the methods utilised to assess livelihood trends and perceptions of poverty and well-being. Whereas Box 3 and 4 describe the methods used to evaluate the key parameters.

BOX 2: LIVELIHOOD AND POVERTY ASSESSMENT

Livelihood Changes Diagram

In each of the districts, key informants were asked to assess changes in livelihoods from 1980 to the present day. Individuals were asked to describe differences in five key livelihood components: livestock keeping, casual labour, crop production, employment and petty trade activities. The purpose of the exercise was not to quantify gross changes but rather to discern trends. Hence, a Venn diagram format was utilised to initiate discussions on perceptions regarding the amount of change and the reasons offered.

Historical Trend and Price Analysis

In each community, focus groups and key informants were asked to identify major periods of stress and the coping and adaptive strategies utilised. Equally, a price analysis was performed to analyse the changing monetary value of livestock from 1950-1999.

Poverty and Social Exclusion Assessment

To assess community-derived notions of poverty and social exclusion, focus groups, stakeholder meetings and individual interviews were held to explore how communities perceive the poor. Questions were asked regarding both the obvious and less noticeable features of the different social stratum that inhabit the community. To evaluate perceptions of poverty, discourse analysis techniques were utilised on the discussions generated from the semi-structured interviews.

BOX 3: KEY UPTAKE PARAMETERS: ACCESS AND AFFORDABILITY

Access

In each community, focus groups and individual interviews were held to transcribe Livestock Healthcare Provider maps. The mapping exercise detailed the distance, availability of government, NGO and private animal healthcare providers and sources of livestock drugs. Individuals were also asked in the semi-structured questionnaire specific information regarding the distance; time required and frequency of use of the nearest animal healthcare provider and livestock drug store.

Affordability

The affordability parameter examined the ability of poor households to pay for veterinary goods and services. As such the parameter evaluated how close households were to meeting the minimum necessary level of preventative and curative animal healthcare in their area. Therefore, the first step in determining the affordability of animal healthcare was to calculate the 'ideal' treatment cost for a variety of livestock diseases. The 'ideal' treatment regime and costs were obtained from key informants i.e. government and private veterinarians and animal healthcare assistants in each of the districts. Next, the actual expenditure on animal healthcare was evaluated. At the community level, The Livestock Productivity and Management Calendar was utilised to obtain information regarding the seasonality of livestock expenditures in each of the communities. Semi-structured interviews were then used to elicit specific information regarding animal health expenditure over three month intervals for a period of one year for the households involved. To improve the accuracy of recall, expenses were categorised by both disease condition and the particular type of veterinary pharmaceutical purchased. Finally, the 'ideal' versus the actual expenditure was compared in this manner the capacity of poor livestock keepers to uptake animal healthcare projects determined.

BOX 4: KEY UPTAKE PARAMETER: ACCEPTABILITY

Acceptability

To determine the acceptability of any animal healthcare intervention, the importance of livestock to the community must be assessed. As such, the following features were examined:

a. Consumer Preferences regarding Animal Healthcare

Pair-wise ranking exercises were performed which analysed consumer preferences regarding choice of drug, nearness of provider, advice offered and access to credit.

b. How livestock healthcare fits into the overall needs of the community.

To evaluate the parameter, ranking exercises were performed among focus groups and individuals to assess the importance of livestock disease to community well-being. Households were also asked to rank the problems they encountered with keeping livestock.

c. How households prioritise expenditures.

To derive perceptions regarding livestock healthcare, households were asked to rank major expenditures.

d. Perceptions of quality.

To assess notions of quality regarding animal healthcare, households were asked open-ended questions regarding the differences between human and animal healthcare delivery, their preferences and perceptions regarding both.

2.4 Household-Level Methods

At the household level, the objective of the study was to obtain information on the role of livestock in both livelihood and food security and to gather specific information on the role of gender in livestock keeping and the viability of non-market livestock transactions. Box 5 and 6 outline the methods used at the household level. In the first stage of data collection, household and compound resource flows were evaluated (Box 5).

BOX 5: HOUSEHOLD LEVEL METHODS I: RESOURCE MAPPING

Compound Mapping

For each informant, the numbers of compound members including age and sex of children was specified via a mapping exercise. In this manner, the social networks between individual households and other members of the same compound could be explored. Maps were also made of the herd structure of animals which were kept together and who their respective owners were. Thus, the study attempted to avoid one of the most common problems plaguing livestock development researchers i.e. who owns what animal in the herd. The information was crosschecked with data gathered in the semi-structured questionnaire regarding herd structure.

Household Resource Maps

The resource maps delineated inputs and outputs regarding enterprises such as livestock, crop production and other livelihood activities. For example, for livestock, the following information was obtained: where off-take was sold, the price and distance, the purchase of livestock drugs (km and time), total livestock kept at compound, nearest tick dip (if relevant), casual labour availability etc.

After mapping households access to resources, data collection focused on gender, perceptions of poverty, household food security and the manner and means that livestock functioned as a form of social capital (Box 6).

BOX 6: HOUSEHOLD LEVEL METHODS II

Labour Profiles

Individuals and focus groups provided information for 24-hour labour profiles to examine both the intensity of and duration of labour required for livestock keeping vs. other activities.

Gender Analysis

The gender analysis examines ownership of assets (particularly livestock) and the changes brought on by life events such as death and divorce. Focus groups and individuals provided information for the study.

Food Security

To assess periods of food insecurity for the households involved, two methods were utilised. First seasonal production calendars were used to assess a household's ability to sell surplus crops and the amount needed for home consumption. Equally, the timing of sales and the ability to purchase seeds for next year's crop was evaluated. Next, individuals were asked to detail weekly food expenditures and seasonal differences. Finally, households were asked to detail milk production and consumption in a Seasonal Milk Production Calendar. The three sources of information were utilised to derive a household food security score.

Social Network Mapping

Individuals were asked to assess the social networks of the poor. The purpose of the exercise was to identify the problems that the poor face and the appropriate institutions or individuals that a household can turn to in times of need. Ten formal and informal institutions were analysed: close relatives, distant relatives, friends and neighbours, the community, the rich, the government, religious institutions, NGOs, self-help groups and customary leadership structures.

Non-market Livestock Transactions

A description of the different types of livestock loaning, sharing and gift arrangements and their relative strength were explored through focus groups and individual interviews.

SECTION II: RESULTS

The following section presents the results obtained at the household and community level.

3. HUMAN CAPITAL

Human capital is defined as ‘the skills, knowledge, ability to labour and good health important to the ability to pursue different livelihood strategies’ (Carney, 1998). To analyse human capital and livestock keeping, the study first examined household composition and collected information regarding compound size and the relationship of members to the primary household. As the majority of poor people in developing countries do not live in isolation, the common focus on the household as a unit of analysis may be misleading. Equally, a compound-level assessment was needed to investigate the dynamics of livestock husbandry and management between households. As such, participatory mapping exercises were the primary tool utilised to assess the compound and resource exchange between households.

As one of the primary means of increasing human capital is through education, the study examined the investment that households were making in education. Finally, the research evaluated food security issues, specifically within the context of livestock keeping. Although, wider data on crop production was collected, for the purpose of this report, only milk production and consumption figures are offered.

3.1 The Household

Households were generally comprised of husbands, wives and/or co-wives, children, and other dependants such as elderly parents and orphans. A distinction was made between children who remained living with the family and those that were independent. As such, in the table below, the number of children does not include adult or working children who are no longer dependent upon household resources. Table 1 details the household composition of the families who participated in the study.

TABLE 1: MEAN HOUSEHOLD COMPOSITION¹

District	Husbands	Wives	Children	Other Dependants	TOTAL
Baringo (n=89)	1	1.2	6.6	0.9	9.7
Garissa (n=58)	1	1.2	6.3	1.2	9.7
Kajiado (n=40)	1	1.0	4.7	0.8	7.5
Machakos (n=44)	.8	0.8	5.0	1.1	7.7
Nairobi (n=53)	.8	0.7	4.0	1.0	6.5
Samburu (n=77)	1	1.3	6.8	0.6	9.7
TOTAL (n=361)	1	1.0	5.6	0.9	8.5

¹ Given the low variability in household size, a mean was utilised instead of an average. The high level of widower households in Machakos and Nairobi account for the partial figures.

From the table, a number of interesting findings are apparent. First, pastoralist and agro-pastoralist households (Baringo, Garissa and Samburu district) are generally larger than the subsistence agrarians (Machakos district) or city dwellers (Nairobi) with the exception of Kajiado district. Overall, the finding is contrary to current notions regarding pastoralist family size. In general, the fecundity rates of pastoralists are thought to be lower than those for subsistence farming families. However, the results may be explained by the polygamous nature of many pastoralist societies. On average, pastoralist households within the study group had a greater number of wives than their more settle counterparts with the exception of Kajiado district. In Kajiado, the expanding Christian influence may account for the lower number of wives and hence children.

Second, as the table demonstrates, households in Nairobi and Machakos district had the lowest number of male household heads or conversely, the highest number of female-headed households (n=11 and n=15 respectively). Indeed, 15% of the total sample was Female-Headed Households. Thus, overall, 53% of the interviewees were male heads of households, with the majority of the remainder married women (28%). The final 6% of interviewees were adult children living in the same compound as their parents. Thus, the study attempted to gain both a gendered and inter-generational perspective on the delivery of veterinary services to the poor. Equally, as described below, few households, across the study group, lived on their own. Therefore, an attempt was made to assess the relationships between and the dynamics of, households living together. The following table details the mean size of compounds across the study zone.

TABLE 2: MEAN COMPOUND SIZE

District	Mean Households in Compound
Baringo (n=89)	2.3
Garissa (n=58)	1.8
Kajiado (n=40)	3.4
Machakos (n=44)	2.0
Nairobi (n=53)	1.2
Samburu (n=77)	3.0
Overall (n=361)	2.3

Two trends may be noticed in regard to compound size. First, not surprisingly, pastoralists (Kajiado and Samburu districts) lived more communally than agro-pastoralists (Baringo), subsistence farmers (Machakos) or peri-urban and city dwellers (Garissa and Nairobi). Secondly, poorer households tended to live in smaller compounds. Across the study zone, a significant relationship was found between socio-economic standing and compound size, with the exception of Female-headed households (FHHs). On average, FHHs lived with 3.4 other households as compared to the overall figure of 2.3. Although generally considered among the most socially excluded, the finding does not contradict notions of marginalisation among female-headed households but rather another explanation may be possible. FHHs due to their social exclusion may be finding other similarly excluded households to live with. This has important implications for social capital, which will be further discussed, in

Section V. Finally, as will be discussed below; livestock holdings are often a communal resource.

3.1.2 Livestock Holdings

The following table details the mean livestock holdings for households, which participated in the study. Across the districts, households had a remarkably similar herd size with the exception of Nairobi and Machakos district. There were few cattle owners in urban Nairobi as such the majority of households kept smallstock. Although not reflected in the table below, Nairobi households also kept a wide variety of species e.g. pigs, poultry, turkeys and rabbits. Furthermore, due to space restrictions, households often kept their animals within the same living area as the family. Although some study participants were charged rent for space (usually a room in a house) to keep their livestock, a few of the more fortunate were able to rent out rooms to other livestock keepers. Conversely, as representatives of a crop-livestock system, herd owners in Machakos generally kept one cow.

TABLE 3: MEAN HERD SIZE FOR HOUSEHOLDS

District	Cattle	Goats	Sheep
Baringo (n=43)	10	17	10
Garissa (n=40)	9	13	5
Kajiado (n=39)	8	13	7
Machakos (n=42)	1	8	4
Nairobi (n=49)	0	6	2
Samburu (n=48)	10	16	5

Given the communal nature of living arrangements, across the study zone, livestock owned by different households were often herded and managed as a single unit. As such, on average, herd size for compounds was 1/3 larger than those for households. This has important implications for the delivery of veterinary services. A focus on individual herd owners may be counterproductive when dealing with the poor livestock keepers in Kenya, hence the compound may be both a better unit of analysis and service delivery point.

3.3 Education

For many of the poor, educating children was perceived as a means of bettering both a child's and a family's chances. As the following table illustrates, in some districts, up to 50% of the children were enrolled in school.

TABLE 4: PERCENTAGE OF CHILDREN IN SCHOOL

District	%children in school	Boys	Girls
Baringo (n=263)	50%	55%	45%
Garissa (n=263)	42%	62%	38%
Kajiado (n=210)	31%	74%	26%
Machakos (n=220)	41%	58%	42%
Nairobi (n=207)	39%	58%	43%
Samburu (n=341)	23%	71%	29%

From the table, it is apparent that the percentage of children in school is higher in farming and peri-urban/urban communities than those for pastoralists. The results are not surprising and indeed corroborate earlier studies. Equally, the majority of school enrolments were for primary and nursery school with only 7% of the total sample attending secondary school.

When asked which child would be removed from school if forced to by economic necessity, 63% of households stated that a girl would be removed whereas, only 37% answered that a boy would be chosen. However, interpreting the results merely in terms of gender bias may be too simplistic. First, households were often reluctant to identify which child would be removed as if such a reckoning could invite the eventuality. Equally, in pastoralist areas, the criteria for both sending and removing a child from school was generally not based upon aptitude or scholastic achievement. On the contrary, many pastoralists reported that the male child chosen to go school would be the one who was ‘not so serious’ with regard to herding. In other words, children with little aptitude for livestock care-taking were the first choice for education. Equally, notions regarding the education of girl children were also more complex than the figures belie. First, in many pastoralist communities, wealth was often equated to the number of girl children in a family. Thus, the expectation of future gain from bridewealth may be greater than that received from further education. The finding may also explain the low rate of attendance of girl children in school in Garissa district, home to many Somali pastoralists.

Education also represented a significant expense for the family’s involved. In addition to school fees, households were expected to pay for school uniforms, exercise books, textbooks, and school activity fees and in cases where electricity was available, lighting. The following table examines mean school expenditures in each of the district per year for the households involved.

TABLE 5: MEAN SCHOOL FEES (KSH)

District	Nursery	Primary
Baringo	848	2392
Garissa	627	1596
Kajiado	950	1162
Machakos	921	2063
Nairobi	2806	5963
Samburu	277	954

From the table, it is apparent that both the fees and incidental expenses that parents were responsible for varied widely across the districts. Demand may at least partially explain the large differences. In general, school expenditures were less in pastoralist areas with increases in both attendance rates and cost in agro-pastoralist, subsistence farming and urban areas. The highest fees were noted in Nairobi.

Given the large expense, not all households were able to pay for their children's school fees. As table 2 demonstrates, 12% of the families that participated in the study received help with fees from family members and close relatives. Conversely, 14% of the study households helped others to pay school fees. Social obligation regarding education appears to be high and households with an employed person or stable source of income were most frequently contributing to other children's school fees.

TABLE 6: HOUSEHOLDS THAT GIVE AND RECEIVE HELP WITH SCHOOL FEES

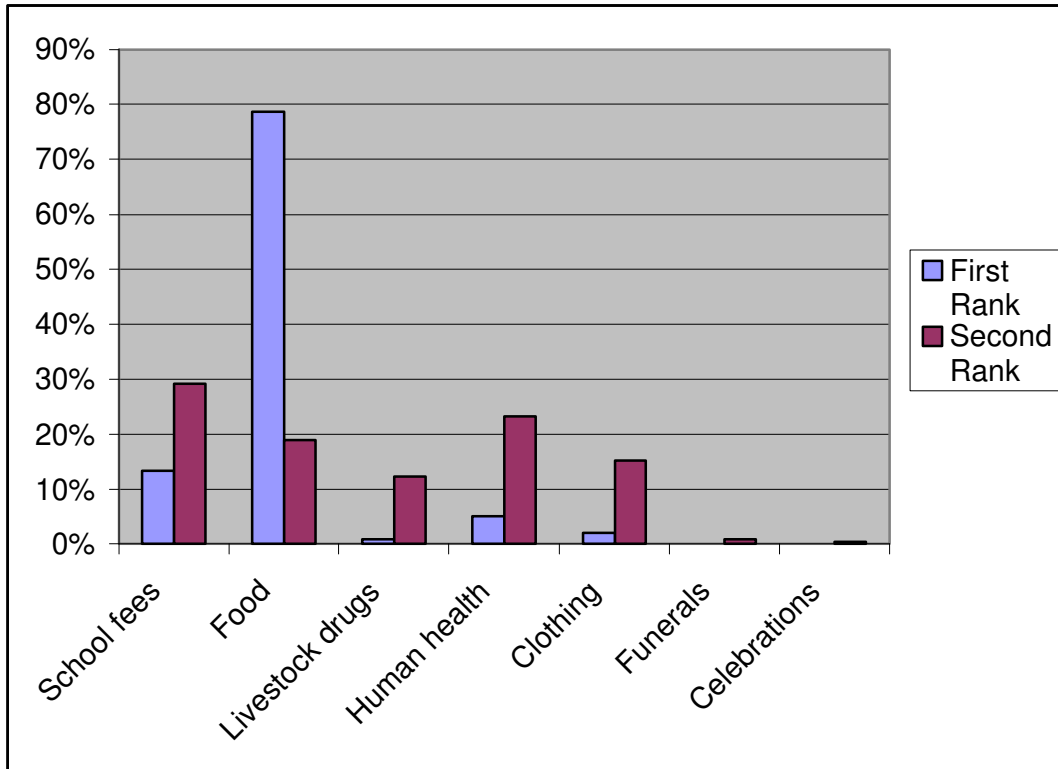
District	Receives help	Assists others
Baringo (n=43)	14%	33%
Garissa (n=40)	23%	8%
Kajiado (n=39)	8%	0%
Machakos (n=42)	9%	7%
Nairobi (n=49)	4%	25%
Samburu (n=48)	14%	10%

In Kenya, school fees are due in September, January and May. Recent PPAs have noted that the period in which school fees were due coincided with times of greatest stress in the farming cycle (Brocklesby and Holland, 1998). Given that most families sell livestock, (particularly smallstock) to generate money for school fees, as noted above, livestock ownership and education are closely linked. To examine the impact on livestock keepers, the study examined the relationship between school fees and smallstock sales, which is presented in (section 4.2.1). However, as the following section demonstrates, food acquisition rather than school fees were the primary consideration for the households, which participated in the study.

3.4 Food Security

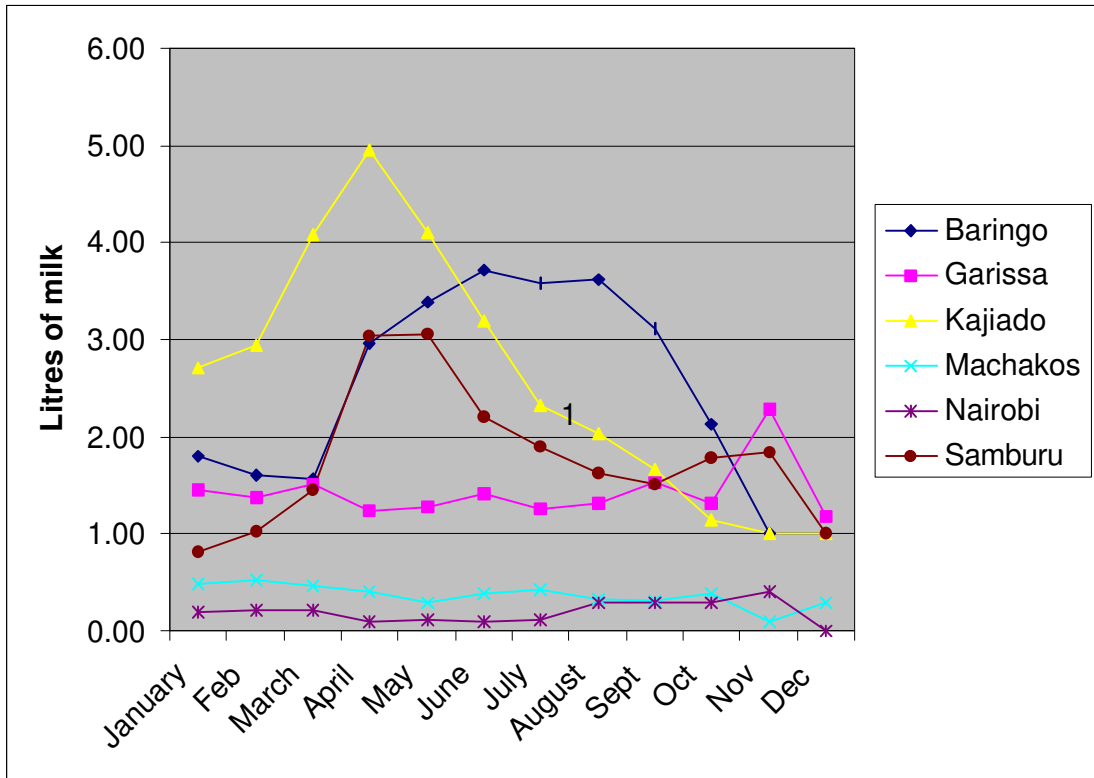
The results of the expense ranking exercise indicated that food was the primary expenditure of the households involved in the study (Figure 4).

FIGURE 4: EXPENSE RANKING



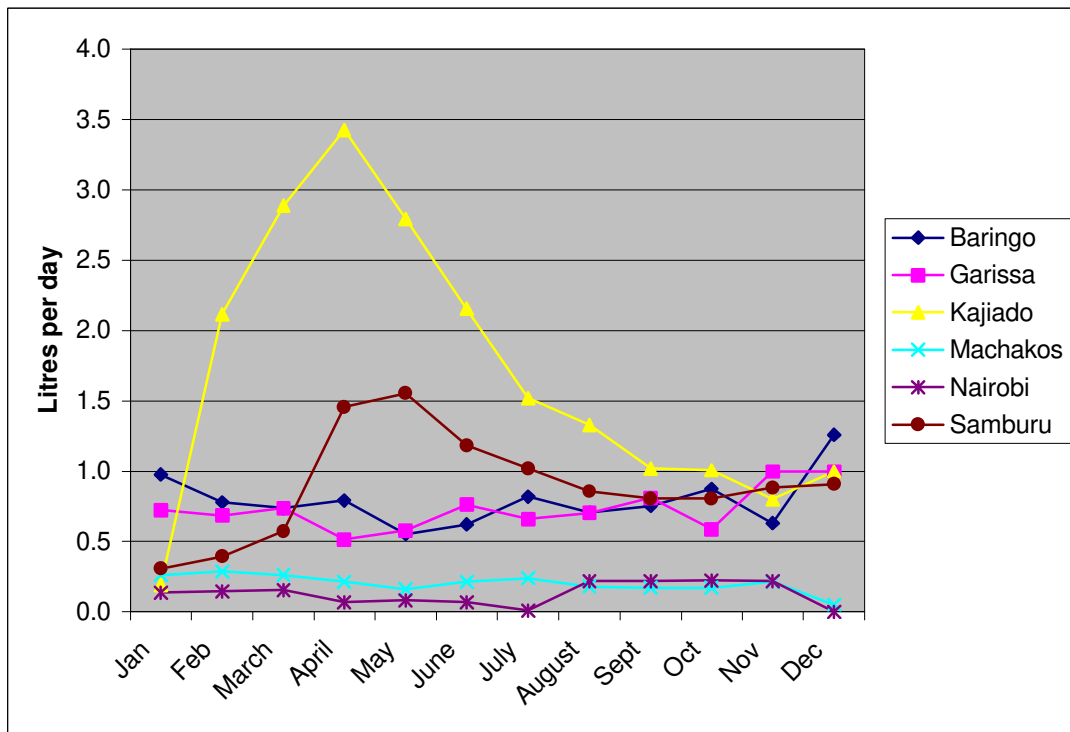
As the figure demonstrates, expenditure on school fees and human health follow that for food as a distant second and third, with livestock drugs and clothing in the fourth tier of expenses. Nevertheless, although the ranking exercise indicates the perceptions that families have regarding the proportional expenditure on food, the method did not offer insight into seasonal food scarcities. Although the seasonality of crop production is well-known, annual variations in livestock productivity and the consequent impact on food security has often been ignored. Therefore, as outlined in the methods, the study utilised seasonal milk production and consumption calendars to analyse the role of milk in household food security. The following figure explores milk production across the study zone.

FIGURE 5: AVERAGE DAILY MILK PRODUCTION (LITRES)



Thus, it appears that milk production peaks during the long rains in the springs and tapers off until the short rains in October and November. Consequently, periods of low milk production correspond to periods of low crop production thereby compounding seasonal food deficits. Hence for the households in involved in the study, food production and consumption were the lowest in the latter months of the year. However, the levels of milk produced only describes the *potential* access of households to milk, they do not reflect the *actual* consumption patterns. The risk is that the majority of the milk may be sold to generate cash and hence does not greatly influence household food security. Figure 6 explores daily milk consumption for households across the study zone.

FIGURE 6: AVERAGE DAILY MILK CONSUMPTION (LITRES)



In general, milk consumption patterns mirrored production with the exception of Baringo district, where higher levels of milk were sold. Hence, although milk production and consumption increases in November and December after seasonal lows in August and September, the levels produced do not meet the seasonal highs of April-June. However, it appears that milk does help level out other food production deficits, particularly in crop-livestock production systems with consumption levels higher in November and December. In pastoralist systems, milk consumption remained steady during these months with the exception of peri-urban dwellers in Garissa district, who more dependent upon crop production and purchased foodstuffs.

The findings have important implications for projects and programmes involved in the delivery of veterinary services and may explain the low uptake of certain technologies such as vaccination and other preventative healthcare interventions. Food expenditure takes priority, and seasonal food deficits will inhibit the uptake and impact of animal healthcare projects. Consequently, the seasonality of food production must be accounted for in the design and implementation of animal healthcare delivery systems appropriate for the poor.

4. FINANCIAL CAPITAL

Financial capital is defined as the ‘financial resources which are available to people (whether savings, supplies of credit, or regular remittances or pensions) and which provide them with different livelihood options’ (Carney, 1998). Therefore, the following section examines livelihood activities, the seasonality of incomes and how households ranked their income sources. Given that livestock are an important form of financial capital, the section also explores the viability of livestock-related livelihoods. As such, the section examines the income derived from livestock sales, the means in which households acquired herds, herd health constraints and management issues.

4.1 Livelihood Activities

On average, households, which participated in the study, were involved in 3.6 different livelihood activities. Households pursued a wide variety of activities ranging from livestock marketing to petty trade to selling water, firewood and charcoal. Indeed, over 30 different activities were reported across the six districts. The most successful households had sufficient capital to make an initial investment in a business whereas the least successful and most vulnerable households were dependent upon common property resources such as the sale of firewood and charcoal burning. The following table examines the percentage of households, which were involved in the most common livelihood activities.

TABLE 7: PERCENT INVOLVEMENT IN MAJOR LIVELIHOOD ACTIVITIES

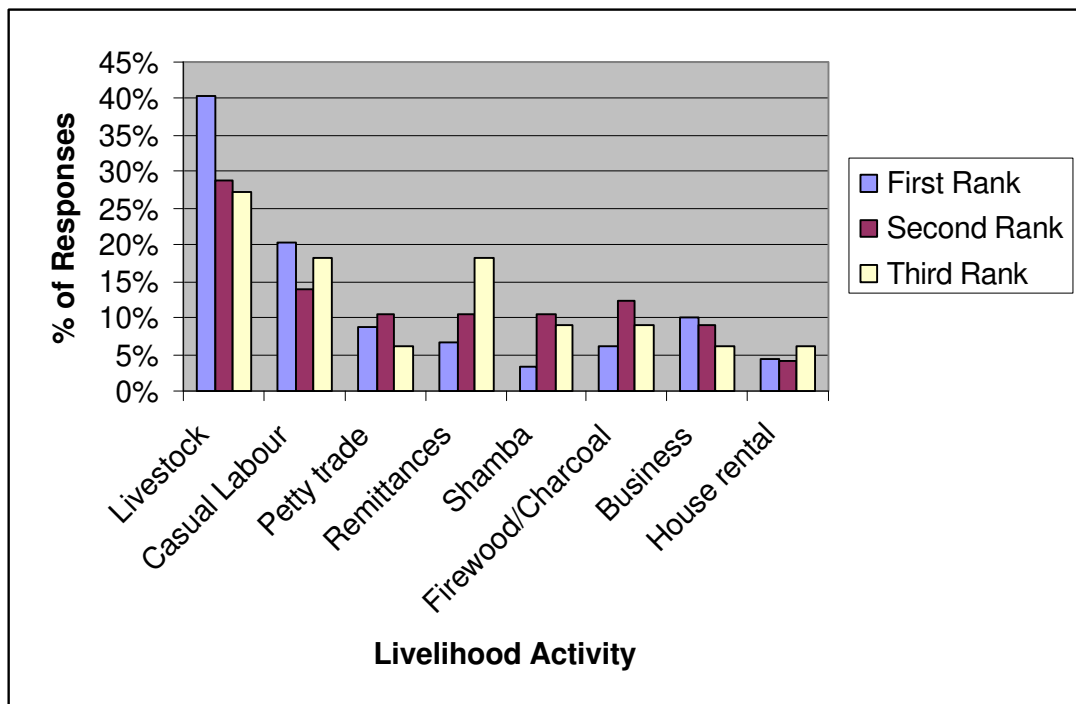
District	Livestock related	Fruit/Vegetable Sales	Casual Labour	Firewood/Charcoal	Business	Employment	Kiosk/Hotel
Baringo	19	27	7	0	0	8	7
Garissa	13	5	8	14	0	5	12
Kajiado	38	19	24	4	6	7	0
Machakos	15	42	34	20	10	6	1
Nairobi	14	3	5	2	8	8	15
Samburu	28	11	11	24	1	3	1
TOTAL	53%	45%	37%	27%	11%	16%	11%

Livestock-related activities included livestock marketing, hides and skins, butchery, herding, bringing livestock to markets and the sale of livestock products. In general, women had control over the sale of livestock products e.g. eggs and milk, with all other livestock-related activities the domain of men. Fruit and vegetable selling refers to sales of homegrown produce, which again women were responsible for. Other female dominated activities included handicraft manufacture, employment in kiosks and hotels, and the sale of firewood. Conversely, casual labour was primarily a male activity. Thus, in regard to livelihood activities there are clear and well-defined gender divisions, which equally apply to livestock-related activities.

To evaluate the differing importance of livelihood activities to household economic well-being, a ranking exercise was performed. Herders and farmers were asked to rank those sources of income that were most important to their household economies. As demonstrated by Figure 7, in all districts, livestock keeping was considered to

contribute the most to household income. Indeed, livestock exceeded petty trade activities, business and wage employment.

FIGURE 7: RANK OF INCOME SOURCES



Thus, it is apparent that livestock keeping is of major importance to economic security. Furthermore, livestock are proportionally more important to the livelihoods of the most impoverished members of the study group. For example, the mean annual income of households that ranked livestock first in overall economic importance was 32% lower than those that ranked livestock second. Indeed, 90% of the bottom income quartile of households ranked livestock as first in importance to the economic security of the household whereas, only 65% of the second income quartile ranked livestock as the first. This is an important finding as it demonstrates that contrary to opinions that livestock projects should not be targeted at the poorest, it is this segment of the population in which livestock are the most vital.

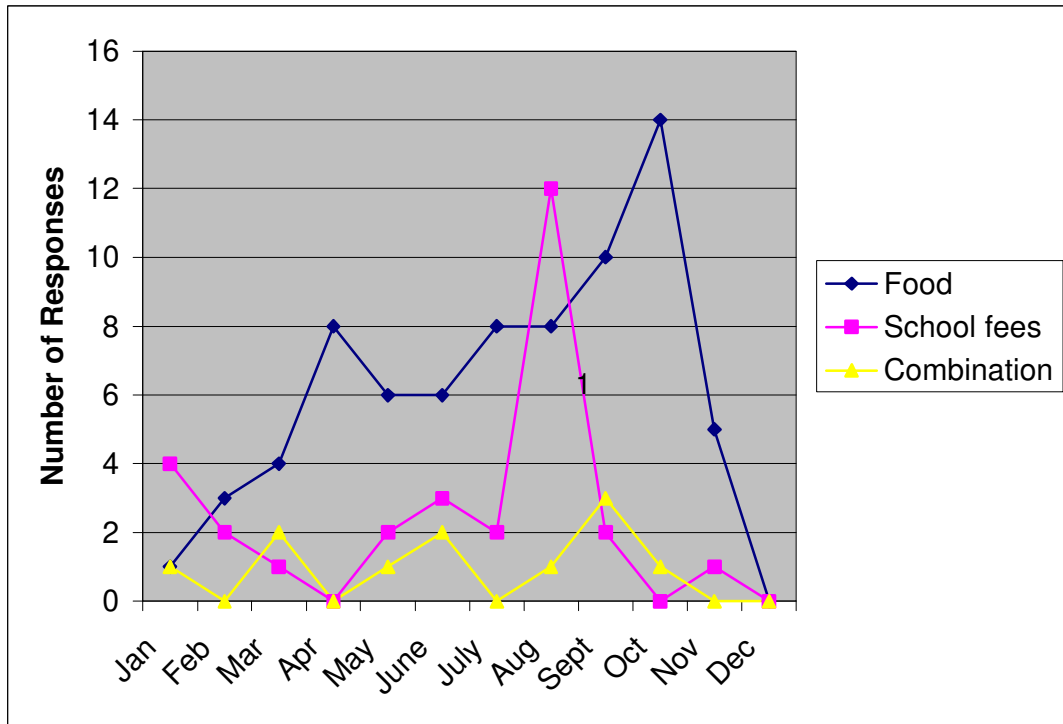
4.2 Income

The problems in household income calculations are well known and were recognised by the study; however, a rough estimation of income was required to establish the importance of livestock to livelihood security. Hence, to calculate the total household income, the earnings from livestock sales, milk sales and that derived from non-livestock livelihood activities were summed. Utilising seasonal calendars as a baseline, semi-structured interviews were performed to collect information regarding the seasonal changes in income streams for the households involved.

4.2.1 Livestock Sales

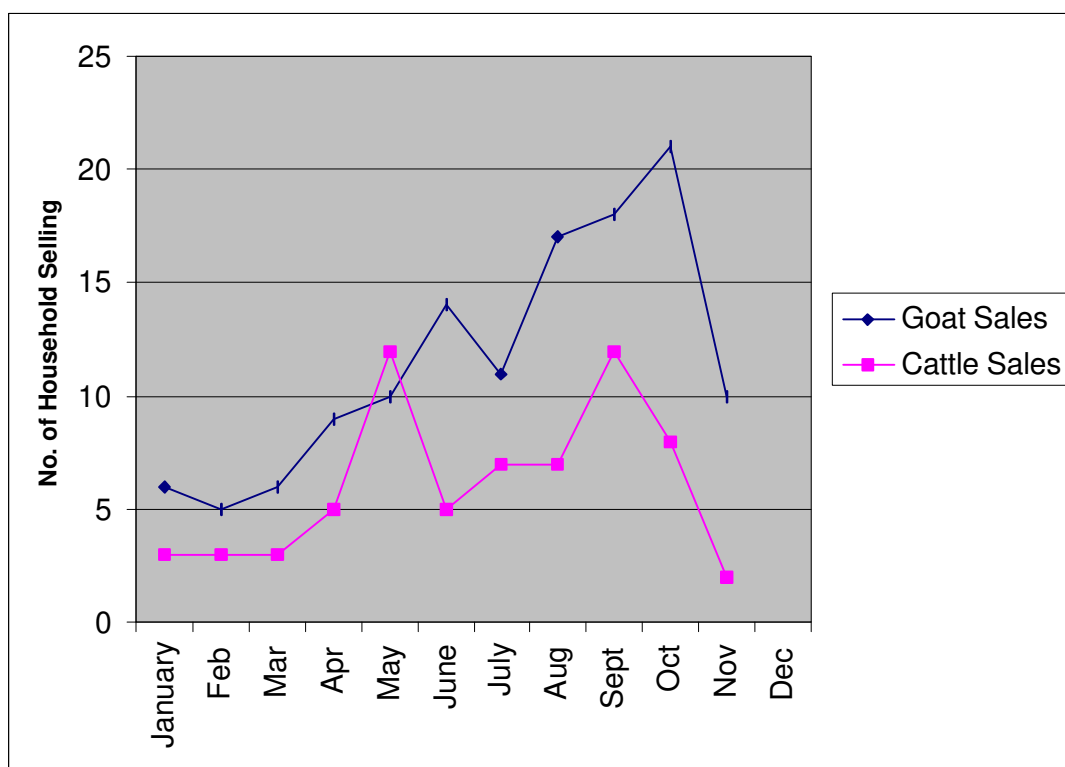
Livestock sales had a strong seasonal correlation. As Figure 8 demonstrates, the majority of livestock were sold during the two rainy seasons from May-June and October-November. When questioned, most herders and farmers stated that they preferred to sell animals near the end of the rainy season when they would fetch the highest prices. Sales at other times during the year were generally made to meet an emergency.

FIGURE 8: NET CATTLE AND GOAT SALES



In general, goats were a much more liquid asset than cattle and goat sales had a strong relation to school fees. For example, for many families smallstock ownership was equated to being able to send a child to school. To evaluate the relationship between smallstock and school fees, Figure 9 examines the seasonality of smallstock sales.

FIGURE 9: NET SMALLSTOCK SALES



As the figure displays, most smallstock sales occurred in October, which coincides with the period prior to the short rains and hence a time of low food production in both crop-livestock and pastoralist systems. Indeed, as displayed in the table below, the majority (58%) of households sold smallstock to obtain money to buy foodstuffs. Only 18% stated that they sold animals for school fees alone, whereas 8% sold animals to meet both food needs and school fees.

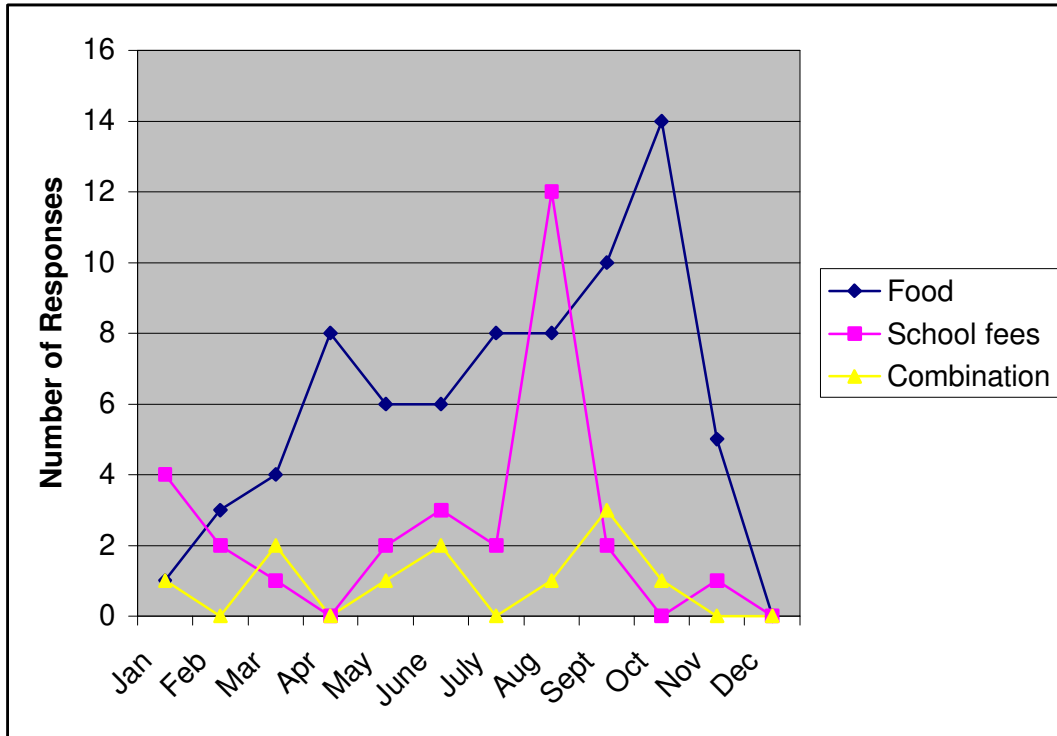
TABLE 8: REASONS FOR SMALLSTOCK SALES

Reason for Sale	Response
Food	58%
School Fees	18%
Food and School fees	8%
Human healthcare	5%
Business	1%
Clothing	1%
Seeds/Farm tools	1%
Unknown	6%
TOTAL	100%

However, when the reasons offered for smallstock sales were plotted by month, a clearer picture emerges. School fees are the driving force behind smallstock sales in September, which coincides with the beginning of the school year. Nevertheless, it is evident from the figure that September is also the beginning of a period of food stress in which households are forced to sell animals to generate cash for food to survive

over the coming period of low food production. Therefore, it is possible that if school fees were due after the rains, when money is more readily available, attendance rates would be higher, particularly in pastoralist areas.

FIGURE 10: REASONS FOR SMALLSTOCK SALES BY MONTH



The results of the household expense ranking also corroborated the finding. As discussed in section 3.4, food was ranked first overall as the primary expense that households incurred (Figure 4).

Like goat sales, the majority of cattle were sold to meet purchase food and other 'basic needs' such as paraffin for lamps and cooking oil. Table 9 details the major reasons for cattle sales.

TABLE 9: REASONS FOR CATTLE SALES

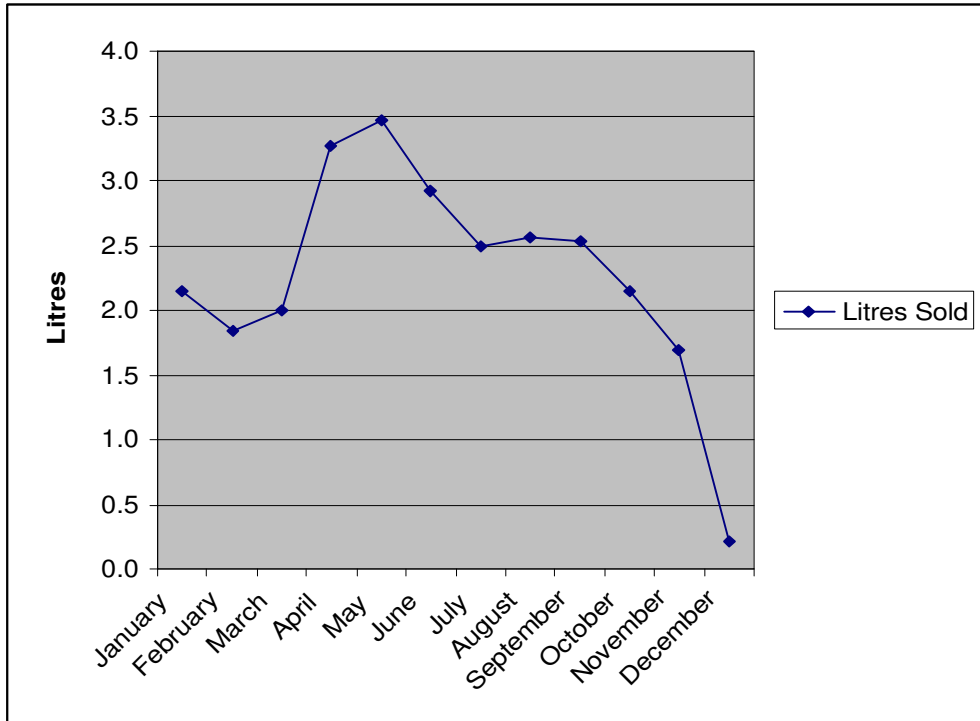
Reason for Sale	Response
Food	45%
School fees	13%
Food/School fees	13%
Livestock drugs	9%
Human healthcare	7%
Business	4%
Purchase land	1%
Unknown	7%

Surprisingly, a higher percentage of cattle than goats were sold to purchase livestock drugs. Thus, it appears that many herders and farmers were willing to make a large capital investment in healthcare for their cattle. Equally, it appears that for the poor, cattle are almost a disposable an asset as smallstock. For example, 71% of cattle were sold to meet food and school fee expenses whereas, 84% of goats were sold to meet these needs. Nevertheless, few cattle were sold for non-essential items such as farm implements and clothing. The following section explores income derived from milk.

4.2.2 Milk Sales

Earnings from milk also followed a seasonal pattern as demonstrated by Figure 11.

FIGURE 11: MEAN DAILY MILK SALES (LITRES)

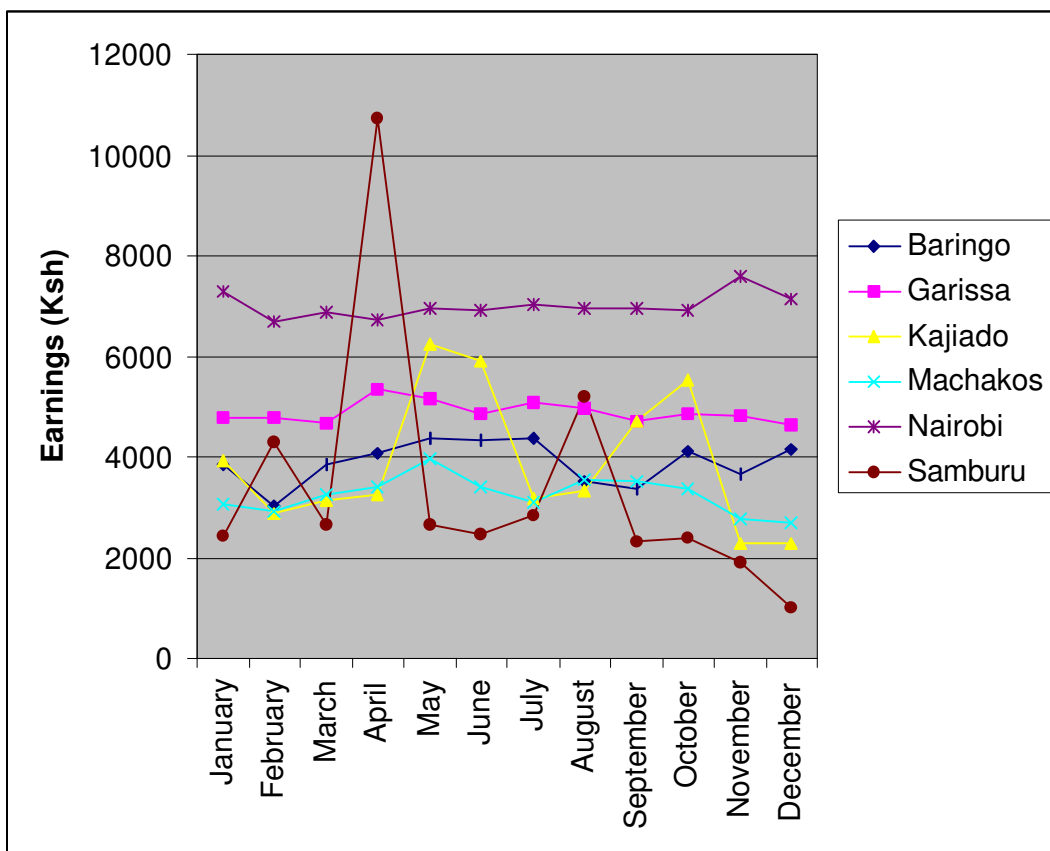


However, although milk production and obviously the ability to sell milk increased during the rains, as discussed in the previous section, the number of livestock sold to meet food needs also increased during this time. As off-take frequently included productive females, it appears that farmers and herders in addition to losing the long-term reproductive potential of animals sold, were also frequently losing out on short-term income from milk sales. Two possible reasons may account for the behaviour. First, given the mean cattle numbers across the study zone, the total amount of milk available for sale was small thus the money generated did not counteract the need to sell animals for basic foodstuffs. A second reason may be that below a certain threshold of viability, productive animals will have to be sold to meet food needs. Thus, in order to fully capitalise on livestock assets a certain minimum viable herd size is required. The literature is extensive on the potential minimum viable herd required for pastoralists to subsist on livestock. However, for the poor, minimum viability does not refer to the subsistence requirements of the household, but rather more specifically relates to the number of animals required to prevent the off-take of productive females.

4.3 Seasonality of Income

Finally, the seasonality of incomes was evaluated. Figure 12 examines the mean monthly household income for each of the districts.

FIGURE 12: MEAN MONTHLY INCOME



From the figure, pastoral areas (Kajiado and Samburu districts) had the highest variation in income during the year, which correlated to the rainy seasons. A number of reasons may account for the income peaks, first, as detailed above, livestock related income is essentially seasonal. However, there were differences in the factors behind the seasonality. For example, in Kajiado district, a large number of households were involved in marketing livestock. Large profits could be earned from buying livestock in rural areas and driving the animals to market centres in Tanzania and larger towns in the district. Equally, as will be further described below, in Samburu district approximately 70% of the total household income was derived through the sale of both livestock and milk in the rainy season. During the remainder of the year, the opposite was true and non-livestock related activities accounted for the majority of income. The finding was also observed in Garissa district. A large number of households acted as ‘livestock middlemen’ or sales assistants or helped put livestock on trucks in the weekly market, thus again showing higher earnings during the rains when the markets were most active. The following table compares the percentage of monthly income derived from livestock related activities in the three pastoralist districts over the course of the previous year.

TABLE 10: PERCENT INCOME DERIVED FROM LIVESTOCK-RELATED ACTIVITIES

	Jan	Feb	March	April	May	June	July	August	Sept	Oct	Nov
Kajiado	64%	72%	66%	76%	60%	61%	71%	66%	48%	27%	0%
Samburu	32%	70%	48%	85%	43%	39%	31%	71%	35%	33%	35%
Garissa	16%	16%	27%	63%	60%	29%	30%	44%	27%	29%	28%

The table demonstrates that areas with economies largely based upon livestock and equally importantly, access to markets had the highest seasonal peaks in earnings.

In conclusion, income for poor livestock-keepers is strongly seasonal for two reasons. First, many livestock-related livelihoods such as livestock marketing and trading mainly occur during the rainy season. Equally, the rains are the period when most households will sell animals to generate income to cover expenses over the course of the year. However, the need to generate cash for school fees and food during times of seasonal food stress often coincides with the beginning of peak periods for milk production. Hence, food stress decreases the overall profit that herders and farmers derive from livestock keeping. Overall, the above findings corroborate the greater importance of livestock to the livelihoods of the poor and their greater vulnerability to the seasonally induced deprivations of income derived from livestock. The seasonality of income and earnings from livestock has important implications for the delivery of veterinary services, which will be discussed further, in Section 6.

5. SOCIAL CAPITAL

Social capital is defined as the ‘...features of social organization, such as trust, norms and networks that can improve the efficiency of society by coordinated actions (Putnam, 1993).’ Of the five capital assets upon which a household’s livelihood is based, social capital is the recognised as being the most difficult to measure (Attanasio and Szekely, 1999). Empirically, measurement of social capital has proved difficult for two reasons. First, social capital is dynamic and therefore subject to change and second, expectations of assistance from relatives, community groups etc.

may not materialise when put to the test. For example, although individuals may join a group with the notion of future benefit, these gains may not accrue. Therefore, it is difficult to separate beliefs vs. reality when attempting to measure social capital.

Furthermore, many appraisals have focused on the group rather than the individual level. For example, Narayan (1997) performed a comprehensive analysis of social capital among the poor in Tanzania. The study focused on the village rather than the household level. As Narayan states:

[As] Social capital is embedded in the social structure, it was measured primarily at the village level, with much less attention paid to social capital ratings at the individual level.

In Narayan's research, social capital was evaluated by questioning households about 'associational' activities or membership in groups, the defining features of the groups and individual attitudes and perceptions regarding trust (Narayan, 1997). Conversely, in Kenya this study opted for an appraisal at the individual level and did not specifically analyse group membership. Two reasons are offered for the focus. First, the essential criteria for social capital, by definition, must begin with the individuals involved. Second, as outlined above, group membership may not be a very effective proxy for social capital.

Recent work by Woodcock and Narayan (2000) classifies social capital into three different types: bonding, bridging and linking. Where bonding social capital are those ties between immediate family members and bridging social capital refers to weaker relations between persons of differing geographic, ethnic or occupations. Linking social capital in this grouping describes the relationships between poor people and formal institutions such as NGOs, governments, etc. However, the framework although valid, does not further elucidate the outcome of these relationships.

Therefore, the study took a narrower, but perhaps more realistic view, of the nature of social capital within many communities. Social capital in the context of the poor relates to those formal and informal institutions that a person may draw upon in times of trouble. Consequently, the study analysed the variety and strength of association to the institutions that were available to individuals. Thus, social capital was measured via the level of access to institutions rather than by the level of associational activity or membership in groups. In this manner, the research utilised a more dynamic concept of social capital.

Given the sectoral approach of the study, both the access of poor livestock-keepers to social capital and the manner in which livestock functioned as a form of social capital were examined. Therefore, the following section is divided into two parts. In the first part, the correlates to social capital are examined whereas in the second part, the nature and strength of livestock sharing-rearing relationships are explored. Two primary methods were utilised to collect data, semi-structured interviews and social network mapping.

In social network mapping, individuals were asked to relate the formal and informal institutions that a poor person could turn to when in need. In the first stage of the assessment, herders and farmers were asked to outline the common problems that the

poor encountered. Next, during the social network mapping, participants were asked to assess the ability of the following ten different formal and informal institutions to help the poor. The study focused on close and distant relatives, friends and neighbours, NGOs, rich people, the government, self-help groups, church and mosques, the community and customary leadership such as chiefs and sub-chiefs. Participants were asked to detail which problems that the above groups and individuals could assist with and the nature of that aid. Finally, herders and farmers were asked to discuss problems and issues that occurred when they themselves sought aid from the above institutions. Thus, the initial analysis focused on 'the poor' in general terms and as the discussion unfolded the ability of the individual participating to draw upon informal and formal institutions was further elucidated. Information regarding non-market livestock transactions and share-rearing arrangements were derived from focus groups and semi-structured interviews.

5.1 Correlates to Social Capital

In Narayan's study in Tanzania (Narayan, 1997), the key dependent variable analysed as a correlate to social capital was household income, which was measured via the 'household expenditure per adult equivalent'. Other variables examined included 'the total number of household members, gender of the head of the household, self-employment in agriculture, and the distance of the village to the nearest road and market'. A household asset index was also derived. The results of the study indicated that social capital had a large influence on household income. Indeed, as Narayan (1997) notes:

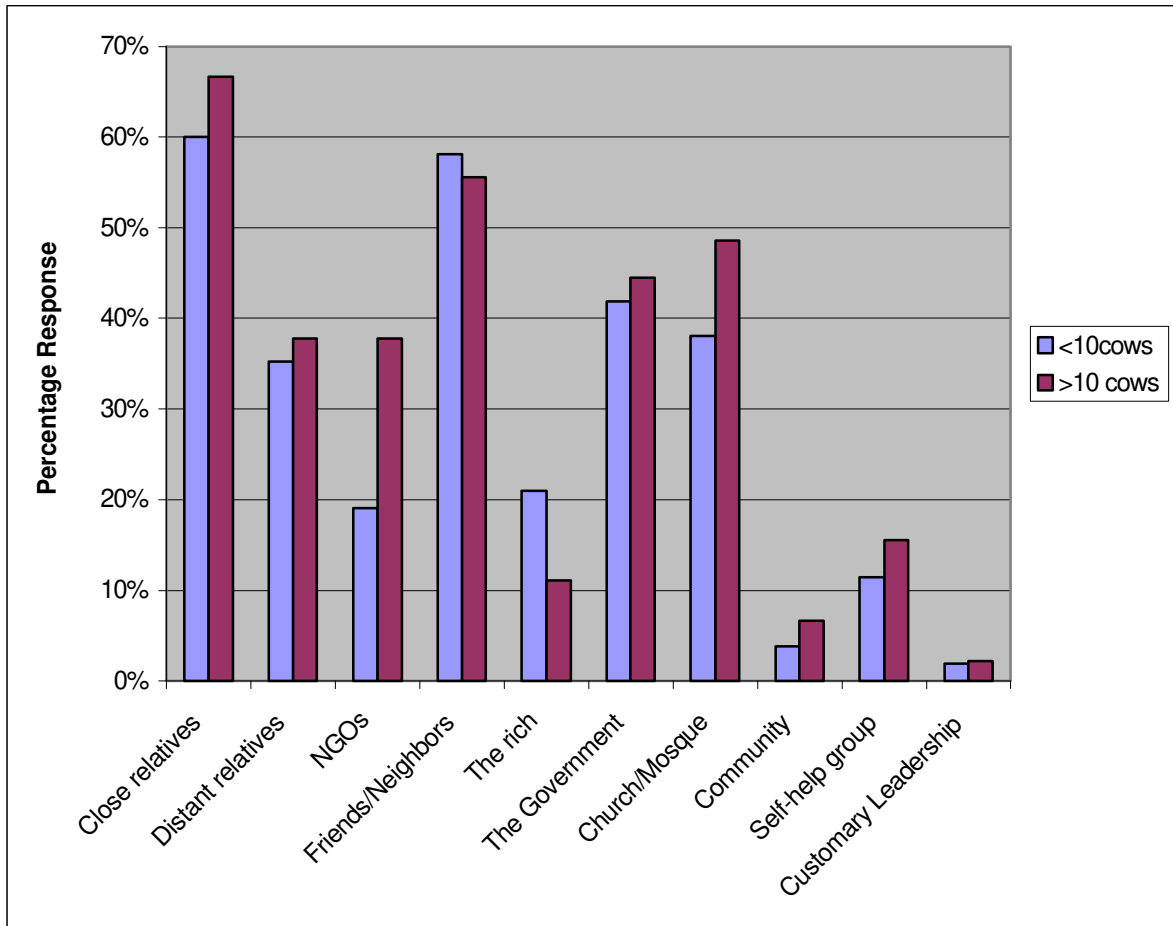
The effect of social capital on income is impressive: a one standard deviation increase in village social capital increases household expenditures per person (a proxy for income) by at least 20-30%; by comparison, a one standard deviation in schooling – almost an additional three years per person – increases income by only 4.8%.

Thus, Narayan argues that the causality of raised incomes was increased social capital at the village-level.

Given that the starting point for this study was the individual and the narrower definition of social capital, the study elected to take a less complex approach. As explained above, to evaluate social capital the number of informal and formal institutions that an individual could rely upon in times of need and the nature of that assistance was evaluated. Therefore, households with increased social capital were those that were able to draw upon the widest range of the ten informal and formal institutions under study. To assess causality, a wide variety of variables were examined. For example, proxies for wealth such as the number of cattle owned (Figure 13) and the number of girl children in school (Figure 14) were evaluated as potential causes for increased social capital.

To examine the relationship between social capital and cattle ownership, a cut-off point of ten cattle was offered by stakeholders as an approximate division between the better and less well off.

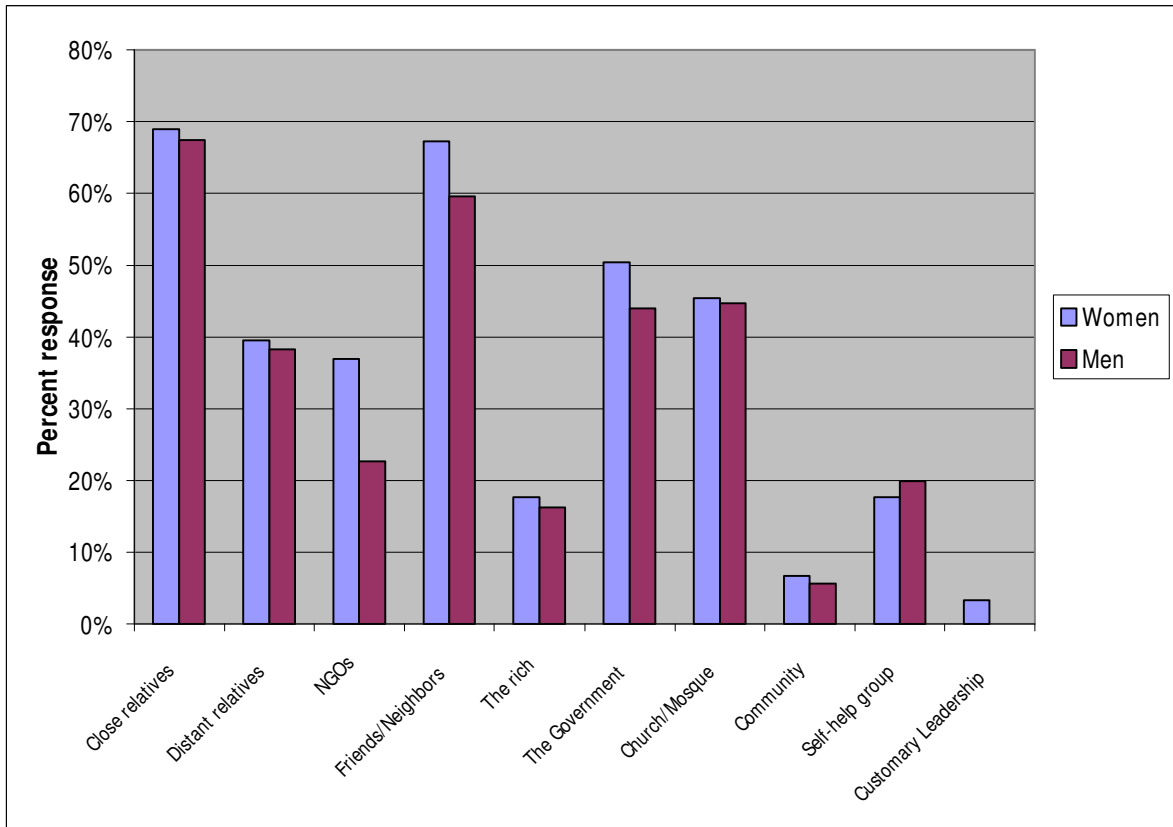
FIGURE 13: ACCESS TO FORMAL AND INFORMAL INSTITUTIONS AND CATTLE OWNERSHIP



As the figure demonstrates, it is apparent that the largest differences between the groups are in relation to formal village-level institutions such as NGOs and religious institutions. Herders and farmers with greater than 10 cows were able to obtain significantly more aid from NGOs and religious organisations, which calls into question if projects and programmes are truly assessable to the poor. The finding will be discussed further in the following section. Not surprisingly, study participants with less than 10 cattle were able to derive more assistance from ‘the rich’ than those who were better off.

Differences in men and women’s access to formal and informal institutions were then evaluated to assess the influence of gender on social capital (Figure 14).

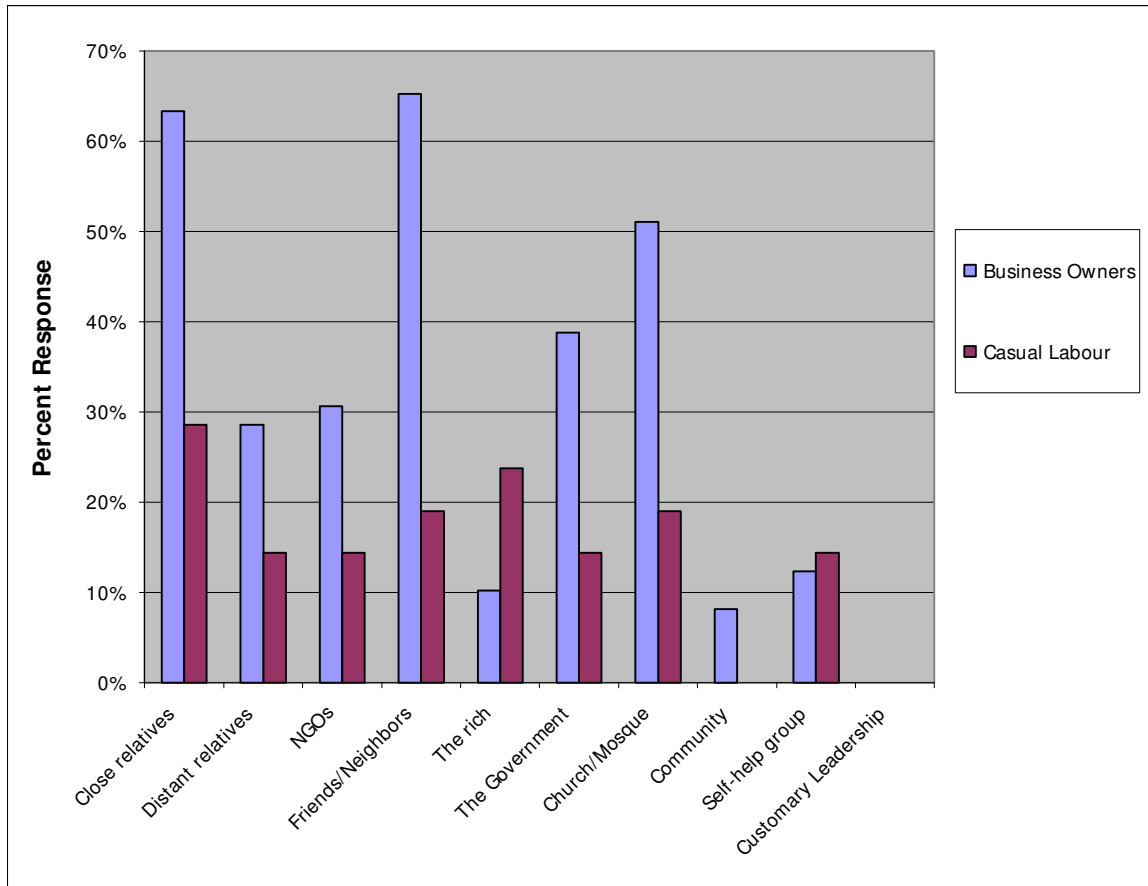
FIGURE 14: GENDER DIFFERENCES IN ACCESS TO FORMAL AND INFORMAL INSTITUTIONS



As displayed above, it is apparent that there is very little difference between the percentage of women and men that could derive help from the above institutions during times of need with the exception of NGOs. Interestingly, a slightly higher percentage of women were able to gain assistance from most of the above institutions with the exception of self-help groups.

Finally, social capital was analysed in relation to livelihood activity. Two different types of livelihood activity, one at the higher end of the economic spectrum (business owners) and one at the lower end (casual labourers) were analysed. As Figure 15 demonstrates, the study found that business owners had significantly greater access to both formal and informal institutions and hence social capital than those involved in casual labour.

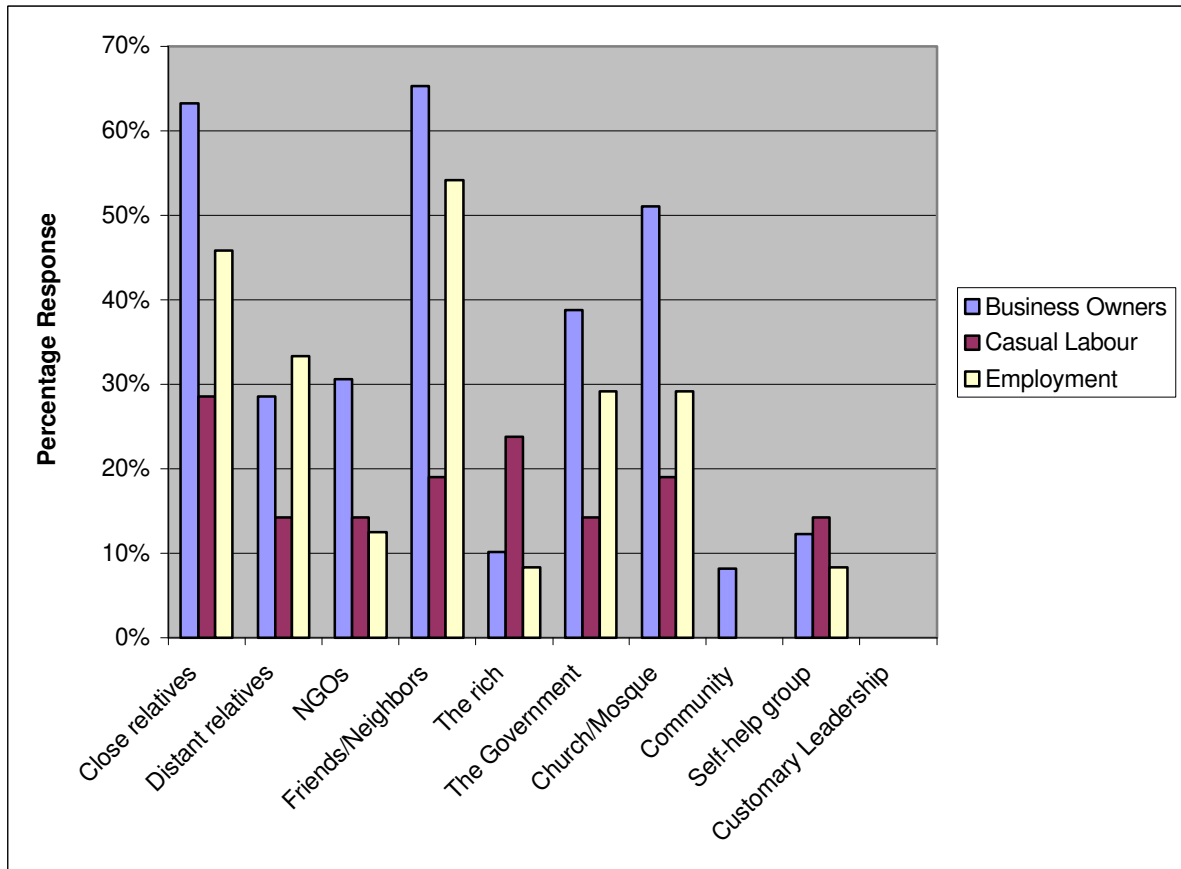
FIGURE 15: DIFFERENCE IN USE OF FORMAL AND INFORMAL NETWORKS FOR BUSINESS OWNERS AND CASUAL LABOURERS



Thus, it is apparent that business owners have both stronger associations and wider levels of association with both formal and informal, household and village-level institutions. As the figure demonstrates, 62% of business owners could access close relatives in times of need and 65% stated that friends and neighbours would be available. On the contrary, only 28% of casual labourers stated that help could be received from close relatives, whereas only 18% could obtain help from friends and neighbours. A higher response from casual labourers was only noted in relation to gaining help from the rich. There are two possible explanations for the finding.

First, it may be possible that as in Narayan’s study income, rather than livelihood, is the true variable. Therefore, to assess causality other incomes must be evaluated. For example, if social capital were related to income alone than employed people would obviously have higher levels of social capital than small business owners. However, as the following figure demonstrates, employment, while offering greater gains than casual labour and firewood selling, is not as beneficial to social networks as owning a small business.

FIGURE 16: ACCESS TO FORMAL AND INFORMAL INSTITUTIONS FOR BUSINESS OWNERS AND EMPLOYED PERSONS AND EMPLOYED PERSONS



Although it may be argued that socio-economic status clearly plays a role in social capital as both business owners and employed persons had a wider associational base than casual labourers the interpretation may be too simplistic. Social capital is not static; relationships both evolve over time and are constantly being renegotiated. Hence, it appears that small business owners by working directly in the community are able to strengthen their networks on a daily basis. Conversely, employed people are generally less visible and most likely have a smaller social radius while on the job. Therefore, while the employed have an obvious social standing, they have less opportunity to negotiate and strengthen beneficial relationships. Thus it appears that social capital is related both to socio-economic standing and the ability to negotiate that standing with both individuals and the community at large.

Furthermore, as the following table demonstrates, the kind of support that may be provided via the formal and informal institutions in question is also related to a person's livelihood activity. Table 11 outlines the large difference between groups in the type of aid, which could be received.

TABLE 11: DIFFERENCES THE TYPE OF AID RECEIVED

Formal and Informal Institutions	Livelihood Activities	
	<i>Business Owners</i>	<i>Firewood/Charcoal/Casual</i>
Close relatives	School fees, food, moral support, advice, money, animals, clothing	food, money, animals, moral support
Distant relatives	school fees, moral support, money and livestock	food and animals
NGOs	famine relief, building schools, livestock and human drugs, credit, hospital bills, school uniforms	scholarship, credit, livestock
Friends/Neighbors	money, clothes, food, school fees, loan animals, medical bills	food and animals
The rich	employment, school fees, food	give livestock
The Government	famine relief, school fees, security problems, advice in legal matters, harambee, human health, livestock health	famine relief and harambee
Church/Mosque Community	famine relief, school fees, credit, clothes, moral guidance, funeral, help with medical bills, funeral, money money and food	famine relief and moral guidance
Self-help group	loan, merry go round, money, school fees	loan, merry go round, school fees
Customary Leadership	none	informal education, livestock

As the table indicates, it is clear that business owners had greater access to a wider range of social institutions whereas; households primarily reliant on casual labour had more limited access with fewer kinds of assistance. A number of reasons may be offered to explain the finding. First, it is apparent that in regard to social capital there are two main types of relationships: reciprocity and patronage. Business owners are in a position to have relationships of reciprocity. For example, as detailed above, for business owners, friends and neighbours may provide assistance with money, clothes, food, school fees, animals, and medical bills. It is likely that the giver believes that in future times of stress, the business owner will be able to return the favour. Alternatively, casual labourers and the less well-off are more likely to be involved in patronage relationships with little expectation on the part of the giver of future return. Consequently, friends and neighbours will provide fewer goods. However, there are other possible reasons to explain the differences. First, it may be argued that the friends and neighbours of casual labourers are likely to be in a similar economic situation and therefore, may not be able to provide greater levels of support. Secondly, there may be lowered expectations of reciprocity for households with less secure sources of livelihood. The differences between the two groups are even more magnified with regard to NGOs. It appears that business owners have greater expectations of NGO assistance and receive a much wider type of support. Thus, livelihood activity may also bear influence on power relations in the community.

Moreover, it may be argued that business owners, as a more literate and educated portion of the population, may be better able to take advantage of NGO programmes. Nevertheless, given the fact that casual labourers were able to receive some aid from NGOs, the finding may be more reflective of the targeting of programmes, which although purportedly focused on the poor, are not.

Furthermore, from the table, a more general trend can be noticed. For casual labourers, livestock were the primary or secondary type of aid received in eight out of the ten institutions examined. Thus, livestock as the outcome of social capital relationships are more prevalent for the poor than the rich. This is an important finding as in addition to being proportionally more important to the incomes of the poor, livestock are more important to the cementing of social networks and are a core component of patronage relationships for the poor.

5.2 The Role of Livestock in Social Capital

The analysis above demonstrates that livestock are an important form of social capital for the poor. However, little is known about the exact functioning of these relationships or their prevalence and strength. To further evaluate the role of livestock as a form of social capital, the first step taken was to analyse how households acquired the livestock in their possession. Therefore, the following section examines the manner and means in which the study participants obtained individual animals. The relationship between the giver and receiver of livestock was also evaluated in addition to issues of trust.

5.2.1 Herd Acquisition

To evaluate herd acquisition, semi-structured interviews were utilised. Herders and farmers were asked to detail how the animals in their herds were obtained. Table 12 outlines the results of the inquiry.

TABLE 12: LIVESTOCK TRANSACTIONS

Livestock Acquisition	% of Households
Purchase	55%
Inheritance	15%
Bridewealth	9%
Loan	5%
Gift	14%
Exchange	2%

The majority of households, which participated in the study, purchased the animals in their possession. Approximately 15% of households inherited animals, principally cattle from immediate family members. The inheritance of livestock, however, is not straightforward, particularly in crop-livestock systems. Indeed, in these systems, animals may be ostensibly ‘inherited’ by the children before their parents have died. This generally occurred where the adult children lived in the same compound as the parents. Hence the ‘inheritance’ relieved elderly parents of their livestock care-taking duties. However, in most cases, the death of the father was the precipitating event to dividing up the herd. Upon the death of the male head of household, a household’s

cattle will become the property of his wife. However, in cases where there is more than one animal, the eldest son usually receives surplus animals that he may or may not distribute to his siblings. Conversely, upon the death of the wife, the youngest son will generally receive any maternal livestock assets.

After inheritance, livestock gifts were the next most common form of transaction. Approximately 14% of households reported either giving or receiving gifts. Alternatively, 9% livestock transactions were as bridewealth, which refers to those animals received by the bride and/or her family upon marriage. Although essentially a gift, given the formal and institutionalised nature of the custom, a distinction was made for livestock given as bridewealth. Conversely, animals that the bridegroom receives during this time have been categorised under ‘gift’ as in the communities that participated in the study do not have formal customs regarding dowry. Furthermore, livestock loans were classified as those animals given with expectations of payback for a fixed duration. Although in many pastoralist societies debts accrued by one generation may be paid back post-humously by another, the vast majority of loan givers and receivers had expectations of repayment within 5 years. On the contrary, gift givers and receivers had no such conditionalities. As such, the more interesting issue is whether gifts of livestock were a benefit or loss to the participants. Finally, ‘exchange’ relations refer to herders and farmers who traded one animal for another. As the table displays, exchange relations were not very common, however the exchanges that did take place were both within the same species (e.g. a bull calf for a heifer calf) and between species (e.g. chickens for a goat).

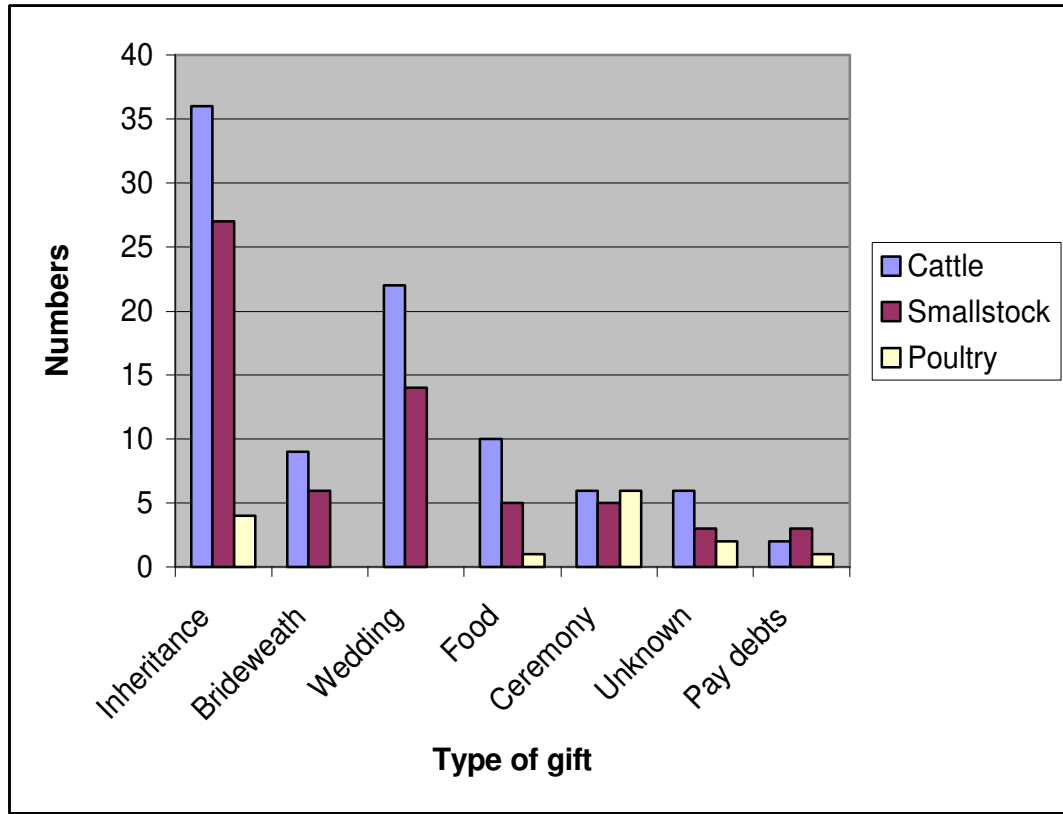
Furthermore, as Table 13 demonstrates, there were differences in livestock acquisition between pastoralist and crop-livestock systems.

TABLE 13: LIVESTOCK ACQUISITION BY DISTRICT

	Baringo	Garissa	Kajiado	Machakos	Nairobi	Samburu	TOTAL
Purchase	50%	61%	42%	67%	84%	26%	55%
Inheritance	18%	20%	16%	11%	7%	17%	15%
Bridewealth	14%	7%	10%	3%	0%	21%	9%
Loan	3%	0%	14%	5%	0%	5%	5%
Gift	9%	12%	18%	14%	9%	24%	14%
Exchange	6%	0%	0%	0%	0%	7%	2%

Not surprisingly, gifts of livestock in pastoralist systems (Kajiado and Samburu) were more common than in agro-pastoralist systems (Baringo), peri-urban (Garissa) or crop-livestock (Machakos). Conversely, the populations with the largest percentage of purchased animals were in Garissa, Machakos and Nairobi. Consequently, it appears that the highest level of purchasing occurred in instances where social networks were potentially the most disrupted, i.e. among peri-urban destitutes in Garissa and economic migrants in Nairobi. The high level of purchased animals in Machakos, however, may be due to a different reason. Although the level of gift giving appeared comparable in Machakos, over 70% of the gifts were poultry. Hence, farmers purchased the majority of cattle and smallstock in their care. Figure 17 further explores the species differentiation and the reasons offered for gifts and loans.

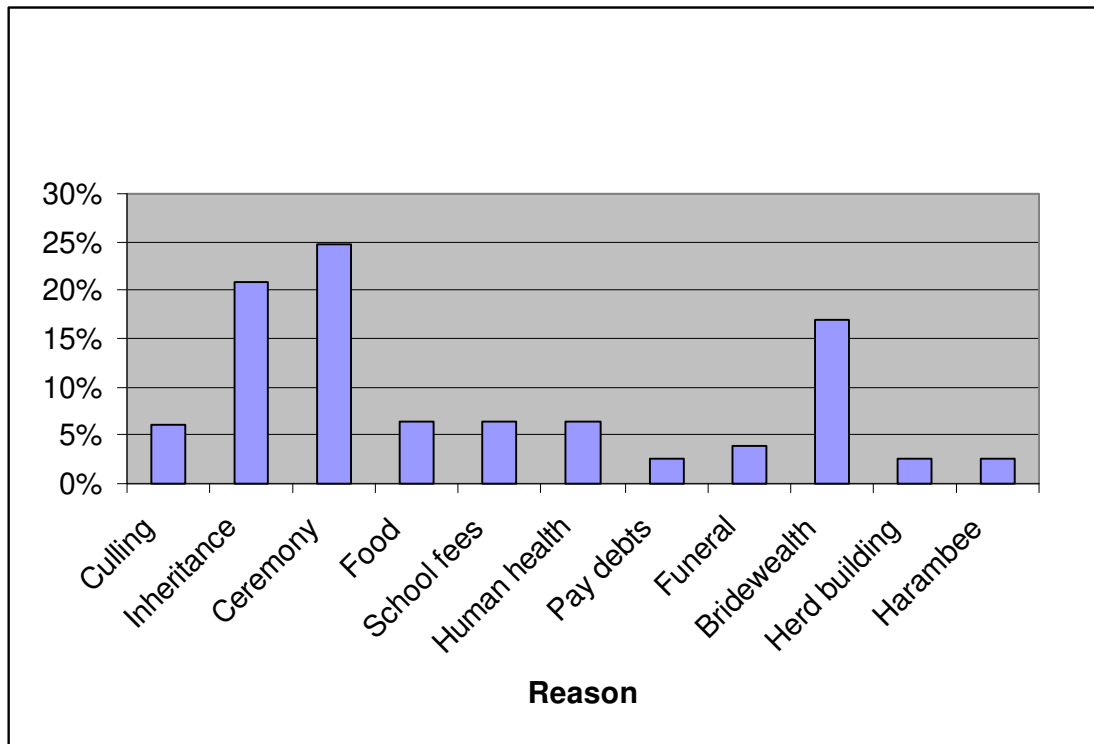
FIGURE 17: SPECIES BREAKDOWN OF LIVESTOCK GIFTS



The figure demonstrates that cattle were the primary animals given as inheritance, bridewealth and gifts to celebrate the marriages of friends and family members. Surprisingly, goats also had a large role in institutionalised gift giving. However, differences were noticed across the socio-economic spectrum of livestock owners. For example, business owners tended to receive cattle as gifts whereas casual labourers tended to receive smallstock. Hence, livelihood in addition to having an overall impact on social capital appears also to influence the manner and means in which livestock function as a form of social capital. Further differences were noted across production systems. In pastoralist systems, gifts of cattle and smallstock predominated whereas in crop-livestock systems, chickens were the most common livestock gifts.

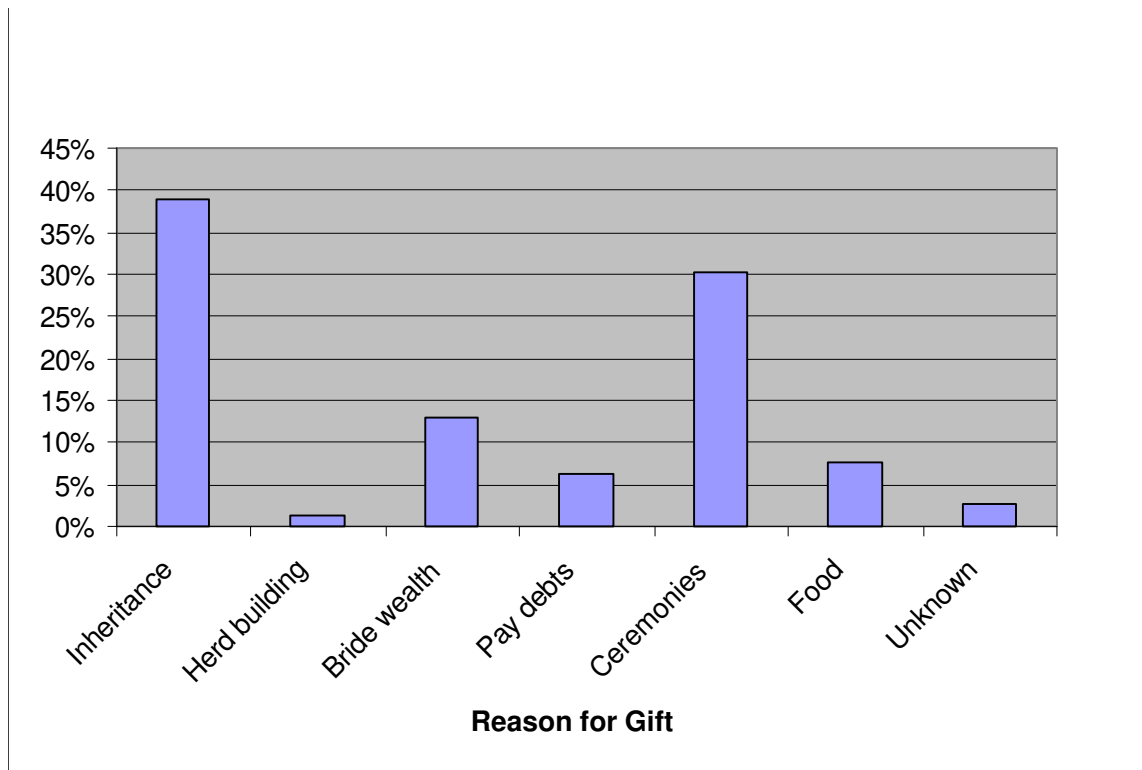
Nevertheless, the above figure offers little insight to the rationale behind livestock gift giving. The following figure explores the explanations given by herders and farmers to explain their participation in gift giving.

FIGURE 18 REASONS FOR LIVESTOCK GIFTS



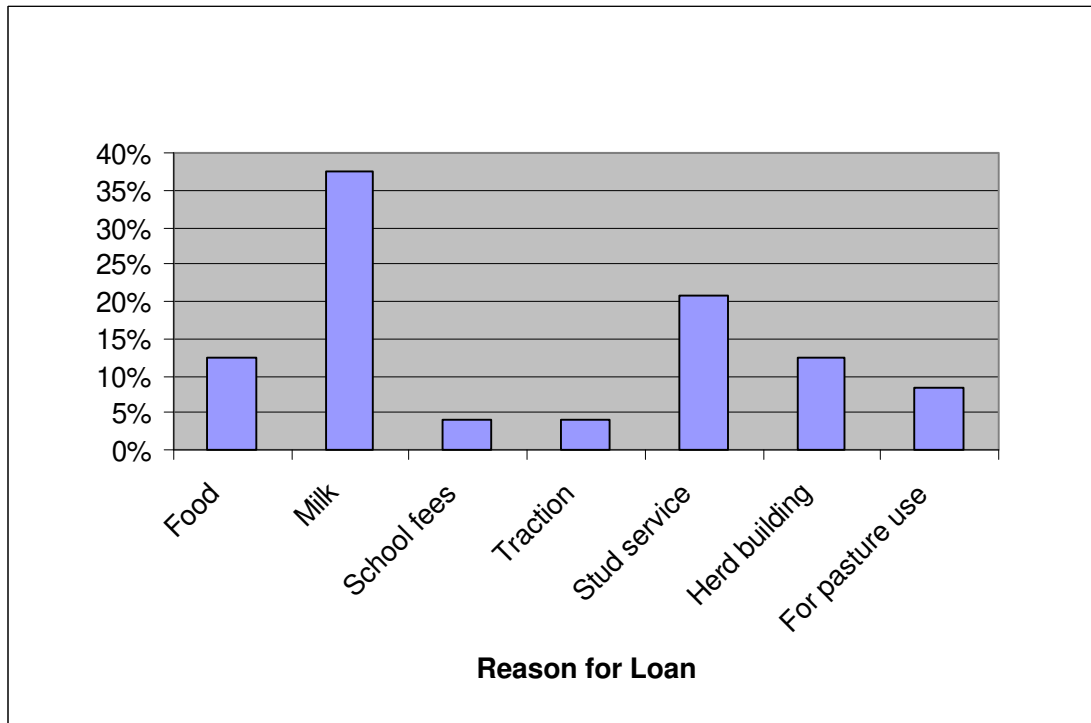
As the figure demonstrates, it is obvious that livestock gifts fulfil a wide variety of functions such as culling undesirable animals from the herd or as a mechanism for aiding relatives, friends and neighbours with school fees, hospital bills, funerals etc. However, it is also apparent that livestock have a larger role in formal institutions e.g. inheritance, bridewealth and other ceremonies than informal or need-based giving such as for food, school fees etc. Hence, the majority of livestock gifts were given to fulfil formal rather than informal social obligations. The finding was also corroborated when the reasons for receiving animals were evaluated. In each of the districts there was very little overlap between households which gave and those that received livestock gifts, indeed, less than 3% of households had participated in both arrangements. Figure 19 details the explanations offered for the receipt of livestock gifts.

FIGURE 19: REASONS FOR RECEIVING LIVESTOCK GIFTS



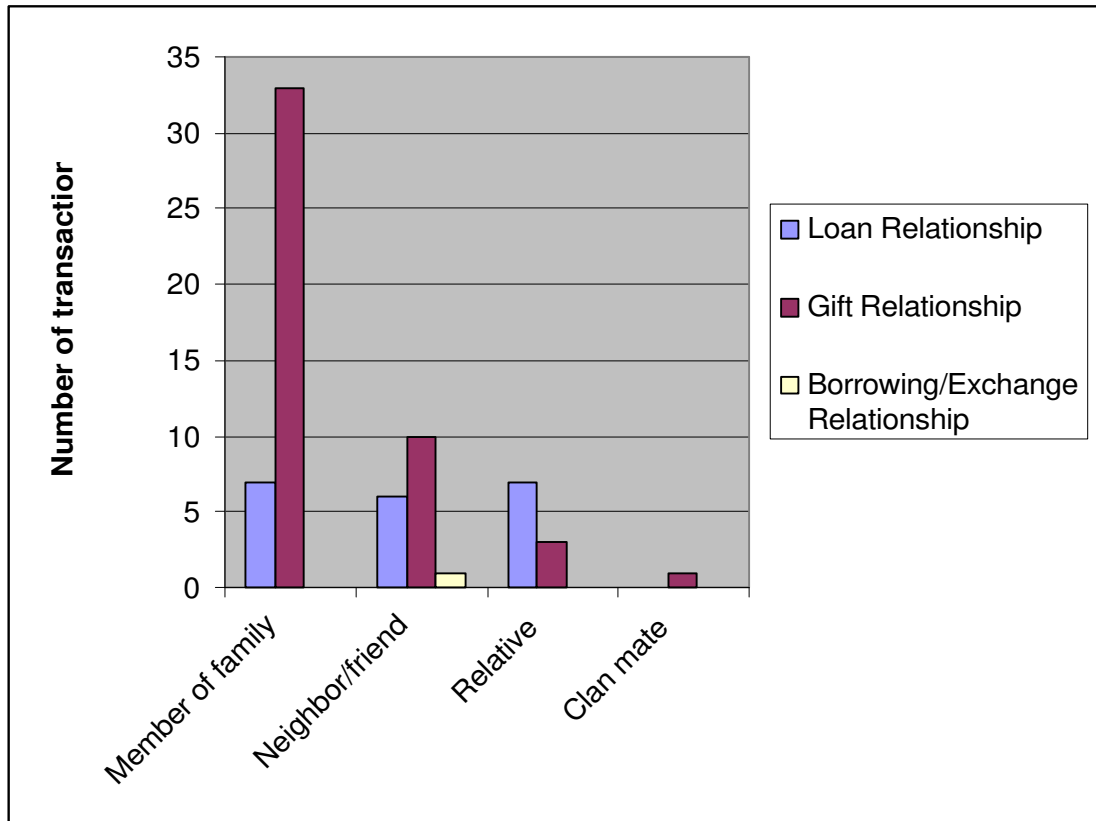
Again, it is apparent that gifts were more often received to meet formal obligations of gift giving rather than in response to a household's need. On the contrary, as demonstrated in Figure 20, livestock loans appear to be more responsive to need-based criteria.

FIGURE 20: LOANS RECEIVED



Although only 5% of households participated in livestock loaning arrangements, the loans were made to meet a wide variety of household requirements. This is an important finding and may explain the disparity between gift and loan relationships. As the majority of livestock gifts were most often made in response to official events in which the wider community participates (i.e. marriages and other ceremonies), livestock gift giving may be in reaction to obvious social pressures. As Lesorogol (forthcoming) notes among the Samburu, generosity is one measure of person's worthiness. Hence, particularly among pastoralist, gifts of livestock form part of the criteria on which a person or household secures social sanction. Conversely, livestock loans do not meet the above criteria. There is an expectation on the part of the giver that the asset will be returned at a future date, often with interest. Thus, it would be tempting to conclude that the role of livestock in social capital is mainly that of one of acquiring social approbation. However, when one examines the relationship between those who gave and received livestock gifts, a different perspective emerges.

FIGURE 21: LIVESTOCK TRANSACTION RELATIONSHIPS



From the figure, the majority of gifts are given to family members with neighbours and friends coming in a distant second. Loans, on the other hand, are more evenly distributed. Thus, unlike much of the early anthropological literature, livestock now do not appear to be a means of widening social relations and spreading risk during times of trouble. Rather, gifts of livestock act primarily as a mechanism for family members to participate in formal and very public social institutions and less commonly as a means of helping immediate family members meet subsistence requirements.

6. ANIMAL HEALTH CARE

Carney (1998) notes that in addition to the livelihood framework, a SL analysis must also include an analysis of the institutions, which include the government and private sector and the 'processes' i.e. policies and legal environment, which impinge on people's livelihoods. Carney argues that the structures are critical for determining who gains access to which kind of asset. Therefore, the study examined the institutional framework with regard to livestock services from the perspective of the poor livestock-keepers. As such, the primary focus was on service delivery and a wider institutional framework is not offered. Hence, the following section explores issues impacting the uptake of delivery of animal healthcare on the rural poor and offers comparisons to human healthcare.

The framework for the analysis focuses on three key parameters: access, affordability and acceptability of services offered. The first section focuses on actual use of services, whereas the latter section analyses consumer behaviour regarding the purchase of livestock drugs.

6.1 ACCESS

The initial starting point in the examination of access to animal healthcare was to evaluate where poor livestock-keepers were obtaining services. Hence, the first section examines use of formal and informal animal healthcare institutions such as government services, traditional healers and Community Animal Healthcare Workers. The second section focuses on access to livestock drugs.

6.1.1 Veterinary Services

In general, the uptake of veterinary services was low throughout the study zone. Across the six districts, only 28% of households utilised the government services. As the following table demonstrates, more than half of this number obtained government services for vaccination only.

TABLE 14: PERCENTAGE OF TRADITIONAL AND NON-TRADITIONAL SERVICE USE

Sample size (N =214)	
Use government service	28%
Use for vaccination only	15%
Use traditional medicine	57%
Use traditional medicine for one disease only	24%
Use private provider	4%
Use private provider for drug purchase only	98%

Thus, most of the herders and farmers who participated in the study did not use government services. Reasons for the poor uptake were numerous. The majority of households (66%) were generally not cognisant that such services existed or even that the purpose of the government vets was to treat animal disease. This was particularly true in urban Nairobi, where many residents of Kariobangi were unaware of nearby vet practices and or indeed the need to buy purchase drugs specifically for livestock. The remainder of the study sample that were aware of the role and function of veterinary services were dissatisfied for reasons offered in Table 15. Thus, there appears to be two groups of non-users, the unaware and the dissatisfied. The following table examines the reasons offered by the study sample as a whole for not utilising the government services.

TABLE 15: REASONS FOR LACK OF USE OF VETERINARY SERVICES

Sample Size (N=71)	
Unavailable	21%
Rudeness of staff	4%
Cost	6%
Poor Performance	2%
Must Pay Bribes	1%
TOTAL	33%

Thus, the majority cited the lack of availability of staff. Interestingly, cost was an inhibiting factor in only 6% of cases. Thus, it appears that the ability and willingness of poor people to pay for veterinary services is not the primary inhibiting factor to animal healthcare seeking behaviour. Equally, poor performance and rudeness of staff were also noted to be a problem. Many herders and farmers complained of diffident and discourteous behaviour on the part of both Vets and Animal Health Assistants providers when consulted for advice. There was a general notion that vets gave preferential treatment to the rich. The finding indicates that far from being passive recipients, the poor are consumers with the ability to discern the quality of service offered.

Furthermore, a little over half of the participants (55%) reported using traditional medicines. The reasons that were offered for using local medicines are described in Table 16.

TABLE 16: REASONS FOR THE USE OF TRADITIONAL MEDICINES

Reason	Response
Less Expensive	30%
Greater Availability	7%
Emergency Use Only	4%
Trust in Efficacy	7%
When Modern Drugs Fail	8%
Specific Disease Only	42%
More Effective	2%

Of the 30% who stated that cost was the primary reason for the use of traditional medicines, 1/3 belonged to the lowest income quartile of the study group. However, concluding that the use of traditional medicines is proportionally more important to the poorest members of the study group may be misleading. First, the majority of the subset was comprised of Samburu pastoralists indicating a regional bias. Second, values toward traditional medicine use are complex. For example, livestock-keepers in Nairobi who cited cost as a major consideration often had to travel to their natal villages to obtain medicines, most likely negating any savings. Hence, although cost was cited as a factor other reasons come into play.

Furthermore, in many areas, traditional medicines are becoming commercialised. For example, pastoralists in Garissa and Samburu district reported purchasing traditional medicines at local markets. Therefore, the use of traditional medicines appears to be changing. Indeed, the majority of households that utilised local medicine did so for one disease only. The finding was further supported by the low usage of traditional

healers. Only 5% of households interviewed had visited a traditional healer in the past 12 months. For the remaining 45% of households in the study group as a whole, who did not utilise traditional medicines, the majority cited lack of effectiveness as the principal reason. Thus, the findings indicate that many indigenous animal healthcare systems in Kenya are currently in flux. However, rather than being lost, it may more appropriate to view the changes in traditional medicine use as part of a dynamic process which requires further investigation.

Community Animal Healthcare workers did not figure prominently into the above assessment for two reasons. First, even in districts that had numerous training programmes for CAHWs, many were not active. Focus groups held with CAHWs revealed a number of causes for the poor performance. When asked why many CAHWs were inactive, group members believed that training programmes were often too fragmented and that community-level support was poor. Most of the herders interviewed had undergone three one-week training courses over a period of three months. Many complained that the long time period between trainings made it difficult to retain taught material. Another serious problem mentioned were the demands from friends and relatives to receive free livestock drugs. Once trained and given kits most felt under pressure to assist friends and relatives in need thereby leaving themselves without the capital to renew their drug supply.

The focus groups also revealed some of the problems in targeting appropriate candidates for training. Although the tenets of participatory development demand that communities choose CAHWs, the focus groups recognised that the process often results in highly politicised choices. Indeed, many voiced the opinion that stricter criteria were needed during the coursework in order to remove those individuals that did not possess the necessary motivation and skills. Poor targeting was also believed to be a factor in the perceived lack of respect or status for CAHWs, contrary to what many believed the training should accord. As one CAHW stated: 'nothing changes after training, the community treats us just as we were before we were trained'. The CAHWs also voiced the need for greater recognition particularly by the government. Furthermore, it appears that the spread of benefits from many projects and programmes is slim, as many of the CAHW interviewed had undergone numerous trainings by different NGOs and donor programmes. For example, in one of the focus groups in Samburu district, of the 25 participants, 16 had undergone training from more than one agency. Indeed, one participant had received training from four different organisations. Thus there is an urgent need for better collaboration and co-ordination among projects and programmes. However, although the role of CAHWs in disease treatment appears to be minimal, overall projects and programmes have improved access to livestock drugs principally through a few highly motivated individuals who utilised the training to open livestock drug stores.

Given the above findings, it appears that the uptake of veterinary services by both official and unofficial channels is quite low. Therefore, the question remains how poor livestock-keepers are obtaining animal healthcare. As the following section demonstrates, for the majority of households, access to service provision consists mainly of the purchase of livestock drugs.

6.2 The Purchase of Livestock Drugs

To evaluate access to veterinary pharmaceuticals, the study first examined where herders and farmers purchased the majority of drugs. In addition, the time involved in travel and the distance was also determined.

TABLE 16: LIVESTOCK DRUG PROVIDERS

	Baringo	Garissa	Kajiado	Machakos	Nairobi	Samburu	TOTAL
Duka	39%	0%	30%	0%	21%	5%	16%
Drugstore/Agro-vet	45%	97%	70%	95%	61%	67%	71%
Vet/AHA	6%	0%	0%	5%	18%	0%	5%
CAHW	0%	3%	0%	0%	0%	19%	4%
NGO/Church	10%	0%	0%	0%	0%	9%	3%

From the table, it appears that a high percentage of households purchased livestock pharmaceuticals from a livestock drugstore or agro-vet. Obviously, the stores are found most frequently in large urban centres and markets which is borne out by the greater percentage of usage by study participants residing in urban and peri-urban areas (Garissa and Nairobi). However, residents in Baringo district and Samburu benefited from NGO and donor efforts to improve drug supplies by supporting livestock drugstores. However, as indicated in the table, a distinction was made between drugs bought from NGO or church organisations directly and those purchased from sponsored livestock drugstores. As previously noted, CAHWs have a role in the provision of drugs in districts with large numbers of training programmes (i.e. Samburu district).

The table appears to confirm the finding of Stem *et al.* (1999) that when given the choice, herders and farmers will choose a CAHW over a duka or small shop. Stem attributes the preference for CAHWs to the increased training and knowledge of the individual involved as compared to an untrained shopkeeper. However, as will be demonstrated in the following section, consumer behaviour regarding the purchase of livestock drugs is complex and the type and quantity of drug available is often a primary motivating factor in the purchasing behaviour of the poor. For example, for many poor pastoralists, CAHW will sell drugs via the syringe/ful often in less optimal dosages to those who cannot afford the appropriate level of treatment. Conversely, most of the shopkeepers interviewed by the study reportedly only sold drugs by the bottle. Nevertheless, the findings demonstrate that while purchasing livestock drugs from a CAHW is preferable to a small shop, it is not preferable to a livestock drugstore.

Proximity or distance is also a factor in driving consumer behaviour. There were large differences between production systems in regards to acceptable distances in the purchase of livestock drugs. For example, as table 17 demonstrates, in agro-pastoralist and pastoralist areas herders were both willing and accustomed to travelling greater distances to obtain the drugs that were required. Nevertheless, necessity is not the sole reason that greater distances were traversed; preference for specific drugs also played a role. Therefore, although overall, the majority of households purchased drugs within 5 km of their home, a large percentage of producers from necessity or preference sourced drugs greater than 5 km away.

TABLE 17: DISTANCE TO LIVESTOCK DRUG PROVIDER (N=261)

	Baringo	Garissa	Kajiado	Machakos	Nairobi	Samburu	TOTAL
<5kms	42%	88%	9%	54%	95%	49%	55%
>5kms	50%	13%	89%	46%	5%	51%	44%
Not specified	8%	0%	2%	0%	0%	0%	1%

To further evaluate which factors were driving consumer behaviour in regard to distance (i.e. preference or necessity) ranking exercises were performed. The results of the exercises are discussed in the following section (6.3).

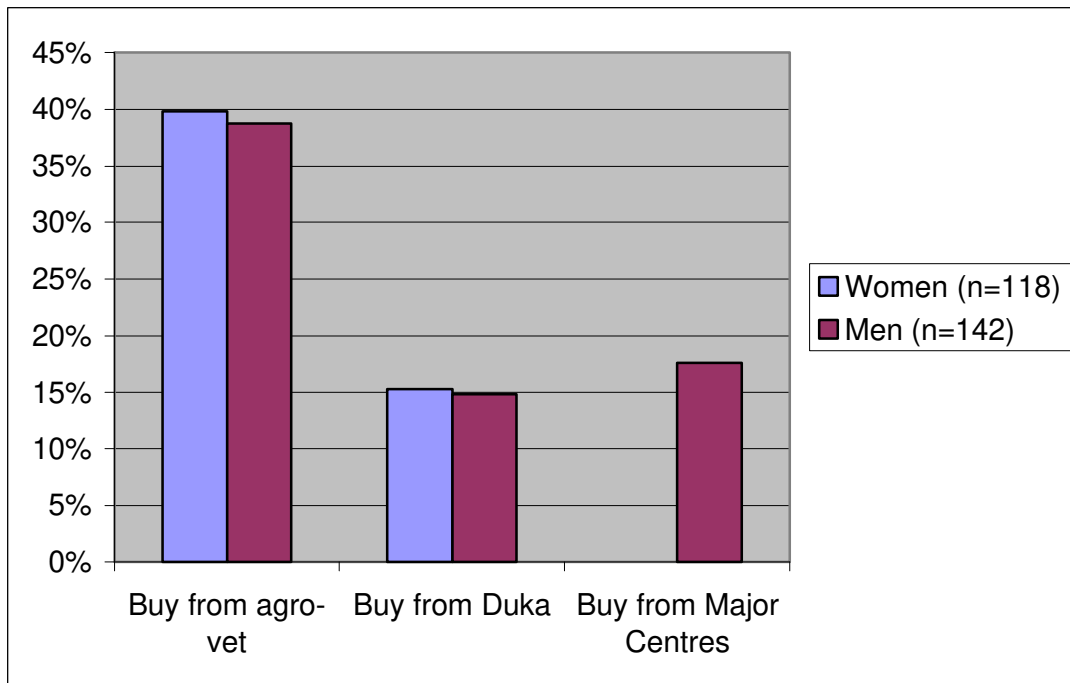
Finally, the time required to access livestock drugs was evaluated. From Table 18, it is apparent that majority of households could obtain livestock drugs in less than five hours. However, the results of the table may be somewhat misleading in that travel by vehicle and on-foot were combined in the same table in order to gain an understanding of the overall time required. For example, 98% of households in Kariobangi were able to access a livestock drug provider within one hour, however, the majority of households utilised public transport to make their purchases in Nairobi proper. Conversely, approximately ½ of study participants in Baringo could access livestock drugs in less than one hour but were generally dependent upon bicycles whereas in Samburu, Garissa and Kajiado transport times of less than 5 hours were on foot.

TABLE 18: TIME TO LIVESTOCK DRUG PROVIDER (N=256)

	District						Total
	Baringo	Garissa	Kajiado	Machakos	Nairobi	Samburu	
<1 hour	50%	83%	18%	67%	98%	49%	60%
<5 hours	47%	18%	60%	33%	2%	40%	34%
>5 hours	0%	0%	7%	0%	0%	5%	2%
1 day (approx.)	0%	0%	13%	0%	0%	4%	3%
> 1 day	3%	0%	2%	0%	0%	2%	1%

Also apparent from the above table is that only in agro-pastoralist and pastoralist areas were herders willing to travel more than one day to purchase livestock drugs. To further analyse the impact of distance to provider on purchasing behaviour, gender differences in purchasing behaviour were evaluated (Figure 22).

FIGURE 22: GENDER DIFFERENCES IN THE PURCHASE OF LIVESTOCK DRUGS



By disaggregating gender two important issues arise. First, from the figure, it is apparent that gender does not have a large influence on the purchase of livestock drugs with the exception of major centres. Major centres in this context refer to large cities at either the district or national level that often house terminal livestock markets. For example, in many pastoralist areas men will travel to the centres to both sell animals and buy drugs in bulk. As will be demonstrated in the next section, the majority of women interviewed by the study stated a preference for buying drugs close to home. There was a perceived opportunity cost of travel time for women as most had household and child-rearing responsibilities. Second, the finding also gives an indication of the differing roles and responsibilities of women and men in animal healthcare. Women were more often involved in curative treatments and hence had a more urgent need to source drugs close to home. Whereas, men were generally responsible for preventative animal healthcare e.g. the purchase of tick dip and anthelmintics.

6.3 ACCEPTABILITY

As demonstrated above, for the poor, access to animal healthcare was derived mainly through the purchase of livestock drugs. Thus, the acceptability parameter focused on consumer preferences in relation to the acquisition of livestock drugs. To analyse consumer preferences, a pair-wise ranking exercise was performed. In total three districts were examined and 90 informants took part. In the exercise five parameters were compared: advice given, proximity to the home, the type of drugs on hand, the cost of the drugs and the availability of credit. To perform the exercise, herders and farmers were asked to express preferences in regard to two hypothetical livestock drugstores, each having one of the above criteria. For example, to compare advice and credit, herders and farmers were questioned which was preferable, a livestock drug

store that offered advice or one that offered credit. Thus, the results of the pair-wise ranking exercise are more a reflection of the desires of poor consumers rather than representative of the factors that drive consumer behaviour. However, the findings do offer insight to the needs of poor livestock-keepers in regards to improving the delivery of livestock services. Table 19 offers the results of the ranking.

TABLE 19: RESULTS OF PAIR-WISE RANKING FOR KEY PARAMETERS IN DRUG PURCHASING

	Advice Given	Proximity to Home	Type of Drug	Cost of Drug	Availability of Credit
Advice/Proximity (n=89)	90%	10%			
Advice/Type (n=78)	79%		21%		
Advice/Cost (n=83)	81%			19%	
Advice/Credit (n=75)	85%				15%
Credit/Proximity(n=90)		23%			77%
Credit/Type (n=80)			47%		53%
Credit/Cost (n=76)				30%	70%
Proximity/Cost (n=85)		19%		81%	
Type/Proximity (n=68)		13%	87%		
Type/Cost (n=78)			62%	38%	

Overall, the availability of advice was deemed the most desirable feature of a livestock drugstore. When asked to comment on their choices, many herders and farmers stated that obtaining accurate advice with regard to the choice of drug, dosage regimes and administration was difficult, if not impossible. Interestingly, many participants complained that even in cases where drug sellers had purportedly undergone training that it was insufficient and that the accuracy of advice given was often suspect. Moreover, the reason for the critical assessment of many drug sellers tended to vary across production zones. For example, in Nairobi, if the animal died then the advice of the drug seller was suspect. Conversely, in Baringo district, an agro-pastoralist area, there was the general notion that the drug sellers knew no more or less than the herders themselves. Therefore, it appears that the primary issue was the quality of information received and herders and farmers were discriminating regarding the advice available.

Access to credit was the next most desirable characteristic in a livestock drugstore. Credit was ranked higher than all the other factors by quite a wide margin with the exception of the type of drug available. Given the seasonality of livestock related incomes, it is not surprising that credit was perceived as a highly desirable characteristic. Interestingly, the selection of drugs on hand was also viewed as a key feature. Pastoralists, in particular tended to have strong preferences for the size of bottle and type of drug that they wished to purchase. Surprisingly, clients viewed neither cost nor proximity to the homestead as critical features.

However, in addition to the pair-wise ranking exercise, a straightforward rank of problems regarding the purchase of livestock drugs was performed. In this exercise, herders and farmers were asked to detail problems encountered in purchasing livestock drugs. As will be demonstrated by the results below, the ranking exercise

offered a different perspective of the realities facing poor producers with regard to obtaining veterinary pharmaceuticals.

TABLE 20: RESULTS OF PROBLEM RANKING REGARDING LIVESTOCK DRUGS

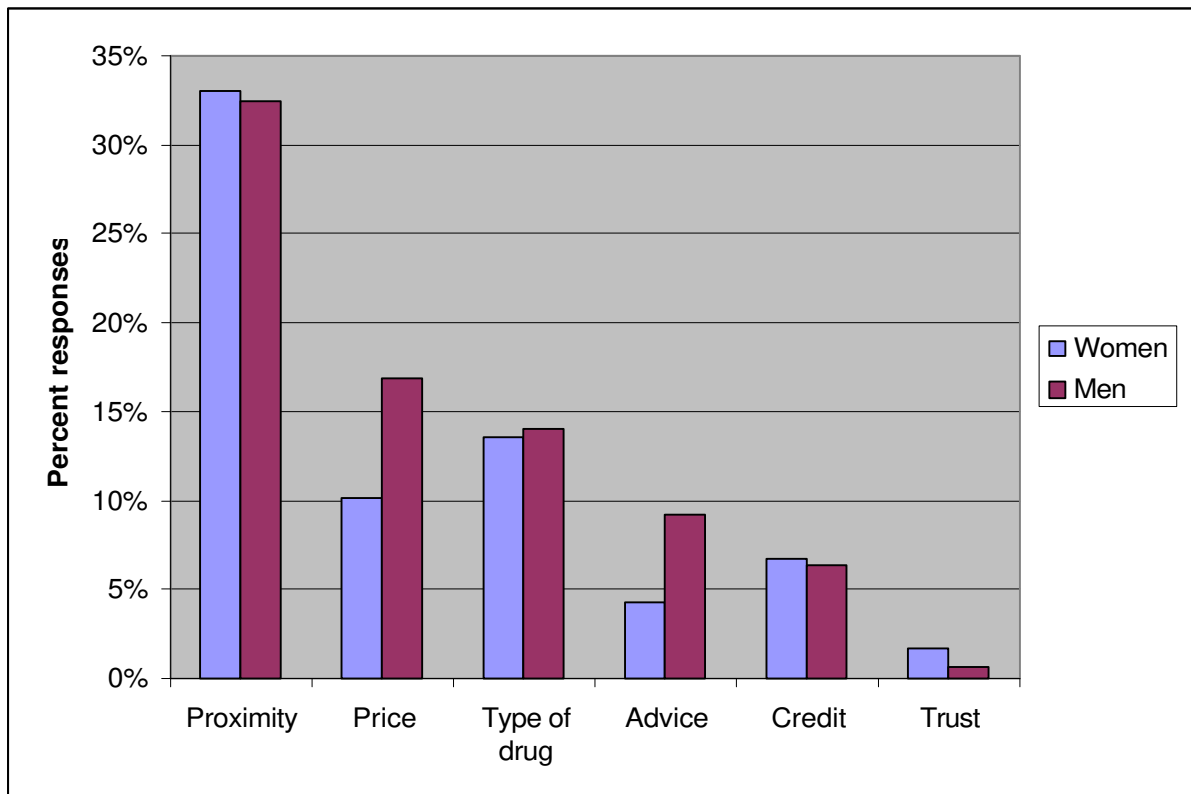
	Proximity	Type of Drug	Price	Advice	Credit	Availability of Provider
Baringo	22%	28%	39%	0%	0%	11%
Garissa	3%	41%	22%	29%	5%	0%
Kajiado	23%	23%	54%	0%	0%	0%
Machakos	31%	23%	25%	0%	21%	0%
Nairobi	14%	34%	10%	24%	10%	8%
Samburu	33%	29%	25%	0%	13%	0%
TOTAL	21%	30%	29%	9%	8%	3%

From the table, it is apparent that proximity, the type of drug and price play a much bigger role in the purchase of livestock drugs than credit, the availability of provider or advice. Indeed, the overall percentages for the type of drug and cost are nearly equal with proximity a close third. Hence, in reality, proximity and price are important issues. However, a number of reasons may explain the finding. Unlike in pair-wise ranking, few of the herders and farmers interviewed could obtain credit when purchasing livestock drugs. Equally, as described in section 6.1.1 many study participants were unaware of the function of animal healthcare providers consequently their availability was not a large issue. In addition, advice was deemed a big problem only in the urban and peri-urban study zones (Nairobi and Garissa) consequently in the rest of the study sites other problems prevailed. Therefore, the low response for many of the above parameters appears to indicate the complete absence or unavailability rather than the lack of a problem.

A comparison of pair-wise and problem ranking yields the following differences. In the pair-wise ranking exercise, advice > credit > type of drug. Whereas, in the problem ranking exercise, type of drug > proximity > price. Thus, by comparing the results of two different methods, it becomes obvious that the type of drug available has the largest influence on consumer behaviour. Advice and credit while hoped for, are generally not available and as such do not influence purchasing behaviour whereas, proximity and price do. Thus, the purchase of livestock drugs is driven by three key factors: drug selection, proximity, and price. The finding will enable future projects to address both the problems and perceived needs of poor producers.

Finally, Figure 23 examines the influence of gender on the above parameters.

FIGURE 23: GENDER BREAKDOWN OF KEY UPTAKE PARAMETERS



As the figure illustrates, proximity to the home was the most desirable characteristic of a livestock drug supplier for both men and women. Interestingly, price is more a factor for men than for women in addition to the need for advice. The final difference noted between the genders was in relation to trust. Surprisingly, trust in the provider was ranked very low in relation to other factors in regard to buying veterinary drugs. However, more women than men chose specific providers due to issues of trust. Nevertheless, as will be discussed in the next section, trust was more of an issue in choosing the human healthcare provider. The following section compares perceptions regarding human and animal healthcare.

6.3.1 Differences Between Human and Animal Healthcare

To evaluate notions of service quality, perceptions regarding the differences between human and animal healthcare were examined. Overall, 84% of households believed that human healthcare services were better than those for animals. Although a variety of reasons were offered, the majority of participants stated that human healthcare providers offered a better quality service. In general, individuals believed that they were treated more fairly by human healthcare providers than the local vet, Animal Health Assistant or even Community Animal Healthcare Worker.

TABLE 21: REASONS OFFERED FOR RANKING HUMAN OVER ANIMAL HEALTHCARE

Reasons Offered	Percentage (n=61)
Level of Service	28%
Proximity	5%
Quality of treatment	16%
Treated well by staff	7%
Less expensive	18%
Staff don't take bribes	5%
Offer credit	10%

As table 21 demonstrates, the majority of respondents believed that the 'level of service' (which included reduced waiting times and the increased availability of providers) was greater for human healthcare. Interestingly, although human healthcare was deemed less expensive in both pastoralist and urban areas, the actual expenditure per year was greater than that for livestock. To verify the perceptions, table 22 and 23 compare human and animal healthcare statistics regarding distance and average time to treatment for study participants.

TABLE 22: HUMAN HEALTHCARE STATISTICS

	Ave Expenditure per year (Ksh=)	Ave distance (km)	Ave time to treatment (Hours)	Type of Transport	
				Foot/Bicycle	Public transport/Hired Vehicle
Baringo	936	>5	3	54%	46%
Garissa	711	<5	1	78%	12%
Kajiado	1945	>5	2	36%	64%
Machakos	1956	5	1.2	55%	45%
Nairobi	3651	<5	<1	50%	50%
Samburu	113	<5	1.5	96%	4%
Average	1552	<5	1.5		

TABLE 23: ANIMAL HEALTHCARE STATISTICS

	Average Expenditure per year (Ksh)	Average distance	Average time
Baringo	2808	>5km	<1 hour
Garissa	628	<5km	<1 hour
Kajiado	2001	>5km	<5 hours
Machakos	522	<5km	<1 hour
Nairobi	925	<5km	<1 hour
Samburu	1104	>5km	<5 hours
Average	1331	5km	1.5 hours

As the tables illustrate, the overall expenditure on human healthcare was greater than that for animal healthcare, although in some districts with large livestock populations (Kajiado and Baringo) the reverse was true. This corroborates the findings of the expense ranking exercises as previously demonstrated by Figure 4 (section 3.4).

Although the time needed to traverse the distances involved was essentially equal for both human and animal healthcare, as Table 23 demonstrates, the average distance to provider was greater for those seeking veterinary services.

Finally, healthcare-seeking behaviour was analysed for the herders and farmers participating in the study. Table 24 examines the reported use of human healthcare providers was explored.

TABLE 24: HUMAN DRUG PROVIDERS

	Provider				
	Dispensary	Hospital	Private	Traditional	Duka
Baringo	39%	39%	22%	0%	0%
Garissa	46%	32%	14%	7%	0%
Kajiado	32%	32%	36%	0%	0%
Machakos	28%	26%	28%	2%	16%
Nairobi	30%	53%	15%	0%	3%
Samburu	57%	43%	0%	0%	0%
Average	39%	37%	19%	2%	3%

As with animal healthcare, the use of dukas and traditional healers as providers of medical treatment was lower than that for conventional western sources. However, unlike animal healthcare delivery, the use of private practitioners (ranging from hospitals to Community Health Workers) was generally much higher. Therefore, further investigation of consumer behaviour regarding human healthcare may be useful in improving the impact and uptake of privatised animal healthcare services in Kenya. Hence, it appears that overall in relation to both perceptions of quality and percent usage, human healthcare is considered to be superior to that for livestock.

6.4 AFFORDABILITY

In regard to affordability, the majority of previous studies focus on the *willingness* to pay of producers. Conversely, the intention of the affordability parameter is to assess the *ability* of poor households to pay for animal healthcare. Obviously, an exact calculation is not possible, nor may it be necessary within the context of the research. Thus, the affordability parameter is meant to be a guide to the capacity of poor producers to pay for adequate levels of both preventative and curative animal healthcare. Expenditures regarding curative animal healthcare are those surrounding the treatment of both specific and non-specific disease conditions, whereas, preventative care is defined as those treatments given in order to prevent disease conditions and includes vaccination, treatment with anthelmintics and tick control. Although the parameter may also be calculated at the community level, the following analysis focuses on the household.

6.4.1 Household Level

To assess the ability of households to pay for both curative and preventative animal healthcare, the average cost of curing specific disease conditions was calculated and an ‘ideal’ rate of expenditure for each disease determined. Subsequently, the actual expenditure for households was determined and the two figures compared. The

comparison allows a rough estimation of the ability of poor households to pay for adequate levels of animal healthcare in the different districts under study.

As diagnostic tests were not performed, the data regarding the incidence of disease depended entirely upon informant recall. However, a number of problems are recognised with the technique. First, indigenous beliefs regarding livestock disease are often very different from western veterinary medical constructs leading to problems of misdiagnosis or categorisation. Local names given for livestock diseases often have a stronger correlation to symptoms rather than causation. For example, the Samburu have a number of names for diarrhoeal disease, all of which may be caused by intestinal parasites. To account for any errors due to differing indigenous constructs of livestock disease, very general disease categories were utilised. As such, the category for diarrhoeal disease is comprised of illnesses caused by both intestinal parasites and microbes. Recognition of specific tick born disease is also prone to misdiagnosis therefore the category is purposefully broad enough to include the wide variety of tick related illnesses present in the study zone. Finally, unless data collection can occur throughout the year, there is a well-known seasonal correlation to disease reporting utilising informants. For example, respiratory infections are more common during the rainy season hence data collected during other times of the year may be unrepresentative of the true incidence rate. To account for the problem, seasonal livestock management and production calendars were utilised to identify times of the year of increased incidence of specific livestock diseases in order to further clarify information obtained through the semi-structured household interviews.

To calculate the total cost of obtaining animal healthcare at the household level, the following general formula was utilised:

Treatment costs = cost of transport + cost of drugs + opportunity cost of labour

To determine the cost of transport, in each district, the mean time to obtain treatment was evaluated. In districts where public transport was utilised the average cost was determined. Conversely, where the majority of informants walked or cycled, the additional time was included in the opportunity cost calculation. Key informants were utilised to determine the prices of livestock drugs in each of the districts involved. The average cost of specific drugs is offered below in table 26. Finally, the opportunity cost of obtaining animal healthcare was determined by multiplying the average time to obtain treatment by the average hourly wage (as determined by mean income) of the study population in each of the districts involved. Given that the time required to treat animals i.e. injecting, spraying, dipping and drenching is generally the same for the ideal vs. the actual expenditure, the opportunity cost of treatment was not included in the calculation. The formula was utilised to determine both the 'ideal' and actual expenditure on animal healthcare.

Obviously the above cost calculation does not include production losses due to disease and death as the intention is only to gain a greater understanding of the actual cash outlay and the time required for the households involved. Although production losses present perhaps a larger problem for poor producers than others, accurately quantifying the losses within the time limits of the fieldwork were not possible. Hence, the analysis focused on the cost of obtaining treatment only. Table 25 offers

an estimation of the cost of transport and the opportunity cost of labour for each of the districts.

TABLE 25: PROJECTED TREATMENT COSTS

	Cost of labour/hour (Ksh)	Average cost of transport	Average time	TOTAL (Ksh)
Baringo	14.53	0	<1 hour	14.53
Garissa	22.08	0	<1 hour	22.08
Kajiado	16.6	30	<5 hours	112.5
Machakos	12.89	10	<1 hour	22.89
Nairobi	29.76	11	<1 hour	40.76
Samburu	5.98	0	<5 hours	29.9

After calculating the total cost of transport, the average cost of livestock drugs were determined across the six districts. Interestingly, the costs for livestock drugs were broadly similar for each of the districts with the exception of Nairobi, which was less expensive.

TABLE 26: AVERAGE COST OF DRUGS

Name	Cost (Ksh)
Oxytetracycline (Adamycin 10%) 50 ml	260
Oxytetracycline (Adamycin 10%) 100 ml	180
Penecillin 100 ml	390
Diminazine Aceturate (Berenil) 1 sachet	80
Wormcid Plus 1L	800
Wormcid Plus 120ml	120
Albendazole (Valbazen) 120ml	570
Levamisole/Oxyclosamide (Nilzan Plus) 125ml	200
Homidium Chloride (Novidium) 1 tablet	60
Buparvaquone (Butalex) 40 ml	3000
Triatix 1L	500
Tixfix 100ml	200

Next, the ideal expenditure on livestock drugs was calculated for indigenous breeds of cattle and smallstock under local husbandry conditions. As such, the 'ideal' represents the minimal level of treatment necessary for the well-being of the herd rather than the maximum. For example, in determining the cost of preventative treatment with anthelmintics, the estimation included that for all ages of smallstock and immature cattle. Costs for drenching adult cattle were not included, as the majority of the study group did not deworm mature cattle. Thus, the calculation attempts to represent the best that can be expected under the management conditions at hand. The following table outlines the assumptions made in the calculation of the ideal cost of treatment. At the time of the study, the reported incidence of tick borne and diarrhoeal disease was higher than for respiratory ailments, therefore, the following analysis focuses on these conditions. The calculations are based upon a 300 kg adult cow and 30 kg adult sheep or goat.

TABLE 29: ASSUMPTIONS FOR DETERMINING THE IDEAL EXPENDITURE

Drug	Dose	Frequency	Cost per treatment (Ksh)	
			Cattle	Smallstock
Butalex	1ml/20kg	1x	1125	
Oxytetracycline	1ml/10kg	1x daily for 2 days	468	52
Wormcid Plus	10mg/kg	1x every 3 months	240	8
Triatix	Wash/spray	1x per fortnight during rainy season	150	15

Utilising the above assumptions, Table 30 outlines the ‘ideal’ expenditure on livestock drugs for tick borne and diarrhoeal disease.

TABLE 30: IDEAL DRUG EXPENDITURE (KSH)

Disease	Cost per animal (Ksh)		TOTAL
	Cattle	Smallstock	
East Coast Fever (per episode)	1593		1593
Preventative tick control (4 months per year)	1200	120	1320
Preventative anthelmintic use (3 x per year)	720	24	744
Treatment for diarrhoeal disease (per episode)	468	52	520

Next, the actual expenditure on livestock drugs per episode of disease was determined. Table 31 offers the mean household expenditure for diarrhoeal and tick borne disease.

TABLE 31: ACTUAL EXPENDITURE ON DRUGS PER EPISODE (KSH)

	Diarrhoeal disease		Tick borne	
	Cattle	Smallstock	Cattle	Smallstock
Baringo	139.5	248.8	1224	0
Garissa	135	134	370	185
Kajiado	380	270	883	200
Machakos	141	305	610	220
Nairobi	0	250.4	0	0
Samburu	60	234	807	252

By comparing the two tables, it is obvious that a wide variability exists in regard to household expenditure per episode of disease. For example, in districts with a high incidence of East Coast Fever (Samburu, Baringo and Kajiado), expenditure on tick related illness was closest to the ‘ideal’ in Baringo and only reached approximately ½ of the ‘ideal’ in Samburu. However, interestingly, the variability does not appear to directly relate to the reported incidence of disease. The following table offers the incidence rates for tick borne and diarrhoeal disease in cattle at the time of the study.

TABLE 32: INCIDENCE RATE FOR COMMONLY OCCURRING DISEASES (CATTLE)

	Diarrhoeal Disease	Tick Borne Disease
Baringo	8%	6%
Garissa	13%	10%
Kajiado	11%	66%
Machakos	18%	14%
Nairobi	17%	0%
Samburu	13%	17%

Given the incidence rates, another explanation may be possible for the wide variability in expenditure on livestock disease. Therefore, the study examined the premise that proximity to an animal healthcare provider influenced the overall expenditure on livestock drugs. Three groups of study participants lived in close proximity to a donor or NGO funded livestock drugstore in Baringo, Kajiado and Samburu district. On average, households, which lived in close proximity to one of these drugstores, spent 20% more on livestock drugs than households that did not. Conversely, households residing near a community animal worker did not display an increased expenditure. This is an important finding and the correlation between proximity to the livestock healthcare provider and appropriate levels of animal healthcare expenditure will be further analysed in a forthcoming paper. However, proximity alone is not sufficient to explain trends in animal healthcare expenditure. The affordability parameter is also related to knowledge regarding the appropriate treatment strategies. Herders and farmers, when informed, appear willing to outlay larger amounts of capital on their animals. For example, households in Kariobangi with the least amount of knowledge regarding appropriate animal husbandry and management techniques tended to buy the largest amount of human drugs to treat their animals. Human drugs were both readily available and inexpensive. Conversely, those farmers who had learned from a friend or neighbour specific husbandry or animal health advice tended to follow the advice and had higher levels of appropriate animal healthcare expenditure.

Finally, to get a notion of what poor producers were purchasing in regard to animal healthcare, the following table offers a breakdown of household expenditure on specific categories of drugs.

TABLE 33: BREAKDOWN OF MEAN HOUSEHOLD DRUG EXPENDITURE (KSH)

	Antibiotics	Acaricides	Anthelmintics	Anti-hemoparasitic	Anti-trypanosome	TOTAL
Baringo	461	380	704	890	373	2808
Garissa	203	141	117	0	167	628
Kajiado	533	294	553	621	0	2001
Machakos	207	164	151	0	0	522
Nairobi	453	165	307	0	0	925
Samburu	382	214	208	250	50	1104

From the table, it is obvious that large expenditures on preventative healthcare are not occurring and the levels of expenditure are for curative purposes only. To further

explore the finding, the total ‘ideal’ and actual household expenditure on diarrhoeal and tick borne disease were compared for the overall study group.

TABLE 34: ‘IDEAL’ VS. ACTUAL EXPENDITURE

	Ideal Treatment Expenditure		Actual Treatment Expenditure	
	Tick borne Disease	Diarrhoeal Disease	Tick borne Disease	Diarrhoeal Disease
Curative	1593	520	773	382.95
Preventative	1320	744	226	0

Thus, it is clear that for the poor, expenditure on curative treatments outstripped preventative measures by almost 2:1. For example, expenditure on tick borne disease was approximately three times that for preventative tick control. Equally, preventative deworming was rare and generally anthelmintics were given in response to illness in individual animals. The finding is important for developing client oriented livestock extension services and equally, CAHW training programmes. By stressing the benefits of preventative animal healthcare, programmes may increase compliance and uptake as herders and farmers accrue savings due to production gains and a decline in morbidity rates.

6.5 SUMMARY OF PRELIMINARY FINDINGS OF LIVESTOCK POVERTY ASSESSMENT

The study demonstrates that far from being a luxury of the better off, livestock are vital to the lives and livelihoods of the poor. As such, a number of trends are contributing to the increasing impoverishment and vulnerability of livestock-based livelihoods in Kenya. The rapid commercialisation of the livestock economy and the need to generate income for food and school fees has fuelled the need to devolve livestock assets thus generating an apparent permanent underclass. The demarcation of land and unstable tenure regimes are also negatively impacting livelihoods based upon livestock, particularly among pastoralists. Across the country, there was a general notion that in the past, livestock-based livelihoods were more secure, herders and farmers had greater numbers of animals.

By using a simplified livelihood framework, the study was able to direct the inquiry to the specific capital assets important to poor livestock keepers in Kenya during the time of the fieldwork. Although it may be argued that by limiting the scope of the investigation that the comprehensiveness of the standard SL approach has been lost, the benefits of the approach were twofold. First, the simplified framework allowed researchers to concentrate on areas perceived by stakeholders to be disabling or problematic. Secondly, by focusing on human, financial and social capital the relationship between asset acquisition and availability could be explored. Criteria for the framework will be further developed in the coming research.

The results of the human capital analysis indicated that communal living relations are the norm for the poor in Kenya. Given that livestock are a pooled resource from both a social and epidemiological standpoint, the compound rather than the household may be a more appropriate vehicle for the delivery of animal healthcare services. In addition, livestock as a form of financial capital were proportionally more important

to the livelihoods of the poorer members of the study group. Hence far from being uneconomical, the potential benefits of improved animal healthcare to the poor far outweigh the perceived costs of delivering services to low numbers of animals.

Livestock are also an important form of social capital. By utilising a narrow definition of the term, the study found that the *type* of livelihood, rather than income, was the most important indicator of who benefits from the variety of formal and informal institutions analysed. The study also demonstrates that livestock are a more important means of cementing social relations for the poor than for the better off. Consequently, future phases of the study will further evaluate the relationship between social capital, income and livelihood. The obvious question is whether the association found is particular to Kenya or is more generalisable. In regards to livestock-sharing rearing it appears that there are two types of relationships: reciprocity and patronage. In Kenya, the poor are more likely to be involved in relationships of patronage. Equally, giving gifts of livestock is less of a risk mitigation strategy than previously believed. The study found that the majority of gifts were provided to close relatives for formal social occasions such as weddings and other ceremonies. Again, further exploration of the finding in the context of future fieldwork will be of interest.

Finally, in regards to veterinary services, the preliminary results indicate that far from being passive recipients of animal healthcare, the poor are active consumers with strong desires and preferences regarding the choice of provider and the purchase of livestock drugs. Results of the key parameter assessment indicated that access of the poor to animal healthcare was low even in areas with large number of community animal healthcare workers. Reasons for the poor performance of alternate providers were many but particularly focused on the pressure from friends and relatives to give away livestock drugs leaving the CAHW without funds to renew his or her drug supply. Hence, although the presence of CAHWs did increase access to livestock drugs, the limited role that many have in treating animals must be accounted for. Conversely, donor or NGO funded livestock drug stores did appear to influence consumer behaviour in those communities in which they were located. Overall, livestock healthcare expenditure and dosing regimes were closer to the 'ideal' in communities in which such livestock drugstores existed.

However, values toward animal healthcare are complex. Although the need for advice was deemed the most desirable feature of a livestock drug store, in reality advice was in short supply. Credit was also considered a favourable attribute however few of the herders and farmers who participated in the study could actually obtain credit. Conversely, proximity and cost were the most important features identified when participants were asked to directly describe the reality most often faced when purchasing livestock drugs. The finding raises two important issues. First, that more than one methodology is needed when examining motivations or factors, which drive consumer behaviour. By using two different types of ranking techniques, a more complete picture could be obtained. The finding is also relevant to contingent valuation or willingness to pay studies. Researchers must be aware of the distinction between desire and reality. Indeed, the affordability parameter indicated that few herders and farmers were spending the required amount on animal health for both preventative and curative treatments. As such, although apparently willing to pay, the ability of the poor to pay for treatments appears to be a limiting factor. The finding will be explored further in the coming phases of the study.

Thus, poor livestock keepers represent a largely unseen and unheard population of consumers of animal healthcare. The preliminary results reveal a number of issues that require further consideration by projects and programmes in order to create animal healthcare delivery systems that will better meet the needs of the poor in the coming decades. Finally, in order to create effective poverty reduction strategies, understanding the values towards poverty is vital. As the next section demonstrates, perceptions of the poor are complex and hence not amenable to simple categorisation procedures such as those derived from wealth ranking.

SECTION III: DISCOURSE ANALYSIS OF POVERTY CHARACTERISTICS

The recent emphasis on the reduction of poverty in developing countries initially appears as a single objective. Nevertheless, the diverse definitions offered in the literature imply that the concept of poverty is multidimensional (Chambers, 1983; World Bank, 1999). One definition commonly employed is to describe poverty as a lack of assets. However, in stable communities, asset levels may be reliable indicators, but in communities that are undergoing a high level of stress, assets may be irrelevant to determining poverty levels (Mikkelsen, 1999). For example, pastoralists often choose to keep livestock in times of stress rather than consuming or selling animals (Heffernan, 2000). Thus, an asset-based definition displays a bias towards a Western concept of poverty that is often not applicable to developing countries or communities. Consequently, measuring poverty by assets or income alone will only offer a partial picture of a complex and dynamic situation.

A similar but different definition describes poverty by combining two features 'the inability to obtain' with less than a subsistence level. For example, a recent report by the government of Kenya (GOK, 1997) defines poverty as 'the inability to attain a certain predetermined minimum level of consumption at which basic needs are assumed to be satisfied'. A comparable notion was adopted by the World Bank (1990), which describes poverty as an 'inability to attain a minimal standard of living'.

However, a major constraint of the definitions offered above is the notion of attainment. According to the definitions there would be no poverty in a community where subsistence food aid was given. Thus, the inclusion of attainment fails to view poverty within the context of how people live. The notion of 'basic needs' implies merely enough to subsist but surely this does not correspond to the much larger group that poverty encompasses. Equally a 'minimal standard' offers no insight into what such a living would be composed of. The measures entail that if someone can attain just enough to keep them alive they are not living in poverty.

As the World Bank Poverty Group suggested, (World Bank, 1999), a new definition of poverty should be adopted which includes the concepts of ill being or well-being. The report further states that, 'the concept of well-being is broader than poverty which is usually considered as linked only to economic criteria' (ibid). The experience of powerlessness, insecurity, bad social relations, and physical weakness, as well as lack of assets, should also be considered (ibid).

A popular method utilised by the development community to identify the poor is wealth ranking. Grandin (1988) first developed the method by using a card sorting technique with pastoralist communities in Kenya. Widely employed by researchers and practitioners, the method and has been followed by other research techniques, such as social mapping (Gujit, 1992). The process was believed to offer a better understanding of community stratification. However, although innovative and useful in presenting a more complete and reliable representation of the poor, wealth ranking is unable 'to overcome all problems of investigating social and economic dimensions of rural life' (Gujit, 1992).

Bias is as much a problem with wealth ranking as with formal surveys². For example, the choice of key informants has proved to be an issue affecting the results of exercises, offering a representation of the community that often excludes the poorest households (Gujit, 1992). In addition, the use of groups versus individuals may present problems, as not all the participants may be willing to express their own opinion in front of others. During the course of the fieldwork in Kenya, the researchers found that communities which were familiar with the exercise, were able to offer a certain set of indicators to identify poor households, mostly based on assets or quality of assets (i.e. houses with a corrugated iron roof, bicycles, radios). On the contrary, communities that had not been previously wealth ranked, offered a more varied set of criteria.³ Therefore, wealth ranking does not appear to be immune from biases introduced by the facilitators. Consequently, in order to complement the description and understanding of the concept of poverty, a different approach was utilised by the study.

8.1 DISCOURSE ANALYSIS AS A TOOL FOR INVESTIGATION

The choice of utilising discourse analysis (DA) to explore issues related to well-being and its perception, stems from the relevance that the discipline has assumed in a variety of fields other than applied linguistics, where it has traditionally been employed. Applied linguists describe DA as ‘concerned with the study of the relationship between language and the contexts in which it is used’ (McCarthy, 1991).⁴ However, the recognition that changes in languages reflect changes in societies, has led to an increasing appreciation of the importance of using language analysis for studying social change (Fairclough, 1992). Therefore, discourse analysis is increasingly employed as a tool to investigate cultural studies, media and communication studies, socio-linguistics and gender studies (Van Dijk, 1997). Thus, DA now stands as a discipline on its own, which comprises ‘the theory and analysis of text and talk in virtually all disciplines of the humanities and social science’ (Van Dijk, 1997).

According to Fairclough (1992), discourse analysis approaches can be divided into two main groups, which vary to the extent of their ‘objectivity’ in tackling social issues: ‘non-critical’ and ‘critical’ approaches. Where non-critical approaches are more descriptive, critical approaches focus on relevant social problems and enable an increased knowledge of complex social issues (ibid, 1992; Van Dijk, 1997). In particular, the approach taken by researchers working in critical discourse analysis (CDA) allows a better understanding of social inequality and demonstrates how social divisions are reflected or even created in language. One of the assumptions underlying this approach, is that the language we use, ‘embodies specific views – or theories – of reality’ (Fowler *et al.*, 1979). In other words, the language used is not merely a reflection of a particular social organisation, but it is part of it. Therefore, language

² Formal surveys are often considered to be less reliable and less able to produce useful insight within the community (Bulmer and Warwick, 1993; Chambers 1983, 1992, 1994).

³ For example, some of the criteria suggested by farmers in Machakos district were as follows: ‘The rich walk confidently and talk about food and what they are going to eat’; ‘Rich people have purchasing power and the poor lack influence’; ‘A rich person will graze cattle on a poor person’s land and the poor person is legally defenceless because the rich can influence the system’.

⁴ Other definitions are: ‘the analysis of language in use’ (Brown and Yule 1983), and ‘the study of the language of communication – spoken or written’ (Hatch, 1992). For a complete account of discourse analysis and its applications see Van Dijk (1997).

cannot be viewed in isolation, but closely interwoven with social organisation and its ideology.

Recently, discourse analysis techniques have also been applied in the context of overseas development. For example, Hanak (1998) applied discourse analysis techniques to investigate co-operation and negotiation during meetings of an agricultural co-operative in Zanzibar. Hanak explored the premise that 'communication in development work is asymmetric and marked by power differences' and that 'undeclared hierarchies and authoritarian behaviour interfere with the objectives of development work' (ibid). By looking at a variety of discourse features, such as low-power and high power style and modality⁵, control of turns and topics⁶ and politeness, Hanak outlined how dominant behaviour prevents less competent speakers from participating in development projects. The article argues that discourse analysis has an important role to play in development context for two reasons. First, DA reveals asymmetries of relations and power among participants and second, it enables researchers to collect information on institutions and the way that they work, in order to develop a better understanding of the dynamics that often rule them (Hanak, 1998).

8.2 THE ANALYTICAL FRAMEWORK

To design relevant targeting strategies and indeed poverty alleviation programmes local notions of poverty and its defining features must be understood. Many studies have been conducted on this subject, with varying degrees of success. In particular, Narayan Tanzania (1997) provides good insight on how the poor in Tanzania perceive poverty and its causes. Equally, the World Bank study *Consultations with the Poor* (1999) conducted in twenty-three countries, offers the first large scale, comparative study on well-being and ill being, in which participatory and qualitative methods have been employed. The picture that emerges is extremely variable and differs from country to country, although some commonalities can be identified. Overall, five dimensions of poverty are identified; material well-being, physical well-being, security, freedom of choice and action, and good social relations (World Bank, 1999). Each dimension describes differing aspects of household and community life: for instance, many people related physical well-being to health, strength and appearance. Security was described as peace of mind or confidence in survival and referred particularly to freedom from crime and violence and protection from the police or authorities (World Bank, 1999).

However, although exhaustive, the study offers a mere description of well-being and ill being, without analysing two elements that seem relevant; first the values that a particular community believes in and second the attribution of responsibility or blame for being poor. Community values are important as they reveal the basis on which a community is founded. Therefore, categorising poverty in terms of 'being something', 'having something' or 'being able to do something', shows the values that a particular stratum holds as relevant. Values in this context are the standard of principles considered valuable or important in life. Moreover, knowing how the poor are

⁵ See Lind and O'Barr 1979.

⁶ Turn taking represents the way speakers intervene in a conversation, either by being allocated a turn or by taking it because of their role in the interaction or by interrupting others (Sacks, H.; Schlegoff, E. and Jefferson, G., 1974).

perceived in a community i.e. whether they are viewed with sympathy or despised would improve understanding of community dynamics and therefore enable projects to be tailored in a more effective way. As the findings on social capital have demonstrated (section 5.2), it is evident social capital correlates both with social economic status and the negotiation of this status. People with greater resources, both at the private and institutional level, appear to benefit more from projects and programmes. By analysing the attribution of responsibility for being poor, it will be possible to evaluate what elements are considered negative and how the common perception may prevent the needy from accessing communal resources such as development projects.

Therefore, the analysis will focus on syntactic construction and semantic choice of vocabulary in describing the characteristics of rich and poor people. Predicating expression indicates how rich and poor are categorised. The attribution of responsibility or blame for being poor will be analysed by considering patterns of transitivity in discourse. Transitivity indicates the relationship between participants and processes, hence is of prime importance in determining causality. The framework adopted for the analysis is derived from Halliday's functional grammar theory (Halliday, 1994) and the work of Lock (1996).

It is important to clarify that the focus of the analysis is not the actual information presented in the utterance, but the *grammatical forms* in which the utterance is expressed, and the *lexical choices* made by the speaker to express his/her opinion. Hodge and Kress (1993) offer an example of a grammatical form.

- a) Have you emptied the garbage?
- b) Has the garbage been emptied?

In the first sentence (a) a specific person (you) is asked whether or not a certain action has been performed. The implication is a direct relation between the responsibility and the action. On the contrary, in the second sentence (b), the question is passive without implying particular responsibility. Thus, it is clear that choosing an active or passive construction reverses the meaning of the sentence.

In a study on racism in discourse, Sykes (1988) offers the following example of lexical choices:

Black females have the same natural intelligence as white women.
(Sykes, 1988)

Despite the sentence meaning to convey a positive message, the use of the term *females* referring to black women, implies a non-human association, which completely invalidates the intention of the sentence.

According to Halliday (1994) the transitivity system construes the world of experience into a manageable set of process types. Different choices of transitivity present a different worldview (ibid). For example, a predominance of material processes as opposed to mental processes will present a more practical world, in which it may be possible, through action, to change the status quo. On the contrary, a

predominance of mental processes may indicate a world of perception that may not represent reality.

As such, the main processes identified by Halliday (1994) are as follows:

1. MATERIAL PROCESSES:

Material processes represent the outer experience of facts and events. It is the process of 'doing'. However, material processes are not necessarily concrete, physical events: they may also be abstract doing and happenings, such as in the following sentence: 'the mayor dissolved the committee' (Halliday, 1994). An actor and a goal normally represent the processes.

2. MENTAL PROCESSES:

Mental processes represent the inner experience and the process of sensing. As such, mental processes are defined as the reaction to the outer experience (recording, reflection and responses). There are four different types of mental process: perception, affection, cognition and volition. A sensor and a phenomenon represent the processes.

3. RELATIONAL PROCESSES:

Relational processes describe the process of being. However, it is not to be confused with 'being' in the sense of existing. In relational clauses, a relation is set up between two separate entities. The process includes classifying and identifying processes of which there are three main types: intensive (x is a), circumstantial (x is at a) and possessive (x has a). Each of these comes in two modes: attributive (a is an attribute of x) and identifying (a is the identity of x) (Halliday, 1994).

Moreover, there are other processes that are borderline between material and mental, mental and relational, and relational and material processes. For example:

4. BEHAVIOURAL PROCESSES present outer manifestations of inner workings, or the external processes of consciousness.
5. VERBAL PROCESSES represent the symbolic relationships expressed in the form of language.
6. EXISTENTIAL PROCESSES are those by which phenomena of all kinds are simply recognised to be or to exist.

Halliday’s framework was utilised to analyse 85 household-level interviews. The interviews were conducted in English, or using a local person as an interpreter. Interpreters were requested to report the exact words of the interviewee’s reply. At the end of the interview the translation was checked by the researcher and the interpreter. All of the samples analysed had correspondent grammatical structures. The analysis was performed on the exact transcription of the interviews. The following four questions were the basis of the analysis:

1. What are the differences between a poor livestock keeper and a rich one?
2. Are poor people and rich people involved in different activities?
3. Are there different aspects of being poor that cannot be noticed easily?
4. Are there different types of poor people who live here?

Thus, questions 1-3 attempted to assess perceptions regarding differences between rich and poor people and whether skills, assets, or behavioural indicators are considered most important. Conversely, question 4 examines the classifications of the poor and hence attribution and blame.

8.3 RESULTS

An initial analysis of the data was conducted to identify reoccurring patterns and common responses among interviews. During the second stage of the analysis, responses were classified into the relevant process. As the table below illustrates, an overwhelming majority of participants employed the relational process when describing poverty. The material process was also widely reflected in the responses but to a lesser degree.

TABLE 34: CATEGORISATION OF RESPONSES

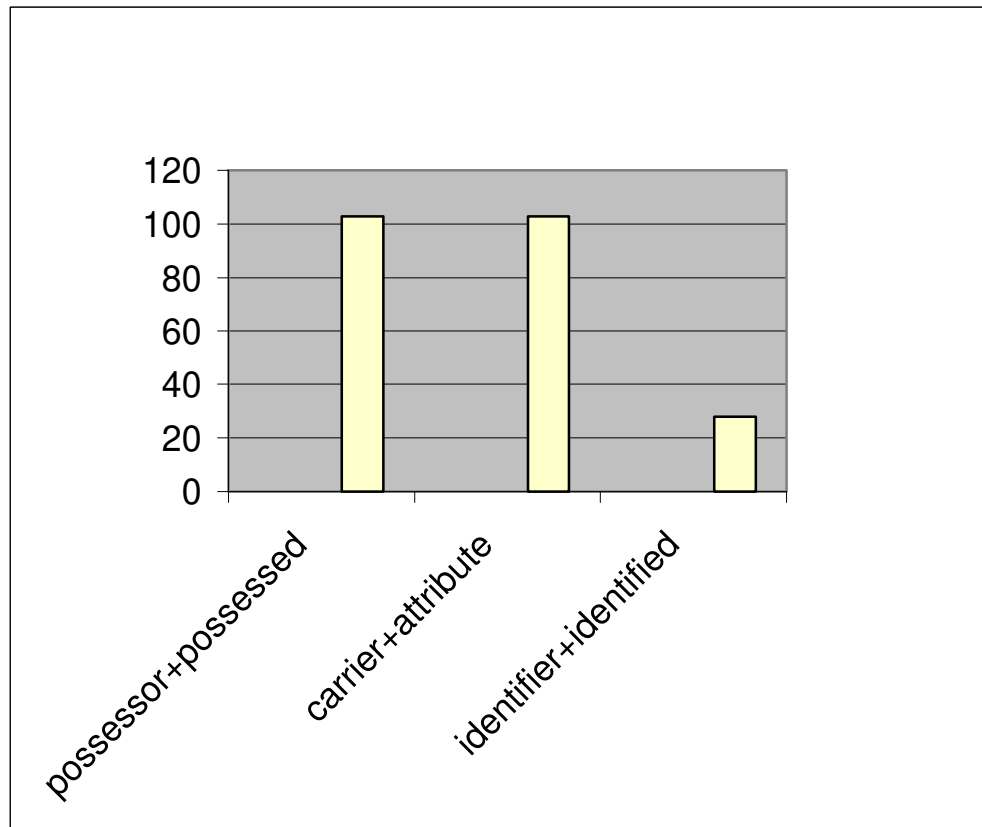
Type of Process	Response
Material Process	156
Relational Process	234
Mental Process	33
Verbal Process	6
Behavioural Process	8
Existential Process	36

Consequently, although the other processes are represented, the following analysis primarily focuses on the relational and material processes.

8.3.1 The Relational Process

The relational process is composed of one of three relations, the possessor and possessed, the carrier and attribute and the identifier and identified. For example, in the sentence ‘I have a goat’, the possessor is ‘I’ and the possessed is ‘a goat’. In the sentence ‘The rich are greedy’, the carrier is ‘the rich’ and the attribute is ‘greedy’. Equally, in the sentence ‘the poor are those who misuse their property’, ‘the poor are those’ is the identifier, and ‘who misuse their property’ is an identified. The following figure categorises the number of responses into one of three relations.

FIGURE 24: BREAKDOWN OF RELATIONAL RESPONSES



As indicated in the above figure, within the process, possessive and attributive relations were utilised with the greatest frequency. As such, poor people were most often described as follows:

- ‘They (the poor) are generous.’
- ‘They (the poor) don’t look happy.’
- ‘Poor people have a different diet.’
- ‘They (the poor) are usually shy.’
- ‘The poor are dependent.’

Conversely, the rich were characterised in the following manner:

- ‘Rich people are usually happier because they don’t have many problems.’
- ‘The rich are happy, they are greedy.’
- ‘A rich person is healthy.’
- ‘Rich people have good clothing.’

Consequently, the use of the attributive relation suggests a rather static representation of the rich and the poor as the characteristics are attributed to all rich or poor people. Thus, the attributive relation simply *describes* the situation, whether or not the terms are evaluative.

In the majority of cases, the qualities stated tended to be positive regarding the rich (happy, healthy, good clothing, calm, self-confident), although they were sometimes mitigated by a negative attribute (happy/greedy; generous/boastful). Negative attributes were also used to describe the rich (proud, mean, not good). However, in general, positive rather than negative terms predominated. Thus, the rich were often viewed as positive role models to be emulated. On the contrary, the type of adjective employed to describe the poor was more varied: they were positive and hold a semantic positive meaning (generous, hardworking, respectful god fearing), or hold a negative semantic meaning (i.e. humble). When a negative meaning was employed, the poor were described either as opposite to the rich (rich happy/poor unhappy or sad) or with a very strong negative attribute (drunkards, lazy). When a strong negative adjective was used to describe the poor, the relational process was often followed by a material process. In other words, a relationship between being lazy and not taking care of the animals, or being drunkards and selling the animals was always stated. Therefore, the analysis of the relational and material process indicates that rich people were viewed positively, whereas poor people were considered in a less favourable way.

However, when behavioural or mental processes are utilised to describe the relationship between the rich and poor, a different picture emerged. As the following examples demonstrate no positive connotations are noted for the rich.

- ‘Rich people behave selfishly and always look at other poor people as a bother’.
- ‘People showing off are rich’.
- ‘They (the rich) try to draw an imaginary line between themselves and the poor’.
- ‘The rich consider poor people as bad people (thieves), they keep distance’.
- ‘The rich look down at the poor’.
- ‘Poor people feel left alone, a poor person is hated by the rich because he begs and he is not given’.

The rich were claimed to constantly behave badly towards the poor, who were affected by the rich peoples’ behaviour. Therefore, there is a clear divergence between the ‘ideal image’ of the rich and the perceptions of their behaviour.

The carrier attribute relation is not merely employed to describe, but it is also used to express changes in status and to explain the reason why one is poor. Any altering status is normally indicated by linking verbs, particularly ‘to become’.⁷ Included among the causes of poverty are becoming an alcoholic, and thereby being unable to take care of the animals, or selling animals to buy drink. Being considered a drunkard is highly condemned, and it further jeopardises a person’s chance of escaping poverty, as the community will generally not assist those who are considered to have a problem with drink. Condemnation for alcoholics was particularly stressed among study participants in Samburu district. Conversely, if someone has become poor due to bad luck i.e. drought or raids there was a general notion that the community would be ready to help. Therefore, as the following examples illustrate, it appears that there is the notion of responsibility for poverty with assistance offered when the individual is not viewed as contributing to the cause.

⁷ Lock (1996) selects a number of verbs that are normally used in attributive sentences which have to do with change such as grow, go, turn, get.

- ‘There are those who become poor because of bad luck like being raided or through droughts. The clan or close relatives usually quickly compensate these people. There are also those who are drunkards and these people often do not get any assistance from people since they will waste it.’
- ‘There are people who always remain poor because nobody is willing to give them animals through loans.’
- ‘There are also the ones who became poor because of disease outbreak or theft. These people however, are able to get loans from others and because they are hardworking can regain their wealth again.’

Other reasons for becoming poor, such as not having daughters, and therefore not being able to gain wealth through bridewealth were noted for pastoralists. However, it is unclear whether assistance from the community could be obtained when the causality was perceived to be a lack of girl children.

The study also found that there appears to be a difference when poverty is described as a consequence of something, and a change-type linking verb such as to become, get, grow etc., is employed or when it is simply described by the verb ‘to be’. In the first case the syntactic and semantic structure suggests that poverty may be a temporary and possibly reversible state, whereas in the second instance, poverty is viewed as a more permanent situation. However, in the majority of the cases, study participants utilise the verb to be, thus indicating poverty is perceived as an inflexible and more or less permanent condition.

The verb ‘to be’ also influenced the existential processes that were discovered. An existential process sets the scene by stating the existence of poor people whereas a relational process explains who the poor are. However, the situation presented is very static, due to the use of the verb ‘to be’ in both processes.

- ‘There are those who are poor because they are drunkards and cannot take care of the animals.’

On the contrary, the following examples use a changing linking verb.

- ‘You’ll become poor because you don’t take care of the animals and they will die of hunger.’
- ‘There are those who become poor because of bad luck like being raided or through drought.’
- ‘People who have lost all their animals to calamities such as raiding and drought are not considered poor.’

Thus, poverty is presented as a process: a person who does not take care of his or her animals becomes poor, as does a person who has been raided. However, moral judgements are implicit, and were often externalised by the study participant. Lazy people, drunkards and people who do not take care of the animals will not receive any

help from the community. On the contrary, those suffering the loss of animals due to raids or drought will be assisted and may regain their wealth.

When exploring the association between the possessor and the possessed it is clear that it is not a simple relationship merely demonstrating ownership, but describes a metaphorical status that can be illustrated by different processes. In other words, as shown in the example below, the participants chose to express a carrier attribute relationship as a process of owing. For example:

- ‘Somebody who is poor lacks self confidence besides lacking his assets’.

In the first part of the utterance, ‘lacks self confidence’ stands for ‘is not confident’, whereas the second part ‘lacking his assets’ refers specifically to ownership.

However, overall, the ownership meaning was most widely employed to describe the relationship between the possessor and the possessed, with 63 occurrences as opposed to the metaphorical meaning, with only 33 occurrences noted. Thus, although assets appear to indicate wealth, the metaphoric use of possession cannot be neglected. For example, having malnourished children, having or not having education, having self confidence, having pride etc., cannot be neglected in favour of ownership of assets, as they refer to a different kind of possession, qualitative rather than quantitative. Moreover, the quantity or the presence of assets alone is not sufficient. As the following examples demonstrate, the quality of an asset also appears to be important.

- ‘Everybody has got a shamba. It depends on inputs. The poor don’t have the means to cultivate it’.
- ‘A rich farmer has a nice shamba, terraced, a lot of manure, and has good healthy looking animals.’
- ‘A poor farmer has weak animals.’
- ‘The poor have nothing, no good shelter, bad food.’

The above examples further illustrate how quality is also an important feature of well-being. In particular, when speaking of houses, herders and farmers utilise different terms when referring to the rich or to the poor. For instance, rich people have good houses, or better houses, whereas poor people have or do not have shelters. The semantic difference is very important, as it implies a qualitative difference. The word house refers to a brick or stone construction, which protects people from the cold and the rain. A shelter on the contrary, does not constitute this kind of meaning. It recalls a place where people may find temporary refuge from the weather or during the night. The distinction was most prevalent among urban dwellers in Kariobangi.

8.3.2 The Material Process

The material process is the second type of process employed to describe poverty and the differences between poor and rich. The accounts include a variety of actions, which span from the type of jobs poor people must do to survive, to the capability of sending children to school, from the possibility of marrying someone, to the way people eat. Again, as the following examples demonstrate quality seems to be a relevant factor.

- ‘A rich farmer eats well and his animals also eat well.’
- ‘In school rich children do better than poor children as they have less problems at home.’
- ‘They (the rich) use good oils.’

In terms of activities, poor people:

- ‘...burn charcoal and sell firewood or do nothing.’
- ‘Go for employment (as a maid) sell charcoal or firewood.’

The majority of the material processes presented an actor-goal structure, which implies active participation in the process of doing. Only a few respondents used a goal – actor structure, which implies a passive participation, in which the participant cannot avoid the outcome.

- ‘They (the poor) are underpaid by the rich.’
- ‘They are neglected in the community and discriminated against by the rich.’

The material process is widely used when referring to ability and potentiality. Where ability denotes the skills, means and capabilities a particular person possesses and potentiality refers more to the external environment and circumstances, on which a person has influence (Lock, 1996). Both ability and potentiality are expressed with the verb ‘can’. The modal verb can was most frequently used to mean ability and was widely employed by the respondents, especially when speaking of ways to get out of poverty. However, the conception differed according to the area. In Samburu District, as the following examples demonstrate there is a strong belief that poverty is not a permanent status (with the exception of drunkards), but can be overcome through commitment and hard work.

- ‘As much as poverty exists, people can work their way up from poverty if they are determined to have the necessary skills.’
- ‘There are also the ones who become poor because of disease outbreak or theft. These people however, are able to get loans from others and because they are hardworking can regain their wealth again.’

The use of the modal verb ‘can’ in both sentences stresses the capability of the poor. Being ‘determined’ and ‘hardworking’ are necessary skills to change someone’s status. However, the qualities are characteristic of a particular person and do not depend on external factors. Consequently, as a person can control his or her fate, the inability to subsequently escape poverty may be highly condemned by the community.

To a certain extent, poverty in Garissa District is viewed as a reversible status although it was presented in a slightly different manner.

- ‘There are also those who cannot improve because they cannot do without miraa, which is very expensive.’

Failing to escape poverty is still presented with the modal verb 'can'. In this instance, the modal verb is used in the meaning of ability, although negative. However, the relative sentence describing mirraa ('which is very expensive') mitigates the effect of can, somehow switching the focus from the inability of doing something to an element that cannot be controlled by that person. In this manner, responsibility is shared. The person cannot do without mirraa, but mirraa is very expensive.

The tendency to share the blame is even clearer in the following sentences, where poverty is perceived as God's will, and or presented as bad luck.

- 'Most people who live around here are poor because of bad luck'
- 'There are those who are given and those who are denied by Allah.'

The goal – actor structure of the second sentence clearly denies any responsibility for someone's status. Poverty is decided by Allah and men do not have ultimate control over their circumstances.

Nevertheless, it is possible to change, if efforts are made.

- 'There are those who when given little, can work hard and become richer, while there are those who when given little can also lose the little they have.'

In the example, the goal – actor structure ('those who when given little') is suddenly reversed in a actor - goal structure ('[they] can work hard and become richer'), which underlines how skills or ability might influence a person's destiny. The same syntactical structure is employed in the second portion of the sentence. However, the fact that it is not clearly explained how people can lose 'the little they have', suggests an external reason for falling into poverty. As such, overall, a person is not responsible for their status.

Thus, use of the material process is important in revealing the underlying beliefs that a particular community holds about poverty and the factors of causality. If the relational process offers a description, although often evaluative, of the different strata of which a community is composed, the material process reveals both the means through which people are believed to be able to escape from poverty and the judgements that the community hold regarding the poor.

9. SUMMARY OF PRELIMINARY FINDINGS OF DISCOURSE ANALYSIS

The analysis revealed that asset levels alone are inadequate to describe well-being, which is better defined by a combination of criteria, such as type and quality of assets, moral characteristics and relationships. Furthermore, by analysing the attributive relation a more complex picture of ill being was discovered. Rich and poor people are often compared and their characteristic features presented as opposites. However, the adjectives chosen to describe the characteristics of the rich are often negative, whereas the adjectives describing their status have a positive meaning. The choice of adjectives may indicate a double feeling towards the rich: envied for their status and wealth but also despised, as they are perceived to be unreachable and inhabiting a privileged world of their own.

The analysis of carrier and attribute relationships further outlined the process and reasons for becoming poor. The selection of a change linking verb or of the verb 'to be', suggests a two-folded perception of poverty: as a reversible and irreversible state. The majority of study participants perceived poverty as a process rather than a state and as such as a reversible condition. Particularly among pastoralists, external factors such as drought or raids are important causes of impoverishment but in these cases, wealth can be regained quite easily, as community support is possible. On the contrary, if the cause of poverty is the misuse of resources, it is more difficult to reacquire wealth. In the latter case, the community is highly condemning, particularly when related to the over-consumption of alcohol or miraa. It is further claimed that having the right skills and being hardworking are the best tools to get out of poverty. The material process analysis confirms the perception. The verb 'can' is largely employed when describing how people can improve their status, indicating a process concerned with personal skills, rather than external factors, despite an external causation of impoverishment. Moreover, material processes underline the differences between the rich and the poor in terms of abilities, or what can be achieved as a consequence of wealth. A few indicators were widely used, such as the ability to send children to school, to care for one's family or the ability to marry.

Interestingly, when the results were compared to a wealth ranking exercise, it appears obvious that two main types of bias may be prevalent. First, the results of the analysis demonstrate that the use of locally derived criteria for wealth and poverty is not a neutral process. As such, the risk is that wealth-ranking exercises may not be targeting those in the community, who are the most needy as they have been classified as undeserving by the community in question. Conversely, and equally problematic, projects and programmes may be viewed as assisting the unworthy or those who are responsible for their own poverty. The long-term consequence of such a targeting bias is that the agency of communities and individuals may be diminished as irresponsibility may be rewarded. For example, wealth ranking is commonly utilised as a targeting procedure for restocking projects. However, the technique appears to frequently select those who have already fallen out of pastoralism or those whom communities believe are not good investments for livestock. Indeed, traditional restocking mechanisms and restocking by external agents tend to target completely separate populations.

On the contrary, the values that a community holds in relation to the poor may be expressed in a wealth ranking exercises. Consequently, those individuals who are believed to be responsible for their own poverty are excluded from the process. Thus, the community may intentionally or unintentionally misrepresent the voices of the poor. At community meetings, it is unlikely that the 'undeserving' poor will be present or that the truly poor will be heard. Hence, understanding the values that a community holds toward the poor is entirely relevant to both the targeting of existing programmes and the future development of appropriate projects and programmes. Consequently, the use of discourse analysis techniques demonstrates that a further level of analysis is needed given the descriptive nature of responses generated by participatory methods.

10. REFERENCES

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