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Livestock or the pen: Is education a route out of poverty for pastoralists?

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The Chronic Poverty

Research Centre

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**Paper presented at the CRPC/ ODI Roundtable
‘Inheritance and the Intergenerational Transmission of
Poverty’, ODI, London, 11 October 2010.**

First draft, for comment
(please do not cite without permission)

**Chronic Poverty Research Centre
October 2010**

This document is an output from Chronic Poverty Research Centre (CPRC) which is funded by UKaid from the UK Department for International Development (DFID) for the benefit of developing countries. The views expressed are not necessarily those of DFID. The CPRC gratefully acknowledges DFID's support.

Livestock or the pen: the effects of inheritance and education on poverty among pastoralists¹

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October, 2010

Paper presented at the CPRC/ODI Roundtable Inheritance and the Intergenerational
Transmission of Poverty, ODI, London, 11 October 2010

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Abstract

Samburu pastoralists in northern Kenya experience chronic poverty and often express the belief that formal education may be an alternative route out of poverty for poor pastoralists. The roles of livestock inheritance and formal education in household wealth (measured in livestock holdings) and income are investigated using quantitative and qualitative research methods and building on our long term research among the Samburu. Quantitative analyses indicate that parental wealth and the amount of livestock inherited are positively associated with household wealth status. However, it also appears that wealthier families are better positioned to transmit wealth through inheritance compared to poorer households. Findings from qualitative interviews examine how livestock are passed from one generation to the next, illuminating the important role of *inter vivos* transfers of livestock in distributing wealth among sons, and the advantages of being part of a wealthy family for retaining and rebuilding herds. Education is positively associated with increased household income, but not with livestock wealth. Interviews indicate that Samburu people are sending more children to school with the belief that it constitutes one means to overcome poverty through employment and gains in skills and knowledge.

Executive Summary

Samburu pastoralists remain one of the poorest and most marginalized groups in Kenya (CBS, 2003). Recurrent shocks including frequent droughts and growing insecurity due to cattle raiding and banditry have exacerbated poverty and inequality among the Samburu. Rising human populations, decreasing access to land, and stagnant livestock numbers are leading to lower per capita livestock holdings, forcing pastoralists to explore other options (Little et al. 2001; Adriansen 2006). Poorer pastoralists are most disadvantaged as they lose social standing and networks and have difficulty continuing with a pastoral lifestyle (Tache and Sjaastad 2010). Consequently, many Samburu have experienced chronic poverty.

While pastoralists are often thought of as egalitarian in wealth and power (Salzmann 1999), there is recent evidence of growing wealth and income inequality including among Samburu (Lesorogol 2008a, 2008b). Amid these changes, many poorer households are investing in formal education as a means to overcome poverty by building the capabilities of their children for employment outside the pastoral sector. Many Samburu express the belief that “the pen is stronger than the spear” signaling education and employment as alternatives to pastoralism. While inheritance and other forms of livestock redistribution have potential to reduce poverty, formal education is an important alternative. However, there is little empirical evidence regarding the intergenerational transmission of poverty through livestock inheritance or the possibility of overcoming poverty through education for pastoralists.

Using quantitative and qualitative research methods and building on Lesorogol’s long term research among the Samburu, we analyze the roles of livestock inheritance and formal education in household wealth (measured in livestock holdings) and income. Regression analysis was conducted using a sample of 128 Samburu households to discover associations between parental wealth, livestock inheritance, and current wealth of respondents. Included in the analysis were important control variables such as income, age, years of education, and household size. These analyses indicate that both parental wealth and the amount of livestock inherited are positively associated with current household wealth status. However, it also appears that wealthier families are better positioned to transmit wealth through inheritance

compared to poorer households. Our qualitative findings assist in interpreting why this is the case by examining how livestock are passed from one generation to the next, illuminating the important role of *inter vivos* transfers of livestock in distributing wealth among sons, and the advantages of being part of a wealthy family for retaining and rebuilding herds.

Regarding education, regression analysis suggests that formal education is associated with increased income. To this extent, investments in education appear to pay off in terms of household incomes and may constitute one route out of poverty for poor households. Education, however, is not significantly associated with livestock wealth signaling that income, which is derived from a range of livestock and non-livestock sources, and livestock based wealth may follow divergent trajectories. Qualitative findings indicate that formal education has only been available to the Samburu for about fifty years, but that after a period of initial resistance, many Samburu are now investing in education of the next generation and believe that it brings about benefits including enhanced knowledge, capability and financial security.

Our findings suggest that livestock inheritance and formal education both influence household economic status. There is evidence of intergenerational transmission of wealth and poverty through livestock inheritance. At the same time, even relatively modest amounts of formal education are associated with increases in household income. To the extent that poorer households invest in formal education, it may indeed constitute one pathway out of poverty.

Introduction

Samburu pastoralists remain one of the poorest and most marginalized groups in Kenya (CBS, 2003). Recurrent shocks including frequent droughts and growing insecurity due to cattle raiding and banditry have exacerbated poverty and inequality among the Samburu. Rising human populations, decreasing access to land, and stagnant livestock numbers are leading to lower per capita livestock holdings, forcing pastoralists to explore other options (Little et al. 2001; Adriansen 2006). Poorer pastoralists are most disadvantaged as they lose social standing and networks and have difficulty continuing with a pastoral lifestyle (Tache and Sjaastad 2010). Consequently, many Samburu have experienced chronic poverty.

The Samburu rely heavily on inheritance of livestock for the intergenerational transmission of wealth. Traditional norms and practices of inheritance enable most sons to establish independent households, although inheritance varies among sons depending on family structures and relationships. Daughters and widows rely heavily on their husband's or husband's family's livestock. While pastoralists are often thought of as egalitarian in wealth and power (Salzmann 1999), there is recent evidence of growing wealth and income inequality including among Samburu (Lesorogol 2008a, 2008b). Amid these changes, many poorer households are investing in formal education as a means to overcome poverty by building the capabilities of their children for employment outside the pastoral sector. Many Samburu express the belief that "the pen is stronger than the spear" signaling education and employment as alternatives to pastoralism. While inheritance and other forms of livestock redistribution have potential to reduce poverty, formal education is an important alternative. However, there is little empirical evidence regarding the intergenerational transmission of poverty through livestock inheritance or the possibility of overcoming poverty through education for pastoralists.

Using quantitative and qualitative research methods and building on Lesorogol's long term research among the Samburu, we analyze the roles of livestock inheritance and formal education in household wealth (measured in livestock holdings) and income. Our quantitative analyses (presented below under Quantitative Results) indicate that both parental wealth and

the amount of livestock inherited are positively associated with household wealth status. However, it also appears that wealthier families are better positioned to transmit wealth through inheritance compared to poorer households. Thus, while poverty and wealth may be passed along intergenerationally, there is not a simple linear relationship between the two. Our qualitative findings assist in interpreting why this is the case by examining how livestock are passed from one generation to the next, illuminating the important role of *inter vivos* transfers of livestock in distributing wealth among sons, and the advantages of being part of a wealthy family for retaining and rebuilding herds.

Regarding education, regression analysis suggests that formal education is associated with increased income. To this extent, investments in education appear to pay off in terms of household incomes and may constitute one route out of poverty for poor households. Education, however, is not significantly associated with livestock wealth signaling that income, which is derived from a range of livestock and non-livestock sources, and livestock based wealth may follow divergent trajectories. Qualitative findings indicate that formal education has only been available to the Samburu for about fifty years, but that after a period of initial resistance, many Samburu are now investing in education of the next generation and believe that it brings about benefits including enhanced knowledge, capability and financial security.

Our findings suggest that livestock inheritance and formal education both influence household economic status. There is evidence of intergenerational transmission of wealth and poverty through livestock inheritance. At the same time, even relatively modest amounts of formal education are associated with increases in household income. To the extent that poorer households invest in formal education, it may indeed constitute one pathway out of poverty.

Research questions

We sought to understand practices of livestock inheritance, patterns of decision-making regarding inheritance, as well as the relationship between transfers of livestock and the economic status of households. In addition, we investigated attitudes toward formal education and how parents made decisions about sending children to school. We also analyzed whether

there were associations between formal education and current household livestock wealth and income. The following questions guided the study:

1. How are livestock passed from one generation to another?
2. Perceptions about the effects of livestock inheritance on household well-being.
3. How are decisions made about sending children to school?
4. Perceptions about the effects of education on household well-being.
5. What is the relationship between father's wealth and son's current wealth?
6. What is the relationship between livestock inheritance (*inter vivos* and post-mortem) and son's current wealth?
7. What is the relationship between years of formal education (of household head) and current household wealth?
8. What is the relationship between years of formal education (of household head) and current household income.

Questions 1-4 were pursued through a set of qualitative interviews while questions 5-8 were addressing using quantitative household survey data and regression analyses. The questions were designed to gain insight into patterns of livestock inheritance and formal education, attitudes about how these affect household economic status, and quantitative relationships among inheritance, education, and household wealth and income.

Research design and methods

For questions 5-8, we used survey data from our existing random sample of 200 Samburu households to investigate patterns of inheritance and education and whether livestock wealth and poverty are transmitted intergenerationally. The household sample consists of 200 households randomly identified from lists of households that were registered in the process of adjudicating group land titles in the 1970s (updated in the 1990s—the sample was selected from the updated lists). These households are drawn from two Samburu communities. One hundred reside in Mbaringon where communal land tenure (in the form of a group ranch with title granted to all resident households) remains in force. The other one hundred households are in Siambu (about 40 km away from Mbaringon) where land was privatized among 240

resident households in the late 1980s. Each household received a virtually equally sized parcel of land of about 23 acres in size. Thus, although the two communities are culturally very similar, they do differ in terms of their property rights to land and the change in land tenure has implications for livelihood strategies (e.g. more participation in cultivation on private land), household well-being, and social relations (explored in Lesorogol 2008a, 2008b). While these differences are important to consider, we also note that in terms of household economic indicators such as income and wealth, there were no statistically significant differences found in mean values between the two communities in the last survey conducted in 2005 (Lesorogol 2008b). Both communities exhibit considerable levels of wealth inequality. For example, the wealthiest quintile in both Siambu and Mbaringon own more than fifty percent of the livestock wealth while the poorest quintile in each place own less than five percent.

In order to investigate intergenerational transmission of wealth, we added questions to the current survey instrument that has been conducted with this sample in 2000 and 2005. The survey includes information on demographic characteristics (age, gender, marital status), wealth (livestock by type and number), land ownership (in Siambu only), income (from 25 different sources including wage labor, trade, livestock and crop sales, land sales and rentals (Siambu only), remittances, and gifts), educational attainment, employment status, expenditures (weekly and annual), , crop production, milk production, and 24-hour food intake. The husband and/or wife were interviewed for each survey household, although given the focus on inheritance in this survey, the majority of respondents were men.²

Since most wealth is transmitted from father to son (often through the mother who has a caretaker role over her children's livestock) we asked men about their inheritance. Transfers of livestock do not occur at one point in time for Samburu. Rather, fathers give gifts of livestock to their sons at many points, especially during significant social transitions such as birth, initiation into warriorhood, and at marriage. Most transfers occur *inter-vivos*, although a father's

² There were four female-headed households in the sample (widows) which were excluded from the quantitative analyses because the focus of analysis was on livestock inheritance which flows through the male line. Although women do play a role in transferring livestock to their sons, we were not able to obtain accurate information on the deceased husband's livestock inheritance and his parental wealth from the widows.

remaining livestock generally go to his oldest son upon his death.³ Barring pre-mature death, most men will have divested most of their wealth before they die.

In order to best capture information on livestock inheritance we asked male respondents about the size of their herd when they married (the total herd size minus bridewealth paid to the wife's family). This is a point at which most young men would be at a high point in terms of inheritance, since they require livestock to pay bridewealth to the wife's family as well set up an independent household. Since this is a signal event in a person's life, men are likely to have good recall of their situation at that time. We also asked respondents (both spouses) about their fathers' livestock holdings and household size when they (the respondents) married.

The qualitative portion of the study consisted of in-depth interviews with sixteen respondents in June and July 2010 to further illuminate the strategies and decision-making behind livestock inheritance and formal education. We selected four father-son pairs from the random sample to interview about inheritance practices and educational experiences in their natal families as well as their current plans for inheritance and education. In all cases, the father was part of our sample and we interviewed him and, separately, one of his adult sons. The other interviews were conducted with a cross-section of men and women who have been involved in Lesorogol's ongoing research. These individuals are part of the random household sample, and in addition were included in a smaller, stratified (along lines of wealth, income, and age) sub-sample of 30 households among whom we have conducted recent research on land use and household economics. Availability of individuals for interview during our field work was an additional criterion for selection.⁴ The interviews focused on the practices, norms and values attributed to inheritance and education and how respondents believed each of these had affected their current well-being and that of their families.

³ In polygynous households, it is the eldest son of the first wife who inherits the father's remaining livestock at death while the youngest son of each wife is expected to inherit any livestock remaining in her allocated herd at her death (see below).

⁴ While a larger number of interviews would have been desirable, there was limited time available for the interviews for this project. However, the selection of interviewees was diverse in terms of age, gender, and economic status. It would have been desirable to interview more of the highly educated members of the sample (or their sons and daughters) for their perspectives on inheritance and education. However, two of the four sons in the father-son pairs had university level education and are at the high end of the education spectrum.

Qualitative analysis: Livestock inheritance and formal education

Most Samburu people reside in northern Kenya, primarily in Samburu district (recently divided into three districts⁵). Exact figures for the population are difficult to find, but there are probably between 150,000 and 200,000 Samburu in Kenya. They are closely related ethnically to the better known Maasai with whom they share language, history, and most customs. The Samburu remained in northern Kenya during the Maasai migrations several hundred years ago as the Maasai proper continued moving south to their current location in southern Kenya and northern Tanzania. Like the Maasai, Samburu rely heavily on livestock herding for their livelihood, both through the consumption of livestock products (milk much more than meat) and through livestock sales that generate income to purchase food, clothing, and other necessities. In addition to cows, sheep and goats (and some camels, especially in the lowland areas), many Samburu engage in trade in other commodities such as timber, firewood, charcoal, hides and skins, tobacco, sugar, and alcohol and some work for pay in both the formal and informal economic sectors.

Samburu district comprises both lowland and highland areas. About two-thirds of the area is lowland with annual average rainfall between 200-400 mm. and vegetation dominated by shrubs and trees with relatively little grass. The other third is the higher elevation Lorroki plateau (over 1200 meters) with rainfall averaging between 400-1000mm in which grassland and forest dominates. In addition, there are three mountain ranges that punctuate the lowland landscape and provide dry season reserve grazing areas. Although most Samburu are close to pure pastoralists in that they practice little or no farming, some communities have become more involved in cultivation, especially over the last twenty years. This is the case in the Siambu community located in one of the wettest and highest elevation areas of the highlands and where land that had been managed communally was privatized in the late 1980s. Since then, about two-thirds of households in Siambu have begun to practice farming in addition to keeping livestock. In addition, about one-third of Siambu households lease out part of their

⁵ For convenience, we will refer to Samburu district rather than the three districts throughout the paper. This recent change in administrative units also seems likely to be rescinded by the new constitution that was passed in August 2010 in which local governments are defined as the original 47 districts in Kenya, one of which is Samburu.

privately owned land to commercial wheat and barley farmers. Mbaringon, in contrast, remains a communally managed group ranch in which land title is held by a group of resident households, and relatively few people grow crops on a regular basis, although some do so opportunistically in a year of good rainfall (like 2010).

Samburu social organization revolves around patrilineages, clans, and larger sections of related clans. Homesteads are organized around related men, generally fathers and their married sons, or brothers, although there is considerable variation in this pattern and a trend toward smaller settlements. These kinship structures are cross-cut by a male age-grade system in which all boys are initiated into a named age-set upon their initiation (in their teens) into warriorhood. Each age-set passes through the age-grades of warrior, junior elder, firestick elder, and senior elder in fourteen year cycles. Women do not have a comparable system, but are associated with the age-set of their husbands. Polygyny is common and often considered an ideal as it is a sign of success and wealth. Since household labor is the core of herding labor, a large household is often necessary to support a large herd. Household labor is also supplemented by combining herds and sharing/borrowing herders with relatives, as well as—more recently-- hiring herders.

As noted above, Samburu district is one of the poorest in Kenya and is part of the larger northern Kenya region composed primarily of pastoralist groups who are often in competition for natural resources and livestock. Many Samburu express the feeling that they are becoming poorer over time, especially due to the continuing impacts of recurrent drought, livestock diseases, and the rise of organized and lethal cattle raiding from neighboring groups. Their perceptions are borne out in research that shows steadily rising population with fairly static livestock populations that fluctuate with drought cycles (Fumagalli 1977, Lesorogol 2008a). Although Samburu people often attribute poverty to forces such as drought and disease that are largely beyond their control, they also consider individuals to some degree responsible for their own wealth or poverty. Someone who herds his animals diligently and resists the urge to consume his livestock (by selling or eating them) will not be blamed for disaster-induced poverty while someone who is negligent of his herds or “eats” them will be. Even in such cases,

though, Samburu people appreciate the complex array of risks in their environment that influence individual wealth and poverty. One result of living in an environment with high risk and uncertainty is shifts in livestock holdings over time. For example, earlier research with our sample shows that there is considerable economic mobility across wealth and income quintiles over time (Lesorogol 2008b). We will return to a discussion of the influence of risk in the discussion section below. Next, we turn to the findings from this project to explore the meaning and operation of livestock inheritance among Samburu.

Inheritance among Samburu

There is a clear norm for livestock inheritance (*njungu* in Samburu, from *a-jung*, meaning the last words spoken at death) that all informants agreed upon: the oldest son inherits from the father and the youngest son from the mother. In more precise terms this means that when a man dies, his remaining livestock are passed on to his oldest surviving son. In addition to inheriting the livestock, this son also inherits the role of the father as the head of the family. This means that he takes on many of the responsibilities and obligations that his father had when he was alive. For example, this son will now be responsible for organizing initiation ceremonies and helping negotiate marriages for his unmarried younger siblings. At their weddings and initiation ceremonies he will assume the ritual roles that his father would have played. He will also be liable to pay off any outstanding debts that his father incurred as well as collecting credits that were owed to his father. Many eldest sons also receive their father's personal possessions such as his herding stick and fly whisk. Thus, inheritance is not merely a transfer of material goods from one generation to another, but it signifies a transfer of authority and caretaking as well. In fact, the material transfer of livestock may be relatively minor compared to the other responsibilities that the eldest son is expected to assume. Most of their livestock have already been transferred to their sons (as discussed below) or remain in their wife/wives' allocated herd(s) that she has use rights over and which she can transfer to her sons. Since most wives are considerably younger than their husbands (usually at least 10 years younger) they will generally outlive them and will require livestock for their daily needs after the husband's death. Thus, a wife retains the livestock in her allocated herd after her

husband's death and is expected to provision herself and her dependent children from this herd to the extent possible.

When people say that the youngest son inherits from his mother, they are referring to the special relationship that youngest sons have with their mothers. This son is expected to take care of his mother in her old age, once all her children have married she will remain close to the youngest son's household and he is expected to provide food and other resources when she is no longer able to meet her needs more independently. When she dies, the youngest son receives what remains in her allocated herd. Her daughters and other female family members may receive her personal possessions.

This general pattern of inheritance reflects the patrilineal and patrilocal character of Samburu society. The patrilineal descent pattern means that descent is reckoned through the male line and, accordingly, property also moves through the male line, primarily from fathers to sons, but other men—particularly from the same patriline (lineage or clan)-- can and often do contribute to young men's herds. This is especially the case when young men are preparing to marry, a point at which they need to assemble adequate bridewealth to formalize the marriage.

Patrilocality refers to the common practice of fathers and sons residing in the same settlement, meaning that women who marry into the family also physically move away from their father's settlement to that of the husband and his father (and brothers). Those living in one settlement frequently combine their livestock for daily herding in order to form joint herds that are easier to manage and to take advantage of economies of scale in herding. This settlement pattern is compatible, then, with the notion of retaining livestock among the men of the patriline while women move to the husband's patriline and do not generally take livestock from their father's settlement.

In addition, the pattern of inheritance described here is consistent with the idea of the "house-property complex" (Hakansson 1989, Oboler 1994) described for a number of East African societies referring to the sub-division of property among the houses within a household. Specifically, in polygynous families, each wife has a house and a herd—the allocated herd that she receives initially from her husband at marriage and which continues to grow (and decline)

over time. She has rights to use these animals and also to transfer them to her sons, thus forming the nucleus of the son's herd. Her rights, however, are limited in that she cannot sell or give away the livestock in her herd beyond the household without the husband's consent. Scholars have noted that the "house-property complex" often reveals the efforts to equalize wealth and well-being across households as well as the conflicts that may develop among wives who are sometimes in competition for household resources (Hakansson 1989). Another aspect of this concept is the way in which house property is distributed among sons. Our impression from the interviews is that while there is a general feeling that all sons are worthy of receiving wealth both from fathers and mothers, parents use discretion in dividing their resources depending on the characteristics of their sons. One way of thinking about this, perhaps, is that while distributions of livestock wealth should be equitable, they are not necessarily equal. The "house-property" notion also underscores the role that bargaining may play in inheritance, both inter-generationally (parents-children) and within generations (for example, among sons in a house or household) (Quisumbing 2007, Cooper 2008).

Inter vivos Transfers of Wealth

Many of the individuals interviewed, when asked what they had inherited from their fathers and mothers, replied 'nothing'. These were either women or men who were not oldest or youngest sons but rather somewhere in the middle of the birth order. According to the definition of inheritance and the norms discussed above, they did not receive any inheritance. We knew, however, that virtually all men would have received wealth from their parents during their lifetimes, and proceeded to ask them about what they had received through *inter vivos* transfers. While everyone acknowledged that they had indeed received something from their parents while they were alive, there was a clear distinction between these transfers and inheritance itself. One of the key differences seems to be the associated roles and obligations that are attached to post-mortem inheritance that are absent in the *inter vivos* case. It may be more accurate, then, to refer to these as *inter vivos* transfers rather than inheritance, given the connotations of the term inheritance for Samburu people.

The most important occasions for *inter vivos* transfers are life transitions such as birth, initiation, and marriage. For boys, these gifts form the nucleus of their herd and are the basis for their future independent household. Girls may receive a few livestock from their parents, but these will usually remain in the family herd when they marry. In fact, the family herd will grow when girls are married due to the addition of bridewealth provided by her husband. These same animals are often used by her brothers to pay their own bridewealth. Some of the women and men interviewed emphasized that girls did not receive livestock and some of them felt that this was unfair (this response seemed to be more common among people with formal education), while others were more matter of fact, explaining that women were expected to leave their parent's homestead and go to their husband's where they would be provided with livestock for their needs. Women do return to their natal home after marriage (usually quite a few years later) to "take the house" (*keyea nkaji*). This entails receiving household goods such as milk calabashes, skins, pots, and so on but does not include livestock.

As noted above, *inter vivos* distributions involve the discretion of parents in deciding how to distribute property among children. Parents often take into consideration their son's characteristics such as trustworthiness and reliability as well as their level of need. Mothers, realizing that their youngest sons will play an important care-taking role in their old age, often appear to cultivate a particularly close relationship with that son including livestock transfers from her herd. Several informants noted that education had some impact on these decisions. For example, the expenses of formal education (especially secondary level and above) may consume quite a bit of household wealth and therefore affect how wealth is distributed among children. In addition, a few informants noted that they did not feel that their educated children necessarily required livestock wealth. Reasons for this included that the educated child (generally but not always a son) had his own resources and was not in need or that he might value other resources, such as plots of land in town, over livestock. These comments suggest that as formal education and employment outside the pastoral sector spread, patterns of wealth distribution may also change.

Variations on the Norm

While all informants explained the normative pattern for livestock inheritance discussed above, and most were in favor of following it themselves, there were some variations in practice revealed in the interviews. One man in his early sixties, with no formal education, described how he has already specified and given out most of his wealth. He did so in order to maintain control over the process, saying that after he was dead he would not be able to express his wishes regarding his possessions. His was also an interesting case because he was passing on wealth to all of his children, girls and boys, all of whom he had also sent to school. In addition, the property he was passing down was not restricted to livestock but included plots of land he had acquired in the town, money, and his share in the group ranch. He explained that he was trying to be equitable in passing property to his children and that he wanted each of them to have some form of property that would assist them in making a living:

I have already done inheritance. I gave one son a plot. I gave another son from my second wife...I gave him some money. I gave land, I gave membership in the group ranch. I'm not waiting until I die, because after I die I don't know what they will do. I gave one daughter a plot. I gave each child something instead of waiting until I die when I can't say anything. I finished that—because I don't know when I will die....They know their livestock, each one knows their cows, sheep, goats....If you leave it to the oldest son he may take it all, so I have told each child what they will get. (L.L. 7/2010)

He was one of the few informants who believed that urban land was rivaling livestock in value and thus included it among the property that he bequeathed to his children. His interest in urban property may stem from the fact that his homestead is close to a small town in which he owns a number of plots. His two wives operate small businesses in the town and one of his sons is a primary school teacher living in the same town. Although he retains his pastoral settlement and livestock, the town is also an important source of livelihood for him.

Some of the younger, educated men interviewed also intend to distribute property among male and female children. One of these was the son of the man referred to above, the primary school teacher. He explained how his father had divided his wealth among all the children:

I have seen that he [his father] has done well because at least he has tried to educate all of us, and to educate someone is to give us equal rights-- from a boy to a girl child. He has given us education, sent us to school, so I have seen that I won't take things [inheritance] by myself, because I have education like the others so it's better for us to all divide [the inheritance]. (A.L. 7/2010)

Interestingly, he is the oldest son and, according to Samburu tradition, would rightfully inherit his father's livestock when he dies. He pointed out that he was not unhappy that he would not inherit all his father's remaining livestock and that he had not expected that to happen. He did, however, anticipate that he would take on his father's role as head of the family including responsibilities to help his younger siblings and his mother and her co-wife:

If my father dies, I will take on the responsibilities of the head of household, for my mother and step-mother and younger siblings. If my younger siblings get married, I'll be like the father, I'll take the role of the father. (A.L. 7/2010)

A few individuals discussed the issue of adult, unmarried daughters. While in the past this was a virtually unknown status as all girls were married by their late teens, today there is a growing population of young adult women, almost always single mothers, who continue to live in their father's or brother's homestead. Those who discussed this group generally acknowledged that these women would need continuing support from their natal family in the form of livestock and, in the more agriculturally oriented Siambu community, land for farming as well. This support, however, generally seemed to fit under the category of *inter vivos* transfers and use rights, not inheritance per se. That is, if the woman left the father's or brother's settlement she would not have rights to take the livestock with her. A number of these young women were observed operating small businesses such as selling sugar, tea, and other foodstuffs from their houses. In this way, they may earn some income and reduce their dependence on their male relatives.

Men invariably appreciated the property they received from parents, either pre- or post-mortem. They pointed out that these livestock were the building blocks of their family livelihood and they recounted how they had multiplied over time and been essential to their well-being. Even when the number of livestock inherited was small, people emphasized how

they had taken care of these animals so that they multiplied. Men noted that these gifts of livestock enabled them to pay brideprice, marry, and set up their household. Women were a little more equivocal. On the one hand, they appreciated the assistance they had received from their parents as far as supporting them while they were growing up. On the other hand, they also noted the gender differences in livestock gifts and inheritance and the fact that they were not allowed to take “their” livestock with them when they got married. These mixed feelings were also reflected in their plans for their own children such as the desire to send both boys and girls to school. Some women claimed, however, that they would continue the Samburu norm for livestock inheritance even as they understood how it privileged boys. Again, this should be viewed in the full context of the implications of inheritance in terms of roles and responsibilities and not just transfers of livestock.

Views on Education

Formal education began later in Samburu district (and the rest of northern Kenya) than in the more central parts of the country where the British colonial regime focused its efforts in transforming and “modernizing” the population including introducing education in the early 1900s. In the 1950s, the colonial government began to promote education to some extent through agreements with Christian missionaries who built and ran the first schools which were mostly boarding schools. They met resistance from most Samburu people, however, who were not convinced of the value of education and showed little interest. The government responded by using administrative chiefs to force participation in education by requiring each family to send at least one son to school. Since schools were few and far between, this meant that boys who went to school were separated from their families, often for months at a time (Lesorogol 2008a). While good data are hard to come by, this forced approach seems to have led to distinctive patterns of enrollment including the sons of chiefs (who were supposed to serve as examples to the others) and boys from poorer families that had less need for herding labor and, as suggested by some informants, may have sent sons to school in order for them to be fed. Another stereotype about enrollment decisions that is common among Samburu (and again

evidence is hard to find) is that boys who had some kind of physical deformity or were otherwise not good herders were chosen to go to school.

This historical context is important to bear in mind when interpreting interviews about education. Although the outward attitudes toward education have changed dramatically—confirmed by the universal approval of education by those interviewed for this study—such attitudes sometimes gloss over more ambivalent feelings about the effects of education. While this set of interviews focuses strongly on the instrumental benefits of education (e.g. employment, income, ability to care for self and family), there are also concerns about how formal education affects culture and social relations that are not reflected here (but see Lesorogol 2008c for a discussion of these kinds of concerns around female education).

Parallel to the interview questions regarding inheritance, the questions about education focused on the decision-making process—how did parents decide whether or not to send children to school, which children were chosen and why? For older informants (40-50s and older) their parents “did not understand” education and therefore enrolled few children in school. They pointed out that their parents did not believe that there was any value to education and did not see a need for it. One man in this age group who had sent all his children to school and was running a successful butchery business (even though he had no formal education himself), noted:

It’s just now that people see a meaning to education. Before, they saw no meaning—they said, just let them stay home and herd—herding had value. Long time ago, only the bad boys were sent to school, the ones they liked they had herd. The oldest boy could not go to school. (A.L. 7/2010)

This was especially the case in wealthier families. If they had sufficient livestock, they did not perceive any advantage to education. On the contrary, sending sons to school was a hardship, because it deprived the family of herding labor, particularly since older boys are the ones who herd livestock during dry seasons and droughts when they may migrate with the herds to cattle camps. His comment that older boys were not sent to school may also refer to the role of the

oldest son both as the father's inheritor and also the one who would take on his responsibilities. It suggests that a strong relationship between oldest son and father is valued.

For informants in this age group the assumption was that only boys were considered for enrollment in school. The idea that girls would go to school hardly registered at all with their parents. In fact, it is only after Kenya's independence in 1963 that girls in this part of the country began to attend school in any numbers. A couple of informants noted that boys who went to school in the 1950s often dropped out of school—they refused to go to school. They were not always sure of the reasons behind these refusals, but it has been common in more recent years for school boys to drop out around the time of their initiation into the warrior age-group. The attractions of being a warrior may trump the value of education for some.

Among the younger informants, people in their thirties and forties, most had at least one sibling who went to school. This reflects the trend toward increasing enrollments in schools from the 1960s and especially in the 1970s and later. In some cases, only one or two children in a family attended school while in a couple of cases most of the children had gone to school. In every case, however, at least one child remained a herder—either going to school for a few years and then being taken out to herd, or being selected to be the herder at an early age. The years of education completed in these cases varied from a few years to completing primary school and a few cases of siblings going on to secondary school.

When asked about their own intentions for their children, all informants said that they would try to send all or most of their children to school. In a few cases of older informants, they actually had sent all of their children to school and they described how far each child had reached in school and some of the outcomes of education such as employment, greater understanding and knowledge, and helping the family. A few informants acknowledged that the need for herding labor was a constraint and that they planned to retain at least one child at home to herd. The second man quoted above told us about three of his sons, all of whom had made it to higher education:

School is really good. My oldest son finished secondary, he joined a church, then he went to university and he finished. Now he's working in a good job—I see he's a person

of importance. He doesn't have any problems. He's smart. He doesn't have problems like we do.... The next son went to secondary, but he didn't pass well in his exams. He went to teachers college and he finished—he's waiting to get a teaching job. I see that if he gets it, he'll be able to take care of himself. The third one is in university now. (A.L. 7/2010)

Thus, the interviews reveal changing patterns over time of decision-making about school enrollment and the current trend toward greater confidence about formal education as a means to success. The next sections present the quantitative analysis which is followed by a discussion of the findings and synthesis of the qualitative and quantitative results.

Quantitative Analysis

This section presents the results of quantitative analysis of the household level data collected using the survey discussed above. We first outline the measures that were used, then the data analysis plan, followed by presentation and interpretation of regression analyses.

Measures used in Quantitative Analysis

Demographic characteristics. We collected information on age, household size, and years of education of the household head. Household size was converted to Active Adult Male Equivalents (AAME) in order to control for differences in household size and composition. To calculate AAME, we used the following formula: each adult male = 1; children 0-5=.52; 6-10=.85, 11-15=.96; adult female =.86 (ILCA 1981).

Son's (respondent's) current wealth. This variable, measured in Tropical Livestock Units (TLU), is an aggregate of the livestock owned by a household multiplied by the relative exchange value of each type of livestock according to current market rates of exchange. Cattle, sheep, and goats were included in the measure with the following values: cow=1; sheep or goat = .12.

Son's (respondent's) inheritance at marriage. This variable refers to the total number of cows, sheep and goats that the respondent had received from his parents by the time of his marriage. Note that this includes both *inter vivos* transfers as well as inherited animals (in the Samburu

sense, discussed above). The total number of cows, sheep, and goats were converted to TLUs using the formula mentioned above.

Father's wealth : This variable refers to the respondent's father's livestock holdings (cows, sheep, and goats) at the time of the son's (respondents) marriage. As above, this total was converted to TLUs.

Income: Total annual household income included the following: sales of livestock, crops, and land (Siambu only); income from leasing land (Siambu only); income from non-livestock sources such as wage labor and trade; gifts and remittances.⁶

Education of household head: Respondents were asked the total number of years of formal education that they had completed.

Note that in the original analyses we included a dummy variable for community (Siambu and Mbaringon). However, as there was no significant result from this variable, we dropped it from the final analysis. Also, while we did calculate per capita income and wealth for each household, we decided to use household totals in the final analysis while controlling for household size using the AAME measure.

Quantitative Data Analysis Plan

The quantitative analyses consider questions 5-8 introduced above.

5. What is the relationship between father's wealth and son's current wealth?
6. What is the relationship between livestock inheritance (*inter vivos* and post-mortem) and son's current wealth?

To address these two questions, we analyzed data using Ordinary Least Squares (OLS) and Ordinal Logistic (OL) regression to determine the impact of father's wealth and son's inheritance at marriage on son's current wealth (total household wealth in TLUs), taking into

⁶ Recall that land in Siambu was privatized in the late 1980s. Thus, each household in the survey owns about 23 acres of land and individual owners have ability to buy, sell, and lease this land. In Mbaringon, land is collectively held in a group ranch and individuals do not have rights to buy, sell, or lease. Therefore, income from sales and leases of land are only possible and reported for Siambu.

account respondent's total household income, respondent's years of education, respondent's age, and household total AAME. Two OLS regression analyses were conducted. The first analysis assessed the relationship between son's current wealth and father's wealth, livestock inherited, income, education, age and AAME. In the second analysis, an additional variable called interaction term was added to the initial analysis. The interaction term is a product of two independent variables: father's wealth and son's inheritance. The interaction term enables us to take into account the likelihood that father's wealth influences the amount of son's inheritance.

The second technique used was Ordinal Logistic (OL) regression in which son's wealth was transformed into quintiles. Previous research with this sample has shown distinctive livelihood strategies across wealth quintiles. For example, households in wealthier quintiles rely more on livestock sales while poorer groups depend more on trade and wage labor for income. Thus it was reasonable to expect that the effects of inheritance and father's wealth might differ across quintiles. OL regression identifies potentially distinct effects of the independent variables across the quintiles of son's current wealth. For example, OL can tell us if an independent variable has a significant and positive effect on the poorest quintile and a significant and negative effect on the wealthiest quintile. Such differential effects are masked in traditional OLS analysis, because the OLS assesses the average effect for the entire distribution of son's wealth.

Questions 7 and 8:

7. What is the relationship between years of formal education (of household head) and current household wealth?
8. What is the relationship between years of formal education (of household head) and current household income.

The effect of years of education on current wealth is included in the same regression analysis discussed above. To address question eight, an OLS regression analysis was used to investigate whether years of education of household head are associated with current income levels, taking into account current wealth, AAME, and age.

There are many factors that might potentially affect a respondent's wealth portfolio. The independent variables that we were able to take into account in the analysis were years of education of the household head, age, household total income, and household AAME. Several of these factors could directly or indirectly affect current wealth. For example, respondents who have more income are able to purchase livestock independent of how much wealth their fathers had or how much wealth they inherited from their father. It was hypothesized that having more income might lead to acquisition of assets thus increasing wealth portfolios. Similarly, it was hypothesized that years of education could mean that respondents had better jobs, potentially increasing income and assets. Other factors that might influence the son's current wealth include respondent's age and household AAME both of which may impact the use of resources and investment margins.

Results

Description of the sample

The quantitative analysis is based on survey responses from 128 men, 68 from Siambu and 60 from Mbarignon.⁷ The average age of participants was 55 years. The youngest respondent was 33 years and the oldest was 85 years (see Table 1 for details of the sample). Most respondents were married (n=126) while two were widowers. The average household size was 9 with the smallest household having 3 people and the largest 26 people. Over a third (34%) of the sampled households was polygynous. There were two single-parent households while one household had four wives. The average number of years spent in school was almost 3 years, but the majority of respondents (68%) had no formal education.

The average household Tropical Livestock Unit (TLU)⁸ was 15.93 (StDev=22.94). Respondents had an average annual household income of 99,331.72 Kenyan Shillings (KES) or 1,241 US

⁷ As noted above, four female headed households were excluded from the analysis in order to focus on the flow of livestock from fathers to sons.

⁸ Tropical Livestock Unit which is calculated by attributing a relative value to different classes of livestock. For this analysis, we used current exchange values of sheep and goats to cattle. Thus, one cow=1.0 TLU while one sheep or goat=.12 TLU. We used the same rate for father's wealth and livestock inherited even though actual exchange rates at those (various) times in the past were probably different.

dollars (USD) (StDev=104,890.2). One respondent reported no income at all while the median income was 69,980 KES (874 USD). The highest income was 687,800 KES (USD 8,597) and the second highest income was 398,000 KES (USD 4,975). Respondents' fathers' wealth (at the time of respondent's marriage) in TLU averaged 158.58 (StDev=426.12). This figure ranged widely from zero to 4036. Respondents reported inheriting an average of 19.16 TLU from their parents (StDev=25.76). The inheritance also varied widely from zero to 144 TLUs.

Table 1: Descriptive characteristics of variables

Variables	Mean	StDev	Range	Median	Mode
<i>Dependent Variable</i>					
Son's current wealth in TLU	15.93	22.94	0 – 174.24	8.68	0
<i>Independent Variables</i>					
Father's wealth in TLU	158.58	426.14	0 – 4036	92.92	0
Inheritance in TLU	19.16	25.76	0 – 144	8.92	0
Income (KES)	99,331.72	104,890.2	0 – 687,800	69,980	16,800
Household size	9.27	3.89	3 – 26	8	7
Age	55.22	12.03	33 – 85	53.90	47
Years of Education	1.95	3.84	0 – 18	0	0

# of Wives	Frequency	Valid %
0	2	2
1	83	65
2	35	28
3	6	5
4	1	1
<i>Community</i>		
Siambu	68	53
Mbaringon	60	47
<i>Formal Education</i>		

Yes	40	32
No	86	68

Spearman's correlation analyses reveal that son's current wealth in TLUs is positively associated with father's wealth ($\rho=.29$; $p=.002$), household income ($\rho=.36$; $p=.000$) and Active Adult Male Equivalent (AAME) ($\rho=.27$; $p=.002$), but inversely related to years of education ($\rho=-.24$; $p=.007$) (see Table 2). Although these relationships are statistically significant, the magnitude of the correlations indicate moderate to weak relationships. Neither inheritance from father nor respondent's age is associated with respondent's wealth. The strongest relationship in the correlation analysis is the inverse relationship between years of education and age ($\rho=-.46$; $p=.000$), which means that older people have less education and vice versa. This reflects the fact, discussed above, that formal education was not available to Samburu people until relatively recently.

Table 2: Correlation matrix of variables

	Respondent's Wealth in TLU	Inheritance in TLU	Father's wealth in TLU	Income	AAME	Age
Inheritance in TLU	.02					
Father's wealth in TLU	.29*	.36*				
Income	.36*	.03	-.21**			
AAME	.27*	-.04	.09	.15		
Age	.12	.31*	.91**	-.01	.18**	
Years of Education	-.24*	-.26*	-.15	.04	-.17**	-.46*

* $p<.01$, ** $p<.05$

Regression Results

The influence of inheritance and father's wealth on son's current wealth

Table 3 presents results of both the OLS and OL analyses showing the coefficients (effect sizes) and errors associated with these estimates. Significant relationships are denoted with asterisks. The third column in Table 3 presents the coefficients and standard errors for the final OLS linear regression model. The results show that father's wealth, income, AAME, and the interaction term (product of father's wealth and son's inheritance) were statistically significant at a 95% confidence interval. For one TLU increase in father's wealth, son's wealth in TLU increases by 0.2 %⁹, taking into account the son's inheritance, age, income, AAME, education, and the product of father's wealth and son's inheritance. There is a positive relationship between income and wealth, also. That is, as a son's income increases by 1,000 KES (USD 13), his wealth in TLU increases by 4 % ($b = 0.00004$, $p = .028$). Also, son's wealth increases by 9.2% when the household's AAME goes up by one unit: ($b = 0.092$, $p = .005$) suggesting that larger households tend to be wealthier.¹⁰ The interaction term is significant meaning that the effect of inheritance on son's current wealth is conditional upon the father's wealth. The main effect of the father's wealth is also statistically significant father's wealth ($b = .002$, $p = .028$).

The influence of inheritance and father's wealth on son's current wealth quintile: Ordinal Logistic Regression Results.

The fifth column in Table 3 presents results for the final OL regression model. The model predicts the probability of a respondent falling in the highest wealth quintile. Similar to the OLS results, income, AAME, and the interaction between father's wealth and son's inheritance were significantly associated with the highest wealth quintile. In the OL model, the main effects of father's wealth and son's inheritance were not significant.

⁹ Son's wealth is log-transformed. Hence the final result is converted back to original wealth variable by using this formula: $100 * (\text{coefficient})\%$.

¹⁰ We are not making a causal argument here regarding the relationship between wealth and household size.

Table 3: *OLS and Ordinal Logistic Regressions by Son's Current Wealth*

	Ordinary Least Squares		Quintiles by Son's current Wealth	
	Without interaction <i>b</i> (SE)	With interaction <i>b</i> (SE)	Without Interaction <i>b</i> (SE)	With Interaction <i>b</i> (SE)
<i>Predictors</i>				
Inheritance in TLU	-.006(.001)	.007(.007)	-0.011(.009)	0.012(.015)
Father's wealth in TLU	.002(.001)	.002(.001)*	0.001(.002)	0.004(.002)
<i>Covariates</i>				
Income	.000(.000)*	.000(.000)*	0.000(.000)*	0.001(.000)*
AAME	.064(.030)*	.092(.032)*	0.130(.066)	0.200(.075)*
Age	.001(.009)	-.001(.009)	0.009(.019)	0.008(.019)
Years of Education	-.073(.028)*	-.063(.028)	-.121(.060)	-0.102(.061)
Interaction		-.000(.000)*		0.000(.000)*
Model Fit				
<i>F</i> Statistic	6.635*	6.762*		
Adjusted R^2	.275	.312		
LogLik			263.98	258.94
χ^2			24.31*	29.35*
Deviance			263.98	258.94
Nagelkerke R^2			.247	.290

* $p < .05$

A comparison of the OLS and OL regression results revealed that by including the interaction term, one is able to better explain son's wealth. The OLS model with the interaction term explains 31.2% of the differences in son's wealth while the model without the interaction term explains only 27.5%. Similarly, a comparison of the OL results revealed that the model with the interaction term has lower deviance¹¹ (258.94) and therefore it is a better fit. That model also

¹¹ Deviance is a statistic for comparing statistical results.

explains 29% of the differences in son's wealth while the one without an interaction term explains less of the difference (24.7%). Hence, the two results with the interaction term (i.e. columns 3 and 4) are considered the final results.

Education as an alternative pathway out of poverty: Ordinary Least Squares Result

While education was not positively associated with livestock wealth in the above analyses, we wanted to examine its effects on income as well. The reasoning was that since education often leads to employment or other income generating activities, it might be more likely to have an impact on income rather than livestock holdings. This may be the case for educated individuals in a household who contribute to income but do not invest their income in livestock. The analysis that assessed the effects of education on income yielded significant results and explained 25.6 % of the differences in income: [$F(4,117)=11.41, p<.0001$, Adjusted $R^2=25.6$]. As shown in Table 4, the association of education ($b=4674.73, t=2.57, p=.011$) and son's income ($b=2103.06, t=6.32, p<.0001$) were statistically significant. For every additional year that a respondent spends in school, his income increases by 4,674 KES (58 USD). Wealth was also positively associated with income in this analysis while age and AAME were not.

Table 4: Multiple regression of income on years of education, son's wealth, AAME, and age

Independent variable	Parameter estimate (b)	t	p
Years of education	4674.72	2.57	.011
Son's wealth	2103.06	6.32	.000
AAME	-200.85	-.09	.926
Age	-5.19	-.01	.993

$N=121, F(4,117) = 11.41, p<.0001$, Adjusted $R^2=.256$

Discussion

Effects of inheritance and father's wealth on son's current wealth

The results presented above suggest that the effect of inheritance on son's current wealth depends on the value of father's wealth. The negative sign on the interaction term means that the less the father's wealth, the weaker the effect of inheritance on son's current wealth. Also,

the main effect of father's wealth is significant. Thus, father's wealth is positively associated with son's current wealth but also interacts with son's inheritance to produce an effect on son's current wealth. The results from the OL model similarly demonstrate an interaction between father's wealth and son's inheritance. Father's wealth interacts with son's inheritance to produce an effect on son's wealth but in this analysis father's wealth is not itself directly related to son's wealth. The negative value of the interaction term implies that the lower the father's wealth, the lesser the effect of inheritance on son's wealth.

Although the results do not show a significant direct association between livestock inheritance and current wealth, they do suggest that father's wealth is associated with son's wealth. One way of interpreting these results is to consider the environment in which Samburu herders operate. This is an environment with a high degree of uncertainty and considerable risk. At the most basic level, rainfall is crucial to survival but it is highly erratic both temporally and spatially. While Samburu, like other pastoralists, have developed many strategies for coping with this uncertainty, some of these strategies, such as mobility, are heavily constrained in the current environment where access to land is much more limited than in the past while human populations continue to grow.¹² Thus, the vulnerability to drought-induced livestock losses is high, most recently demonstrated by heavy losses—perhaps upward of fifty percent-- incurred during the most recent drought of 2008-09. It will take years for households to recover from these losses, even with heavy rains in 2010. Given the boom-bust nature of pastoralism, it is not surprising that the numbers of livestock inherited are not strongly associated with current wealth levels, because these levels are likely to fluctuate over time. As noted above, there is considerable mobility across wealth quintiles in this population even over a five-year period (Lesorogol 2008b). The earlier study demonstrated that about half of all households in this sample had moved up or down at least one quintile between 2000 and 2005 (Lesorogol 2008b:

¹² Access to land is limited for several reasons. One is the demarcation of district boundaries that began in the colonial period and continue to be elaborated in the present. These tend to cement ethnic boundaries and lead to increasing conflict over pastures in the border areas. Many prime grazing areas have been put off limits through transformation into national parks and game reserves, or gazetted forests where access is limited. Cattle raiding by neighboring ethnic groups over the last decade has led Samburu to avoid large areas of pasture that they used to frequent.

322). Thus, the lack of a strong association between numbers of livestock inherited and current wealth may not be very surprising.

On the other hand, there appears to be a positive relationship between father's wealth and son's wealth, and the inverse, father's poverty and son's poverty. While this finding seems somewhat contradictory to the lack of relationship between inheritance and current wealth, it may signal other dimensions of wealth beyond the material transfer of livestock. For example, there may be a social network advantage held by wealthier families. More specifically, such families tend to be large (as revealed in our analyses). With a large family, one has a larger network of agnatic (from the patrilineage) and affinal (the families of wives) kin. Having a large social network brings advantages, especially during difficult times like drought when livestock may need to be moved long distances. In such a situation, having relatives in the distant area may ease access to pasture. Following the drought, people need to rebuild their herds and the first group to be approached is generally members of one's lineage. Again, having a large family is an advantage. Even during normal times, being part of a larger, wealthier family affords advantages by, for example, being able to combine herds to economize on herding labor and access better pastures that may be farther away from the home settlement. It may also be easier for a poorer member of a generally wealthy family to take up residence with a better off brother or cousin and gradually build up a herd by providing labor in exchange for livestock. While it is certainly the case that there are sons of wealthy men who have become very poor, and vice versa, the overall association of father's and son's wealth may indicate a structural advantage that wealthier families enjoy.

This interpretation is supported by the previous research on mobility that showed less mobility out of the richest and poorest quintiles compared to the middle ones. For example, in Mbaringon, about 50 percent of households had experienced mobility, but only 25-30 percent had moved out of the poorest quintile, while 35 percent moved out of the richest quintile (Lesorogol 2008b: 322). Some scholars have referred to this kind of phenomenon as a poverty trap, where below a certain threshold it is difficult to rise out of poverty (Lybbert et al 2004,

Carter and Barrett 2006). The question raised here is the extent to which social relations influence the likelihood of falling into, or escaping from, such traps.

Effects of education on income and wealth

One of the goals of this study is to try to determine the extent to which education provides an alternative pathway out of poverty for pastoralists. The regression analyses suggest, on the one hand, that years of formal education are not significantly associated with current livestock wealth levels, but, on the other hand, more years of education is positively associated with current income. Thus, investments in formal education appear to have positive returns as far as income is concerned.

The quantitative results of the study are limited by the fact that the survey respondents are relatively old and, therefore, have relatively low educational attainment due to the recent introduction of formal education in the area. In addition, the households were selected from rural areas of the district where employment opportunities are limited. Thus, it would not be surprising if people with more education have left these communities to seek better opportunities in other parts of the country. Indeed, we know that 15 percent of households in the sample do have family members (generally fathers or older sons and daughters) who are employed and are non-resident.¹³ Given the growth in educational attainment among the younger generations (people in their 20s and 30s) it would be desirable to expand the sample to include more of this group to obtain more complete empirical evidence regarding the returns to education. Notwithstanding, having found a positive relationship between years of education and income in this sample constitutes a conservative test of the hypothesis that education has positive returns.

It is also important to understand how people perceive of education, as it is these perceptions that influence decision-making around enrolling and withdrawing children from school. As noted above, informants in the interviews were universally positive about the value of

¹³ As noted above, incomes from absent household members are included in the analysis either as remittances or as wage labor or trade income (depending on the source). What is not captured here are those complete households that have left the area to pursue employment and therefore could not be in our sample.

education and most of them had committed to enrolling most or all of their children in school. Gender bias in enrollment seemed to be diminishing in this group as both girls and boys were reported to be enrolled. People noted both instrumental and intrinsic values in education. In terms of instrumental values, they pointed out that education led to jobs, income, and the ability to be self-supporting as well as help one's family. When asked whether there was still any value in education if the graduate (at whatever level) did not find a job (which is common) almost all informants said yes. Many of them pointed out that even without a job, an educated person had knowledge and skills that they could use, say, for self-employment. Many informants also argued that education broadened one's horizons and enabled one to understand and communicate with the wider world. The person with education would "know their way around" in the world—the implication was that they would be able to move beyond the limits of Samburu district and survive anywhere, be more "worldly-wise". One informant felt that education improved problem solving skills that could be used in a wide range of situations. Another person noted that education made a person "clever".

Many saw education as a way out of poverty especially through employment. A number of the older informants pointed out that the poorer families who had sent sons to school in the early days of formal education had benefitted as those sons had become successful and rich. They named particular individuals from their age-sets as examples of success stories, noting that if they been given the chance to go to school they would have been as successful (or more) than those men. These men communicated a certain amount of regret at not having had the chance to go to school. One man related how he had begged his father to send him to school to no avail. Even though he runs a successful business today, he wonders how different life would have been if he had gone to school. Others expressed no regret at not receiving formal education even though they recognize its value, now. They argued that education does not replace one's own intelligence and that they have used what they know to do well for themselves.

We asked informants if they thought that education is an alternative form of inheritance. Most said no, again reflecting the limitations on the concept of inheritance (*njungu*) which is tied

closely to post-mortem inheritance and taking on paternal roles and responsibilities. Instead, several individuals included education among the things that parents can provide to children while they are alive. In this sense, education appears to be linked with *inter vivos* transfers of livestock, reinforcing its investment nature. Along these lines, a couple of the younger informants (including one of our research assistants) pointed out that they felt that providing their children with education was largely going to replace any livestock that they might give them. For them, education was the primary investment they could make for their children's future.

Conclusion

Our results suggest that wealth begets wealth, but not simply through the intergenerational transfer of livestock. It may be that the broader advantages incurred through membership in a wealthier family, as well as luck and herding acumen are as important as the initial herd inherited from one's parents. The moderating effect of father's wealth on son's inheritance suggests that, particularly for poorer families, it is more difficult to escape poverty through inheritance than it is for those from wealthier families to remain wealthy.

Formal education demonstrates a positive effect on income but not on livestock wealth. Further investigation is required to understand the complex relationship between wealth and income, but these results do indicate that even the relatively modest amounts of formal education attained in this sample do have positive financial returns. It is clear from the interviews that many Samburu people are investing more in education, sending more children to school, and perceiving benefits to education. Observations of the educational system in Samburu district raise some concerns regarding the quality of education on offer as well as the prospects for gainful employment upon graduation. Kenya recently introduced free primary education and enrollments have jumped, including in the study communities. In addition, the World Food Programme operates a school feeding program in Samburu district providing another incentive to attendance. The downsides of these generally favorable policies are overcrowded classrooms, teacher shortage, low quality of education, and continued high drop out

rates. These problems may pose a threat to the continued positive returns to education and more attention should be paid to quality and employment opportunities for graduates.

References:

- Adriansen, H.K. (2006) Continuity and Change in pastoral Livelihoods of Senegalese Fulani, *Agriculture and Human Values* 23(2): 215-29.
- Carter, M. and C. Barrett (2006). The Economics of Poverty Traps and Persistent Poverty: An Asset-based Approach. *Journal of Development Studies* 42(2): 178-99.
- Central Bureau of Statistics (Kenya) (2003) Geographic Dimensions of Well-being in Kenya, Vol. 2. Nairobi: Ministry of Planning and National Development.
- Cooper, E. (2008) Inheritance Practices and the Intergenerational Transmission of Poverty in Africa: A Literature Review and Annotated Bibliography. Manchester UK: CPRC Working Paper 116.
- Fumagalli, C.T. (1977) A Diachronic Study of Socio-Cultural Change Processes among the Samburu of Northern Kenya. Ph.D. dissertation. SUNY Buffalo.
- Government of Kenya (2005) Geographic Dimensions of Well-Being in Kenya : Who and Where are the Poor. Vol. 2. Nairobi: Central Bureau of Statistics.
- Hakansson, T. (1989) Family Structure, Bridewealth, and Environment in East Africa: A Comparison of House-Property Systems. *Ethnology* 28(2): 117-34.
- Lesorogol, C. (2008a) *Contesting the Commons: Privatizing Pastoral Lands in Kenya*, Ann Arbor: University of Michigan Press.
- Lesorogol, C. (2008b) Land Privatization and Pastoralist Well-being in Kenya, *Development and Change* 39(2): 309-31.
- Lesorogol, C. (2008c) Setting themselves apart: Education, Capabilities and Sexuality among Samburu Women in Kenya. *Anthropological Quarterly* 81(3): 551-78.
- Little, P.D., K. Smith, B. Cellarius, D. L. Coppock, and C. Barrett (2001) Avoiding Disaster:

Diversification and Risk Management among East African Herders. *Development and Change* 32 : 401-33.

Lybbert, T., C. Barrett, S. Desta, and D.L. Coppock (2004) Stochastic Wealth Dynamics and Risk Management among a Poor Population. *The Economic Journal* 114: 750-77.

Oboler, R. S. (1994) The House-Property Complex and African Social Organization. *Africa* 64(3): 342-58.

Quisumbing, A. (2007) Investments, Bequests, and Public Policy: Intergenerational transfers and the escape from Poverty. Manchester UK: CPRC Working Paper 98.

Salzmann, P.C. (1999) Is Inequality Universal? *Current Anthropology* 40(1): 31-61.

Tache, B. and E. Sjaastad (2010) Pastoralists' Conceptions of Poverty: An Analysis of Traditional and Conventional Indicators from Borana, Ethiopia. *World Development* 38(8): 1168-78.