
Challenging Orthodoxies: Understanding Poverty in Pastoral Areas of East Africa

**Peter D. Little, John McPeak, Christopher B. Barrett
and Patti Kristjanson**

ABSTRACT

Understanding and alleviating poverty in Africa continues to receive considerable attention from a range of diverse actors, including politicians, international celebrities, academics, activists and practitioners. Despite the onslaught of interest, there is surprisingly little agreement on what constitutes poverty in rural Africa, how it should be assessed, and what should be done to alleviate it. Based on data from an interdisciplinary study of pastoralism in northern Kenya, this article examines issues of poverty among one of the continent's most vulnerable groups, pastoralists, and challenges the application of such orthodox proxies as incomes/expenditures, geographic remoteness, and market integration. It argues that current poverty debates 'homogenize' the concept of 'pastoralist' by failing to acknowledge the diverse livelihoods and wealth differentiation that fall under the term. The article concludes that what is *not* needed is another development label (stereotype) that equates pastoralism with poverty, thereby empowering outside interests to transform rather than strengthen pastoral livelihoods.

INTRODUCTION

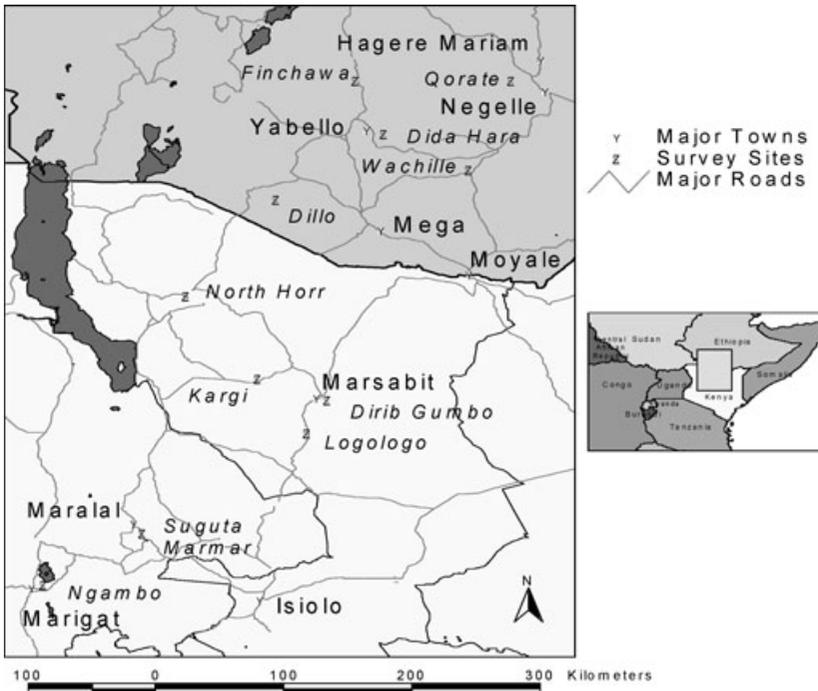
Recent drought and flooding in East Africa have once again sharply exposed the layers of poverty, underdevelopment and political marginalization in the region's arid and semi-arid lands (ASAL) inhabited mainly by pastoralists. Images of malnourished and thirsty children, lunar-like landscapes, and pained herders with their emaciated animals permeate the popular media, while governments, international agencies and non-governmental organizations (NGOs) launch their normal appeals for food and other forms of external assistance. The poor and vulnerable bear the brunt of such events, tragically reminding us that their short-term suffering reflects longer-term structural problems of chronic poverty and food insecurity. What these images gloss over, however, is that the effects of disasters do not uniformly impact all herders in the same manner and that some are doing relatively well while others are suffering.

In contrast to crises elsewhere, natural disasters in East Africa frequently spark calls for renewed efforts to transform, or even abandon, the area's prime livelihood system — mobile pastoralism based on nomadic or transhumant livestock production (IRIN, 2006; Sandford, 2006). Pastoralism is often perceived to be an outdated way of life ill-adapted to 'modern' contingencies, which is assumed to generate its own impoverishment. While considerable social science research has been conducted in pastoral areas, very little of it has addressed the issue of poverty from a comparative perspective. Most of the limited work has been case-specific and geographically limited in its scope (exceptions include Anderson and Broch-Due, 1999; Baxter and Hogg, 1990). This article addresses this shortcoming by looking at poverty across six different pastoral communities in a large part of northern Kenya. While we recognize the considerable value of context-specific, 'thick' versus 'thin' descriptions of poverty (see Broch-Due and Anderson, 1999: 14), comparative analyses based on both quantitative and ethnographic analyses are needed to understand broader patterns of poverty and inequality.

By utilizing an especially rich set of data from a six-year study (2000–2006), we examine poverty against common proxies and hypotheses that have been widely used in poverty studies but usually in the context of sedentary agricultural or urban communities. It is argued that an understanding of the dynamics of pastoral poverty requires a focus both on (1) the descriptive and behavioural aspects of poverty (what the poor do to survive) and (2) the structural causes of poverty (why are they poor and their options so limited?). Many studies address the first and avoid answering the second, more difficult question of why certain communities and individuals are poor in the first place and what has kept them trapped in poverty. Because policy makers often misunderstand local patterns and causes of poverty, they wrongly assume that herders are so impoverished that they will be quick to abandon pastoralism if viable alternatives are provided. The rangelands of East Africa are littered with the failed development consequences of such thinking.

The article is divided into four sections. The first part describes the research setting of the communities covered by the Pastoral Risk Management (PARIMA) project, while the second examines the applicability of the study's findings *vis-à-vis* different proxies of poverty and welfare in northern Kenya. While terms like 'better off' and 'wealthy' are used in the analyses, it is recognized that most individuals and communities of northern Kenya are relatively poor *vis-à-vis* upper-income classes found elsewhere in Kenya, and even more so compared to middle- or upper-income countries. The third section of the article proffers some historical and political explanations for why certain pastoral communities have high and enduring incidences of poverty while others do not. The conclusion cautions policy makers against equating pastoralism with poverty and treating alternatives to mobile herding as the main solutions to the development problems of the ASAL.

Figure 1. Pastoral Risk Management Project Study Area



Source: Map drawn by Paul Box, updated by Ingrid Rhinehart

RESEARCH SETTING

The PARIMA study area covers approximately 10,000 km² and encompasses large parts of the rangelands of southern Ethiopia and northern Kenya. The study region is bounded by the towns of Hagre Mariam and Negelle in southern Ethiopia and Isiolo and Marigat in Kenya (see Figure 1) and includes Borana, Gabra, and Guji of Ethiopia, and Ariaal, Borana, Il Chamus, Gabra, Rendille, and Samburu peoples of Kenya. The discussion in this article is limited to the Kenyan sites because they are better known to the authors and demonstrate considerably more economic and social diversity than their Ethiopian counterparts (Little et al., 2001). Their heterogeneity allows for a fuller treatment of different factors commonly assumed to be associated with poverty than the more homogeneous Ethiopian sites. We used an area sampling framework based on the Kenyan administrative unit, Location, so that our random sampling methodology did not distinguish between pastoral and sedentary, ex-pastoral, and/or non-pastoral households. Thus, the study includes households and individuals residing in or near towns, as well as mobile pastoral households residing away from towns,

which allows us to compare across a mix of different livelihood strategies and geographic localities.

The information presented draws on data from 180 households, with thirty households randomly selected in each of six Kenyan sites. Households were interviewed with a baseline survey in March 2000 and were re-interviewed at three-month intervals for two years. After that, members of households were re-interviewed annually from 2003 to 2006. Heads of households, about 24 per cent of whom were female, as well as other key economic agents (spouses, older sons, and daughters) were interviewed. The data presented draw on the household study, mainly the quarterly rounds covering the period March 2000 to June 2002, and sets of unstructured interviews with household members and key informants conducted during the summers of 2002 to 2006.

Four of the six sites are in Marsabit District, with one each in Samburu and Baringo districts. During the research period (2000–2006) insecurity affected each of our Kenyan research sites and conditions could change drastically within only a few days. The sites were chosen to represent diversity in ethnicity, mean rainfall (and ecology), and market access. The sites are marked on Figure 1 and some key facts about them are presented in Table 1. What follows are brief descriptions of the six Kenyan sites ordered from highest to lowest rainfall.

Dirib Gumbo (DG) is a Borana settlement approximately 10 km from Marsabit town.¹ The Borana are Cushitic pastoralists who predominantly reside in southern Ethiopia. The majority of the market activity undertaken by DG residents takes place in Marsabit town. A small number of households have access to salaried employment in the location or in Marsabit town. Most of the residents of this area reside on the upper slopes of Marsabit Mountain, and practise animal husbandry and rainfed cultivation. Very little large-scale seasonal migration of animals takes place from this location, due to relatively small herd sizes and the fact that nearby pastures are controlled by other ethnic groups. Herders rely instead on crop residues, forest products, or pasture on the lower slopes of Marsabit Mountain to feed their animals.

Ng'ambo (NG) is an Il Chamus settlement approximately 10 km east of Marigat town. Marigat town is located 100 km north of Nakuru and about 270 km north of Nairobi on an all-weather road, and it hosts a twice-monthly livestock auction. The Il Chamus are a Maa (Maasai)-speaking community who for the past two centuries have combined some form of agriculture with pastoralism, although there were periods during 1920–70 when they were predominantly pastoral (see Little, 1992). The form of pastoralism in the area is markedly sedentary, but can entail seasonal herd movements of 20–30 km during the dry season. The majority of family members rarely move

1. Although we describe each settlement by noting the majority ethnic group present in the location, minority populations live in several of the communities.

Table 1. Sites from which Data were Gathered

Site	District	Predominant Ethnic Group	Average Annual Rainfall (mm)	Market Access*
DG	Marsabit	Borana	650	Medium
NG	Baringo	Il Chamus	650	High
SM	Samburu	Samburu	500	High
LL	Marsabit	Ariaal/Rendille	250	Medium
KA	Marsabit	Rendille	200	Low
NH	Marsabit	Gabra	150	Low

Market Access:

- High: existence of livestock market auction
110–150 km from major urban market
10–25 km from key district market centre
connected by primary and secondary roads
- Medium: no livestock market auction
200–240 km from major urban market
10–45 km from key district market centre
connected by secondary and tertiary (poor) roads
- Low: no livestock market auction
300–480 km from major urban market
75–200 km from key district market centre
connected by tertiary (poor) roads only

Source: PARIMA Project Data.

during the year and their economy is highly diversified with large numbers of households engaged in waged labour, trading and irrigated cultivation at the nearby Pekerra Irrigation scheme.

Sugata Marmar (SM) is a predominantly Samburu settlement on the Laikipia–Samburu District border, approximately 50 km south of Maralal, the district headquarters of Samburu. There are also significant populations of impoverished Turkana resident in SM. SM has a large weekly livestock market that offers households the opportunity for alternative income sources and a place to sell animals. Some rainfed cultivation is practised in this area, particularly in the higher elevation areas towards Maralal town. Pastoralism in the area is moderately mobile and cattle can be moved distances of 50+ km during harsh dry seasons or droughts. Rather than the whole family moving with herds as in nomadic systems, households mainly rely on a combination of satellite camps of young men (16 years and older) to care for herds and, for polygamous households, movements of animals between households of different wives residing in different areas.²

Logologo (LL) is an Ariaal and Rendille settlement approximately 40 km south of Marsabit town on the main Isiolo–Marsabit road. Ariaal are

2. As defined here, pastoral nomadism is where the entire residential unit moves with the animals, which can occur as frequently as eight to ten times per year. Most pastoral systems in the study region have moved away from nomadism toward a base residence/satellite herding operation, where only the satellite camps are highly mobile.

a group that mixes elements of Samburu and Rendille culture (see Fratkin and Roth, 2005). LL residents utilize markets in both Marsabit town and in LL town. Rainfed agriculture is possible in the higher areas of this location, such as Kamboi sub-location, but none of the households in our sample were recorded as having successful field crop harvests during the study period. Most households in LL settled there in the 1970s following a series of poor rainfall years and herd losses and the establishment by Christian missionaries of a borehole, clinic and a primary school in the settlement. Like the Samburu mentioned above, they no longer move the whole family with their animals. LL families often send male members of the family outside the district to be employed as soldiers, policemen and/or watchmen.

Kargi (KA) is a Rendille settlement approximately 75 km to the west of Marsabit town in a flat, arid basin. The Rendille are a Cushitic-speaking people whose language is closely related to Somali. KA residents mostly conduct market activity in KA town, although they make occasional use of Marsabit markets. No cultivation is practised in this area. KA is a remote site connected to Marsabit by a rough, poorly maintained road. Over the past twenty years, formerly nomadic Rendille have settled around the town centre in clan groupings. Rendille in the KA area keep small herds around town and rely on young men to stay with the remainder of the herd in highly mobile satellite camps. They keep relatively large numbers of camels and goats and it is not unusual for their camps to move several times during a season.

North Horr (NH) is a Gabra settlement some 200 km west of Marsabit town on the northern edge of the Chalbi desert. The Gabra speak a Cushitic language almost identical to the Borana-Oromo dialect. Most market activity takes place in NH town, although residents do make occasional marketing trips to Marsabit town. No cultivation is practised here. Many Gabra are nomadic in the customary sense, as households move their house and household belongings to new areas with their animals with some frequency (see footnote 2). However, the time interval between these moves is becoming longer and the area covered is becoming smaller as Gabra slowly appear to be moving toward the satellite camp system of their Rendille neighbours. Gabra also keep relatively large numbers of camels and goats in their herds.

WHAT IS MEANT BY PASTORAL POVERTY?

Well-known scholars, politicians, foundations and academic groups have highlighted poverty in Africa as a priority development challenge and have dedicated considerable effort and resources toward its alleviation (see Chronic Poverty Research Centre, 2006; Kates and Dasgupta, 2007; Sachs, 2005). Despite this widespread attention, confusion still exists over the very language and evidence used to identify poverty in Africa and this is especially true for the ASAL areas. Because pastoralists often fare poorly *vis-à-vis*

standard indicators like cash expenditures, education and market access, they are often incorrectly assumed to be among the poorest sub-populations on the continent (cf. Devereux, 2007).³ A reliance on quantitative measurements that are highly questionable in the context of pastoralism and a seeming unwillingness to fully value pastoral production and consumption leads to misperceptions about the nature and extent of poverty among pastoral populations.

Another problem is that depictions of pastoralists as poor usually do not make clear what population(s) are being characterized when speaking about poverty in pastoral areas. Are we talking about poverty among mobile pastoralists or poverty among those who live in areas where pastoralism is the primary economic activity? The presence of growing numbers of stockless ex-pastoralists and casual labourers in and around pastoral towns leads to an assessment of poverty different from one that instead focuses on those who are directly involved in mobile pastoral production or who may be slowly exiting from it. The evidence here demonstrates that those who currently practise mobile pastoralism are less likely to be poor and less prone to drought-induced shocks than others in the area, but that their relative numbers are declining and vulnerabilities to external pressures have increased.

How Are We Defining Poverty?

Any definition of poverty will have a constructionist element and will 'contain some arbitrary and subjective elements' (see Laderchi et al., 2003: 269). This holds true both for quantitative and qualitative benchmarks of poverty. In this section we are discussing what might be called the behavioural aspects of poverty in order to understand why certain households and communities in northern Kenya behave the way they do and are associated with certain socio-economic characteristics. We are more concerned here with general relationships and trends in the region, than with headcounts of poverty or precise poverty lines. As will be shown, the changes and diversity of livelihood strategies, as well as the amount of production that remains outside the 'cash economy' in the area, requires novel and integrated ways of thinking about poverty.

3. The existence of poverty in pastoral areas of East Africa is not a recent phenomenon and dates to the pre-colonial period (Iliffe, 1987; Waller, 1999). Many colonial accounts, however, viewed pastoralists as wealthy, rather than poor like farming communities at the time (see Sobania, 1979).

Table 2. *Income, Market, and Non-market Proxies of Welfare and Poverty, Northern Kenya, 2000–2002*

Site	Avg daily cash income per person (US\$)	Avg daily value of auto-consumption per person (US\$)	Avg daily value of herd reprod. per person (US\$)	Total daily value per person (US\$)	% 'poor' (less than casual labour wage rate)	Market access
DG	\$0.11	\$0.15	\$0.07	\$0.33	73%	Medium
KA	\$0.16	\$0.40	\$0.57	\$1.13	13%	Low
LL	\$0.32	\$0.18	\$0.22	\$0.77	60%	Medium
NG	\$0.13	\$0.16	\$0.18	\$0.47	63%	High
NH	\$0.11	\$0.23	\$0.45	\$0.79	23%	Low
SM	\$0.16	\$0.10	\$0.27	\$0.53	70%	High
ALL	\$0.17	\$0.20	\$0.29	\$0.66	50%	

Source: PARIMA household study, 2000–2002.

Income and Expenditures?

The most widely used and frequently critiqued indicator of poverty relies on income or consumption/expenditure (see Baulch and Masset, 2003). Standard headcount or poverty gap measures are based on the idea that there is an income threshold that separates the poor from the non-poor. One example is the crude but popular depiction of one US dollar per person per day as a global extreme poverty line.

Table 2 differentiates each of the sites according to a range of different income components: (1) cash earnings from pastoral, salaried/waged labour, and non-pastoral activities; (2) subsistence value of pastoral output (milk and meat) consumed by household members ('auto-consumption'); and (3) value of herd reproduction (livestock births less losses from deaths, raids and lost animals). Since livestock are a source of cash income, food, and breeding capital, it is critical to account for all three components. As Table 2 demonstrates, the value of herd gains (the herd reproduction 'dividend') turns out to be a very significant percentage of total income.

For illustrative purposes, we use the average daily wage rate (US\$ 0.64/day) for an unskilled (casual) labourer in the area to highlight how many households fall below this minimal level and how vast the differences are between individual communities. This approach is consistent with local perspectives of who the poor are. Based on this poverty measure, Table 2 reveals incidences of poverty ranging from 73 per cent in DG to 13 per cent in KA, a community that is heavily dependent on mobile pastoralism. LL, which is unique for its dependence on salaried employment (see Table 3), has a significant percentage (60 per cent) of those earning less than US\$ 0.64 daily, but also relatively high average income values.⁴ Those locations that

4. There is an important distinction between salaried and other types of paid employment.

Table 3. Source of Income by Research Site, 2000–2002

Site	Livestock Sale	Trade and Business	Wage and Salary	Pastoral Income (milk/meat) ^a	Net Remittances	Crops
DG	14%	1%	16%	47%	11%	10%
KA	9%	3%	9%	72%	7%	0%
LL	9%	13%	43%	21%	13%	0%
NG	6%	7%	30%	37%	8%	13%
NH	10%	3%	13%	63%	11%	0%
SM	28%	18%	10%	36%	7%	0%

Note:

a. Excludes value of herd reproduction

Source: PARIMA household study, 2000–2002.

are less dependent on pastoral income generally have the highest percentage of those earning less than the casual wage rate.

What is also revealing from Table 2 is that the cash share of total income value is low in some of the better-off communities, but relatively high in the poorest communities. In fact, the majority of income value for the richest community (KA) is based on herd production and reproduction rather than cash revenues. These data imply that Rendille herders of KA have, on average, done well by focusing quite strictly on pastoralism and not diversifying into other activities (see Table 3). By contrast, the NG and DG sites have the lowest total incomes but also relatively diverse economies and high dependence on market/cash transactions. When one examines the high value of herd reproduction that is outside cash exchanges, it is easy to see why Rendille and Gabra so forcefully defend their mobile lifestyle and hold on to their herd assets.

Another significant finding from Table 2 is that total income is not strongly correlated with access to markets. NG is the location with the best access to markets, but has the lowest average per capita incomes. KA, in turn, has the highest per capita income but is remote from markets and infrastructure. These findings support Hulme and Shepherd's cautionary note that: 'A particular problem of contemporary poverty analysis, seeking to rapidly reduce poverty headcounts in an era of globalization. . . is to see "the poor" as those who are not effectively integrated into the market economy. This leads to a focus excessively on the role that market forces can play in poverty-reduction' (2003: 404). Because the most effective livelihoods in this setting continue to rely on extensive grazing away from more densely populated locations, market access is not always a very good indicator of pastoral poverty and welfare.

Salaried employment implies a steady monthly income (often with benefits) usually not paid per day or hour worked, whereas waged/casual work can vary considerably in amounts and stability and is typically paid per hour or day worked. Local respondents also make this distinction between salaried and casual or contract work.

What about household expenditures as a proxy of poverty among pastoralists? Because pastoralists rely on mobility as a key production strategy, their motivation to expend cash on durable consumer goods is minimal. In fact, large amounts of consumer goods actually constrain pastoral mobility and the flexibility that herders require. In addition, the home-consumed milk generated by the herds can displace the need for cash expenditure for food, although all herders depend on purchases of grains, sugar and other foods, especially in dry seasons when pastoral foods are in short supply. Similar to other studies of pastoralism (Little, 1992), our data show average expenditures on basic foods and other necessities account for more than 50 per cent of cash expenses even among better-off households. If one examines the relationship between total income and herd size (measured in Tropical Livestock Units [TLUs],⁵ on the one hand, and cash expenditures, on the other), the data suggest a relatively weak relationship. For example, NH households have about 400 and 175 per cent higher TLUs and total per capita income, respectively, than DG residents, but actually expend less cash weekly than the Borana site. The point to be made here is that simple indicators of cash earnings or expenditures offer only weak proxies for a household's poverty status.

Remoteness and Access to Education?

This discussion about market dependence and expenditures logically leads to an assessment of geographic remoteness as another proxy of poverty (Bird et al., 2002; Okwi et al., 2006). Remoteness, especially from markets, is often assumed to be associated with poverty (Collier, 2007). Yet, based on our findings, one might argue for a different interpretation: geographic isolation can be associated with higher pastoral welfare. This is not to say that producers would be better off without access to markets — clearly they need to exchange livestock to obtain grains and other necessary commodities. However, there appears to be a trade-off between the disruption to the pastoral production system brought about by restricted mobility and greater integration into the national economy, and increased benefits of access to markets.

Other factors explain this apparent contradiction. First, pastoralism requires space to take advantage of uneven patterns of rainfall and forage production and to allow herders to move opportunistically (Niamir-Fuller, 1999). These conditions are most constrained near towns where markets are found but more favourable in remote rangeland zones (Little, 2003). Second, since populations are less concentrated in relatively isolated

5. Herd size is measured in Total Livestock Units (TLUs) where 1 TLU = 1 head of cattle = 0.7 camels = 10 sheep = 11 goats.

rangelands, competition is less severe and mobility is less constrained than around market towns. Thus, the logic of mobile pastoralism requires limited sustained presence in a single setting, particularly around densely populated settlements. As a result, there is a direct contradiction between improving one's livelihood through a larger herd maintained and reproduced through strategic movements, and access to town-based services, including markets.

What about remoteness as it relates to provision of education and other social services? These factors are also assumed to correlate with incidences of pastoral poverty. For example, a recent report asserts that '[p]astoralists are very poor, even by the standards of Ethiopia, when judged by their limited access to basic social services' (Halderman, 2004: 12). Since social services are typically near towns, the same arguments about market proximity and pastoral productivity discussed above can be made here. Not surprisingly, individuals in study sites near towns achieve considerably higher levels of education than those in more isolated locations, although as we have seen this has not always translated into higher average incomes for these communities. Two of the 'better-off' sites (KA and NH) are those where formal education affects less than 50 per cent of households, with very few secondary school graduates, but they have relatively high income values from pastoral-based activities. The key for education is attaining secondary and post-secondary school training, which is critical for acquiring salaried employment and can have a very positive effect on poverty alleviation (see below). In sum, access to town-based social services is desirable, all else being equal, but because spatial location impacts a household's ability to practise mobile pastoralism, produce animal products and increase the size of its herd, a trade-off typically emerges.

Assets and Livelihoods?

The relationship between income, education and pastoralism leads us to an alternative approach that uses asset-based measures (TLUs) to differentiate the poor and non-poor. Relevant questions then become whether the assets (livestock) controlled by the household are sufficient to generate a satisfactory standard of living and what level of assets is required to allow herders to maintain a pastoral livelihood. The use of assets (animals) to distinguish the pastoral poor and non-poor is more in line with recent thinking on poverty. For example, Hulme and Shepherd note that 'a complete understanding of chronic poverty must also rely on developing a picture of people's assets and changes in assets over time' (2003: 407), while others point out that 'poverty is increasingly presented as caused by a lack of immediate assets without which households cannot graduate to being nonpoor' (Green and Hulme, 2005: 870; see also Carter and Barrett, 2006). While assets (animals) have clear economic value as the source of income from a chosen livelihood, they also serve an important social insurance function, facilitating complex social networks that can be drawn upon in times of need.

Interviews with herd owners (female and male) about definitions of welfare and poverty emphasized two critical and related elements that are consistent with an asset-based approach: people (*social assets*) and animals (*material assets*). These are inherently complementary resources and both need to be managed effectively to avoid being poor. For example, Broch-Due (1999) describes Turkana herders falling into poverty, not solely due to loss of animals, but rather as a result of not having managed livestock so as to establish social relations that provide a support network (see also Sobania, 1979: 14). Pastoralists have access to such networks and relations through exchanges of animal assets. Thus, of the various conventional views of poverty, pastoralists' own conceptualization seems to come closest to an asset-based perspective.

The other important aspect of animal assets is their dynamic (reproductive) nature and potential for sustaining a pastoral livelihood even in the face of repeated droughts and/or other disasters. The high values for 'herd reproduction' in relatively wealthy sites (such as KA) hint at such a dynamic (Table 2). For our study region, Table 2 (and Table 6 discussed later in the article) suggests that at about 4.5+ TLU per capita there is a distinct break in welfare and livelihood strategies. This herd size, which we argue distinguishes the 'better-off' pastoralists from others, parallels sustainable herd sizes identified in other studies of pastoralism (Dahl and Hjort, 1976; Lybbert et al., 2004; Potkanski, 1999). Households below this level commonly are unable to move out of poverty even in relatively good periods. Those with higher levels of livestock can create intricate social networks that further buffer them against a volatile environment, while the poor are often isolated from such networks (McPeak, 2005; Santos and Barrett, 2006b).

The asset-based approach emphasizes that pastoral households increase incomes and buffer themselves against drought by herd accumulation (Carter and Barrett, 2006). Table 4 shows the relationship between herd size, mobility and herd losses from the 2000 drought, suggesting that larger herds and greater mobility are key factors determining outcomes of drought. In Table 4 'average number of water points used each quarter' and 'reliance on satellite herding camps' are used as proxies of herd mobility. As the data show, the two communities with the smallest herds and least mobility lost the largest proportion of their herds, but sites with larger per capita herd sizes and more mobility fared better during and after the drought.

This observation about the effects of drought highlights important distinctions between chronic (structural) and transitory poverty. Transitory poverty is associated with temporary movements into and out of poverty, such as those that occurred during and after the 2000 drought, while chronic poverty reflects persistent deprivation (see Green and Hulme, 2005). After the drought ends, the household rebuilds its herd and moves back out of poverty as happened for many 'better-off' herders of northern Kenya during 2000–2002. In the case of chronic poverty, however, poverty persists in shock and non-shock years as households control too few assets to

Table 4. Livestock Holdings and Drought-Induced Changes (ranked according to TLU holdings)

Site	Avg per capita livestock (TLUs) (2000–02)	% decline March–Dec 2000 (due to drought)	Avg # of water points used each quarter (2000–2001)	% of households relying on satellite camps (2000–01)	Mobility ranking (1–6, with '1' highest)
KA	6.98	0	3.3	88%	1
NH	3.61	–24%	1.7	45% ^b	2
LL	2.49	–46%	2.0	81%	3
SM ^a	1.14	–33%	1.3	28%	4
DG	0.97	–79%	1.1	46%	5
NG	0.64	–50%	1.5	1%	6

Notes:

a. This sample excludes a very wealthy livestock trader who owns more than 50 per cent of TLUs in the SM sample.

b. A large majority (> 70 per cent) of NH households migrated with their entire herds and families at least once during the period 1999–2000.

Source: PARIMA household study, 2000–2002.

Table 5. Stockless Households, Northern Kenya, 2000–2002

Site	% with < 0.4 TLU per capita (March 2000)	% with < 0.4 TLU per capita (March 2002)
Kenya — All	21%	29%
DG	20%	73%
KA	10%	0
LL	10%	11%
NG	37%	50%
NH	10%	22%
SM	41%	32%

Source: PARIMA household study, 2000–2002.

handle and recover from disasters and, in many cases, are unable to escape from poverty. Pessimistic assessments of an 'end to pastoralism' in East Africa's rangelands are often voiced during droughts (IRIN, 2006) but fail to distinguish between chronic and transitory poverty.

Stocklessness is a growing phenomenon in northern Kenya. Table 5 shows just how widespread it is. It depicts the number of stockless and near stockless households in March 2000 before the worst of the drought had struck, and two years later, in March 2002. Without animal assets to produce food for their own consumption, stockless households are highly dependent on cash earnings to survive. In contrast to the past, most stockless pastoralists now work in towns as unskilled labourers (often in food-for-work schemes) or pursue petty trade in firewood, charcoal, and illicit brews. Not surprisingly, the areas with the fewest stockless are in the highly mobile pastoral areas (KA and NH) and those with the highest percentage are in the more sedentary

Table 6. Sources and Amounts of Income by Asset Category and Dependence on Wages/Salaries, Kenya, 2000–2002

Household category					HH w/10,000+ Ksh
	<1.0 TLU	1–1.99 TLU	2–4.49 TLU	4.5+ TLU	quarterly salary, irrespective of herd size
% of total hhs (160)	32%	21%	26%	21%	11%
Avg per cap TLU	0.34	1.43	3.17	10.18	2.67
Avg hh size	6.49	6.48	6.11	5.01	6.26
Avg per cap per day income	\$0.20	\$0.35	\$0.39	\$1.05	\$0.78
% cash income	46%	46%	46%	37%	79%
% wage/salary	23%	36%	18%	10%	71%
% pastoral prod ^a	29%	32%	52%	57%	16%
% livestock sale	8%	6%	14%	20%	4%
% trade/business	14%	3%	8%	8%	3%
% food aid	9%	8%	8%	4%	4%
% crop value	12%	11%	<1%	<1%	1%

Note:

a. Excludes annual values of herd growth and reproduction.

Source: PARIMA household study, 2000–2002.

communities. The growing class of stockless residents in northern Kenya is fuelling unprecedented growth in small towns that serve as havens for ex-pastoralists and centres for ‘development’ projects aiming to serve this subpopulation and surrounding herders.⁶

To inform effective policies for the stockless poor and others in pastoral areas, it is critical to know how they make a living. Table 6 differentiates households by asset categories, including an inclusive category based on salaried employment, and shows that the poor depend on drastically different livelihood sources than better-off households. The very poorest categories of households, with less than 1.0 TLU per capita, have the most diversified sources of income and depend heavily on survival-type activities, such as petty trade, rainfed agriculture, and waged unskilled labour. At the other end of the spectrum, households with more than 4.5 TLU per capita focus heavily on pastoral-based activities and avoid petty trade and wage work.

It is particularly worth noting the category of marginal pastoral households in the ‘2–4.49 TLU’ column that still depend on pastoralism for the bulk of their livelihood, but have relatively low per capita daily income values. Many households at the lower end of this category, especially, are vulnerable to exiting out of mobile pastoralism without viable alternatives, especially in the drier parts of the region. The case of Bonaya Tuse⁷ of NH is an example

6. Rapid growth in small towns is perhaps the most significant demographic trend in the region, with many towns (such as Marsabit and Maralal) experiencing 4–5 per cent annual growth rates since 1990, compared to annual rates of 2 per cent or less in the surrounding rangelands (CBS/MPND, 2004).
7. Pseudonyms are used throughout the article to protect the identity of individuals.

of such a person who heads a pastoral household that is increasingly marginal and sedentary.

Bonaya (50 years old) and his wife, Sala (36 years old), have no formal education, nor do any of their five children. During 2000–2002 they earned a combined average total income of only US\$ 0.29/daily and had per capita TLUs of only 2.01. The latter was less than half the animal wealth that the household held in 1999. By June 2001 Sala had begun to sell milk and firewood in NH town regularly to make up for declining pastoral incomes, but earned very little cash from these businesses. However, with few non-pastoral options in this remote, arid location, there were few other activities. The family is less mobile than during the late 1990s and now resides for long periods of time near town, so Sala can do her petty trade and the household can receive food aid. The latter accounted for about one-third of total household income July 2000 – December 2001. In addition, the household's animals now are often combined with a clanmate's herd and that person moves them when needed. Bonaya's family is no longer fully nomadic and with the need to sell additional animals just to meet subsistence needs, their pastoral livelihood is vulnerable and prospects for the future are bleak.⁸

During 2000–2002 there were many individuals in the same situation as Bonaya and Sala. In fact, about one-third of households in the study region had less than 1.0 TLU per capita and another 21 per cent less than 2.0 TLU; both categories of households on average depended more on non-pastoral activities than pastoralism (Table 6). While they reside in the ASALs, maintain cultural identities as pastoralists, and commonly own some livestock, they can hardly be called 'pastoralists' in livelihood or substantive economic terms. At the other extreme are those better-off pastoralists (4.5+ TLU per capita) who presently pursue mobile pastoralism and maintain relatively high levels of production. They represent only about 20 per cent of households in our study region. Together with what might be called marginal and/or vulnerable mobile pastoralists (those in the 2–4.49 TLU category), mobile pastoralism now represents less than half of the households in the region. As will be discussed in the conclusion, these demographic and livelihood realities have important implications for how different sub-populations can be targeted for development assistance.

As Table 6 shows, households with salaried employment and earning at least Ksh 10,000+ (US\$ 130) or more per quarter, for a second group — alongside those with large herds — who enjoy average incomes well above the rest of the population. They achieve this despite the fact that they depend little on pastoral-based incomes. This is consistent with bifurcated patterns of income growth in other areas of rural Africa, wherein some do well by accumulating key agricultural assets (land or, in this case, livestock) while others do well by gradually exiting from agriculture in favour of remunerative non-farm livelihoods (Barrett et al., 2005). For these relatively high earners, the number of livestock/assets controlled is a less valid indicator of welfare and poverty than cash incomes, which further challenges the

8. Based on quarterly interview data collected during March 2000 to June 2002.

Table 7. Underlying Political and Historical Causes of Poverty

Site	Land loss and constraints on mobility	Conflict/political insecurity	Political marginalization ^a
DG	High	High	High
KA	Low	Low	Medium
LL	Low	Medium	Low
NG	High	Low	Medium
NH	Medium	High	Medium
SM	Medium	Medium	Medium

Note:

a. This is a relative use of the term applicable to the regional context, since on a national level all of these communities are significantly politically marginalized.

‘one size fits all’ approach to analysing poverty. What is hidden in these figures, however, is the very unequal nature of salaried employment, since few households (only 20 per cent of the total) actually benefit from it. The reasons why some communities, such as NG and LL, had relatively favourable access to secondary school education and, consequently, to better jobs relate to historical and political factors that are discussed in the next section.

STRUCTURAL AND HISTORICAL CAUSES OF POVERTY AND WELFARE

Underlying historical and political conditions help to explain some of the patterns described earlier and show why some herders and communities in the region started out more disadvantaged than others. Table 7 and the following discussion address three critical historical/political constraints that have differentially affected communities and their ability to sustain pastoralism and avoid impoverishment.

Loss of Land

Pastoralists of northern Kenya have lost many valuable ‘patches’ of grazing to non-pastoral uses, including crop agriculture, forestry, and wildlife protection. These are often productive drought-reserve areas, including high-land pastures, which are critical for the sustainability of a pastoral system, forcing herders to utilize less favourable areas (for other pastoral regions, see Homewood et al., 2004; Lane, 1996). As Table 7 shows, NG and DG have experienced the greatest losses of land. The former site lost large areas to state-funded irrigation schemes and neighbouring crop cultivators, while DG lost grazing and water resources to competing groups and the establishment of a national park. Gedi Guma, a male elder of DG, explained to us

how these constraints affected him during the 2000 drought, when he lost eleven of his thirteen cattle while trying to move them to distant pastures more than 100 km south (field notes, February, 2002). As we saw earlier, herders in these two sites fared very poorly during recent years.

Herders of KA and LL, in comparison, inhabit much drier and less suitable areas for non-pastoral uses and, thus, have been able to control relatively large territories, maintain mobility, and reap considerable benefits from pastoralism (Table 2). By contrast, Samburu from SM have lost parts of their best grazing lands to large-scale commercial agriculture and ranching,⁹ while NH's proximity to Ethiopia and a national park have alienated large parcels of their customary resources. Additionally, Gabra of NH have witnessed the expansion of agriculture in key highland zones, effectively cutting them off from important seasonal grazing zones (Wario, 2006). As will be shown below, the Gabra have also experienced endemic conflict and insecurity that further restricts their grazing options.

Conflict

Livestock raiding and violence have a long history in northern Kenya (Sobania, 1979). However, these conflicts took on a more devastating dimension in the 1980s with the increased use of modern weapons and attack strategies. This trend has only worsened in the past decade as considerable numbers of small arms (especially the popular AK-47) came into the region from conflict-ridden Somalia and Sudan, and as multi-party politics in Kenya aggravated ethnic tensions in the area. Several respondents have remarked that recent violence has been instigated by politicians seeking to weaken political opponents and their ethnic communities and followers (see Wario, 2006).

Armed encounters — and the fear of them — directly affect pastoral livelihoods and welfare in several ways. For example, there is the obvious loss of animals stolen in attacks, which can further impoverish already poor households. The poor suffer the most from insecurity and the most desperate of our study sites, DG, experienced the largest number of stolen animals during 2000–2002. Interviews with separate and mixed groups of males and females also indicate an under-recognized gender dimension to the problem of conflict (Smith et al., 2001), in part because violence is increasingly directed at settlements of mothers and children rather than camps of mainly male youth.

9. Rather than watch their animals starve and die during the 2000 drought, many Samburu moved their cattle to nearby Laikipia District and grazed them on large commercial ranches. In 2006 and 2007 the government forcefully removed Samburu herders from Laikipia, killing several individuals during the brutal eviction.

Conflict also affects livestock productivity by removing from effective use large expanses of productive but insecure rangelands, and inducing spatial redistribution of animals around heavily contested but more secure areas near settlements and towns. This trend accelerates overcrowding and overgrazing problems in the relatively secure areas. The Gabra of NH, in particular, have been forced to stay away from important but insecure grazing areas near the Ethiopian border and Marsabit Mountain, which explains why their pastoral economy does not fare as well as that of nearby KA.

Political Marginalization

The persistent dilemmas of land alienation and insecurity reflect deeper problems of political marginalization in northern Kenya. While the seeds of political powerlessness were planted during the colonial period, they have persisted and even grown in recent times. Borana in the study region, for instance, experienced considerable political discrimination in the 1950s when they were restricted to keeping only a few animals on or near Mount Marsabit (Sobania, 1979). In the 1960s they also were punished for their assumed association with secessionist Somali and lost access to nearby pastures. DG herders are currently cut off from contiguous and 'friendly' Borana areas to the north and south of their location and have had few areas to which to move their animals during prolonged dry periods. Is it surprising, then, that they lost almost 80 per cent of their livestock during the 2000 drought (Table 4)?

Social service provision in the region has often been provided by Christian missionary groups rather than government, a poignant sign of the area's political marginalization. However, certain communities benefited from the uneven policies of missionaries and received differential opportunities for education. Despite its remoteness LL was targeted by missionary groups in the 1970s who wanted to settle pastoralists and insure a Christian community in a location that borders Muslim Somali to the east. Several participants in our study received funding for formal education, which helped them gain access to salaried employment in the military and administrative police. Our findings show that 27 per cent of LL households have a member with salaried employment.

NG is the only other community with at least 15 per cent of households with a member employed in a salaried position. In this case, a limited number of residents received the necessary secondary and post-secondary training for a salaried job because NG is in the political constituency of former Kenyan President Daniel arap Moi. In the case of NG, many tuition bursaries (financial aid) for education were awarded to children of elite families, often male students in particular.

Political marginalization is more than just an issue of neglect. It can also be a question of political powerlessness in the face of demands by outside

actors. When confronted by outside interests and groups, pastoralists have been unable to resist their actions effectively, as witnessed in the case of SM. Wildlife, tourism, and commercial agricultural interests have been able to exploit large tracts of pastoral lands in northern Kenya with the direct or indirect support of governments, NGOs and international donors, and with little legal recourse by pastoral groups (Goldman, 2003).

WHAT CAN BE DONE?

The crisis of pastoralist poverty has been proclaimed since the 1970s and a range of different development interventions have attempted to address the problem (Fratkin and Roth, 2005; Horowitz and Little, 1987). If, as we have argued here, high rates of poverty primarily reflect the conditions of those in pastoral areas not heavily involved in pastoral production, key issues become: (1) how can these people enter or re-enter the pastoral economy? (2) how can viable non-pastoral activities be created? and/or (3) how can mobile pastoralism be supported to avoid additional impoverishment and generate opportunities for ex-pastoralists through livestock-related enterprises? While we have limited our discussion to northern Kenya, we feel that our findings are applicable to other pastoral areas of East Africa and Africa facing similar challenges and opportunities.

Our findings indicate that poverty is usually most prevalent among sedentary pastoralists who may no longer be directly involved in pastoral production or those who are now exiting the system or are likely to do so in the next few years. This group represents more than half the population in some of our sites and forms the true crisis sub-population in the region. These groups are (or will be) most involved in unskilled wage work, petty trade, and low-cost services and will rely heavily on cash to purchase required foods and other necessities. Current policies that favour non-pastoral uses of land can further aggravate these problems by making those who still maintain a viable pastoral livelihood and generate most of the economic value in the area vulnerable. As these vulnerable pastoralists collapse into sedentarized poverty, competition for scarce town-based services and jobs merely intensifies. Stemming the inflow of failed pastoralists into settlements is therefore crucial to the well-being of the already-stockless.

Actions to improve pastoral welfare often have proved expensive, ineffective and unsustainable, too often based on insufficiently nuanced understandings of how the dynamics of poverty have been evolving over time in the face of economic, political and social changes. As our findings suggest, encouraging herders to settle — often using food aid and education and health services as incentives — aggravate problems of local overgrazing and resource conflict, without generating many tangible gains. So what strategies are most likely to work in addressing poverty in pastoral areas, either by assisting the presently poor or by helping prevent the collapse of

others into poverty? Five possible strategies are outlined below.

Recognizing land rights of pastoralists and maintaining their mobility

There is growing awareness that land rights supporting herd mobility in pastoral areas should be strengthened (Homman et al., 2004; Niamir-Fuller, 1999). As our findings demonstrate, mobility of livestock is critical to the overall productivity and sustainability of pastoralism, which will remain the core economic activity in northern Kenya for many years to come. These results favour renewed efforts at supporting pastoral land tenure arrangements in ways that protect and even enhance mobility. One key opportunity is to open up areas currently underused due to insecurity. A combination of state security and community-level conflict management could clarify tenure arrangements and reduce the amount of land lost to insecurity (Haro et al., 2005).

Restocking and other emergency interventions

Most restocking programmes have not fully re-established mobile pastoral households (Anderson, 1999). Key lessons from past efforts include the need to target those who truly desire and are capable of a return to a pastoral way of life (Heffernan et al., 2004). As our study has shown, given a threshold above which herds are likely to increase and below which herds are likely to collapse, the most effective targeting is around the threshold rather than toward those who are already stockless or near stockless (Santos and Barrett, 2006a). We are particularly concerned with that category of ‘marginal’ pastoralists (with 2–4.49 TLUs) who are close enough to herd viability that additional animals could keep them on the rangelands and out of poverty. Our findings suggest that restocking would be more successful when used to keep herders from falling out of pastoralism than in providing marginal animal transfers to stockless ex-pastoralists. Livestock-based interventions that leave households well short of the viability threshold are unlikely to succeed in re-establishing mobile pastoralism (Santos and Barrett, 2006a).

Emergency market interventions — for example, transport subsidies and managed offtake programmes — have attracted much recent attention and been widely hailed as effective (Aklilu, 2002; Morton and Barton, 2002). The only comparative research of which we are aware, however, finds that the benefit–cost ratios for interventions to help pastoralists maintain their herds through a crisis — veterinary care, supplementary feeding and water delivery — have far exceeded those for destocking and transport subsidy programmes aimed at removing livestock from the system (Catley, 2007; Morton et al., 2005). This reinforces our core point that supporting viable mobile pastoralism needs to be the cornerstone of poverty reduction programmes for the East African ASAL.

New income generating activities

To this point, we have focused on activities targeted toward the region's primary economic activity, livestock-keeping. Yet, those individuals and families who are not actively involved in pastoralism or who are plainly exiting the system, often quite painfully, require opportunities to pursue viable non-pastoral activities. They need support to identify and undertake remunerative alternative economic activities that support, complement, or at least do not undermine pastoral production. In many cases, this involves supporting town-based youth so that they can become employable — often after migration to cities outside the pastoral region — along with the necessary infrastructure to support job-creating activities locally.

Although alternative income generation activities have been largely mis-cast as a replacement to pastoralism, they can be promoted to support and complement pastoral production. Some promising examples include sustainable natural resource use (such as acacia sap and wild aloe harvesting and animal feed collection); post-slaughter livestock processing and distribution (for example, hides and skins, meat processing); pre-sale or pre-slaughter animal fattening combined with marketing plans; and tourism. While each example undoubtedly can have negative effects if managed poorly, and none appears scalable for broad-based applications, proper management could offer some added, more remunerative opportunities for residents of pastoral areas who are not directly involved in pastoral production.

Improved access to education

In general education is woefully undersupplied in northern Kenya and accounts for the miserable position of pastoralists in regional and national labour markets. Our study has shown that having a family member with secondary and post-secondary education and stable employment in the formal sector can improve welfare and help households cope with natural disasters. In this respect, models of education delivery that do not constrain pastoral mobility are important to pursue, as has been shown to be the case in other pastoral areas (Dyer, 2006). As pastoralism continues to lose lands and resources to alternative uses, education and salaried employment will figure even more prominently in the future of northern Kenya.

Political empowerment

Our findings demonstrate that pastoralists should become more politically empowered. This requires shedding fundamentally disempowering stereotypes that have impeded pastoralists' voice for years. Herders have been cast as environmentally destructive agents of desertification and uneducated, warring peoples largely uninterested in development. These 'labels' (Eyben and

Moncrieffe, 2006) de-legitimize the political input of pastoralists because if pastoralists are like the stereotype, there is little point in encouraging their participation in shaping their own destiny. This fosters longstanding impulses to transform pastoralism through outside intervention ‘for their own good’, a paternalistic treatment of ‘noble savages’. Such ideas are as offensive as they are inaccurate.

In focusing on poverty and pastoralism, we want to avoid inadvertently promoting a new stereotype of pastoralists as poor because, as we have tried to emphasize, mobile pastoralism is associated with better standards of living than non-pastoral livelihoods in the ASAL rangelands. Because the non-poor in northern Kenya are largely transhumant herders, anything that undermines pastoral production is likely to increase poverty in the foreseeable future, not reduce it.

Far more important than our inferences, however, is what the residents of pastoral areas believe and are willing to act on. Without increased responsibility and authority over their own development agenda, new forms of misguided external interference are sure to emerge. Research to inform evidence-based, participatory decision making is important. But as there is no ‘cookie cutter’ approach available, there needs to be a political process that allows residents of pastoral areas to collectively discuss and negotiate amongst themselves and with external actors to chart viable pathways out of poverty and block forces that currently undermine pastoralism.

Acknowledgements

The authors thank the USAID SAGA co-operative agreement, grant number HFM-A-00-01-00132-00, the International Livestock Research Institute, the Pastoral Risk Management (PARIMA) project of the Global Livestock Collaborative Research Support Program (GL CRSP), funded by the Office of Agriculture and Food Security, Global Bureau, USAID, under grant number DAN-1328-G-00-0046-00, and the World Bank for financial support of the conference for which this paper was originally prepared. They are also grateful to the participants at the conference, and the journal’s anonymous referees, for their comments and insights. The views expressed here are those of the authors and do not represent any official agency. Any remaining errors are our own.

REFERENCES

- Aklilu, Y. (2002) ‘An Audit of the Livestock Marketing Status of Kenya, Ethiopia, and Sudan, Vol. I’. Institutional and Policy Support Team, African Union. <http://www.eldis.org/go/display&id=11901&type=Document>
- Anderson, D.M. (1999) ‘Rehabilitation, Restocking and Resettlement: Ideology and Practice in Pastoral Development’, in D.M. Anderson and V. Broch-Due (eds) *The Poor Are Not Us: Poverty and Pastoralism*, pp. 240–56. Oxford: James Currey Publishers.

- Anderson, D.M. and V. Broch-Due (eds) (1999) *The Poor Are Not Us: Poverty and Pastoralism*. Oxford: James Currey Publishers.
- Barrett, C.B., M. Bezuneh, D.C. Clay and T. Reardon (2005) 'Heterogeneous Constraints, Incentives and Income Diversification Strategies in Rural Africa', *Quarterly Journal of International Agriculture* 44(1): 37–60.
- Baulch, B. and E. Masset (2003) 'Do Monetary and Nonmonetary Indicators Tell the Same Story about Chronic Poverty? A Study of Vietnam in the 1990s', *World Development* 31(3): 441–53.
- Baxter, P. and R. Hogg (1990) *Property, Poverty, and People: Changing Rights in Property and Problems of Pastoral Development*. Manchester: Department of Social Anthropology, University of Manchester.
- Bird, K., K. Moore, D. Hulme and A. Shepherd (2002) 'Chronic Poverty and Remote Rural Areas'. CPRC Working Paper 13. Manchester: Institute for Development Policy and Management, University of Manchester
- Broch-Due, V. (1999) 'Remembered Cattle, Forgotten People: The Morality of Exchange and the Exclusion of the Turkana Poor', in D.M. Anderson and V. Broch-Due (eds) *The Poor Are Not Us: Poverty and Pastoralism*, pp. 50–88. Oxford: James Currey Publishers.
- Broch-Due, V. and D.M. Anderson (1999) 'Poverty and Pastoralist: Deconstructing Myths, Reconstructing Realities', in D.M. Anderson and V. Broch-Due (eds) *The Poor Are Not Us: Poverty and Pastoralism*, pp. 3–19. Oxford: James Currey Publishers.
- Carter, M.R. and C.B. Barrett (2006) 'The Economics of Poverty Traps and Persistent Poverty: An Asset-Based Approach', *Journal of Development Studies* 42(1): 178–99.
- Catley, A. (ed.) (2007) 'Livestock and Pastoral Interventions in Ethiopia: Impact Assessments of Livelihoods-based Drought Interventions in Moyale and Dire Woredas'. Briefing Paper. Medford, MA: Feinstein International Center, Tufts University.
- Central Bureau of Statistics (CBS) and Ministry of Planning and National Development (MPND) (2004) *Statistical Abstract*. Nairobi: Government Printers.
- Chronic Poverty Research Centre (2006) *The Chronic Poverty Report, 2004–05*. Manchester: Chronic Poverty Research Centre, University of Manchester.
- Collier, P. (2007) 'Poverty Reduction in Africa', *Proceedings of the National Academy of Sciences* 104(43): 16763–68.
- Dahl, G. and A. Hjort (1976) *Having Herds: Pastoral Herd Growth and Household Economy*. Stockholm: Stockholm University, Studies in Social Anthropology.
- Devereux, S. (2007) 'Cashing in or Cashing out: Pastoralist Livelihoods in Somali Region, Ethiopia'. Paper prepared for the 'Living on the Margins' conference, Stellenbosch, South Africa (26–28 March 2007).
- Dyer, C. (ed.) (2006) *The Education of Nomadic Peoples: Current Issues, Future Prospects*. New York: Berghahn Books.
- Eyben, R. and J. Moncrieffe (2006) 'The Power of Labelling in Development Practice'. IDS Policy Briefing Issue 28. Brighton: Institute of Development Studies, University of Sussex.
- Fratkin, E. and E.A. Roth (eds) (2005) *As Pastoralists Settle: Social, Health, and Economic Consequences of Pastoral Sedentarization in Marsabit District, Kenya*. New York: Kluwer.
- Goldman, M. (2003) 'Partitioned Nature, Privileged Knowledge: Community-based Conservation in Tanzania', *Development and Change* 34(5): 833–62.
- Green, M. and D. Hulme (2005) 'From Correlates and Characteristics to Causes: Thinking about Poverty from a Chronic Poverty Perspective', *World Development* 33(6): 867–80.
- Halderman, M. (2004) 'The Political Economy of Pro-Poor Livestock Policy-Making in Ethiopia'. Pro-Poor Livestock Policy Initiative (PPLPI) Working Paper No 19. Rome: Food and Agriculture Organization.
- Haro, G., G. Doyo and J. McPeak (2005) 'Linkages between Community, Environmental, and Conflict Management: Experiences from Northern Kenya', *World Development* 33(2): 285–99.

- Heffernan, C., L. Nielsen and F. Misturelli (2004) *Restocking Pastoralists: A Manual of Best Practice and Decision Support Tools*. Warwickshire and London: ITDG Publications.
- Homewood, K., E. Coast and M. Thompson (2004) 'In-migration and Exclusion in East African Rangelands: Access, Tenure and Conflict', *Africa* 74(4): 567–610.
- Homman, S., B. Rischkowsky and J. Steinbach (2004) 'Herd Mobility Leads the Way for Sustainable Pastoral Development: The Case of Borana Rangelands, Southern Ethiopia'. Paper presented at the Conference on International Agriculture for Development, Berlin (5–7 October).
- Horowitz, M. and P.D. Little (1987) 'Pastoralism and Poverty: Some Implications for Drought and Famine', in M. Glantz (ed.) *Drought and Famine in Africa: Denying Hunger a Future*, pp. 59–82. Cambridge: Cambridge University Press.
- Hulme, D. and A. Shepherd (2003) 'Conceptualizing Chronic Poverty', *World Development* 31(3): 403–423.
- Illife, J. (1987) *The African Poor: A History*. Cambridge: Cambridge University Press.
- IRIN (Integrated Regional Information Network of the United Nations) (2006) 'Horn of Africa: Pastoralist Crisis will not be Solved with Food Aid'. <http://www.irinnews.org> (17 May).
- Kates, R.W. and P. Dasgupta (2007) 'African Poverty: A Grand Challenge for Sustainability Science', *Proceedings of the National Academy of Sciences* 104(43): 16747–50.
- Laderchi, C., R. Saith and F. Stewart (2003) 'Does it Matter that we do not Agree on the Definition of Poverty? A Comparison of Four Approaches', *Oxford Development Studies* 31(3): 243–74.
- Lane, C. (1996) *Pastures Lost: Barabaig Economy, Resource Tenure, and the Alienation of their Land in Tanzania*. Nairobi: Initiatives Publishers.
- Little, P.D. (1992) *The Elusive Granary: Herder, Farmer, and State in Northern Kenya*. Cambridge: Cambridge University Press.
- Little, P.D. (2003) 'Rethinking Interdisciplinary Paradigms and the Political Ecology of Pastoralism in East Africa', in T. Bassett and D. Crummey (eds) *African Savannas: New Perspectives on Environmental and Social Change*, pp. 161–77. Portsmouth, NH: Heineman Books.
- Little, Peter D., Kevin Smith, Barbara A. Cellarius, D. Layne Coppock and Christopher B. Barrett (2001) 'Avoiding Disaster: Diversification and Risk Management among East African Herders', *Development and Change* 32(3): 401–33.
- Lybbert, T., C.B. Barrett, S. Desta and D.L. Coppock (2004) 'Stochastic Wealth Dynamics and Risk Management among a Poor Population', *Economic Journal* 114: 750–77.
- McPeak, J. (2005) 'Confronting the Risk of Asset Loss: What Role do Livestock Transfers in Northern Kenya Play?', *Journal of Development Economics* 81: 415–37.
- Morton, J. and D. Barton (2002) 'Destocking as a Drought-mitigation Strategy: Clarifying Rationales and Answering Critiques', *Disasters* 26(3): 213–28.
- Morton, J., D. Barton, C. Collinson and B. Heath (2005) 'Comparing Drought Mitigation Interventions in the Pastoral Livestock Sector'. Natural Resources Institute report. Greenwich: NRI.
- Niamir-Fuller, M. (ed.) (1999) *Managing Mobility in African Rangelands: The Legitimization of Transhumance*. London: IT Publications.
- Okwi, P.O. et al. (2006) 'Geographic Determinants of Poverty in Rural Kenya: A National and Provincial Analysis'. Report prepared for the Rockefeller Foundation, Nairobi, Kenya.
- Potkanski, T. (1999) 'Mutual Assistance among the Ngorongoro Maasai', in D.M. Anderson and V. Broch-Due (eds) *The Poor Are Not Us: Poverty and Pastoralism*, pp. 199–217. Oxford: James Currey Publishers.
- Sachs, J.D. (2005) *The End of Poverty*. New York: Penguin.
- Sandford, S. (2006) 'Too Many People, Too Few Livestock: The Crisis Affecting Pastoralists in the Greater Horn of Africa'. Future Agricultures Consortium debate. Brighton: Institute of Development Studies, University of Sussex. http://www.future-agricultures.org/pdf/%20files/Sandford_thesis.pdf

- Santos, P. and C.B. Barrett (2006a) 'Heterogeneous Wealth Dynamics: On the Roles of Risk and Ability'. Research Paper, Department of Applied Economics and Management. Ithaca, NY: Cornell University.
- Santos, P. and C.B. Barrett (2006b) 'Informal Insurance in the Presence of Poverty Traps: Evidence from Southern Ethiopia'. Research Paper, Department of Applied Economics and Management. Ithaca, NY: Cornell University.
- Smith, K., C. Barrett and P. Box (2001) 'Participatory Risk Mapping for Targeting Research and Assistance: With an Example from East African Pastoralists', *World Development* 28(1): 1945–59.
- Sobania, N. (1979) 'Background History of the Mt. Kulal Region of Kenya'. IPAL Technical Report Number A-2. Nairobi: UNESCO.
- Waller, R. (1999) 'Pastoral Poverty in Historical Perspective', in D.M. Anderson and V. Broch-Due (eds) *The Poor Are Not Us: Poverty and Pastoralism*, pp. 20–49. Oxford: James Currey Publishers.
- Wario, H.T. (2006) 'Historical and Current Perspectives on Inter-ethnic Conflicts in Northern Kenya'. MSc thesis, Department of International Environment and Development Studies, Norwegian University of Life Sciences, Norway.

Peter D. Little is Professor of Anthropology (Department of Anthropology, Emory University, Atlanta, GA 30322, USA). His research focuses on political economy and ecology, development, poverty, food security, and pastoral and agrarian systems. Recent publications include *Somalia: Economy without State* (Indiana University Press, 2003).

John McPeak is an Associate Professor in the Department of Public Administration in the Maxwell School of Syracuse University (215 Eggers Hall, Syracuse University, Syracuse, NY 13244, USA). His research interests include development economics, livestock production and marketing, land use management, poverty reduction and household decision making.

Chris Barrett is the Stephen B. and Janice G. Ashley Professor of Applied Economics and Management and International Professor of Agriculture at Cornell University, and Associate Director for Economic Development Programs at the Cornell Center for a Sustainable Future (315 Warren Hall, Cornell University, Ithaca, NY 14853-7801, USA). His research interests include poverty, hunger, food security, economic policy, individual and market behaviour under risk and uncertainty, and the interrelationship between poverty, food security and environmental stress in developing countries.

Patti Kristjanson is the leader of an innovation initiative at the International Livestock Research Institute (Box 30709, Nairobi, Kenya 00100). Her research interests include approaches for linking knowledge with action, poverty analysis, impact assessment and livestock systems development.