

The Multiple Dimensions of Poverty in Pastoral Areas of East Africa¹

Peter Little, John McPeak, Chris Barrett, Patti Kristjanson

Incomplete Draft, For Comments and Discussion Only

¹ Overview paper for ‘Pastoralism and Poverty Reduction in East Africa: A Policy Research Conference’: 27-28th June 2006, held at the Safari Park Hotel, Nairobi, Kenya.

“An Il Chamus elder of Baringo District, Kenya explained how they once used to be rich and the hill farmers used to be poor. The farmers grew millet and ate wild animals and they used to work for us. They could not marry our daughters because they had no cattle. He then lamented how things had changed and now many Il Chamus are poor (Little, fieldnotes, 1981).”

The most recent drought in East Africa has once again sharply exposed the layers of poverty, underdevelopment, and political marginalization in the region’s arid and semi-arid lands (ASALs). 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 external assistance. Like any natural disaster, the poor and vulnerable bear the brunt of such events, and tragically remind us that their short-term suffering is symptomatic of longer-term structural problems of chronic poverty, food insecurity and inequality.

Yet, in contrast to most disasters, droughts in East Africa frequently call for renewed efforts to transform – or even abandon – the area’s prime livelihood system, mobile pastoralism (Hogg, 1992). In short, the problem often is perceived to be an outdated way of life and a production system ill-adapted to ‘modern’ contingencies. Poorly understood and the natural bane of governments and administrations, mobile pastoralism serves as a convenient scapegoat for the many social and economic problems of the ASALs that are so graphically exposed during disasters.

Understanding the complex relationships and causes of poverty in pastoral areas of East Africa is a necessary first step toward informed and effective policy and program actions. Surprisingly, while there has been considerable research in pastoral areas during the past three decades, much of it highlighting poverty as a key issue, systematic analyses of poverty in pastoral areas are limited (exceptions include Hogg and Baxter 1990; Broch-Due and Anderson, Waller, 1999, Heffernan et al. 2001, Rutten, 1992). This overview paper on poverty in pastoral areas of East Africa hopes to address this gap. It has three general objectives: (1) to summarize the different understandings and analyses of pastoral poverty; (2) to highlight the major issues associated with poverty in pastoral areas, especially newly emergent issues; and (3) to discuss what can be done about the problem. It will be shown that because researchers and practitioners often misunderstand local patterns of poverty, they often assume that herders will be quick to abandon mobile pastoralism if provided viable alternatives. The rangelands of East Africa are littered with the failed development consequences of such thinking. This paper is written to motivate discussion at the conference, as well as to point to new ways of understanding poverty and its alleviation in pastoral areas.

What is Meant by Pastoral Poverty?

To begin, there is considerable confusion over the very language and evidence used to describe pastoral poverty. First it is not always clear about whom one is speaking when characterizing poverty in pastoral areas. Second, there are a variety of different definitions of poverty that can be adopted. We discuss these issues in turn.

Who are we characterizing?

A first step towards addressing this confusion is to specify of whom one is speaking when discussing poverty. Are we investigating poverty among pastoralists or poverty among those who live in areas where pastoralism is the primary economic activity? In many analyses it is difficult to discern whether or not the focus is on those who still practice mobile pastoralism, those who once pursued the activity but now are settled, and/or those who reside in arid and semi-arid areas but really never engaged in full-time pastoralism. The presence of large (and seemingly growing) numbers of stockless, ex-pastoralists and casual laborers in and around towns in pastoral areas may lead to an assessment of poverty in pastoral areas different from that if one instead focuses on those who are directly involved in mobile pastoral production.

Consider figure one based on evidence from herders surveyed by the Pastoral Risk Management (PARIMA) project of the USAID Global Livestock Collaborative Research Support Program (GL-CRSP) in northern Kenya from 2000-2002. The sample was randomly selected from the populations of six locations in northern Kenya purposively selected for variation in agroecological conditions, market access, and dominant ethnic group. The sample includes both those who are involved in pastoral production and those who are not. Figure 1 reports the share of average income coming from each source for the overall sample. One key finding is that livestock generate roughly half of household income in these areas, and most of this comes from the value of home consumed livestock products. Pastoral production remains the core economic activity in these areas, but is only part of the income generation story. In response to calls for the need for residents of pastoral areas to diversify out of pastoralism, it should

be noted that already just under a quarter of income for those in pastoral areas comes from non-pastoral economic activities such as trading, running a business, working for a daily wage, or working in salaried employment. Another 5% comes from transfers in the form of net gifts, which are largely remittances from family members not resident in these areas. Assistance in the form of food aid, which was widely distributed during and after the drought of 1999/ 2000, accounts for just over 20% of income. While this is the second largest share of income, it does suggest that statements that residents of pastoral areas are dependent on food aid are probably overstated. In addition, it should not be taken as representative of other time periods, as the food aid supply was higher during the 2000-2002 period than in other periods (see Mude et al.'s presentation and paper).

Figure 1: Income sources for the northern Kenya PARIMA sample

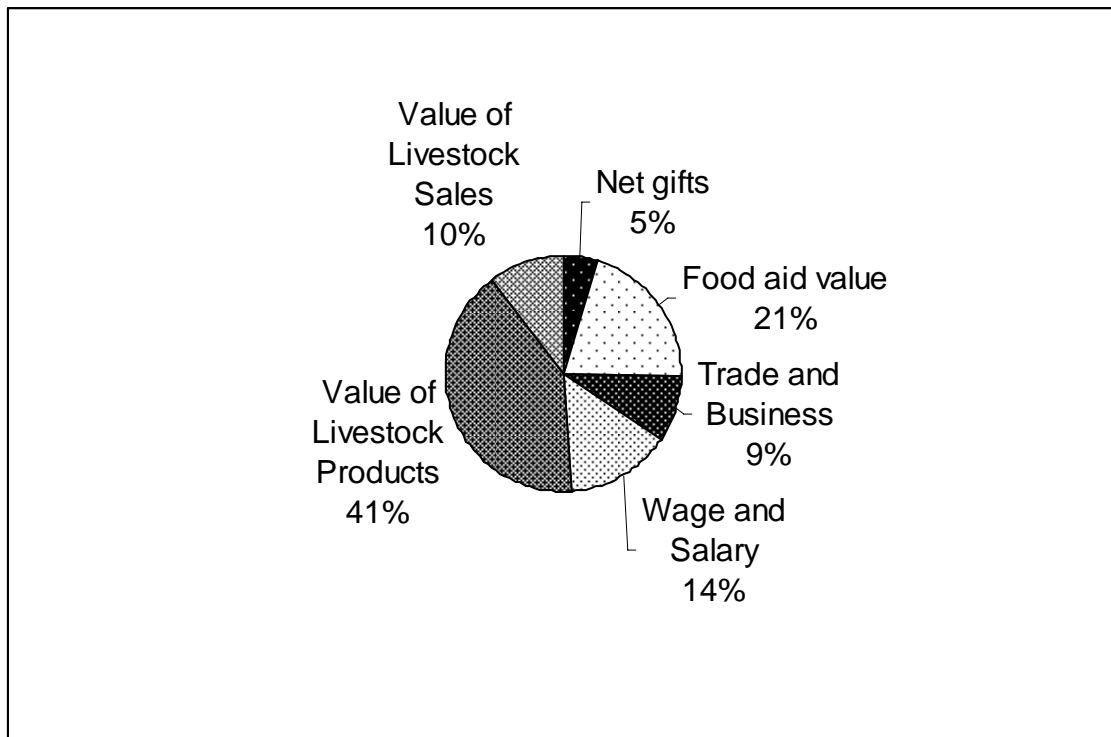


Figure 1 highlights the fact the economic activity in pastoral areas includes much more than pastoral economic activity, just as rural incomes in Africa more generally reflect considerable diversification beyond basic crop and livestock production (Ellis and Freeman 2005; Barrett et al. 2001). In a related fashion, the difference between pastoral poverty, on the one hand, and the presence of poverty in pastoral areas, on the other, has important policy and program implications. If high rates of poverty are inherent to pastoral production, then fighting poverty means transforming or replacing pastoralism. If, on the contrary, high rates of poverty reflect the conditions of those not involved in pastoral production in areas where pastoralism is the dominant economic activity, the issue becomes how can these people enter the pastoral economy, and/or how can viable non-pastoral activities be created, possibly by strengthening the core economic activity of pastoral production so as to stimulate complementary (e.g., post-slaughter processing) activities, to generate new economic opportunities that productively involve those people not engaged in mobile pastoralism? Several papers in the conference concern themselves with closely related issues of livelihood diversification options in pastoral areas (e.g., Gemtessa and Emanu, Lesorogol). Such livelihood diversification options also include wildlife conservation approaches where the benefits from wildlife and tourism can effectively diversify incomes (Radeny et al., Homewood et al.).

Our assessment is that development programs that have aimed at transforming pastoralism or finding an alternative to it, rather than strengthening and complementing it, have been almost entirely unsuccessful. Using the twin shields of ‘alleviating poverty’ and ‘bringing development’ as justifications, these interventions and their agents have sometimes used heavy-handed approaches and authoritarian policies in the past,

which have made some pastoral communities very wary of outsiders and outside assistance.²

How are we defining poverty?

Once the population about whom one is speaking when analyzing poverty is identified, issues arise about what definition of poverty one uses. We can categorize broadly different ways in which poverty can be defined and explore their appropriateness for the pastoral context and the different ways in which they can inform policy in this setting.

Household Income

The most widely used poverty measures rely on flow-based measures of well-being, typically using income as a proxy variable.³ Poverty measures such as a headcount or a poverty gap are based on the idea that there is an income threshold that separates the poor from the non-poor. An example of such a threshold is the commonly used US dollar per person per day global extreme poverty line. The concept here is that this level is a minimum for meeting basic human needs, and income below this level reflects a state of dire poverty. Using this poverty measure, Thornton et al. (2003) estimated that there are roughly 1.4 million poor found in pastoral/grassland-based arid and semi-arid areas of Ethiopia, Kenya, Uganda and Tanzania⁴. Expenditures, food

² Broch-Due shows how a concern with ‘poverty’ among the Turkana provided British colonial administrators with the justification to resettle thousands of Turkana and pursue other extremely unpopular measures that were antithetical to the area’s main livelihood, pastoralism. She notes that colonial administrators continued to play the ‘poverty card’ “as if pastoral wealth—the flocks of well-tended sheep and goats together with the gleaming flanks and swollen udders of tattooed cattle—were invisible to the eyes of the colonial beholder (Broch-Due 2000: 74—in Broch-Due + Schroeder book).”

³ This is most appropriately a full income measure that includes the market value of all non-marketed goods consumed at home.

⁴ There are another 3.2 million in Sudan and 3.5 million in Somalia living under \$1/day in pastoral areas.

consumption, nutrient availability, and other flow-based measures are sometimes used in similar fashion.

The findings available in the literature and our own research lead us to the conclusion that the prevalence of income poverty in areas where pastoral production is the dominant activity is usually most pronounced among ex-pastoralists who are not directly involved in pastoral production. Indeed, rather than originating in the pastoral production system, the pockets of poverty occupied by these people excluded from the pastoral system can often be traced to earlier colonial policies (for example, the Isiolo area, Kenya, see Broch-Due 2000) . While there is poverty among mobile pastoralists, as we will demonstrate below, those most actively involved in the pastoral economy tend to be the better off in these areas.

We illustrate income poverty measures here by investigating what can be learned by looking at patterns in income levels among herders in the PARIMA sample. The overall averages of figure 1 can be broken down by income quantiles to investigate whether income generation profiles are related to income levels. Figure 2 reports income composition in levels for each activity when households are grouped into income quintiles, from lowest 20% to highest 20%. Figure 3 reports the associated shares of total income for each quintile.

Figure 2: Income sources in levels, by quintile

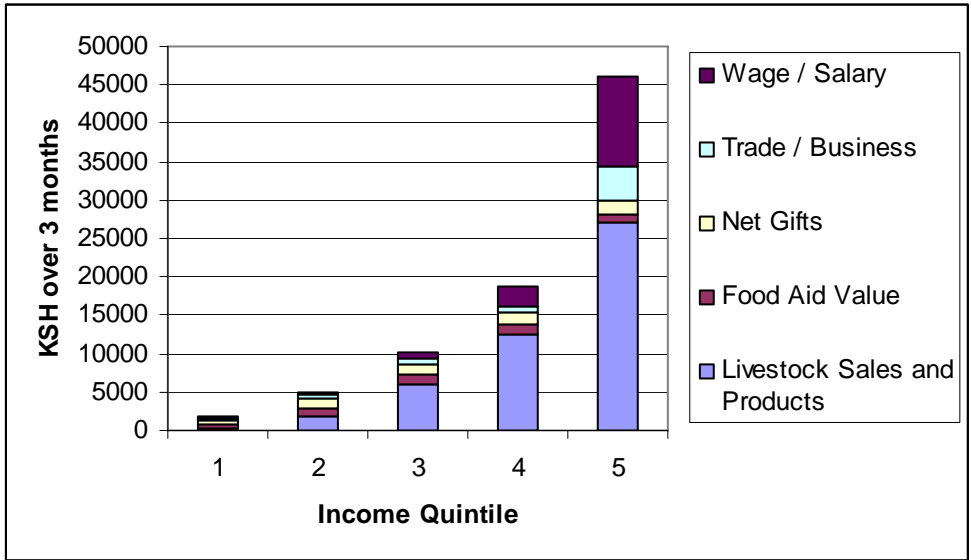
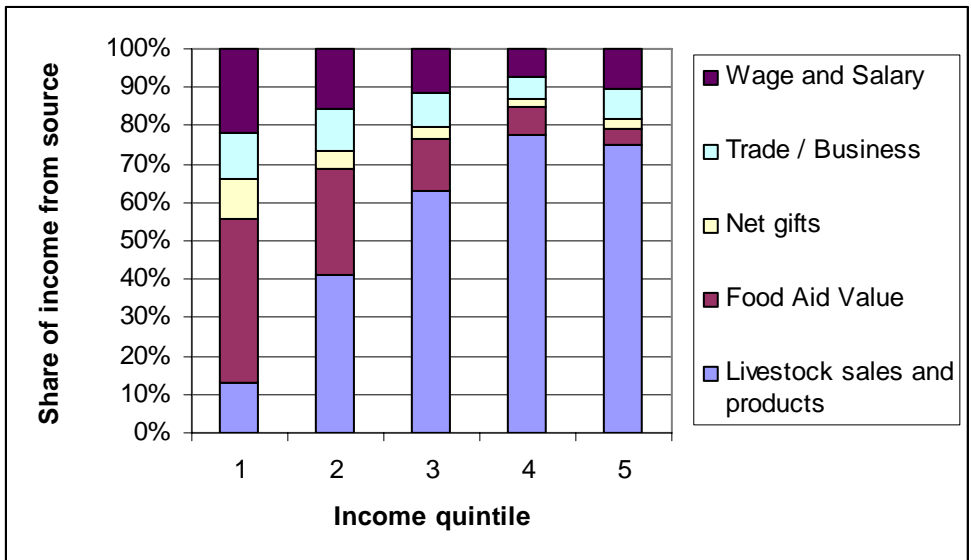


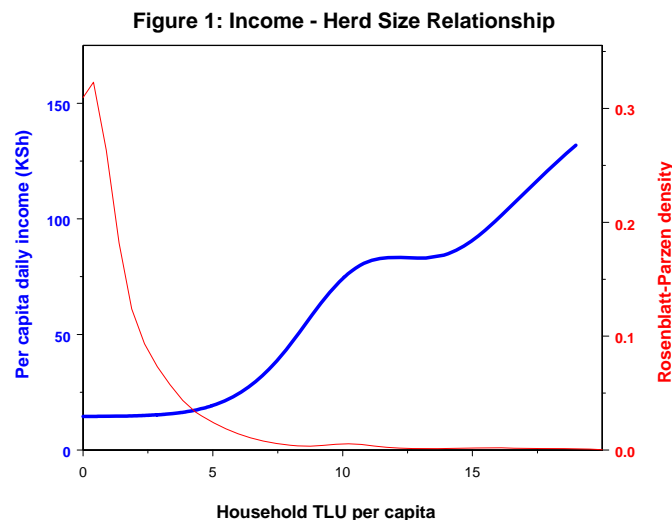
Figure 3: Income sources in shares, by quintile



Only the lowest income quintile appears to rely heavily on transfers of food, though the level of food aid's value is roughly consistent across quintiles due to many communities' choice to employ uniform rations for all households. Livestock production is most important, both in levels and shares, for the middle and upper income categories. Interestingly, we also find that access to salaried income and income from trade and business are increasing as total household income grows. This is similar to findings in Maasailand (Radeny et al. and Homewood et al. conference presentations).

Finally, another approach to this issue asks the simple question – what is the relationship between herd ownership and household income? Figure 4 displays the unconditional relation between household herd size and income level (Radeny et al. find the same relationship). The strong positive relationship between household per capita daily income and herd size underscores again that the issue of poverty in pastoral areas is not poverty among active pastoralists, rather it is poverty of those who have limited to no involvement in the pastoral economy.

Figure 4: Income-Herd Size Relationship in northern Kenya PARIMA sample
(taken from Barrett and McPeak 2005)



Household Assets

This relationship between herd ownership and income naturally leads us to an alternative approach to defining poverty using stock (i.e., asset)-based measures. The question then becomes whether the assets controlled by the households are sufficient to generate a satisfactory standard of living. This is much closer to Sen's seminal "entitlements" approach than are flow-based measures like income poverty. The emphasis in asset-based poverty measures is on the sustainability of current consumption or income patterns (Carter and Barrett 2006).

Considerable attention in the literature has been directed to the question of what is a viable herd size that can sustain pastoral households even when droughts occur. Early work on this was conducted by Leslie Brown, a former colonial agricultural officer in Kenya, who argued that herders needed about three standard stock units each of 500 kg live weight per head to sustain a pastoral family, though the exact level varies according to the ecological conditions" and the make up of "various classes of stock that are kept for meat or milk" (Brown 1971, Brown 1963). Brown's 'standard stock unit' is equivalent to about two Tropical Livestock Units (TLUs),⁵ which are the commonly used measure today. Later on, Dahl and Hjort made perhaps the most sophisticated attempt to model what would be considered a minimum level of herd viability to pursue specialized pastoralism (Dahl and Hjort). Since then, several others have proposed a range of different herd thresholds needed to maintain a viable herd, with estimates ranging from about 4.5 to 6.0 TLU per capita (see Potskanshi and others).

⁵ The TLU represents a standardized measure of metabolic liveweight in animals, enabling aggregation across species according to the formula 1 TLU = 1 cattle = 0.7 camels = 10 goats = 11 sheep.

Recent work also has used the notion of minimum herd thresholds to argue for the existence of ‘poverty traps’ among pastoralists where households below a certain threshold of per capita livestock holdings find themselves unable to escape from poverty even in periods of relatively good pasture and rainfall conditions (see Lybbert et al. 2004; Barrett et al. 2006; Santos and Barrett conference presentation). Those with higher levels of stock ownership, in turn, also can create intricate networks of stock exchange, loans, and friendships that further buffer them against poverty and volatile environment, while the poor often are isolated from such networks and thus without important forms of local assistance when hardship strikes (see Almagor ; Postanski; Santos and Barrett 2006).

The asset-based approach emphasizes that households can increase their income levels by asset accumulation or by adopting opportunities that increase the returns to the assets they possess, whether through improved production technologies or more remunerative exchange relationships (see Barrett et al. 2006 or Carter and Barrett 2006 for a formal exposition). In the context of pastoralism, those pastoral units that are relatively diversified and have reasonable market access may need fewer per capita livestock to sustain their enterprises. In cases where the pastoral economy is especially diversified, non-livestock forms of wealth (for example, cultivable land, salaried employment, or business ownership) may actually be as good an indicator of welfare (or a lack of them, of poverty) as livestock ownership. With increased diversification into desirable⁶ assets and livelihoods (including education that leads to formal sector employment), households can remain active in the pastoral economy with smaller herd

⁶ As we discuss below, and as the rural income diversification literature more generally notes, some diversification is born of desperation, not opportunity (Barrett et al. 2001).

sizes without jeopardizing human welfare. In large parts of northern Kenya, those families with a member engaged in salaried employment are likely to have food during a drought even when they have lost large numbers of their animals (Little et al. 2004).

The asset-based approach also accentuates the important distinction between asset risk and income (or related food security) risk in pastoral areas (McPeak, 2004). There is little doubt that poverty is partially characterized by vulnerability, and that in the past three decades residents of pastoral areas and pastoralists themselves have fared poorly during droughts in food security and nutritional terms. But does vulnerability to food insecurity during droughts necessarily equate to poverty? Is a pastoralist poor if during a drought he has 50 cattle and 75 small stock but has current income of less than \$1.00 per day? In a recent study of the Somali Region, eastern Ethiopia, Devereux notes that ‘far from its image of an economic wasteland, Somali region is actually the least poor of Ethiopia’s rural regions (UN 2004). His report goes on to ask how widespread food and famine vulnerability can co-exist with high levels of livestock wealth. His answer focuses on the lack of market access and movement restrictions caused by conflict in the region. Others have noted that households might intentionally destabilize consumption – rather than smooth it, as most neoclassical economics models assume – in order to safeguard the herds on which their future livelihood security depends (Zimmerman and Carter 2003, Barrett et al. 2006, Hoddinott 2006). Vulnerability to food insecurity and temporarily low incomes is not the same as asset poverty.

This observation leads naturally to the important distinctions between chronic and transitory (temporary) poverty and between structural and stochastic poverty. Transitory poverty is associated with movements into and out of income poverty, while chronic

poverty reflects persistent deprivation. The former type usually results from a drought or other disaster that knocks a household into poverty for up to a few years. After the shock ends and recovery ensues the household rebuilds its herd and moves back out of poverty. In the case of chronic poverty, however, poverty persists in shock and non-shock years as households control too few assets (animals) and are insufficiently productive in using those assets to allow them to escape from poverty without external assistance. In the pastoral areas, these are typically the stockless and near-stockless households that cluster around settlements, receiving food aid and eking out a marginal living through informal employment and petty trade.

The distinction between stochastic and structural poverty considers the standard of living one would expect a household to enjoy, given their asset holdings and productivity, and the actual realization they experience, given variable environmental and market conditions. Table 1 contrasts income-based and asset-based measures of poverty to clarify these important distinctions.

Table 1. Income-based versus asset-based measures of poverty

		Asset-Based Poverty Status	
		Poor	Non-poor
Income-Based Poverty Status	Poor	1. Structural poor	3. Stochastic/transitory poor Structural non-poor
	Non-poor	2. Transitory non-poor Structural poor	4. Structural non-poor

An important message to take from this table is that the different types of poverty each call for different policies to address them. Structural poverty – cells 1 and 2 – requires what Barrett (2005) labels “cargo net” interventions: asset transfers and technological and market improvements to the productivity of the structurally poor that lift or enable them to climb over the obstacles that trap them in chronic poverty. These are not short-term interventions such as food aid rations. The stochastic poor in cell 3, by contrast, need only short-term assistance to tide them over a rough spot of transitory poverty – “safety nets” to keep them from collapsing into chronic, structural poverty.

The safety nets concept acquires increased salience when one recognizes the possibility of true “poverty traps” of the sort uncovered by Lybbert et al. (2004), Barrett et al. (2006) and Santos and Barrett (this conference). These authors statistically identify critical herd size thresholds – at levels strikingly similar to the ethnographically-defined ones mentioned earlier – below which herds tend to collapse towards a very low level and above which herders on average are able to grow their herds through mobile pastoralism. Such findings accentuate how the natural dynamics of biological assets that underpin livelihoods in pastoral areas introduces potentially nonlinear dynamics to households’ poverty status: growth and collapse can easily co-exist within the same community. Asset shocks – i.e., loss of animals, not just diminished lactation rates – then can spell the difference between recovery from a drought (stochastic/transitory poverty) and collapse into long-term destitution (that is, a transition into structural poverty). Safety net programs – such as well-designed drought-restocking or emergency watering or supplemental livestock feeding interventions – that protect households’ asset stocks at or

near those critical thresholds can play a pivotal role in preventing pastoralists from collapsing into destitution (see Santos and Barrett conference presentation).

The failure to understand the dynamics of pastoral poverty, especially the difference between shock-induced, transitory or stochastic poverty and chronic, structural poverty, has resulted in a range of costly development failures that were based on a view of poverty that did not recognize such differences. Recall the high-cost, small-scale irrigation schemes of Turkana District, Kenya, in the 1980s where the temporary poor settled following the 1984 drought, only to abandon them and return to pastoralism two to three years later when herds recovered (see Hogg McCabe ; Broch-Due). Other efforts in Kenya and Ethiopia to encourage settlement among what were assumed to be chronically poor households met with similar results (see citations for Isiolo schemes, Awash valley, etc., Moris “three flags” paper). While each successive drought ‘expels’ additional families from the system who may eventually become chronically poor, the vast majority of mobile herders appear to return to livestock production when conditions improve. Overly pessimistic assessments of an ‘end to pastoralism’ in East Africa’s rangelands are often voiced during droughts, including the recent catastrophe (2005-2006) (cite ‘end to pastoralism’ article), but such pessimism fails to acknowledge that much poverty is ‘temporary’ and will diminish when conditions improve. At least for the foreseeable future we see no better use of the rangelands than mobile pastoralism, despite regular occurrences of drought and other external pressures.

Local Definitions and Characterizations

Another approach to defining poverty is to ask people in poverty or in the communities where poverty is a major issue how they define poverty. Kristjanson et al., 2005 took such an approach and found that livestock is a critical asset that can help households progress out of poverty, particularly when it helps diversify income, but can also cause households to fall into poverty (e.g. through the loss of those key assets to drought), supporting the need for both ‘cargo net’ and ‘safety net’ livestock-related policies mentioned above. In the World Bank’s “Voices of the Poor” series, those experiencing poverty were asked to describe the multidimensional ways in which poverty impacts their lives. These types of exercises often bring out how poverty impacts people’s lives in ways that go far beyond the narrower definition of lack of income or even lack of assets, as used above, especially by drawing in concerns about power, voice and vulnerability (see Hesse and Odhiambo’s conference presentation). These concerns motivate political movements to organize effective representation of pastoralists to central governments in the region as well as the formation of local groups, such as the northern Kenyan women’s groups discussed by Coppock et al.’s conference presentation.

Community level perceptions of poverty in pastoral areas are an area of growing research. One need only interview herders about their own definitions of poverty and its inverse, wealth, and it will be seen that those who maintain pastoral livelihoods, participate in local institutions and rituals, and keep up their local obligations are not considered to be poor, even if they suffer food insecurity during droughts and have ‘below average’ cash incomes and expenditures (see discussion below). Legesse (1989) describes how perceptions of what poverty means for town dwellers differs from those

who remain in the nomadic population. For town dwellers, poverty is a state of being. For the pastoralists, it is acquired trait, as “one does not *become* poor, one *catches* poverty, like a cold. Everybody has, at one time or another, caught this particular ailment.” (p. 273, italics in original). Broch-Due (1999) describes how Turkana herders describe falling into poverty as a result of having not managed livestock in a way to establish social relations to provide a web of support should herd losses occur. In her appraisal, poverty is not due to the loss of animals alone, but due to a loss of animals combined with a past failure to manage social relations.

Poverty as Poor Access to Social Services

The UNDP has advanced a measure of poverty that considers poverty as a combination of deprivations called the human poverty index. From this perspective, poverty is characterized as being deprived of: a long and healthy life; education; and a decent standard of living as proxied by access to clean water and children’s nutritional status. This idea that poverty is related to being deprived of factors that allow a more productive life leads to another common assumption about pastoral poverty.

Through this view, the fact that pastoral areas have relatively poor access to basic social services and physical infrastructure is often seen as a measure of their poverty. For example, a recent report on Ethiopia uses the lack of infrastructure and social services as evidence of poverty: “Pastoralists are very poor, even by the standards of Ethiopia, when judged by their limited access to basic social services” (Halderman 2004). A problem with this approach is that there can be a conflation of pastoral poverty with symptoms or attributes of poverty, such as minimal access to services and infrastructure, without really

explaining why they are poverty inducing. Radeny et al. (conference presentation) found that distance to water, roads and livestock market towns for households across the Kitengela area does not have a significant effect on net incomes, for example.

In particular, there is too often an implicit assumption that unmet, latent demand exists for publicly provided social services and that pastoralists are deprived by virtue of either limited cash income to pay for services (directly or indirectly, via local taxes) or insufficient government provision of infrastructure and services. This view ignores at least two crucial facts. First, over centuries, mobile pastoralism has evolved mechanisms for providing or tapping into social services; the existence of effective indigenous institutions often limits the need for new, publicly-provided services.⁷ Second, social services are typically point-based, thus access is directly related to proximity to towns. Yet, the logic of mobile pastoralism requires limited presence in a single setting, perhaps especially relatively densely populated settlements. As a result, there is a direct conflict between improving one's livelihood through a larger herd maintained through regular, strategic migration, and access to town-based services. Hence the result that growth and morbidity indicators among children in nomadic households are significantly better than those among sedentarized households (Fratkin et al. conference presentation), although the latter typically have better access to social services such as health clinics, schools and piped water. Similarly, as Bishop (conference presentation) describes, the cost of schooling children is highest for mobile pastoralists because physical proximity to a school is limited and irregular and, possibly, because the returns to formal education in mobile pastoralism itself are limited. These features pose serious challenges to standard

⁷ For example, Luseno et al. (2003) describe how publicly-provided climate forecasting services merely supplement extant indigenous services, often providing less contextualized and detailed information. Partly as a result, modern, public climate forecast information is not widely accessed or acted upon.

models for the provision of childhood educational services for viable pastoralist communities. As van de Linde and Lenaiyasa (conference presentation) explain by reference to the Samburu District Center for Early Childhood Education in northern Kenya, effective and sustainable early childhood development interventions must be based in traditional practices, circumventing the natural scepticism that indigenous communities may have for Western intervention.

‘Old’ and ‘New’ Forms of Poverty

The existence of both transitory and chronic forms of poverty has a long history in pastoral areas of East Africa. Poverty was so common during the pre-colonial period that many settled communities were developed by impoverished pastoralists, who left herding due to herd losses from a natural disaster or war. Pastoral systems themselves are geared to herd growth, a major risk management strategy for herders (see McPeak and Gebru 2004; McPeak 2005), and pastoralists try to position themselves for the next disaster by keeping large numbers of animals. Nonetheless, they also face volatile environments and production risks that dispel herders and their families when animal levels are too low to allow them to be viable pastoralists. Indeed, historical and anthropological studies have shown that poverty (defined in the asset-based sense as the complete or near complete absence of livestock) in pastoral areas has existed for a long time and often resulted from drought, warfare, and/or animal or human disease (see Illife 198 ; Robinson 1985; Waller 1999). Pockets of impoverished herders were forced to rely on non-pastoral livelihoods (for example, irrigated and rainfed agriculture and hunting/gathering) or to become clients of wealthier herders with some frequency in pre-colonial East Africa.

Famines and even human death also were not uncommon and entire communities of ex-pastoralists were formed as a result of such hardships (see Little 1992).

In some cases, defeated and impoverished pastoralists might attach themselves as clients to a wealthy clan or lineage and take on the ethnic identity of their patrons. This type of acculturation was a common social process among Somali and Maasai clans (see Besteman ; Cronk). In fact, during the pre-colonial era almost all major pastoral groups had communities of hunters and gatherers and, in some cases, agricultural settlements associated with them from whom they could trade with for honey and grain. The demographic impetus for ethnic groups like the Il Chamus of Baringo District or the Mukugodo of Laikipia District, were the outflow of impoverished Samburu and Maasai herders after droughts and wars. Some of them stayed permanently but others moved back to their natal homelands once their herds recovered.

It is important to stress that poverty, food insecurity, and frequent significant herd losses are not new to pastoral areas. However, while poverty in pastoral areas is not a new phenomenon, some of its current forms are starkly different than in the past. What one finds now are concentrations of ex-pastoralists in peri-urban settlements and towns where they engage in petty trading, waged labor, and other non-pastoral activities. Customary options for impoverished herders, such as hunting/gathering, are clearly limited and most now work as unskilled laborers (often working on food-for-work schemes), trade in firewood and other small consumer items, produce charcoal and sell it, and make and sell illicit brews and hallucinogens. Diversification away from pastoralism is often celebrated in the development literature as an effective strategy to reduce dependence on relying on highly volatile pastoral income streams. But the reality of how

this diversification occurs is that much of it is really little more than a desperate measure by the poor that often entails unsustainable, low return, and very risky activities (see Little et al. 2001). Rather than income diversification as a force “pulling” people in due to its’ revealed attractiveness or as a result of a development intervention, it is more often the case that people are “pushed” into it when they have no other option open for survival, just as in other areas of rural Africa (Barrett et al. 2001).

In addition to economic activities, there are many other ways that the experience of poverty has changed in pastoral areas. In geographic terms it shows up in new patterns of settlement and population distribution. These ‘unnatural’ spatial patterns are partly the result of misguided development and humanitarian efforts of the past 30 years that concentrated activities and services in settlements and towns, which then grew considerably. The well-known irrigation schemes of Turkana District ‘actually grew into small towns,’ as Little et al. 2001 discusses, and turned into pockets of poverty and environmental problems. In two pastoral districts of Kenya, Turkana and Marsabit, which have experienced their share of natural and ‘unnatural’ disasters (for example, the irrigation schemes mentioned above), almost 50 percent of the population resided within 5 km of a permanent settlement in the 1980s (Hogg 1987, O’Leary). This spatial distortion is a powerful indicator of poverty in the area. The poor must remain close to settlements to pursue non-pastoral livelihoods, sell products, and gain access to social services, including food aid. The widespread poverty results in the contradictory situation of excessive population pressure in certain areas, especially around settlements, and very low population densities in distant range areas that often are underutilized (Little 1994, McPeak 2003).

The spatial dimension of poverty also is revealed in local grazing patterns, as poorer households with less labor and the need to be near settlements for livelihood purposes, often graze their animals near towns and settlements. They do not have the labor or sufficient herds to move to distant grazing areas, and instead utilize pastures and water near settlements. Research in Baringo District, for example, shows how the poorest two categories of herders “usually do not herd their goats and sheep separately, do not seasonally move their herds outside of a six-km radius of their settlement, and often do not herd their cattle during the wet season when grazing is plentiful. This pattern contrasts sharply with that of wealthier households (strata I and II), which have sufficient labor to herd goats and sheep separately, to move cattle and sheep seasonally, and to herd cattle during the wet season (Little 1994: 226).” The result of these different grazing patterns is that pastures are unevenly utilized and areas near settlements are overused and degraded. McPeak (2003) reports very similar patterns in Gabra areas of Marsabit District, Kenya.

Another spatial aspect of the new ‘pastoralism’ is the rapid growth in small towns in pastoral areas, which as noted earlier partially stems from certain policies and development investments. As poverty and inequality have grown, so have towns and settlements, serving as havens for ex-pastoralists and administrative centers for development projects and agents. These towns also attract the wealthy, political elites of the area, many of whom have built homes and businesses in key pastoral towns and hire herders to graze their sizable herds on nearby pastures. Historically, there was little hired herding in the region as the best-off individuals practiced nomadic pastoralism themselves. This is now changing somewhat as a subgroup of more economically

successful individuals pursue town-based livelihoods while still maintaining herds that must remain mobile to be viable. Consequently, the rapid growth in small towns is perhaps the most significant demographic trend in the region, with many towns (for example, Marsabit and Maralal, Kenya) experiencing 4-5 percent growth rates since 1990 (cite district dev't plans/GOK stats).

The new poverty in pastoral areas also is manifest socially. First, there has been a large increase in the percentage of stockless or near stockless households often headed up by females. In some parts of northern Kenya small and very poor female-headed units comprise up to 30 percent of total households in some locations. Recent studies suggest that these units tend to be the poorest in the area and hold only minimal hope of ever returning to pastoralism (see Little et al ; McPeak). A second aspect is the increase in violence and petty crime and theft in many pastoral areas, especially around settlements, which is reportedly often instigated by unemployed individuals. A third social indicator of poverty has been the general decline in polygyny as bridewealth payments are increasingly unaffordable for many families. Among the Maasai of Ngorongoro, Tanzania, the inability to make prolonged bridewealth payments of cattle “is becoming increasingly prevalent in this part of Maasailand as a consequence of poverty” (Potkanski 1999: 207). Decreased levels of wealth also make it difficult to maintain large, polygynous homesteads, and consequently in some areas there has been a general decline in average household size. A fourth indicator, at least anecdotally, has been the increase in alcohol abuse in the towns of the study area as occasionally used traditionally fermented drinks are increasingly replaced by highly potent distilled liquor. Finally, the importance of a range of local institutions and practices to assist poor families, such as

different types of livestock exchanges and mutual aid mechanisms, have declined as many households no longer can afford to participate and as the incentives to provide transfers to the poor have declined (Huysentruyt et al. 2006, Santos and Barrett 2006).

Pressures on Pastoralism

The widespread pressures that pastoralists confront are well documented in the literature cited above and in the papers at this conference. They often are responsible for recent increase in poverty rates in pastoral areas. This section summarizes a few of the more important forces that have an especially large impact on pastoral welfare.

Loss of land

In pastoral ecosystems the loss of valuable ‘patches’ (for example, highland grazing zones, river basins and wetlands, and forests) to non-pastoral uses, including crop agriculture, forestry, conflict, and wildlife enterprises, is well documented (cite the Tanzania and Maasai cases). Some cases of land loss have taken place in subtle ways, for example, the gradual encroachment onto rangelands of cultivators who settle and cultivate over a period of several years (Munyao 2005). Other incidences have been more dramatic, such as the forced expulsion of herders from park areas or potential irrigation sites (see ‘Fortress Conservation in Tanz’; and Ayele book in Awash Valley). National parks and reserves alone have removed hundreds of thousands of hectares of rangelands from pastoral use, turning them over to wildlife authorities for use by fee-paying tourists and, in some cases, licensed game hunters. While there have been some efforts to empower pastoralist communities to tap into the revenue stream from biodiversity

conservation (Nkedianye, 2004), this has typically proved difficult, not least of which due to weak community level governance and the potential for elite capture of the benefits (see Sachedina conference presentation).

One of most dramatic cases of how the loss of land to conservation impacted local welfare is the Ngorongoro Conservation Area (NCA) of northern Tanzania (see Arhem 19). The loss of land and the restrictions on cultivation in the NCA area has led to severe food insecurity, a rapid rise in stocklessness, and a general pattern of impoverishment. Potkanski notes that poverty is so extreme that many local institutions to help the poor have broken down: “Informants in Endulen and Nayobi explained that poverty is so widespread within their immediate communities, that they are ashamed to ask others, knowing that the majority of potential donors may be equally poor or only marginally better off than themselves (1999: 213—in B-D and Anders book).” As in any pastoral culture, it is the lack of livestock in the Ngorongoro Maasai case that defines poverty. This is not solely because without them they have little capacity to purchase consumer goods and food, but because without animals they cannot participate in those local transactions and institutions that they find meaningful and that define their identity as pastoralists.

The loss of land in pastoral areas usually removes the most productive drought reserve areas, which are so critical for the sustainability of a pastoral system, forcing herders to find grazing and water in already overused areas. Herder encroachment into forest reserves, national parks, and even cities like Nairobi during droughts is symptomatic of the disruptive effects of land alienation. However, other than in stateless Somalia, we can think of no other area in the region where important dry season grazing

areas were recovered by pastoralists — and in Somalia this occurred at enormous human costs and prolonged conflict (Little 2003).

What makes the current practice of encroachment so complex is that some of it stems from cultivation by herders themselves. This is an increasing trend that was noted in the 1970s and 1980s (Campbell 1979; Little 1987), but has accelerated in recent years. Note the rapid growth in agricultural activities in parts of the Borana Plateau in southern Ethiopia (especially near Dida Hara) centered on prime seasonal grazing areas. Similarly, the growth in irrigated and rainfed cultivation on the slopes of Marsabit Mountain, in the Hurri Hills, and in highland Samburu in northern Kenya or in parts of the Maasai areas of southern Kenya, where many households are now attempting to grow crops (Radeny et al. conference presentation). Vulnerability to local forms of agrarian encroachment is especially high in pastoral locations where rainfed agriculture is feasible (Thompson and Homewood, 2002).

The trend toward increased cultivation naturally changes the dynamic of land use, in particular creating new pressures for land privatization that were previously more subdued. One sees this manifest in land disputes that are most pronounced in areas going through transitions during the early stages of sedentarization (see Yirbecho et al. 2003 or Hundie's conference presentation). Some communities are self-organizing effectively to maintain mobility in the face of seemingly unstoppable privatization of lands (Burnsilver and Mwangi conference presentation). But the trend towards privatization of lands poses new, considerable challenges for mobile pastoralism that require attention.

Stagnant Livestock Prices

With few non-pastoral livelihood options available in most of the arid and semi-arid lands of the region, and with little improvement in biophysical productivity through genetic or nutritional improvements or advances in disease control, any improvements to the income generation capacity of pastoralists turns largely on the prices their livestock and livestock products fetch. Yet, in US dollar terms, livestock prices in the region have remained relatively stagnant over the past 20+ years. In parts of northern Kenya an average bull in a normal year fetched the equivalent of about \$125 in 2004, which is about equivalent to the price in 1981 (Little 1992). A similar pattern of price stagnation has been documented for Ethiopia and southern Somalia, where livestock prices are even lower than in Kenya (Halderman 2004: 10-11; Little 2003:).

Meanwhile, retail prices for a number of products that pastoral households purchase—for example, sugar, flour, cooking oil, tea, and clothes—have risen considerably over this same period, as has the cost of health and education services. For example, in Baringo District, Kenya, the average retail price of sugar increased from X to Y during 1981 to 2005. In the northern Kenya PARIMA sites, education and health services that were effectively ‘free’ or very inexpensive in the 1980s had become major expenditure items in household budgets by 2000. Over the 2000-2002 period, expenditures on education and health respectively were 66% and 41% of what households spent on maize and maize meal, the main components of the diet in this area. The implementation of health and education fees began in the early 1990s with the imposition of budget reforms and structural adjustment programs. It is not yet clear what impact, if any, the Government of Kenya’s 2003 move to free primary education has had

on education-related expenditures among pastoral households. But the overall terms of trade faced by pastoralists – the price of livestock sold relative to the price of goods and services purchased – has declined steadily over the past generation.

Over roughly the same period between the early 1980s and the early 2000s, volumes of marketed livestock from pastoral areas of Kenya have remained relatively stable, while the number of animals imported into the country (informally or formally) from pastoral areas of southern Ethiopia, Somalia, and northern Tanzania grew enormously (Little 2006; Mahmoud 2003; Zaal 2006). In addition, annual herd off-take rates (the percentage of the herd that is sold) also have been relatively stable during this time – at rates of 5-10%, a low figure by global standards – which is not surprising since herd structures (with 70+ percent females) are geared more toward growth and dairy production than commercial marketing. To greatly increase aggregate livestock sales would require major changes to herd structures (i.e., a shift toward keeping male/beef animals) and in the general orientation of pastoral production systems.

The poverty effect of terms of trade trends is especially felt by herders during drought periods when livestock prices can plummet by as much as 75 percent or more while grain prices typically spike; market quarantines when prices and sales decline; and conflicts when trade routes and markets may close for extended periods of time (Barrett et al. 2003). While herders are dependent on the market to provision their households, they especially rely on it during droughts when declines in herd productivity necessitate increased food purchases. The effects of unfavorable market conditions are especially felt by poor herders because they are forced to sell a high percentage of their animals, and because they may not have access to larger traders and markets that pay better prices

(Little et al. 2006). Although pastoralists appear not to use livestock sales as much of a buffer against income shocks – so as to smooth consumption – (McPeak 2004, Barrett et al. 2006), sometimes mere survival compels regrettable sales or slaughtering of animals, leaving poorer pastoralist households especially vulnerable to the next shock. While it is not the only factor, the general stagnation in livestock prices while other prices and new expenditure categories have risen has contributed to increased poverty in pastoral areas.

Conflict

Livestock raiding and armed skirmishes between pastoral groups have been going on for probably as long as there have been pastoralists. However, these conflicts took on a new and devastating dimension in the 1980s with the increased use of modern weapons and attack strategies. This trend only worsened in the past decade. With armed conflicts in many of the border areas, especially those along the Somalia and Sudan borders, illegal imports of small arms have grown significantly in recent years. Almost all pastoral groups in northern Kenya have access to small arms, even those groups who until recently relied on customary weapons like spears, bows and arrows. Armed conflicts — and the fear of them — leave large grazing areas unused, a pattern that only accelerates overcrowding and overgrazing problems in relatively secure areas. For example, in the northern part of the Leroghi Plateau, Samburu District, Kenya, up to 50 percent of grazing lands were left ungrazed in the late 1990s and 2000s. Resident Samburu herders, in turn, moved into the southern part of the district or into neighboring Laikipia District, where they encroached on commercial ranches, often sparking nonviolent conflict over land access. Underused, conflict zones between the Boran and the Somali and Garre are

also found in southern Ethiopia along the border between Region 4 (Oromia State) and Region 5 (Somali State). While such patterns are less common in the pastoral areas of southern Kenya and northern Tanzania, such vacated and undergrazed 'buffer' zones are found throughout northern Kenya and southern Ethiopia.

The social and economic effects of conflict are experienced in many different ways. As noted above, trade routes and markets often are disrupted. In addition, retail shops often close and traders and transport owners may leave when conflict is severe. In addition to loss of life, especially among economically productive members of the community (i.e., young males), conflict also closes down schools, health clinics, development projects, and other critical social and economic services. Once again, the poor who can least afford to lose their few animals and other assets during a conflict suffer the most from insecurity. Participatory risk ranking exercises in the PARIMA study area also indicate an under-recognized gender dimension to the problem of conflict (Smith et al. 2001). Women express far greater concerns about conflict, not only due to arguably greater preferences for peace but also because loss of male warriors' time to conflict – including, obviously, combat mortality – places greater burdens on women and because violence has become increasingly random and directed at settlements, not just at other groups' warriors.

Political marginalization

The persistent dilemma of insecurity and access to services and infrastructure described above reflect deeper problems of political marginalization in pastoral areas. While the seeds of political powerlessness were planted during the colonial period, they

have persisted and even grown in recent times. Pastoral parliamentary groups of politicians have now formed at national levels in most countries in the region. But it is difficult to see how they will meaningfully counter the strong forces that favor non-pastoral areas, which enjoy far larger populations and more vibrant, profitable economies. An analysis of the spatial determinants of poverty across Kenya's rangelands shows that the lack of government-provided services and investment in infrastructure across these areas has negatively influenced poverty levels, providing a graphic reminder of how political disenfranchisement and government funding priorities become manifested spatially (Okwi et al., 2006). This deficiency severely constrains business investments in the area, as well as pastoralists' ability to compete for salaried employment in national labor markets. With minimal levels of education and skill training, most herders enter the labor market at the bottom rungs, where wages are miserable (<\$ 1 per day). Another outcome noted above is the debilitating impact of governments' unwillingness to insure public security. Without adequate political attention by the region's respective states, problems of conflict and insecurity have grown and crippled certain pastoral areas.

However, 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 able to provide only minimal resistance. Wildlife, tourism, and commercial agricultural interests have been able to exploit large tracts of pastoral lands with the direct or indirect support of governments and international donors, and with little legal recourse by pastoral groups. Development projects also have in some instances implemented projects with little input

from or consultation with local peoples, at times leading to outcomes that have harmed rather than helped people in pastoral areas.

Declining Per Capita Livestock Holdings

Many longitudinal analysis of livestock holdings reveal a general decline in average per capita livestock holdings among pastoral groups, even when discounting for the increased incidences of drought in the 1990s and 2000s (Little ; cite Ethiopian studies; Lybbert et al. 2004, Desta and Coppock). They also point to a rapid rise in the number of stockless or near stockless households, as well as in patterns of inequality (see Talle 1999). For instance, a 1993 survey among Maasai communities around Namanga, Tanzania, found that about 30 percent of households owned less than 10 cattle or about 4 percent of the total, while 10 percent owned 57 percent of all cattle (Talle 1999:109). In Kitengela, southern Kenya, half the cattle are owned by the 20% of households with the highest incomes, and 11% of the cattle are owned by the poorest 20% of households (Radeny et al. conference presentation). As Santos and Barrett (conference presentation) demonstrate, growing wealth inequality is the natural consequence of a system characterized by poverty traps associated with a migratory herding threshold and regular climatic shocks.

Studies also generally find that aggregate livestock populations in the pastoral areas show little long term change over the past 20 years. This means that the main factor driving down per capita livestock holdings is human population growth (Zaal ; Sandford ; Coppock). For example, in areas of northern Kenya and southern Ethiopia where longitudinal data are available, Little et al (2001) show per capita livestock

holdings have declined by as much as 50 percent in the past 20 years. With few exceptions, most pastoral areas have averages that are well below the approximately 3-6 per capita TLUs cited above as a threshold needed to maintain a household's participation in the pastoral economy. In the Maasai areas of northern Tanzania, Talle shows that 77 percent of Maasai households 'fall below the minimum pastoral survival limit of 5.5 livestock units per capita' (Talle 1999:109).

What Can Be Done?

The crisis of pastoralist poverty has been proclaimed since the 1970s and a range of different interventions have attempted to address the apparent problem (see Hogg ; Little 1983). Most interventions, however, have proved expensive, ineffective and unsustainable, too often based on insufficiently nuanced understandings of poverty in the pastoral areas, how the dynamics of poverty have been evolving over time in the face of economic, political and social change, and based too often on efforts to encourage settlement and sedentarized livelihoods centered on irrigated and rainfed agriculture and other non-pastoral activities. Encouraging herders to settle and pursue crop agriculture —often using food aid and health services as incentives — seems to aggravate problems of local overgrazing and resource conflict, without generating many tangible gains. So what strategies seem to work or most likely to work in addressing poverty in pastoral areas, either by assisting the presently poor or by helping prevent others' collapse into poverty in the face of repeated shocks of various sorts? This closing sections aims to summarize key findings from the literature and the papers presented at this conference.

Recognizing land rights of pastoralists and maintaining their mobility

The growth of towns in pastoral areas as pastoralists settle can result in a failure to distinguish between livestock mobility and human mobility. Declining human mobility need not be the same as declining herd mobility. Some successful pastoralist households are able to keep part of the family settled permanently to take advantage of town-based opportunities while maintaining herd mobility through sending other family members to satellite herd camps (McPeak and Little). Increased flexibility in livelihood diversification can complement flexible grazing strategies well.

However, the growth of towns can put new pressures on land tenure systems, inadvertently leading to changes in mobility (Ensminger , Munyao). There is growing awareness that land rights and mobility in pastoral areas should be strengthened (Niamir-Fuller volume). Mobility of livestock is critical to the productivity of pastoralism, which will remain the core economic activity in these areas for many years to come due to the region's physical geography. Particularly in light of the 'new range ecology' research that questions the universal applicability of "tragedy of the commons" assumptions, i.e., that common property rangelands inevitably invite land degradation, and econometric evidence consistent with the absence of broad-scale externalities associated with dysfunctional tenurial arrangements (Lybbert et al. 2004, McPeak 2005), it seems appropriate to mount a renewed effort at supporting pastoral land tenure arrangements in ways that protect and even enhance mobility. One key opportunity in many pastoral areas is to open up areas currently under- or un-used due to a lack of security. Some combination of state security and community level participation in conflict management

will be needed to clarify tenure arrangements and to reduce the amount of land lost to insecurity, thus enhancing mobility (Haro et al. 2005).

Production Improvements

Given fixed or declining grazing areas and terms of trade, the main way to improve productivity among pastoralists is to improve the productivity of their assets, i.e., their livestock. Inputs available to producers in these areas are minimal. Veterinary inputs are not widely available and are often of dubious quality. Feed supplements are also difficult to obtain. In each case there is evidence that producers are willing to purchase these inputs when price, quality and timeliness are satisfactory. The economic feasibility of such structures remains an open question, but certainly merits further research and innovation.

Livestock productivity can also be improved by changing the characteristics of the animals themselves. Breed improvement activities have long played a part in pastoral production systems. Herders are keen to adopt breeds that can improve production. The biggest challenges in this area appear to be ensuring the introduced breeds are able to withstand the highly variable production environments found in pastoral areas and in maintaining genetic diversity so that existing animal genetic material does not disappear. Breeding programs which select for livestock traits that result in more robust, drought and disease resistant animals with relatively high lactation and fecundity rates would markedly improve the expected returns to livestock based pastoral livelihoods while reducing their vulnerability (Ouma et al. conference presentation). Burnsilver and Mwangi discuss how land subdivision and income

diversification are providing more incentives for herders to cross-breed their animals (conference presentation). Innovations in targeted breeding programs using new marker-assisted selection methods show considerable potential for facilitating genetic enhancement of pastoralists' herds (Janssen-Tapken et al. conference presentation). This area deserves more attention by both researchers and policymakers who must support long-term research in this area.

Improved Marketing

The growth of livestock marketing has been one of the great successes and supporters of pastoralism. Markets offer the possibility for producers to survive on lower herd sizes than they could in the absence of markets due to what has been termed the 'caloric terms of trade'. This terms of trade revolves around the fact that a given cash amount of grain has much higher caloric value than an equivalent cash value of meat or milk. Herders have arguably been able to survive the declining per capita herd sizes noted above due to this fact. As market integration has increased, herders need fewer animals to meet subsistence needs.

Data from northern Kenya implies that future income gains for pastoralists via livestock marketing should focus on increased prices (value) per animal sold rather than emphasize growth in aggregate market volumes (McPeak 2006). As noted by McPeak, Little, and Demment (2006), "We don't believe the difficulty in increasing the sales volume reflects cultural attitudes toward marketing or animals, but rather the realities of pastoral production in these areas: herds are 60 to 70 per cent female, herd losses of up to 50 per cent over a period of a few months are disturbingly common, and there is

growing evidence that there are thresholds in household herd size below which families are more likely to be driven over time towards total stocklessness than towards recovery (see Lybbert *et al*, 2004; Santos and Barrett, 2005).” This would suggest that there are limits to how much untapped marketable potential there is in pastoral herds. The question then becomes how to increase the value of that which is currently being tapped.

Herders in much of the pastoral areas are getting less than half of the terminal market price when they sell their animals in local markets. This suggests there is room to improve pastoral incomes by finding ways to increase their share of the terminal market price. Two main options appear to offer this potential. First is to improve the infrastructure of the marketing system, including roads and market structures under the assumption that the low producer share of the price reflects the high costs borne by traders due to the poor condition of the transport and marketing infrastructure. A second option is to improve the organization of the marketing system. The current market system is characterized by poor coordination among producers and all along the marketing chain that leads from producer to consumer. Relatively simple interventions like organizing market days, introducing auctions, organizing producers to collectively transport animals to the terminal markets themselves, and organizing trading groups to improve coordination overall and also at specific niche markets have shown promise in some areas and should be supported and expanded where appropriate (McPeak and Little 2006).

We also note that emergency market intervention during droughts is an area of increasing activity. A variety of approaches have been tried recently, some focusing on supporting incomes and / or distributing meat to the poor, others on subsidizing transport,

while others have viewed emergency support as a means to generate cash to pay for inputs that reduce herd losses. The relative merits of each approach warrant further comparative research, as does the issue of how these different approaches can be made compatible of pastoralists preferred drought coping strategy – migration.

Restocking

As Anderson shows, most restocking programs have not fully-re-established mobile pastoral households. Heffernan and her collaborators have provided some findings that help explain this, and they indicate some ways to improve the effectiveness of restocking programs. Key lessons are that restocking should target those who truly desire and are capable of a return to a pastoral way of life. The finding that there is a threshold in herd size around 3-6 TLU per person above which herds are likely to increase and below which herds are likely to disappear suggests targeting those around the threshold rather than those who are already stockless (Santos and Barrett conference presentation). Different types of interventions will be needed to support the stockless. We suspect that restocking is likely to be more successful when used to keep producers from falling out of pastoralism than it will be in returning stockless herders to pastoralism, but further research is needed to help clarify this issue.

New income generating activities

While we have argued above that alternative income generation activities have been largely mis-cast as a replacement to pastoralism, and often are adopted as a last resort, increased economic opportunities can be designed that support and complement

pastoral production. Some examples that offer promise include ones based on local natural resources (e.g., wild aloe production and harvesting, palm frond weaving, acacia sap collection, animal feed collection), post-slaughter livestock processing and distribution (e.g., hides and skins production and marketing, meat processing), and the cultural and natural wealth of these areas (e.g., wildlife based tourism). While each example undoubtedly can have negative implications if managed poorly, proper management of these could offer some opportunities for residents of pastoral areas who are not directly involved in pastoral production and could help relieve (land, conflict, social and other) pressures faced by viable pastoralists.

Equally important to the income generation activity would be training in managing the income generation activity. Many of the examples cited above will require coordination across multiple individuals. Those agencies supporting alternative income generation activities should also be supporting training in group governance and management to ensure sustainability. Collective action groups have proved difficult to organize and sustain in many pastoral areas of the region (Amudavi 2005, Beyene conference presentation).

Improved access to health and education services

Since health costs often push a pastoral family into poverty, better and more affordable health care is needed to protect the valuable human assets that underpin long-term viability of households in the region. A growing body of evidence suggests that health shocks account for a disproportionately large share of movements into persistent poverty worldwide, including in sites studied in northern Kenya (Mango et al. 2004,

Barrett et al. 2006, Krishna 2004, Kristjanson et al., 2004). In addition, good health and education are often critical pre-conditions for gaining access to the non-pastoral formal economy, i.e., health care is important not just for blocking slides into poverty but for opening up pathways out of poverty as well. As we noted above, having a family member with stable employment in the formal sector was often a key determinant in whether a household would be able to cope with and recover from a drought.

Safety and Cargo Nets

Pastoral areas and especially poorer households in these areas require direct intervention to help build and protect assets and to improve the productivity of households' existing asset stocks – largely their livestock and their human members – as well as to remove the barriers (for example, access to markets, public services and financial products) that exclude the poorest households from viable livelihoods, whether in pastoral production or non-pastoral activities. Such interventions can stimulate wealth accumulation and income growth (Santos and Barrett conference presentation). The key is to build assets to the level(s) necessary to ignite such endogenous accumulation behaviors. Given critical herd thresholds of 3-6 TLU per capita, livestock-based interventions that leave households short of the threshold, or that provide animals to those with less aptitude for or inclination towards herding, are unlikely to succeed. Alternatively, it may be possible to lower the critical threshold through, for example, improved veterinary care, improved physical security of herds and herders, dry season water availability and genetic improvements to local breeding stock. These all represent

“cargo net” interventions aimed at helping lift the chronically poor onto a sustainable growth trajectory.

At the same time, and especially given frequent, serious shocks in pastoral areas due to disease, drought, flooding, violence, etc., there is constant need for effective safety nets. Effective safety nets protect the (human, livestock and other) assets households accumulate so as to prevent inadvertent backsliding. Such safety nets need to be located strategically just above the critical asset thresholds at which expected asset dynamics bifurcate. This calls for a somewhat broader conceptualization of safety nets than simply the nutrition-focused, food aid-based safety nets prevalent in policy discussions today. Protecting human health through adequate nutrition and ensuring children stay in school (for example, through food-for-education projects) is indisputably important and may suffice in town-based settings where one need only maintain access to labor markets in order to grow out of poverty. But health shocks largely unrelated to nutrition – for example, HIV/AIDS, malaria, tuberculosis – are perhaps the most common reason households become and stay poor, underscoring the importance of preventive and curative health care quite apart from support for adequate access to food. Moreover, in pastoral areas, labor is not the only critical productive asset, for mobile pastoralists, perhaps not even the most important. Mechanisms to insure livestock herds against excessive losses – e.g., through well-designed re-stocking projects – help households negotiate asset and income shocks due to theft, climate and civil strife, preventing episodes of transitory poverty from digressing into chronic destitution.

Political empowerment

Pastoralists have suffered under a weight of stereotypes that are fundamentally disempowering. To select a few key ones, they have been cast as the cause of desertification due to their land tenure system, tradition bound individuals who love animals so much they won't sell them at any price, fierce war like groups who if they can't be pacified are perhaps best left alone, and as uneducated and largely uninterested in modern society. In focusing on poverty and pastoralism, we want to avoid adding a new stereotype that pastoralists are poor because, as we have tried to emphasize, traditional, mobile pastoralism remains quite viable and is associated with better standards of living than non-pastoral livelihoods in the arid and semi-arid rangelands of the region. The power of these stereotypes is that they de-legitimize the political input of pastoralists. If pastoralists are all like the stereotype, there is little point in encouraging their participation in shaping their own destiny. In that case, they need transformation though outside intervention for their own good, a sort of paternalistic treatment of "noble savages". Such ideas are as offensive as they are inaccurate.

There is poverty in pastoral areas and there are indeed poor pastoralists. However, the solution to this problem lies in strengthening what already works, both directly and through complementary interventions to reinforce the still-viable pastoral economy. We have tried to illustrate that addressing poverty in pastoral areas fundamentally revolves around two key elements. First, pastoral production should be improved and supported, not replaced, for the majority of pastoralists with the skills and interests to continue traditional livelihoods. It has proven to be effective and there are opportunities to make it more so. Further, since it appears to be the economic activity of

choice among those who are relatively better off, anything that undermines pastoral production is likely to increase poverty, not reduce it. The second key element is to focus on those residents of pastoral areas who are not actively involved in pastoralism or who are plainly exiting the system, often quite painfully. They should be given support to identify and undertake alternative economic activities that support, complement, or at least do not undermine pastoral production. At present, their livelihood diversification is forced and unremunerative, driven by desperation rather than by emerging opportunities appropriate to this subpopulation in the pastoral areas.

But more important than what we believe is what the residents of pastoral areas believe and are willing to act on. They have to be given increased responsibility and ability to control their own development agenda. We don't suggest that there is a single agenda out there, but rather there needs to be a political process that allows residents of pastoral areas to collectively discuss and negotiate amongst themselves and with external actors.

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