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Pathways to Resilience in Pastoralist Areas: A Synthesis of Research in the Horn of Africa

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Executive Summary

Across the Horn Africa, pastoralist areas have been one of the most persistent and difficult challenges for governments, and development and humanitarian agencies. Although often viewed as physically remote, universally poor, and subject to droughts and conflicts, in reality these areas can also be economic hubs, with substantial livestock trade networks to local markets, and crossing borders to neighbouring countries. Ethiopia, Somalia, Somaliland and Sudan are all major exporters of livestock with most of these animals sourced from pastoralist areas, or from producers who rely on mobile production systems. This synthesis paper reviews research by the Feinstein International Center at the Friedman School of Nutrition Science and Policy at Tufts University, and focuses on the increasing socioeconomic differentiation in selected pastoralist areas, and the implications in terms of pathways to resilience.

Feinstein's Moving Up, Moving Out analysis first emerged in 2009 and aimed to explain the co-existent of increasing domestic and international livestock trade from some pastoralist areas, and increasing destitution. The analysis showed that although most pastoralists were engaged in livestock markets, commercialization was associated mainly with wealthier pastoralists and herd owners. Over time, and as human populations grew, commercialization was also associated with a gradual shift of livestock from poorer to wealthier producers, and related trends such as increasing privatization of rangelands, and declining social capital related to livestock support. These changes were evident in parts of Ethiopia, Kenya and Somalia despite diverse central political ideologies and policies over several decades, and within a context of multiple conflicts and frequent droughts.

For pastoralists with sufficient numbers of animals, and adequate access to rangeland and markets, there is a clear pathway to resilience based on pastoralism. However, as commercialization advances, the number of households following this pathway declines relative to the population as a whole. Although severe droughts can still

decimate large, more commercially orientated herds, wealthier livestock owners also have various options for positive livelihoods diversification, including investment in businesses in urban centers, and better-quality education.

A far greater number of pastoralists appear to be living on the edge of pastoralism, surviving off small numbers of animals, and increasingly reliant on a range of diversified activities. Whether located in rural areas or near to towns, for these households the pathways to resilience are far less clear. A full return to pastoralism can be difficult as land becomes more fragmented and privately controlled; and diversification often involves low-paid or exploitative wage labor, or activities with negative environmental or social consequences. The net results are poverty traps. Although often viewed by policy makers as the best alternative to pastoralism, agriculture can be far more risky than livestock production in areas with highly variable rainfall, and few permanent water sources. Commercialization of pastoralism brings new jobs, such as contract herding or market employment, but in general, there is a marked disparity between the slow growth in work opportunities, and the substantial numbers of people who need to find work. The emergence of large-scale social protection programs in pastoralist areas of Ethiopia and Kenya is symptomatic of the problems. The policy message is that for many people, Moving Up, Moving Out is not only about moving away from pastoralism, but also moving out of pastoralist areas. In theory, education is critical, but education services are still very poorly developed in pastoralist areas, or, unaffordable.

For women and girls in poorer pastoralist households, the situation is particularly dire, with consistently lower levels of education and health relative to men and boys, and higher risks of negative diversification, and exposure to violence and sexual abuse. Again, although livestock commercialization provides some opportunities, such as trading in small ruminants and milk processing, women have far fewer pathways to resilience relative to men.

1. Introduction

Since its establishment in 1997, the Feinstein International Center, Friedman School of Nutrition Science and Policy at Tufts University has been working in pastoralist areas of Ethiopia, Kenya, South Sudan, Sudan, and Uganda. Initially, our work was a continuation of Tufts University's support to livestock disease control and veterinary services in remote and conflict-affected areas of Africa. This involved work with the African Union (AU), and it also involved providing coordination and policy support to large-scale regional projects, often covering cross-border areas (Leyland and Catley, 2002). The success of these veterinary projects led to communities and partners asking us to look at other problems, and so the veterinary work expanded to conflict management (e.g., Minear, 2001) and livestock marketing (e.g., Aklilu, 2002a; 2002b), and later, to general development and food security policies for pastoralist areas with the AU (African Union, 2010), and Regional Economic Communities (e.g., COMESA, 2009). At the same time, Feinstein also supported the creation of the Livestock Emergency Guidelines and Standards (LEGS), which included guidelines for effective drought management and response in pastoralist areas, and livestock programming in complex emergencies.

Although the work outlined above was very much framed by “pro-pastoralist” thinking, in the mid-2000s a dominant policy narrative started to re-emerge from international humanitarian agencies and governments in the Horn of Africa, especially in drought-affected areas of Ethiopia, Kenya, and Somalia. This narrative presented pastoralism as no longer viable and proposed that pastoralist areas needed to be transformed to avoid future humanitarian catastrophes, especially those caused by droughts. Typically, the proposed transformations were geared towards agricultural and sedentarized livelihoods, and a belief that these changes could absorb increasing numbers of destitute pastoralists in these countries. Prominent, long-running sub-narratives described pastoralism as ecologically damaging and mobility as a backward way of life.

Yet an alternative narrative was also evident, which described pastoralist livestock production as the backbone of local and national economies, and as a system that for many years had been supplying millions of animals to domestic and international markets. For those aid practitioners interested primarily in development, poverty reduction, and economic growth, the assumption was that livestock production and marketing was a pathway out of poverty for pastoralists. For humanitarians and many central government policy makers, pastoralism was a problem to be solved through transformation to settled crop production.

Researchers at Feinstein examined these contrasting views from a livelihoods perspective, and with a particular emphasis on understanding the assets and behavior of poorer versus wealthier pastoralist producers, and on long-term changes in demographics, markets, rangeland access, social capital, policies and governance, conflict, and other trends. We also combined analysis of local trends with regional and international market conditions. Two reports from this research became known as the “Moving Up, Moving Out” analysis (Aklilu and Catley, 2009; 2010) and described how different people followed different livelihood pathways as livestock production became more commercialized, and as human populations expanded.

Other research on pastoralist areas at Feinstein has also been geographically specific and has involved prolonged engagement in the areas concerned. Since 2004, Feinstein has conducted detailed livelihoods analysis in Darfur, Sudan, working in a conflict and then post-conflict context, work complemented by various studies on rural livelihoods, markets, and other topics. Central to this work has been the persistent political marginalization of Darfur and central government policies that contributed to vulnerability. More recently, the research has expanded to look more widely at the role of livestock in Sudan, the main livestock production and marketing systems, and how these are changing over time. Critically, this work shows the importance

of herd mobility for both pastoralist and settled livestock producers in Sudan and therefore, the need to enable mobility to ensure production and herd growth across different types of producers, not only pastoralists. Some of these findings are similar to Feinstein's research in Karamoja, Uganda from 2006, where again, political isolation and underdevelopment have been key drivers of vulnerability. Our research in both Darfur and Karamoja also describes trends in livelihoods diversification in post-conflict settings. A third area of Feinstein's research related to pastoralism includes work on famine in the Horn of Africa, especially Somalia. This research focuses on how people with different livelihoods (pastoralists, agropastoralists, and farmers), ethnicity, and socio-political status coped with drought and conflict (Maxwell et al., 2016; Majid et al., 2016). This research is not about pastoralism but describes the impacts of severe drought on Somali pastoralists and the importance of social capital for survival.

Across all of the pastoralist areas covered by this synthesis report, two fundamental contextual factors are political marginalization and frequent humanitarian crises associated mainly (but not exclusively) with conflict or drought. For example, the Somali Region of Ethiopia, Karamoja in Uganda, and Darfur in Sudan are all characterized by long histories of neglect by central governments. Human development indicators in these areas are among the lowest in the world, with limited infrastructure and basic services. Overlaying this isolation have been equally long histories of protracted conflicts and, in common with other pastoralist areas, recurrent droughts. Against this backdrop, two relatively recent and positive policy advances stand out. The first is the African Union's Policy Framework for Pastoralism in Africa, which recognizes the basic rights of pastoralists, their economic contributions to national and regional economies, and the need to support "strategic mobility" (African Union, 2010). Second, Kenya developed a government strategy that was supportive of pastoralist areas in 2012 (Government of the Republic of Kenya, 2012), which was carried over into policy in 2015 (Ministry of Devolution and Planning, 2015). This policy explicitly recognized the historical neglect of Kenya's arid and semi-arid lands.

The report's findings are structured into two main sections:

- The first section describes how and why livelihoods are changing in pastoralist areas, and covers changes and adaptations within pastoralism, as well the trend towards increasing diversification and alternative livelihoods. This section includes an account of the highly gendered nature of livelihoods in pastoralist areas and the changing nature of social capital.
- The second section of findings examines three specific policy and programming challenges in pastoralist areas, viz. health and education, market-based approaches, and social protection.

By definition, a synthesis of Feinstein's research means that we have selected and examined our own research. We have also made judgements about the relevance of specific topics and made choices about which studies, reviews, and evaluations to include. Although livelihoods analysis was a common approach across much of our research, individual researchers and teams usually worked independently of each other, and used a range of research designs and methods, from qualitative to quantitative. Mixed methods were also used. Different livelihoods frameworks have been used, as have different interpretations of these frameworks. Our researchers also have diverse disciplinary backgrounds. We have assumed that our long-term engagement in the areas where we have worked, the independence of researchers, and the mix of research methods support the validity of the synthesis and the common findings that emerge. Indeed, when we look across the findings from this apparently diverse body of work in different areas, a distinct set of issues appears consistently and prominently. Furthermore, we provide examples of how other research, conducted independently of Feinstein fits with our findings. For example, in the case of the economics of pastoralism in Ethiopia and Kenya, and market behavior, the Global Livestock Collaborative Research Support Programs (GL-CRSP), from 1998 to 2010, focused on human nutrition, economic growth, environment, and policy related to animal agriculture, under an overarching theme of managing risk in a changing environment. The East Africa component of GL-CRSP—the Pastoral Risk Management Project—focused on pastoralist areas of Ethiopia and Kenya, and included quantitative economic studies on pastoralism and livestock marketing (e.g., McPeak et al., 2012).

2. Synthesis Findings: Changing Livelihoods in Pastoralist Areas

2.1 Economics, Markets, and Mobility

2.1.1. *Moving Up, Moving Out revisited*

In 2008, the Food and Agriculture Organization (FAO) and the Intergovernmental Authority on Development (IGAD) were jointly implementing the Livestock Policy Initiative (LPI) projectⁱ in the Horn of Africa, and developing IGAD's regional policies for livestock development and trade. The general approach followed a model of livestock for economic growth, and assumed that better livestock production and trade would contribute to poverty reduction. As the IGAD Member States all had substantial pastoralist populations, there was also a more specific strategy of supporting livestock trade from pastoralist areas. This was an area-based approach to poverty reduction under which, it was assumed, the benefits of more trade would be widely felt. In contrast, livelihoods analysis assumes that poverty reduction requires us to understand the livelihoods of the poorest people within a particular context or area, and develop policies and programs that specifically assist these people to build, protect, and develop their assets (Scoones, 2009). Rather than being area-based, livelihoods approaches are more "pro-poor."ⁱⁱ With these concerns in mind, the LPI asked Feinstein to examine livestock exports from pastoralist areas from the perspective of "Who benefits and why?" (Aklilu and Catley, 2009).

The starting point for the study was earlier research on the economics of livestock production in African drylands, whereby wealth is associated—logically—with the accumulation of livestock more than cash. This strategy is based on the high returns from livestock relative to cash, a natural resource base

that supports livestock rearing and the limited financial services in pastoralist areas (e.g., McPeak, 2005). For poorer pastoralist households with fewer animals, the main aim is to build and save livestock as financial capital, and manage their animals to meet basic food requirements, e.g., to supply milk for household consumption. During this process, livestock sales are limited to meet immediate domestic needs. As livestock holdings increase, domestic needs are more easily met, and more animals become available for sale. As noted by Barrett et al. (2006), "Pastoralists appear generally to be unwilling to liquidate animals to the point that their herd size may prove insufficient to ensure household food security in the face of unknown conditions in the future." Therefore, a large herd not only represents financial capital but is also used as a strategy for coping with drought.

Our study for the LPI also collated pre-existing data on livestock sales and household income by pastoralist wealth group. In selected areas of northern Kenya and southern Ethiopia, better-off households sold 26 times and 18 times more animals than the "very poor" respectively (Table 1). The LPI study concluded that a pro-poor approach in pastoralist areas would focus on enabling poorer herders to build their herds by preventing avoidable losses and better drought management, while ensuring access to markets and rangeland. The main pastoralist suppliers of livestock to local and international markets were relatively wealthy households.

In late 2010, Feinstein conducted a more detailed analysis of pastoralist livestock commercialization that drew on the earlier LPI study and also described long-term trends in social capital and land access

Table 1. Annual pastoralist household income from livestock sales in selected areas of Ethiopia, Kenya, and Sudan (Aklilu and Catley, 2009)

Area, country	Pastoral wealth group income (US\$) (equivalent sheep or goats)			
	Very Poor	Poor	Middle	Better-off
Mandera, Kenya	105 (3.5)	229 (7.5)	702 (24)	1,787 (60)
Wajir, Kenya	42 (1.5)	169 (5.5)	677 (22)	1,105 (37)
Teltele, Dillo, and Dier, Ethiopia	114 (5)	202 (8.5)	714 (31)	2,100 (92)
Borana-Guji, Ethiopia	132 (5.5)	231 (10)	768 (34)	1,500 (66)
North Darfur, Sudan	-	115 (4)	615 (21)	-

Notes for Table 1:

Income data compiled from SC UK (2004) and LIU (2008). The annual household income from livestock sales is expressed in US\$ by using the exchange rate when the study was undertaken for the three countries. Livestock equivalents that needed to be sold to raise the level of income for each wealth group are expressed only as sheep or goats for the purpose of comparison (for conversion purposes, 10 sheep or goats = 1 Tropical Livestock Unit (TLU)). Price information was obtained from Save the Children's data for Darfur and northeast Kenya, and from exporters and local traders for Borana. The exchange rate at the time was US\$1 = Ksh 74 (Kenya) = Birr 11 (Ethiopia).

(Aklilu and Catley, 2010). The second study focused on Somali and Borana areas of Ethiopia, and was done at a time of renewed government commitment to livestock and meat exports (but not pastoralism), of recurrent drought, and of the presence of a large-scale social protection program, the Productive Safety Net Programme (PSNP). In terms of access to productive rangeland, the Ethiopia study collated information on the trend towards the private control of land and water by relatively wealthy herd owners, as well as other pressures on land due to agricultural expansion, and on the spread of invasive plants such as *Prosopis* species. Those herd owners with access to private land were able to use both communal and private grazing areas, but, critically, in difficult times they were able to exclude other herders from enclosed areas:

Better-off households are also fencing *kallos* (land enclosures) on their own initiative, and with increasing frequency. In general, it is relatively elite groups who fence *kallos* for commercial use, and further isolate poorer pastoral households from important grazing resources. Therefore, *kallos* represent the

potential fragmentation of communal land for private and select group use, changing the pastoral way of life and production system as commercialization intensifies. (Aklilu and Catley, 2010)

At the same time, systems of social support were changing in the face of commercialization and population growth. Although traditional social support systems often involved the provision of livestock to poorer households (e.g., following drought), wealthier households were becoming less inclined to support an increasing number of poorer producers:

Although increasing destitution is probably the main reason for the decline of traditional support systems, commercialization is also contributing to behavioral changes around these systems, as individualism creeps in. As stated by the Jiren Dikale women's group in Borana, "The poor have no one to turn to these days, except firewood and safety net." In some areas, even community leaders seem resigned to the fact that a critical point had been reached, at which the poor can

no longer be helped. Borana communities used to have positive attitudes about “dropouts,” since they provided labour as hired herders (notably, for the wealthy). However, such people are increasingly seen as a nuisance as their numbers have grown in excess of the labour needs of the communities they live in, and they require assistance in the form of food, milk, loans and so on. (Aklilu and Catley, 2010)

Therefore, the initial Moving Up, Moving Out analysis was based on the interrelationships between population growth, livestock commercialization, market demands, privatization of land and water, and declining social capital. These factors led to a gradual shift of financial assets, i.e., livestock, from poorer to wealthier producers. During drought, not only are the wealthy better able to withstand drought because they have more animals, they are also more likely to have access to their own, private dry season pasture and water.ⁱⁱⁱ Over time, the market demand for meat and milk increases in line with the growth of urban and middle-class consumers in the region, and internationally. In simplified terms, the poor fall out of pastoralism and become destitute; the wealthy stay in pastoralism, adopt more commercialized approaches, and supply markets. The asset gap between the two groups increases over time, making it more difficult for the poor to return to pastoralism. Increasing numbers of people become caught in a poverty trap.

The analysis demonstrated the importance of a wealth-differentiated perspective and of understanding market trends within and outside of pastoralist areas. Rather than viewing pastoralists within an area as homogeneous in terms of livelihoods and assets, we sought to understand differences and interactions between wealth groups, and changes over time. Notably, the Moving Up, Moving Out analysis was consistent with earlier descriptions of the economics of pastoralism in Somalia (e.g., Abdullahi, 1993), and predictions of pastoralist destitution and its causes in the 1970s, which foretold the likely impacts of population growth, commercialization, and declining resource access in Ethiopia (Coppock, 1994). Other independent research also supports the findings of Moving Up, Moving Out, such as: the “Hanging In,

Stepping Up and Stepping Out” work on livestock and poverty (Dorward et al., 2009); the analyses based on “low cash” (McPeak et al., 2012; McPeak and Little, 2017); and the four-quadrant framework for understanding pathways of change from subsistence pastoralism, developed by the Institute for Development Studies in 2007.

2.1.2. Conflict, climate, and governance: A Moving Up, Moving Out perspective

For some readers, the limitation of the Moving Up, Moving Out analysis is that it seemed not to cover other factors that contribute to poverty and vulnerability in pastoralist areas. For example, livelihoods analysis emphasizes the importance of policies and institutions, and how formal and informal policies and norms enable or hinder livelihoods. Yet beyond the policies in some countries that support livestock trade, Moving Up, Moving Out does not include analysis of wider development policies in pastoralist areas and the well-known under-development and political isolation of these areas, often over many decades. There are also other issues to consider; e.g., conflict analysts might argue that severe conflict in the Horn of Africa must be the driver of vulnerability, whereas for others, climate change and recurrent drought explain the problems.

To examine these issues in more detail, we consider the Somali pastoralist system covering northeast Kenya, Somalia, Somaliland, Puntland, eastern Ethiopia, and Djibouti. In this vast cross-border area, a distinct increase in livestock exports and related changes in production and market orientation took place in the 1960s and 1970s in response to the oil boom in the Gulf States (Reusse, 1982). These changes included the privatization of rangeland (Behnke, 1988) and alterations to herd composition to meet market demands (Al Najim, 1991). Up to the present day, livestock exports have been a prominent feature of the Somali economy and have remained robust and adaptive, despite constraints such as trade bans. In 2015, 3.6 million animals were exported from Berbera port alone,^{iv} with approximately 60% to 70% of these animals originating in Ethiopia (Aklilu and Catley, 2010). Over the last 65 years, and assuming an annual human population increase of 3%, human population

has increased approximately sevenfold, but the livestock population has probably not changed substantially (Catley and Aklilu, 2013).

But how have governance and government policies influenced these changes? From the late 1950s to the present day, this wider Somali pastoralist system has experienced different forms of colonial administration—under the French in Djibouti, the British in Somaliland and Kenya, and the Italians in Somalia. After independence in the 1960s, Somalis in Kenya saw relatively democratic and economically liberal policies under Jomo Kenyatta, Moi, Kibaki, and Uhuru Kenyatta, and Somalis in Somalia experienced the scientific socialism of Siad Barre until the late 1980s, before entering a period of limited central governance that persists to the present day. Somaliland created its own government in the early 1990s and has enjoyed more than 20 years of relatively stable and democratic government, albeit internationally unrecognized. Somalis in the Ethiopian eastern rangelands have experienced the imperial regime of Haile Selassie, the Marxist government under Mengistu, and the democratic development policies of Meles Zenawi. While policies in Somalia and Somaliland have generally been supportive of livestock development and trade (and indirectly, pastoralism), development policies in Kenya and Ethiopia have often neglected pastoralist areas, and focused on agriculture. Ethiopia's most recent Growth and Transformation Plan sets ambitious targets for livestock exports but without mentioning specific support to pastoralist livestock production or mobility. There are also many marked disconnects between formal policy and realities on the ground. For instance, in recent years Ethiopia has repeatedly questioned the legality of the cross-border livestock trade with Somaliland, but the substantial movement of livestock to Berbera and other Somali ports has not been unduly affected. Across this myriad of governments, leaders, and policies, the net result across this Somali system is gradual commercialization.

This finding comes more into focus if two extremes of governance are considered. In recent history, southern Somalia has had a minimal, ineffective, and geographically isolated central government, coupled with a dynamic business community and

private sector; livestock trade and related income-generating facilities, such as ports, have long been recognized as critical to the country's economy. In contrast, the government in neighboring Ethiopia is often described as highly controlling, intensely bureaucratic, and restrictive in terms of private sector activity. Although very recent policy and institutional changes indicate more recognition of livestock, pastoralism remains a thorny policy issue. Somalis live on both sides of the Somalia-Ethiopia border and, in some areas, transcend the border; the Moving Up, Moving Out trend is clearly evident in Somali areas in both countries. One interpretation is that central government policy has not been a key factor in pastoralist livestock commercialization in this particular system. In Somalia and Somaliland, where livestock trade has usually been encouraged, pastoralists and traders have responded. In Kenya and Ethiopia, policies and regulations have simply been ignored or bypassed if they disrupt trade. In all countries, weak land governance has enabled the uncontrolled private acquisition of rangeland and water by wealthier herders and elites.

For those moving up, and over the long-term, government neglect of pastoralist areas has not been a major hindrance as their herds grow and as they take personal control of natural resources. However, for those moving out or facing destitution, the weak development of pastoralist areas in terms of education, health, infrastructure, and security has serious implications, as discussed later in the report. A symptom of this underdevelopment is the emergence of large-scale social protection programs in Somali areas of Ethiopia and Kenya (and other pastoralist areas of these countries), as governments struggle to deal with increasing numbers of people with few or no livestock, limited education, and poor health status.

The same Somali pastoralist system has experienced conflicts. These have varied from localized conflicts between individuals and clans over access to water, grazing, and markets, and similar conflicts with other pastoralist ethnic groups, and non-pastoralists. Over time, these relatively small-scale conflicts have become more complex with changing administrative boundaries. Local governments have competed for control of key resources, such as customs

points and markets. At the other end of the conflict spectrum was civil war in Somalia and the Ogaden War. Both of these conflicts have ongoing impacts, including the separatist movements that emerged after the Ogaden War and the constitutional chaos of southern Somalia since the late 1980s. Further layers of complexity were then added in the post 9/11 counter-terrorism era, including the US military presence in Somalia, Ethiopia, Kenya, and Djibouti, and incursions into Somalia by Ethiopian and Kenyan forces. Ongoing, protracted conflict in southern Somalia is partly associated with struggles to control key resources, such as ports for the export of livestock. The timeline in Figure 1 illustrates the diversity and scope of conflicts and their causes in only one relatively small area of the wider Somali system—Shinile Zone^v in eastern Ethiopia, occupied mainly by the Issa clan. Similar timelines could

be developed for other areas and clans, across countries and borders, and when combined would create a picture of immense complexity and the same time, a level of conflict permanency over more than 100 years. Therefore, under the Moving Up, Moving Out analysis, conflict was treated rather like weak governance, as a constant, normal part of everyday life, and a barrier to livestock production and trade that could be handled far more easily by wealthier producers and traders than poorer herders. Whereas specific conflicts can be an important shock and lead to loss of livestock and human life, the loss of livestock is felt most by poorer herders with smaller herds. These types of losses and the disproportionate impacts by wealth group are comparable to the impacts of drought.

Figure 1. Conflict affecting Somali Issa pastoralists in and around Shinile Zone, Ethiopia, early 1900s to 2010 (Catley and Iyasu, 2010)

Time Period	Events
Early 1900s	Migration of Oromo Ittu into Mieso from western Hararghe highlands to access grasslands for livestock production occurs. Ittu are mainly pastoralists at this time. Construction of the Djibouti-Addis Ababa railway begins, with Issa from Djibouti employed as workers and guards who later occupy areas around the railway in what is now Shinile Zone.
Imperial Early 1930s	Government allocates around 500 ha of land in Mieso to two private investors for cultivation and livestock production; the land is fenced. Although armed guards are used to protect the area, Ittu and Issa collaborate to destroy the farms and raid the animals. October 1935, Italy attacks Ethiopia from Eritrea and Italian Somaliland. The Issa are recruited by the Italians and receive modern arms and training, which they use against the Afar to control parts of the Allighedi plain—a key grazing resource for livestock, with access to the Awash River.
Imperial 1960s	Government gives concessions to foreign and domestic investors along the Awash River for commercial irrigation, mainly cotton, without consultation or compensation of the Afar. Some Afar leaders also appropriate land for irrigation. Pastoralists lose access to large stretches of the river and dry season pastures, with impacts on livestock.
Imperial 1970–74	Commander of armed forces in eastern Ethiopia encourages Oromo and Afar to attack the Issa; gains from livestock raids are distributed to raiders. Some Issa youth leave the country. Both Issa and Afar are very badly affected by drought and famine, without much assistance from government. Infant mortality of 615/1,000 is recorded among Issa during the 1974 famine; Issa wells are reported to be deliberately poisoned by army, with livestock and human deaths, which adds to animosity between Issa and Oromo.

Socialist Mengistu
1974–1991

1974 land reform puts all land under state ownership. Landlords are dispossessed, and land instead is allocated to Ittu, leading to a growing trend for private enclosure of land, i.e., the Ittu become more agropastoral. The Issa resist the expansion of cultivation, e.g., they organize attacks during the planting and harvesting seasons to secure extensive communal grazing land. The Siad Barre regime in Somalia trains the Western Somalia Liberation Front (WSLF) in preparation for invasion of Ethiopia. Issa who had previously fled Ethiopia are organized by Hamud Farah. In 1977, they cooperate with Siad Barre in the war launched against Ethiopia and rejoin clan members in Ethiopia to fight against the Oromo and Afar, pushing deeper into Afar areas. Although Ethiopia repels the invasion in 1978 with Afar support, the Issa occupy settlements along the main Djibouti road, Gadamaitu, and Adaitu. As well as trade and contraband, the Issa use the settlements as entry points for livestock movements further north into Afar. The period is characterized by supply of automatic weapons. The Oromo Ittu are supplied by the Ethiopian government; Somalia and Djibouti supply the Issa. In 1984, the Ogaden National Liberation Front (ONLF) is established, with leaders drawn from the WSLF.

EPRDF and
Regional
Autonomy,
1991–2000

Formation of the Somali Regional State, bordered by Oromiya and Afar Regions, but with borders in key areas left undefined, e.g., the western edge of Shinile Zone and Afar Region. **Somali-Oromiya issues**—Oromiya and Somali Regions are to jointly administer Mieso District, but a dispute emerges over control of Bordede, a customs and tax collection point connecting the eastern region to the center of the country. Although an administrative dispute between regions, there is continued violence between the Issa and Ittu. Somali Region later claims that 21 *kebeles*, including Bordede, should fall within its borders. These events lead to a referendum in November 2004, which allocates 20 of the 21 of the contested *kebeles* to Oromiya. As a result, the Issa “undertook indiscriminate retaliatory attacks on non-Somalis, to punish the ethnic groups that favoured Mieso administration under Oromiya. Many people were displaced or lost assets” (Shide, 2005). Ittu are increasingly disarmed due to government concerns about their support to the Oromo Liberation Front. Issa are more difficult to disarm due to their mobility and cross-border access and within a context of weak control of firearms proliferation in the wider region. This leads to imbalance in terms of physical power and puts the Ittu more at risk of large-scale or “commercial” raiding. Issa are able to sell raided stock at local markets or move them across the border to Djibouti to avoid repossession. Income from sales is partly invested in better weapons. As conflict reaches the level of territorial expansion by government entities (the regions) and dispute between regions for resources, customary institutions are less able to overcome conflict. **Afar-Somali Region**—continued conflicts between the Afar and Issa, essentially resource based and around control of grazing resources and access to the Awash River. The Afar-Shinile Zone border remains unclear, and Issa acquire a third settlement, Undofo, along the Djibouti main road. The occupation of the three settlements becomes a specific and intractable point of dispute between the two regional governments. **1988–1991—Somalia Civil War** and overthrow of Siad Barre. The self-declared independent Republic of Somaliland is established in the northwest; the onset of protracted political instability and humanitarian crises in the south occurs. **1991–1992—Civil war in Djibouti** is linked to the representation of the Afar in the Issa-dominated Djibouti government. **1998–2000—Ethiopia-Eritrea War** starts over disputed border, followed by long-running tensions to present day and proxy support from Eritrea to insurgency groups in Ethiopia.

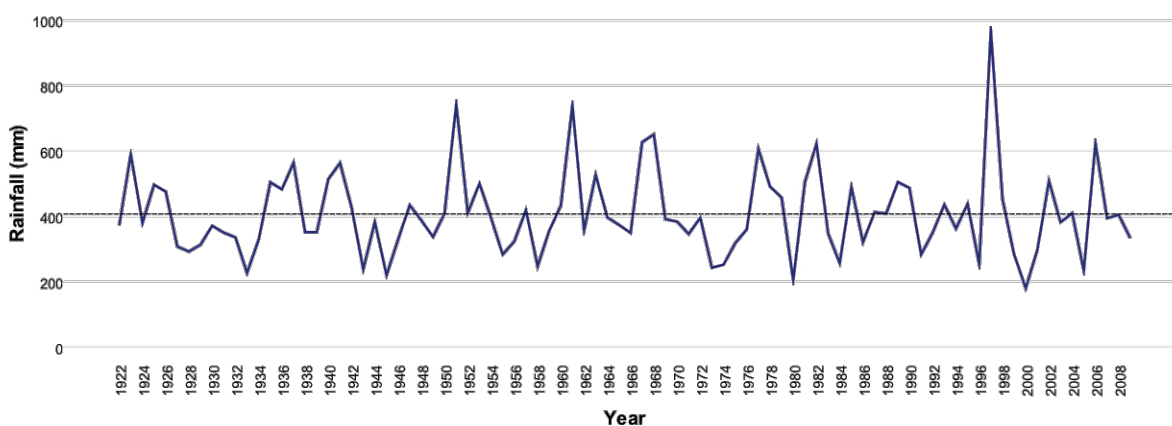
2001-2005	<p>The 9/11 terrorist attacks in the US in 2001 lead to shifts in the foreign and development assistance policies of major aid donors, towards “aid for security.” Somalia is increasingly perceived as harboring Islamic fundamentalists. The US establishes the Combined Joint Task Force (CJTF) in Djibouti in early 2003 as part of counter-terrorism measures; in Ethiopia, activities are conducted around Dire Dawa (adjacent to Shinile Zone), Gode, and other areas. Somali-Oromo issues—up to 2005, conflict intensifies, with frequent incidents of indiscriminate killings when federal army is not present in the area.</p> <p>Increasing Issa attacks occur to prevent Ittu use of grazing areas. Ittu expansion of cultivated land is supported by land tenure policy that favors private use of land for cultivation and is further supported by agricultural development policies such as supportive property rights for communal grazing land.</p>
2006-2010	<p>The Transitional Federal Government (TFG) in Somalia is increasingly under pressure from the militarized Islamic Courts Union. Ethiopia views the rise of Islamic groups, and Eritrean involvement, as a threat. The Ethiopian army moves into Somalia in 2006 to support the TFG. April 2007, the ONLF attacks a Chinese-run oil field in Abole, Somali Region, killing approximately 65 Ethiopians and 9 Chinese nationals. A large-scale counter-insurgency operation is launched by Ethiopia, with military operations focusing in Fik, Deghabur, Warder, Korahe, and Gode Zones, and related restrictions on humanitarian agencies.</p> <p>June 2008, a military clash occurs between Eritrea and Djibouti; the French Foreign Legion and CJTF are still present in Djibouti.</p> <p>Ethiopian army officially starts to withdraw from Somalia in January 2009. In Shinile Zone, a new conflict develops between Issa and agropastoral Hawiya in 2009 over informal designation of Mulu town as the administrative center of Mieso-Mulu <i>woreda</i>. Mulu is located in the Hawiya area. Access of Issa to Mieso livestock market is curtailed.</p> <p>Negotiations continue between Afar and Somali regional governments over the border demarcation; Afar rejects a proposal for the Issa-occupied settlements along the Djibouti road to be designated a “special <i>woreda</i>” under Afar Region.</p> <p>Plans are announced to improve the road from Djibouti via Dewale, through Shinile Zone. This would create a main highway for Djibouti-Ethiopia traffic through official Issa areas.</p>

For projects and programs framed around climate change, the apparent crisis in pastoralism is often explained by reference to declining rainfall, and an apparently increasing frequency and severity of droughts. For the Somali pastoralist system, data were analyzed from all 18 of the rainfall stations in the Kenya-Somalia and Ethiopia-Somalia areas, where data were available. The data covered periods ranging from 33 to 88 years, but a statistically significant negative trend in rainfall was evident in only one location, in Teltele in southern Ethiopia (Catley and Aklilu, 2013). The average annual rainfall across all 18 locations is illustrated in Figure 2.

High rainfall variability is normal in pastoralist areas, and this explains why pastoralist systems use herd mobility to access vegetation and water over large areas. However, government policies often restrict

movement (e.g., due to agricultural development), conflicts remain unresolved (or are encouraged), and human populations increase. In this situation, droughts have increasing impact because they affect growing numbers of poorer herders with few animals, who have few options in terms of moving or maintaining their herds. In contrast, wealthier herders can buy fodder, manage their animals in private enclosures, or transport livestock by truck to grazing areas. In common with conflict, drought is normal in pastoralist areas, and for those moving up, it can be an opportunity to buy out poorer herders. This perspective on rainfall trends and droughts does not mean that pastoralist areas are disconnected from global climate trends, as evident from the El Niño-related drought in pastoralist (and other) areas of the Horn from 2015. However, both El Niño and La Niña events have been associated with drought

Figure 2. Mean annual rainfall, border areas of Ethiopia, Kenya and Somalia, 1922 to 2009 (adapted from Catley and Aklilu, 2013)



in the region since records began in the late 1800s (e.g., Catley, Cullis, and Abebe, 2016).^{vi}

2.1.3. Mobility and land

Feinstein’s work on pastoralist mobility and access to rangeland and water falls into four main activities: working with organizations such as the AU and the Common Market for Eastern and Southern Africa (COMESA) to review research on mobility and land tenure in pastoralist areas, and incorporate research findings into new policy frameworks (African Union, 2010; COMESA, 2009); collation of evidence on the scientific basis for pastoralist livestock mobility, and using this to develop training courses for mid- to senior-level policy makers and practitioners regionally,^{vii} and in Ethiopia and Sudan;^{viii} and research on the trends and impacts of rangeland enclosures in Ethiopia (Napier and Desta, 2011), and livestock mobility in pastoralist and non-pastoralist livestock production in Sudan (e.g., Krätli et al., 2013; Young et al., 2016). Other research has included issues of mobility and land as part of wider analyses of livelihoods in pastoralist areas, often drawing on livelihoods frameworks and conducted in conflict-affected areas, in Darfur (Young et al., 2005), Karamoja (Stites et al., 2010), and the Somali Region of Ethiopia (Catley and Iyasu, 2010). Reduced access to rangeland and the responses of different actors is also central to the Moving Up, Moving Out analysis (e.g., Aklilu and Catley, 2010).

In general, Feinstein’s work on pastoralism and mobility has been heavily influenced by earlier research that explained the ecological and economic rationale for moving livestock in dryland areas, which are characterized by high rainfall variability, and therefore uncertainties in the availability of pasture and water, both spatially and temporally (Scoones, 1994). In common with many other studies, our research demonstrates the fundamental importance of mobility to pastoralist livestock production but at the same time, the changing nature of mobility, an increasing array of barriers to movement, and the responses by pastoralists as they continue to adapt to declining land access. Examples of barriers to movement and land access are summarized in Box 1, and mirror a very substantial body of research from other studies in the same areas and elsewhere.

These barriers exist in multiple configurations within and between pastoralist areas and countries. Notably, pastoralist land tenure and rights, land grabs, and constraints and innovations around land access were dominant themes at the international Futures of Pastoralism conference in Addis Ababa in 2011. In addition, contributors to the conference associated land fragmentation and private ownership with livestock commercialization, and increasing socioeconomic differentiation, with case studies from Tana River, Kenya (Nunow, 2013), southern Ethiopia (Tache, 2013), and Gedaref State, Sudan

(Babiker, 2013). Other contributors focused on the limitations of a new pastoralist land proclamation to secure communal land against private takeover in the Afar Region of Ethiopia (Mulatu and Bekure, 2013) and in Kenya, the blatant “legal theft” of Maasai land (Galaty, 2013). In contrast, there are examples of new, mutually beneficial agreements between pastoralists and farmers over land access (Letai and Lind, 2013), as well as examples of customary institutions “banning” rangeland enclosures (Napier and Desta, 2011). This raises the question of how rapidly these types of arrangements can be scaled up, adapted, and formalized where needed, in the face of the commercialization trends and the reality that in some areas, key seasonal resources are already in the hands of private individuals:

The development of private enclosures is linked to the expansion of crop land, the commercialization of livestock production and a weakening in the power of the customary institutions. As it became possible to fence land in specific areas for farming, some individuals saw an economic opportunity in enclosing a large area, cultivating a part of it and leaving the rest as pasture. These ‘two section’ *kallos* allow the owners to graze livestock for fattening and/or rent the pasture to others. A few individuals began to appropriate larger areas and the Borana customary institutions were not able to prevent them (one such individual was a former customary leader, the Abba Gada). Some of these individuals have ‘moved up’ within pastoralist society over the past decade, establishing large herds of cattle for trading. Informants reported that these people tend to be close to government systems and structures and use their relationship with powerful individuals in government first to appropriate land and then to protect them from the consequences. In one case described by elders, a powerful individual established a large private enclosure without permission. Reportedly, the surrounding communities asked the government many times over a 10-year period for the enclosure to be dismantled, but each time the individual was able to negotiate with government to keep the land. As one elder said, “The problem is that this

person has one foot in the customary system and one foot in the government system.” (Napier and Desta, 2011)

A hard reality facing projects that aim to support mobility and land access is that some of the key individuals who engage in capacity building, participatory land use planning, and similar activities are the same individuals who have a vested interest in private ownership of land and livestock commercialization. This might help to explain why progress towards formal, supportive pastoralist land tenure and livestock movement arrangements has been so slow. At higher levels, central governments are mainly interested in livestock development from a trade perspective and especially in the export of live animals and meat to generate foreign currency revenues. In countries with substantial livestock exports, such as Ethiopia, Somaliland, and Sudan, governments are able to generate high revenues but with limited investment in terms of livestock services or attention to land and livestock production. For some analysts, such revenues are likely to contribute to political budgets rather than being reinvested in public goods related to the livestock sector (e.g., de Waal, 2015). Indeed, there is little evidence to suggest that livestock-related export revenues are directed back towards livestock development or pastoralism.

2.2 Adapting, Diversifying, and Alternative Livelihoods

According to the African Union (2010), “African pastoralism is defined by a high reliance on livestock as a source of economic and social wellbeing, and various types of strategic mobility to access water and grazing resources in areas of high rainfall variability” and “Livestock or livestock-related activities contribute at least 50 percent of total value of marketed production and subsistence production consumed by an average household.” The critical role of livestock in pastoral livelihoods has influenced waves of development projects from the 1970s that have focused on livestock development, and activities such as natural resource management, water development, veterinary services, and livestock marketing. However, Feinstein’s research shows that until very recently, few projects have

Box 1. Policy and institutional barriers to pastoralist mobility include:

- A long history of land legislation that recognizes or prioritizes agricultural land over rangeland, positions rangelands as unoccupied or nonproductive, and incorrectly assumes that alternative land uses are more rational and productive. There are many variations of this general theme, including disconnects between national constitutions and laws or different bodies of law. Outcomes include: large-scale government appropriation of rangelands, including critical dry season grazing areas, for agricultural development; and favoring of irrigated agriculture by governments, with either local or foreign investments. Vested interests are often at play;
- Related to the above, the issue of pastoralist representation in dialogue on land policy and legislative reform, which relates to the wider constraint of the political marginalization of pastoralists in many countries;
- The limited recognition of customary institutions and in some cases, the declining influence and relevance of these institutions;
- A deeply entrenched perception among central policy makers that mobility is inherently backward, and, for example, makes pastoralists more difficult to administer and service; centrally, modernity is not associated with mobile communities; government programs aiming to settle pastoralists, explicitly or indirectly;
- Weak or absent policies on pastoralism and the development of pastoralist areas; where livestock policies exist, specific support to pastoralism is often lacking;
- Disconnects between the progressive policies on pastoralism of the AU and some Regional Economic Communities (RECs), and national policies; although regional policies are “signed off” by Member States, the AU policy support to pastoralist strategic mobility is absent from national policies;
- Encroachment of rangeland by woody plants; a 10% increase in bush cover reduces grazing by 7%. Related policy barriers include government bans on the use of fire to control bush encroachment;
- Changing administrative boundaries within countries; e.g., a non-pastoralist district might expand into a neighboring pastoralist district;
- Central government concerns that cross-border movements and livestock trade are illegal—but further disconnects with the objectives of RECs and the principles of the free movement of goods, services, and people;
- State-instigated conflict affecting pastoralist areas; e.g., competition between local governments over land, markets, or customs points;
- Unresolved ethnic conflicts by the state, leading to “no man’s land” acting as a buffer between ethnic groups, and unused;
- Weak or new local administrations that tend to mirror the political behavior and central government, and encourage rent seeking;
- Local appropriation of land by government officials and elites, including wealthier pastoralists and traditional leaders;
- Weaknesses in land use planning, including urban expansion;
- Fixed-point provision of health and education services, which do not take account of mobility;
- Limited or no policies or programs to control invasive plants, or at least do this effectively;
- Inappropriate water development; e.g., positioning of wells or boreholes;
- Widespread misunderstandings within governments, academia, and aid agencies on the reasons behind pastoralist mobility, and the ecological and economic benefits.

recognized the dynamics of livestock management systems in pastoralist areas or have considered the other, non-livestock activities that contribute to household economies and risk management.^{ix} Similarly, households often change their livelihood activities over time, either through necessity or choice. This section of the report reviews adaptations of pastoralism, and different types of diversification and alternative livelihoods:

- *Adaptations* are viewed as changes to the main livelihood activity, which continues but in a different, adapted form; for pastoralists, adaptations often involve changes to herd composition, movements, and marketing practices.
- *Diversified activities* are viewed as activities that are used to complement the core livelihood activity (whether real or aspirational); for pastoralists these diversified activities can relate to, or add value to, the core business of livestock production or can be quite separate, non-livestock-related activities.
- *Alternative livelihoods* refer mainly to people moving out of pastoralism; it includes a shift to settled agriculture, as well as various employment and other opportunities in urban areas within and outside of pastoralist areas.

Within and between areas, communities, and households, there is considerable fluidity between these three categories of change. Some adaptations and diversification can be temporary; one family member might adapt as a pastoralist whereas another might move out of pastoralism and find employment; a successful employee might save cash and later, buy livestock and return to pastoralism or pay contract herders to manage the livestock; different types of diversification might be used at the same time, with some being maintained and others being dropped. Spatially, some options are proximate, and some might require temporary (including seasonal) or permanent relocation to urban centers within a pastoralist area, in other parts of the country, or in other countries. Furthermore, there are very wide variations in the relative importance of different types of diversification in terms of their contribution to household income, and contributions can change over time.

The Moving Up, Moving Out scenario in Ethiopia and Kenya points to an increasing need to support livelihoods diversification and alternative livelihoods inside, but especially outside, pastoralists areas. However, the trends around diversification were evident in areas such as Somaliland from the early 1900s, when overseas travel and maritime employment led to increased remittances, and where education was seen as an important pathway to better income (Geshektar, 1993). In other areas, the major droughts in the 1970s were seen as important for triggering diversification trends (Little, 2016). Conflict and responses to conflict have also been major turning points in terms of prompting changes to livestock ownership and related diversification.

In terms of pastoral livestock systems, a common misperception among policy makers and researchers is that pastoralists resist change, and are inherently and irrationally conservative. A stereotypical perspective might refer to an apparent obsession with large herds and market aversion. In contrast, our own research and many other studies show how pastoralists respond to factors such as market demands and insecurity, and adapt their herd composition and management in face of changing access to resources such as pasture and water. Examples are provided in Box 2, and further examples are available from research in Sudan (Krätli et al., 2013).

Research up to mid-2017 shows a range of diversification options are available for pastoralists but with varying accessibility, availability, and affordability of these options (e.g., Little, 2016). In general, positive diversification leads to relatively high, predictable, and safe income, without damaging local environments or cultures, and has a positive or neutral impact on pastoralism. However, many of the better pathways to resilience are determined by a household's wealth (including livestock assets), proximity to urban centers, markets, and services, and social and political capital. These pathways are also usually more accessible to men and boys relative to women and girls. In contrast, negative diversification has harmful environmental or social consequences, places people at risk of violence, sexual abuse, or other types of harm, or adversely affects the livelihoods of

Changing livestock breeds and species in Borana, Ethiopia

Historically, pastoralism in Borana focused on cattle rearing and a single Boran breed of cattle, known locally as *qortii*. However, a different *geleba* breed was introduced from neighboring Konso and Guji areas of southern Ethiopia.

In spite of its high productivity, disease resistance, tolerance to high temperatures, and general hardiness, Borana herders have increasingly adopted the lower-yielding *geleba* over *qortii* cattle. According to local herders, feed shortage is the primary factor influencing this management decision. They note that *qortii* require much more feed than *geleba* because of their larger body frame. Thus, as land cover and use change and reduce available grazing and feed availability, particularly during droughts, herd composition has favored *geleba* cattle with its smaller feed requirements. *Geleba* cattle also can survive by feeding on tree branches and other nutritionally poor fodder during extended dry periods or droughts. The introduction of *geleba* cattle into the Borana pastoral system occurred in two ways: (1) post-drought trading of mature male *qortii* for *geleba* milking cows to restock herds; and (2) cattle rustling from neighboring groups. (Abebe, 2016)

Over a 42-year period between 1969 and 2011, the ratio of traditional/*qortii* to new/*geleba* cattle in Borana herds changed from 70:30 to 31:69. At the same time, there was a substantial shift towards greater ownership of small ruminants and camels, again in response to changes in access to rangeland.

Cross-border camel trade in Ethiopia to Sudan

Research in 2011 described an extensive and growing camel trade system that stretched for nearly 2,000 km, from pastoral producers in eastern Ethiopia to the far northwest of the country and into Sudan. This trade involved more than six ethnic groups and was served by 24

markets across Oromia, Afar, Amhara, and Tigray Regions. Within this evolving system, pastoralists were supplying camels in response to demands from farmers in mid-altitude areas of Ethiopia and increases in the market value of camels in Sudan. Although this trade evolved in the absence of government or aid programs, in 2010 it was valued at US\$61 million. In comparison, the total value of formal cattle, sheep, and goat live animal and meat exports from Ethiopia in 2010 was around US\$125 million (Aklilu and Catley, 2011).^x

“Trading Up” in Karamoja, Uganda

Typically, pastoralists in Karamoja are not price responsive when they sell livestock, and “The amount of money needed, not price, is the primary consideration when animals are being sold to meet cash needs. When the price is high, fewer animals are sold; when the price is low, more animals are sold. In other words, the supply of animals being sold to meet cash needs is price inelastic” (Rockemann et al., 2016). However, some pastoralists were adapting their marketing practices and “trading up.” “In this case Karamojong pastoralists take advantage of high livestock prices to sell slaughter bulls (high value/low potential growth assets) and buy heifers (high value/high potential growth assets). This is most apparent at the end of the rainy season, when slaughter bulls are in excellent condition and command relatively high prices. In summary, Karamojong livestock marketing practices, including decisions on which animals to sell and when, represents fully rational economic behaviour” (Rockemann et al., 2016).

others, e.g., crime. Negative diversification is often associated with low household wealth, low or no education, physical isolation from urban centers, and limited social networks. It can also reflect political marginalization or discrimination against specific groups or communities. These factors, together with cultural beliefs and practices such as early marriage, result in distinctly higher risks of negative diversification for women and girls. In general, irrespective of gender, negative diversification is also associated with livelihoods activities pursued by necessity not choice, and poverty traps.

Other types of diversification are more difficult to categorize, being not necessarily positive or negative. These types also often arise from limited choice. An example is paid unskilled work, which is usually the only type of work available to pastoralists, due to the low levels of education (e.g., Little, 2016; also see section 3.1). Typically, unskilled work is associated with proximity to urban centers, low wages, long hours, high competition for jobs, and marked seasonal variations in availability. Plus, employment and labor laws are weak or not applied. This encourages an exploitative labor market, where the supply of workers far outweighs demands (e.g., Iyer and Mosebo, 2017). Wage rates may be so low that opportunities for saving or acquiring productive assets are minimal, and further education or skills training is unaffordable. Similarly, low wages mean that remittances back to rural family members are also low. To some extent, trends in wage labor reflect “moving out” of pastoralism:

In the Borana case study, we have time series data that reveal an upward trend in wage-based diversification. The PARIMA study showed only about 2% of Borana households with waged employment in 2000 (PARIMA, Summary Statistics June–October 2000), but in Chapter 4 of this report Abebe reports that 18% of households had a member(s) employed in 2013, including in cash-for-work schemes. Comparable studies from Baringo, Kenya and elsewhere in eastern Africa show similar increases in waged employment (Little 2014; McCabe 2003; McCabe et al. 2010). The lack of marketable skills, education, and a positive policy environment restrict many pastoralists and ex-pastoralists to low-paying casual work. (Little, 2016)

The categorization of some forms of diversification is also open to question, as described by Little (2016):

Different strategies are generally distinguished between what might be labelled positive or adaptive and negative or maladaptive forms of diversification (Little, Smith et al. 2001; Little 2009). The boundary between the two categories, however, can be blurred and also invoke moral undertones about what is good and what is bad. For instance, petty trade in *khat* (*miraa*), a mild natural stimulant that is legal in Kenya and Ethiopia, provides an important source of cash for women traders, but it also has negative social effects, including misallocations of expenditures away from food purchases, encouragement of criminal behavior (including theft), and violence against women. The same case can be made for alcohol sales, another important source of income for pastoral and ex-pastoral women. Whether trade in *khat* or alcohol sales is a good or bad form of diversification depends on the perspective taken.

At national policy levels, it has often been assumed that pastoralists should be transformed into agriculturalists, with explicit policy support to farming. However, this approach often overlooks the fundamental climatic risks in arid and semi-arid areas, and high rainfall variability. More reliance on agriculture over livestock can place pastoralists at greater risk of food insecurity and poverty traps, and as noted by Little (2016), “Poor pastoralists and ex-pastoralists usually cultivate out of necessity.” In areas where rainfall patterns, or access to irrigation, make crop production a viable option, better-off pastoralists are more likely to acquire the best plots.

Table 2 summarizes some of the main types of adaptation, diversification, and alternative livelihood options reported by Feinstein’s research in pastoralist areas, and provides notes on some of the key aspects of each option. If this selective and incomplete listing is viewed from a perspective of many households using multiple types of adaptation and diversification, with some household members opting for alternative livelihoods, a very complex and diverse mix of options and pathways becomes evident. Yet in 2017 pastoralist areas continue to be characterized by high levels of humanitarian

assistance, high malnutrition rates, very low human development indicators, and, in some countries, large-scale social protection programs. This situation is symptomatic of trends in livelihoods diversification, with the numbers of households following negative diversification pathways and caught in poverty traps far outnumbering those engaging in positive diversification.

To illustrate the scale of the problem, the concept of a pastoralist minimum herd size can be used. This assumes that a household needs a minimum number of animals to function as a pastoralist household, i.e., provide sufficient milk for their own consumption, and offspring for sales and the related purchase of cereals. Research from different sources indicates that a minimum herd comprises approximately 4.5 TLUs^{xi} per person (e.g., Little et al., 2008), which equates to 27 TLUs for a family of six people.^{xii} However, using data from an outcome assessment of the PSNP in Ethiopia in 2014 (Kumar and Hoddinott, 2015), 80% of households in Afar Region and 90% of households in Somali Region lacked a minimum herd. Assuming these figures are accurate, and when combined with human population figures, the numbers of households needing to return to pastoralism or find positive diversification activities or alternative livelihoods would be approximately 213,600 households in Afar Region and 795,000 households in Somali Region. These estimates can be compared with trends in urbanization, job creation, and population growth, and intuitively, point to an increasing disparity

between the numbers of people needing to find positive diversified or alternative livelihoods, and the opportunities that are available. Similarly, the options for viable agriculture can be assessed by reference to rainfall and other conditions, and the realities of land acquisitions around irrigation schemes. At first site, the PSNP data are implausible. Is it really possible that such a high proportion of households in Somali and Afar regions lacked a minimum herd? However, research in other areas presents similar findings. For example, an assessment of poverty in Marsabit District of northern Kenya used panel data over five years from 2009 to 2013 and concluded that “The majority of households (over 70%) are both income and livestock-poor with few having escaped poverty within the five-year study period. Disaggregating income and asset poverty also reveals an increasing trend of both structurally poor and stochastically nonpoor households” (Mburu et al., 2017). The main pastoralist ethnic groups in Marsabit District are Samburu, Rendille, Boran, Gabra, and Somali.

Again, the “Moving Out” term in our analysis refers less to people finding non-pastoral livelihoods in pastoralist areas and more to migration to neighboring areas and countries (Catley et al., 2016). As we discuss in section 3.1, better education is a critical development strategy to support good diversification or alternative livelihoods, but also has to be assessed against actual job opportunities locally, nationally, and internationally, and options for migration.

Table 2. Adapting, diversifying, and alternative livelihoods: Examples from pastoralist areas

Option	Pros and cons, issues and choices
Adaptations within pastoralism	
Market-based changes in herd composition and management, and marketing behavior (e.g., Aklilu and Catley, 2009; 2011; Krätli et al., 2013; Rockemann et al., 2016)	<ul style="list-style-type: none"> ▪ Supports pastoralism and provides benefits to those involved; changes arise mainly from choice ▪ Practiced by those with sufficient numbers of animals to “stay in” the pastoralist system, and with access to markets and rangelands ▪ Can lead to private control of rangeland and water by wealthier producers, and less commitment to traditional social support systems; negative impacts on poorer producers

Stress-based changes in herd composition (e.g., Abebe, 2016—see Box 1)	<ul style="list-style-type: none"> • Supports pastoralism and benefits for those involved, but driven by necessity, e.g., drought, population growth, declining rangeland • Practiced by those with sufficient numbers of animals to “stay in” the pastoralist system
Livestock-related diversification and adding value	
Added-value activities related to livestock rearing and marketing, e.g., milk processing and sales (Mahmoud, 2016)	<ul style="list-style-type: none"> • Supports pastoralism • Requires access to markets • Can provide specific and relatively low-risk opportunities for women—but demands and opportunities are not infinite
Fodder production (Mahmoud, 2016; Fitzpatrick et al., 2016)	<ul style="list-style-type: none"> • Supports pastoralism • Requires access to land, water, and markets; can involve private land enclosures and exclusion of other pastoralists from key grazing areas
Agropastoralism (Bushby and Stites, 2016; Fitzpatrick et al., 2016)	<ul style="list-style-type: none"> • Relevance and level of risk closely linked to rainfall—wide range of contexts • Requires access to land and sufficient numbers of livestock • Risks of agricultural land competing with rangeland • Flexibility—can enable seasonal or annual shifts in emphasis on livestock vs. crop production due to rainfall, security, markets demands, or other factors
Non-livestock-related diversification and alternative livelihoods	
Investments in new businesses, especially urban-based (Mahmoud, 2016)	<ul style="list-style-type: none"> • As financial services are limited, a choice available mainly to wealthier households, and/or peri-urban and urban households • Strong social networks often important, as a means to access finance
Education (Jackson, 2011; Mahmoud, 2016; Iyer and Mosebo, 2017)	<ul style="list-style-type: none"> • A critical and positive livelihood option, but more available to wealthier households, and to boys and men; more accessible to peri-urban and urban households (see section 3.1). • Social ties to urban centers are important, e.g., to provide accommodation and food to children from rural areas
“Medium” wage income, e.g., teachers and nurses in government; NGO employment; mechanics (Jackson, 2011; Mahmoud, 2016; Iyer and Mosebo, 2017)	<ul style="list-style-type: none"> • Often requires education, especially higher education (see section 3.1), and so less accessible to women and girls; arises mainly by choice • Can provide relatively high levels of remittances back to rural households • Often draws on social networks to access employment • Involves types of employment with relatively fair wages, benefits, and protection, and relatively high predictability • Can involve out-migration, especially for higher-paid, professional-level employment
“Low” wage labor, e.g., agricultural labor, truck loaders, construction, domestic cleaners, and cooks; bar and hotel work (Stites et al., 2014; Iyer and Mosebo, 2017)	<ul style="list-style-type: none"> • Urban workers often retain ties to rural home areas • Often relates to exploitative, unpredictable, or seasonal labor, or labor involving high health or protection risks; can involve out-migration • Reflects limited education, and migration and labor through necessity • Can involve in-kind payments, e.g., in food or alcohol, or accommodation, and in turn, very low or no cash income • Often one of the few options available to women and girls • High risks of poverty trap

Income from collection and sale of natural resources, e.g., charcoal, firewood, gums, resins, stone, mining (Young et al, 2016; Stites et al., 2014; Little, 2016)	<ul style="list-style-type: none"> • Reflects limited education and limited choice, but less associated with out-migration; exceptions include gold mining, which attracts migrants from across a wide region, even cross-border from Chad to Sudan • Depending on the specific item collected, often one of the few options available to women and girls • High risk of poverty trap
Agriculture (Burns et al., 2013; Fitzpatrick et al., 2016; Bushby and Stites, 2016)	<ul style="list-style-type: none"> • Wide range of pros and cons related to local contexts • High risk in areas with high rainfall variability • Often reflects limited choice in contexts of declining livestock ownership; high risk of poverty traps in these cases • Risks of agricultural land competing with rangeland
Trading, e.g., market trade in food or clothes; brewing and beer sales; <i>khat</i> trade (Abebe, 2016; Stites et al., 2014)	<ul style="list-style-type: none"> • Relatively predictable and can be managed independently/ privately • Mainly peri-urban or urban • Reflects low education • Often one of the few options available to women and girls

2.3 Gendered Pathways to Resilience

Livelihoods and pathways out of poverty in the drylands of the Horn of Africa are highly gendered. Looking across the various options for improved or resilient livelihoods, women and girls have relatively limited options as livestock producers, if viewed from the perspective of owning and controlling their own herds (e.g., Stites et al., 2016). In terms of diversified or alternative livelihoods, again women and girls consistently have fewer options than men and boys. Activities that tend to be the domain of women also tend to provide relatively low levels of income and place women at particular risk of poverty traps or abuse. Despite these generalizations, the money that women acquire from diversified activities might be the first cash that they have ever directly received. In situations where they can use some or all of this cash independently of decisions by husbands or male relatives, the income has an impact beyond its monetary value (e.g., Young et al., 2009). It follows that for women and girls, an analysis of the benefits and risks of diversification needs to take account of the level of independence that a new activity might provide, despite the risks and the limited cash income.

The low social and economic status of women and girls in pastoralist areas has deep cultural roots, and has created societies and social norms that

emphasize the power, voice, and assets of men. Our research in Karamoja clearly demonstrates the difficult position of women and girls, including high levels of domestic violence, early marriage, limited ownership of livestock, and less access to positive diversified livelihood activities relative to men. In part, the practice of early marriage relates to the husband's payment of bridewealth in the form of livestock (at least traditionally), but the term bridewealth obscures the fact that most or all of the payment goes to the bride's father. Therefore, there is a financial incentive for fathers to marry off their daughters at an early age.

Although pastoralist livestock production is still the core and most robust livelihood activity in the drylands, in general, men are the main owners of livestock. Ultimately, men make most of the key decisions about how livestock is managed and sold. If women do own animals, this is often restricted to small stock such as sheep and goats, rather than the more valuable cattle and camels. In parts of Sudan and in many Somali areas, sheep production is distinctly market oriented and profitable, and women can be directly involved in and benefit from this. However, there is also a risk that as a specific type of livestock acquires a higher commercial value, men take over the ownership and control (e.g., Talle and Abdullahi, 1993). Although women and girls play central roles in livestock rearing, especially of small stock, their contribution to production is not

matched by their control of either livestock or the income derived from livestock.

From a Moving Up, Moving Out perspective, the benefits of livestock commercialization include the ownership of large herds, the related increases in income from livestock sales, and options for investing in non-livestock-related businesses in growing urban centers. Although the evidence on the gender dimensions of these trends is limited, if men dominate livestock ownership, it seems likely that this ownership control would continue as systems become more market oriented. This includes processes related to commercialization such as the private ownership of rangeland, which again appears to be ownership primarily by men. Where there are clear benefits from livestock commercialization for women, these benefits are probably more focused around milk production, processing, and sales, trade in livestock (especially small ruminants), and sales and services at livestock markets. If so, a common thread is proximity to towns and markets, or at least proximity to roads. Also, milk is highly perishable relative to live animals, and this tends to limit milk sales to local markets. While activities such as livestock trade or providing services in livestock markets are important sources of income for women, these opportunities are relatively limited in number.

In terms of pathways to resilience, better health and education are critical, but across the countries covered in the synthesis report, pastoralist girls and women have less access to education and health relative to boys and men. Frequently, these differences are substantial and can have health outcomes such as higher mortality rates in girls and women. For example, in Ethiopia:

There are also major gender differences in accessing and using health services in the Somali Regional State (SRS). These differences help to explain why there is a high male to female ratio in the Somali population relative to other parts of Ethiopia, with the Central Statistics Agency reporting more than 115 males for every 100 females in the region in 2006 against a national average of 99.5 males per 100 females (CSA/EDRI/IFPRI, 2006). These figures are supported by estimates of life expectancy in the SRS, and a notably higher life expectancy of men (56 years) compared to women (53 years)

(Devereux, 2006); this differs from Ethiopia as a whole, where women tend to outlive men. One probable factor explaining these figures is the high proportion of deaths in the SRS that are attributable to childbirth in women. Approximately 23% of all deaths were linked to childbirth, and this was around four times the rate of people dying from old age (Devereux, 2006). (Admassu et al., 2013)

In part, women's low health status relates to limited education, and together the health-education problem contributes to a higher risk of women becoming caught in poverty traps. When women and girls discuss health and education (Jackson, 2011), they describe important barriers such as:

- Their domestic responsibilities such as caring for siblings, food preparation, and water collection;
- Early marriage, in terms of not being supported to attend school at all or being withdrawn from secondary education; fathers and other male relatives receiving bridewealth, especially in the form of livestock;
- Discrimination against girls within the family and wider society, and a preference to educate boys; boys have preferential access to health services;
- Risks related to travel to school or health clinics and the need for girls to be accompanied; additional issues if girls have to relocate, e.g., to go to school;
- Predominance of male health workers in some areas and reluctance of girls and women to be examined by men;
- Men controlling decisions over expenditure on health and education;
- For female-headed households, the costs of education being far higher than their income (e.g., see Table 4, section 3.1).

Examples of education indicators in pastoralist areas are shown in Table 3, section 3.1.

In 2008, an impact assessment at the end of a five-year health project in southern Ethiopia highlighted some of the challenges in overcoming the gender-specific barriers to better healthcare in pastoralist areas.

The health project covered a remote Somali pastoralist area in southern Ethiopia adjacent to the Kenyan border. The project included the training and deployment of community health agents (CHAs) and traditional birth attendants (TBAs) in line with government health policies.

Community health agents were based in communities. Their official tasks focused on health extension around important problems such as malaria, diarrhea, and pneumonia; treatments were limited to the use of oral rehydration therapy (ORT) to treat diarrhea.

Traditional birth attendants were trained on key symptoms, diagnostic methods, and preventive measures for pregnancy-related problems and difficult pregnancies and labor, including edema, anemia, hypertension, and pre- and post-natal bleeding. In addition to attending normal births, the TBAs were responsible for early referral to health centers in dystocia cases, and basic infant and child healthcare.

The health centers referred to above were government facilities, where staff have higher levels of training. Within the government system, it was expected that CHAs and TBAs would refer cases to health centers, and that patients would act on the referral advice.

An impact assessment included interviews and participatory methods with 200 women and 200

men in the health project area. The key findings were:

- Women scored CHAs significantly higher for accessibility, availability, and affordability relative to men. In contrast, men scored health clinics significantly higher than women for these same three indicators. Both men and women reported health clinics as providing the best-quality service. Overall, men were able to travel to the health clinics and use the better-quality service there; women were far less able—or allowed—to travel to clinics and so had little option but to rely on CHAs.
- Women gave very low scores to TBAs for all health service indicators, viz. accessibility, availability, affordability, and quality. No information was available within the project from monitoring of TBAs, or on the outcomes of TBA advice or interventions. During the five years of the project, there was a zero referral rate to health clinics for difficult births. It was assumed that while TBAs might have been able to deal with dystocia cases that were due to minor malpresentations, more severe birth complications would require treatment by higher-trained workers at health centers. It was also assumed that more severe, untreated dystocia cases would result in high case fatality rates. Therefore, the zero referral rate was a major concern.

One of the recommendations of the impact assessment was to improve the quality of CHAs and broaden the range of treatments they provide to include malaria and pneumonia, drawing on the positive findings from a pilot project on community case management in Ethiopia (Degefe et al., 2008). At the time of writing this synthesis report, CHAs were still restricted to the use of oral rehydration therapy, and within the government health system in

Somali Region other treatments were only available in health centers.

2.4 Social Capital and Pathways to Resilience

Historically, pastoralism has required collective action to manage livestock herds, including the daily tasks of moving herds to pasture, watering, and

providing security. The seasonal movement of herds can be based on reports from scouts on grazing and security conditions in distant locations, and joint decisions on when and how to move livestock. At the same time, social capital in pastoralist areas is reinforced by complex exchanges of livestock and livestock products between households and individuals in the form of loans and gifts, and key social events such as marriage use bridewealth or dowry payments in the form of livestock. Historically, social capital has also been central to drought recovery and rebuilding herds after disease outbreaks or raids. Various “traditional” social support systems have been described, such as the Borana *busa gonofa* system in southern Ethiopia that is embedded in customary law and involves the provision of cattle to people who have lost livestock (Aklilu and Catley, 2009; Abebe, 2016). Similarly, the use of *zakat*^{xiii} in Somali pastoralist areas includes the collection of livestock from wealthier families, and a redistribution of these animals to the poor (Aklilu and Catley, 2009). Social capital is also reflected in local peace making and can involve intermarriage across clans, tribes, or ethnic groups to consolidate peace agreements. However, conflict can also undermine intermarriage, as described in South Darfur when intertribal conflict was associated with divorce among intermarried couples (Young et al., 2009).

A key aspect of the Moving Up, Moving Out scenario is that social capital changes over time, and that these changes contribute to the widening gap in livestock assets between richer and poorer households, and the capacity of the poor to manage crises such as drought. In terms of traditional social support after shocks, the limitations of this support are illustrated in Box 4 and indicate a growing mismatch between the numbers of people needing support and the capacity or inclination of wealthier households to provide this support. These changes can also be viewed from the perspective of reciprocal arrangements versus obligatory support. The former assumes that support to kinsfolk is provided at least in part to ensure that the giver will also receive support in future, if needed. Obligatory support relates more to religious or social beliefs and the ethics around supporting those in need. With commercialization, wealthier herders reduce

their investment in reciprocal social capital because of the harsh reality that they are unlikely to receive anything in return. In other words, there is a changing moral economy associated with Moving Up, Moving Out.

Although the long-term changes in behavior linked to livestock commercialization point to declining social capital, it is very evident that social connectedness is still central to surviving major crises. Narratives from pastoralists, agropastoralists, and farmers who experienced the famine in Somalia in 2011 repeatedly show the importance of social ties, especially with relatives overseas, as a means to access support (Majid et al., 2016). They used the language of having “someone to cry to” to denote the request for assistance—often but not always a close relative—and usually someone outside the immediately affected area: “People who have nobody to cry to, that is who don’t have kinsmen to help, don’t have a son or a daughter in the towns or out of the country to help . . . all such people have no coping capacity. From our case, we were also affected very much in our village but the number of people who died were not many” (Maxwell et al., 2016).

Looking more closely at commercialization and more individualistic behavior over time, wealthier and more influential herders (including absentee herd owners living in towns) are more likely to take private control of rangeland and water. They also tend to have larger families and therefore, a larger labor force. In this situation, there is less need for them to rely on more traditional collaboration with other herd owners for livestock management. This points to a further weakening of social capital. Even when traditional social support is still in place and poorer households receive livestock as a way to rebuild their herds, this occurs in a context of a widening gap in livestock holdings between rich and poor, and declining access to rangeland and water. Therefore, it becomes increasingly difficult for poorer herders to secure their position back in the pastoralist system.^{xiv} In part, this explains the growing trend towards diversification whereby poor households maintain livestock but lack a “minimum herd” (see section 2.2) and so are compelled to find other sources of income.

Box 4. Declining social capital in southern Ethiopia (Aklilu and Catley, 2009)

According to Boran elders, the traditional *busa gonofa* support system has declined so that the amount of support given to families in need is about one-fifth of what it used to be, and it takes years before a household receives this support due to a long list of intended beneficiaries. Informants reported that the number of people who can contribute to this system is in decline, while those who seek support are increasing. The queue for support is lengthening, although some can “jump the queue” through influence and friends. A person with five cows was expected to donate one cow in the old days since he is assumed to have calves and immature cattle, and *busa gonofa* involved the donation of female animals. These days, however, donations can be given either in the form of livestock or cash, because those who cannot afford to contribute in livestock can donate a little cash to meet their obligations. While *busa gonofa* remains a compulsory social obligation under customary law, the means to practice it are fading with increasing poverty.

Although increasing destitution is probably the main reason for the decline of traditional support

systems, commercialization is also contributing to behavioral changes around *zakat* and *busa gonofa* as individualism creeps in. As stated by the Jiren Dikale women’s group in Borana, “The poor have no one to turn to these days, except firewood and safety net.” In some areas, even community leaders seem resigned to the fact that a critical point had been reached, at which the poor can no longer be helped. For example, the directive issued by the 1996 General Assembly of Borans (*Gumi Gaayo*) that wealthy Borans have to diversify into urban businesses could serve as a tacit acknowledgment by the highest traditional body that only the rich can consolidate wealth under the current pastoral system. The options for this body to directly assist poorer households seemed to be running out. Desta et al. (2008) reported that Borana communities used to have positive attitudes about “dropouts,” since they provided labor as hired herders (notably, for the wealthy). However, such people are increasingly seen as a nuisance as their numbers have grown in excess of the labor needs of the communities they live in, and they require assistance in the form of food, milk, loans, and so on.

Although livestock-related social support may be declining in some areas, it still functions to varying degrees and in some cases is combining traditional transfers of livestock with cash. In some areas of northeast Kenya, livestock no longer features in the local social support. Instead, this support involves financial assistance to people who can present a strong business idea to local leaders, irrespective of whether the idea relates to livestock (Mohamed Abdinoor, personal communication). At the same time, other types of social capital are becoming increasingly important as people diversify. As indicated in Table 2 being able to draw on assistance from family members or neighbors—especially those in towns and cities—can enable access to jobs

and education or help to deal with household-level shocks. For example:

- Accessing education, Somali Region, Ethiopia: “For many young Somalis, their continuation in education has been dependent on support from their immediate and wider family. Many respondents recounted examples of living in towns with relatives, or in rental accommodation paid for by relatives. Most of these are now employed, and are supporting and housing younger relatives who are currently in education, as well as supporting their parents, if they are still alive. Linked to this has been the influx of remittances from family members overseas, particularly targeted to supporting relatives in education” (Jackson, 2011).

- Finding work, rural-urban migrants, Karamoja, Uganda: “Some respondents are able to avoid onerous rents through reliance on social or kinship networks. This is normally done by staying with a relative who already resides in the urban area, and contributing to rent or other expenses when possible. Interestingly, of the small number of Tepeth in the sample, none in Moroto town pays rent. The tight social network of Tepeth in the Singila neighborhood enables migrants to find free accommodation, as described by a young man, ‘I stay in Singila with friends: no rent...We the Tepeth people love each other; where I sleep is not a problem’” (Stites and Akabwai, 2012).
- Social support around idiosyncratic shocks, Darfur, Sudan: “When one of these idiosyncratic shocks affected a household, they usually turned to their friends, family, and neighbors. In fact, there appeared to be a constant exchange of support among the population to help whichever household was affected. Sometimes it was not even an exchange of goods. When a woman without older children was ill, other women might collect water or firewood for the household. Another type of social assistance is *nafir*. This assistance consisted of many different ways of working together to support a struggling household but was usually in the form of agricultural labor. If a household had only one or two adults and one was sick or injured, or if a farmer hadn’t been able to get his crop in before the *talaig*^{sv} (and the crop was therefore in danger of being lost), the household could ‘call for *nafir*,’ and others who had time available would come to help” (Fitzpatrick et al., 2016).

The first two examples above also illustrate that from a resilience perspective, the nature of shocks will change for people moving from rural areas to find work or education. Whereas major risks in rural areas might be drought, livestock disease outbreaks, or violent conflict (i.e., covariate shocks), in urban areas the shocks are probably more idiosyncratic, such as the loss of employment. In all cases, illness or the death of a family member is a major household-level shock because it reduces or stops

an income stream or a form of production. Partly for these reasons, access to quality healthcare and the ability to work are central to resilience; we return to this issue in section 3.1.

For former pastoralists who migrate to find work in areas that are dominated by other ethnic groups, the risks of ethnic discrimination are high and can be compounded by language barriers. This situation makes it more difficult to find well-paid work or to adjust socially and integrate into a new environment. The problem is particularly acute for many pastoralist groups because of their physical and economic isolation within countries, government policies or narratives that portray pastoralism as backward or problematic, and media coverage that also presents a negative or derogatory view of pastoralists. The issue of discrimination was recently highlighted in a study in Uganda, which reported substantial discrimination against Karamojong when they moved to Ugandan cities and towns outside of Karamoja. In contrast, when Karamojong migrants moved across the border into Lodwar, the main town in Turkana County, Kenya, they were welcomed by local residents who shared cultural and linguistic ties (Iyer and Mosebo, 2017). Similarly, many young Somalis in the Somali Region of Ethiopia do not look internally to other regions of Ethiopia to find work and are more likely to move to Djibouti and the Middle East. These trends show how social capital is not only locally specific but can also relate to broader social similarities across societies and across borders. People prefer to move to places where they not only have direct support from family and friends, but also where they are more likely to “fit in” and be accepted more generally.

3. Synthesis Findings: Policy and Programming Challenges

3.1 Health and Education

In general, pastoralist and agropastoralist areas of the Horn of Africa have very low health and education indicators. For countries like South Sudan and Somalia where these communities comprise the majority of the population, low health and educational status is evident from national statistics; in other countries, the national figures tend to hide

the chronically dire situation in pastoral/agropastoral areas. Health and education are also gendered, with women and girls often having lower health and educational status (see section 2.3). In 2009, Feinstein compiled health statistics as part of the development of a COMESA policy framework for food security. Some selected figures are provided in Box 5.

Box 5. Selected health indicators in the Horn of Africa, 2009^{xvi}

Sudan and South Sudan—the proportion of fully immunized children varied by state but was noticeably lower in some northern states with high pastoralist populations, e.g., North Kordofan: 39.4%, South Kordofan: 37.3%, North Darfur: 39.9%, and South Darfur: 23.7%. In South Sudan, with substantial agropastoral populations, these figures were as low as 5.5% in Bahr el Ghazal.

Kenya—child immunization coverage was only 6% in the pastoral North Eastern Province of Kenya, an area covering 20% of the country in terms of landmass, compared to a national average of 57%. The province has only nine doctors and a doctor-patient ratio of 1:120,823; in other provinces the ratio varies from 1:21,000 to 1:51,000. Looking specifically at women's and children's health, only 15.5% of deliveries in North Eastern Province involved trained health workers, compared with a national average of 50.7%. Eighty-six percent of pastoralists were more than 5 km from a health clinic compared to a national average of 48%.

Eritrea—infant mortality in the pastoralist Northern Red Sea and Southern Red Seas areas was 77 per 1,000 live births and 122 per 1,000

live births respectively, compared to a national average of 48 per 1,000 live births; death rates were between 1.6 and 2.5 times higher in pastoralist areas.

Ethiopia—in the Somali Region of Ethiopia there are major disparities in access to healthcare between urban centers and pastoral communities. For example, while 96% of urban respondents reported a health clinic in their community, and within 1 km distance, only 12% of pastoralists reported a health clinic in their community and at a nearest average distance of 36 km. Similarly, in pastoral areas only 24.4% of children were immunized compared with 49.4% of children in urban areas. In other districts of the region, child immunization coverage varied from 17.8 to 34%.

Uganda—in the Karamoja Region of Uganda, the under-five mortality was 174 per 1,000 live births compared to a national average of 137 per 1,000 live births. Only 18% of births were assisted by skilled workers compared to a national average of 42%.

While at first sight these findings might be seen as outdated, it is difficult to find evidence of much improvement during the last ten years or so. There has been a notable increase in the construction of health facilities and schools in areas such as the Somali Region of Ethiopia (Jackson, 2011; Admassu et al., 2013) and Darfur (Fitzpatrick et al., 2016), as well as increasing demand for education, associated with people moving out of pastoralism, with diversification, and with settlement. However, despite these trends and a notable increase in health and education infrastructure, there seems to be limited evidence that health status has improved, or that more children are leaving school with relevant qualifications. For example, in 2017 Somali Region once again experienced drought and again became the epicenter of cholera outbreaks.

In South Sudan, Somalia, and eastern Ethiopia, persistent or renewed conflict has certainly hindered service provision. For example, in South Sudan:

South Sudan has some of the worst health indicators in the world. In 2006, it was estimated that there were only 36 doctors and 3,600 primary healthcare workers for a population of approximately 7 million (Rietveld and Waldman, 2006). One out of every seven children dies before their fifth birthday. Nearly one in every seven women who become pregnant dies from pregnancy-related causes, and only 10 percent of deliveries are attended by a skilled professional (compared with 70 percent of deliveries in the North). The infant mortality rate is 170 per 1,000 live births (compared with 70 per 1,000 live births in the North) (The Brenthurst Foundation, 2010). Health accounts for only 3 percent of household expenditures in South Sudan (WFP, 2010). GoSS never managed a health system before 2005, and the Ministry of Health (MoH) was ill equipped to build the health sector, necessitating the involvement of the World Health Organization (WHO) and the World Bank in the development of policies and programmes (Cometto et al., 2010). Although the Interim Constitution stated that primary healthcare services should be provided freely, lack of government capacity has been a challenge.

South Sudan has the unfortunate distinction of having one of the lowest literacy rates in the world—24 percent as of 2007 compared with 49.9 percent in North Sudan (Kett and Trani, 2007). Fully 92 percent of women cannot read or write. While 1.3 million children are enrolled in primary school, only 1.9 percent of these complete a primary education, and only 27 percent of school-aged girls are enrolled in school. Education accounts for 1 percent of household expenditures (WFP, 2010). In 2006, only 16 percent of classrooms in the South were permanent structures, and the vast majority of teachers had received no training and worked as volunteers (GoNU and GoSS, 2008). (Maxwell et al., 2012)

A comparable health and education environment is evident in the Somali Region of Ethiopia in 2011 (Table 3). Although the region has experienced severe conflict over many years, most recently conflict has been localized to specific zones. Therefore, conflict per se does not explain the low health and educational status.

In part, the persistence of weak basic services relates to long-term conflict and then after conflict, the challenges of developing health and education systems and services with national or local governments with weak administrative capacities, and high levels of corruption (e.g., Maxwell et al., 2012). However, conflict does not fully explain the gaps in service provision. Even countries that are politically stable have very low levels of service provision in pastoralist areas. In all countries covered in this report, weak services in pastoralist areas are also associated with decades of political marginalization and disproportionate budgetary allocations to non-pastoral areas.

From livelihoods and resilience perspectives, better health and education should be central to concepts of building resilience. In pastoralist areas experiencing high levels of destitution and “bad” diversification, education offers a pathway to stable employment and income. Better health services help to alleviate the impacts of illness as one of the main idiosyncratic shocks, and over time these shocks can outweigh the impacts of drought or conflict (e.g.,

Table 3. Selected health and education indicators in Somali Region and Ethiopia nationally, 2011 (compiled by Admassu et al., 2013)

Indicator	Somali Region	Ethiopia
Health indicators		
<i>Health indicators—children</i>		
Under-five child mortality per 1,000 live births	122	88
Infant mortality per 1,000 live births	71	59
Child mortality per 1,000 live births	56	27
Children receiving full vaccination	16.6%	21.7%
Children receiving measles vaccination	39.5%	49.3%
Children with acute respiratory infection where advice treatment was sought	18.7%	27%
Children with acute respiratory infection treated with antibiotics	2.1%	7%
<i>Health indicators—women</i>		
Women receiving no antenatal care	74.7%	57%
Women not delivering in health facility as “too far/no transportation”	35.9%	14.4%
Women not accessing healthcare as “no permission to go for treatment”	50.8%	28.9%
Women’s concern that no female health provider at health facility	78.8%	53.2%
Education indicators		
No education—women	72.2%	51%
No education—men	42.4%	33%
Completed primary education—women	1.4%	4%
Completed primary education—men	5.5%	5.5%
Completed secondary education—women	0.4%	0.9%
Completed secondary education—men	1.7%	1.2%
Literacy rate—women	19.8%	38.4%
Literacy rate—men	51.2%	65.0%

Fitzpatrick et al., 2016). Effective health programs should also limit or prevent covariant health shocks related to drought (e.g., outbreaks of measles or cholera, which can cause dramatic increases in mortality in malnourished populations). So aside from weak governance and conflict, why do basic services remain so weak? Feinstein’s research points to at least three main issues.

Disconnects between service design and livelihoods

Across governments, donors, and NGOs there has been a strong tendency to provide services for pastoralists that use service delivery models from settled, agricultural, or urban areas. Although agricultural areas are relatively densely populated, have static populations (albeit with some seasonal labor migration), and have better roads and communication networks, fixed-point models of service delivery have been transferred to pastoralist

areas, with limited adaptation. In general, service delivery in pastoralist areas does not take account of seasonal mobility as a fundamental and rational aspect of pastoralist livestock production. There has been an expectation that pastoralists will become less mobile in order to access new services, rather than designing services that cater to mobility. Similarly, there are often various challenges around adapting school curricula to suit pastoral environments, and using local languages to deliver courses and teaching materials. In general, fixed-point facilities can improve the availability of services in a given area but will only really improve accessibility for those people within easy travelling distance of the facility. Service provision might improve in urban centers, but services will remain inaccessible to pastoralists. Although there has been considerable piloting and testing of alternative delivery systems by NGOs and local government, new approaches have been difficult to scale up and formalize, partly due to rigidities in national government policies and strategies.

An example is basic education in Somali Region of Ethiopia, where Alternative Basic Education (ABE) was piloted using the approach of ABE schools as mobile schools (Jackson, 2011). However, despite the positive outcomes, the regional government developed a strategy of phasing out the ABEs or replacing them with formal, fixed-point schools, in line with national education strategies. Similarly, there have been useful lessons from the use of Community Health Workers (CHWs) in southern Ethiopia, who were particularly valued by women in pastoralist areas (see Box 3) but were restricted by government policy in terms of the medicines they could handle.

A further consideration is drought, and a common failure of services to acknowledge the likelihood of drought and plan accordingly. Therefore, education services do not foresee drought, mitigate the removal of children from school during drought, or recognize that absences from school can be prolonged or permanent. Health services seem not to be aware that during drought substantial numbers of people will move to urban areas to seek assistance, and that this predictable movement will place pressures on local health and sanitation systems.

Services, state building, and stability

In recent years, the political economy of service provision has been central to the rehabilitation and development strategies of some donors, whereby service development is not seen as an end in itself but is framed under higher-level objectives related to political stability, state legitimacy, and conflict management. Unfortunately, in pastoralist areas where donor programs have been implemented using this approach, there is little evidence to show that limited basic services were an important root cause of conflict, and so direct causal links between better service provision and political stability remain obscure (e.g., Richards and Bekele, 2011). Arguably, one of the risks of aid support to service development under projects that aim to enhance government presence or legitimacy is that these projects will emphasize appearance over impact. This translates into infrastructure, especially new schools, clinics, or other fixed-point facilities. As explained, this model of service provision overlooks the mobility of pastoralists and the need to design services accordingly.

The cost of service provision

In large geographical areas with small populations, the transaction costs of fixed-point service delivery per person are relatively high; these costs increase further if populations are mobile, and if infrastructure such as roads and communications are poor. Similarly, professionals such as teachers and doctors are mainly from other areas and often prefer not to be deployed to pastoralist areas; financial incentives and bonuses may be required. For governments with limited budgets, these features of pastoralist areas pose a particular problem in terms of long-term financing and management, and further point to the need to design services with financial viability in mind. This means examining options for private sector involvement in service provision and greater use of community-based delivery systems, rather than assuming that government should physically deliver all components of a service. However, large aid projects that focus exclusively on state services can easily reinforce the notion that service provision is the exclusive domain of the state.

The affordability of services for both providers and users is likely to become an increasingly challenging area as demand for services increases in a context of increasing numbers of very poor or destitute families. For example, Feinstein’s research in eastern Ethiopia (Jackson, 2011) and Karamoja, Uganda (Iyer and Mosebo, 2017) clearly shows that although education is recognized as an important route to a good job, the cost of education is an important barrier. In Karamoja, many urban households—even with someone in work—will not be able to pay secondary school fees for one child (Table 4), especially if the other costs of education are

considered along with the family’s basic domestic needs for housing and food. In one sense, this is a component of a poverty trap, with a child’s future livelihood options being limited by the family’s limited income. The figures in Table 4 illustrate the economic value of livestock and pastoralism over unskilled labor. For example, a pastoralist in Karamoja could sell a single small slaughter bull for US\$250^{xvii} and cover the higher rate secondary school fees (US\$84/term) for a child for an entire year, or at the lower rate (US\$42/term) could cover two children for the year (also see social capital, section 2.4).

Table 4. Average monthly income from wage labor vs. secondary school fees in Karamoja, Uganda (adapted from Iyer and Mosebo, 2017)

Sector	Average monthly income (US\$)	Range of secondary school fees (US\$), per term (three months)
Agricultural wage labor	24.77	42-84
Brewing	22.82	
Casual labor	0.56 to 0.83 per day	
Construction	59.83	
Domestic work	20.32	
Mechanic	53.72	
Security guard	27.28	
Service and sales		
- Petrol pump attendant	90.45	
- Hotel workers	27.83	

3.2 Social Protection in Pastoralist Areas

In 2010, one of Feinstein’s studies on livestock commercialization in “high-exporting” pastoralist areas of Ethiopia concluded that:

The development of long-term development strategies should be based on a far better understanding of pastoral livelihoods. Central to such understanding is the role of commercialization, and in the face of the growing export trade, the options for assisting poorer and destitute pastoralists. The ‘Moving Up, Moving

Out’ scenario shows why it is increasingly difficult for poorer herders to reach a higher wealth group. This trend, together with the limited non-livestock economic opportunities in pastoral areas, indicates that out-migration is an important policy option. However, out-migration as policy contrasts with current safety net and asset-building strategies, which may encourage destitute and poor households to stay in pastoral areas despite the economic trends. The rapid acceleration of efforts to improve education seems central to support livelihoods both in and out of these areas. (Aklilu and Catley, 2010)

Section 2.2 expands on the earlier analysis by noting that marked wealth disparities and a concentration of livestock is also evident in some “low-exporting” pastoralist areas, such as the Afar Region of Ethiopia, Maasai areas of Kenya and Tanzania, and Marsabit District of northern Kenya. To varying degrees, these areas supply livestock to domestic markets rather than to export markets.

Section 2.2 also estimates the number of households in the Afar and Somali Regions of Ethiopia who will need to find a viable diversified or alternative livelihood. These numbers indicate that even if job opportunities are maximized in these areas through private sector growth, government programs, and aid programs, very substantial numbers of people moving out of pastoralism will only find a livelihood outside of these regions or will depend heavily on remittances from relatives who have migrated out. From an aid programming perspective, Moving Up, Moving Out does not conclude that aid programs should not support new employment, skills training, and other related activities in pastoralist areas or that safety nets are not needed. Instead, Moving Up, Moving Out calls more for a reality check, and program strategies and objectives that take account of likely trends in employment opportunities and economic growth, against the numbers of people who need to find work. Inherent in this way of thinking about future opportunities is the need to bring out-migration into the analysis and in turn, examine ways to support employment for people who migrate out of pastoralist areas. At one level, this means understanding cross-border linkages, economies, and social capital, and assessing whether some aid investment targeting the Somali Region of Ethiopia, for example, should be directed at creating new employment in Djibouti or further afield. However, this regional approach challenges the structures and funding constraints of aid donors and NGOs, which in general are arranged by countries and not regions.

Looking more specifically at safety net programs, the nature of the transfers, and the likely outcomes, in 2010 Feinstein led a mid-term review of a cash transfer activity in Somali agropastoral areas in eastern Ethiopia (Catley and Napier, 2010). This activity was relevant to the Productive Safety Net

Programme (PSNP) in Ethiopia, because the levels of cash transfer were aligned to the PSNP rates. The outcomes of the activity within the two-year timeframe of the project were asset protection and asset building. To predict the outcomes of cash transfer on household assets, simple economic models of typical project households were developed with project staff. In essence, the models were household budget scenarios that listed income and expenditure, and included the likely growth of financial assets over time. The models used actual market prices of cereals and livestock, and standard nutritional parameters such as human daily energy requirements and the nutritional composition of cereals. The project document specified that new financial assets were most likely to be livestock, and so the models included basic herd growth predictions, drawing on literature on pastoralist livestock production in Somali areas. To test the project outcomes, the models were run with different types of households and different levels of cash transfers. Herd growth estimates were triangulated against information from various earlier restocking projects. The absolute value of the cash transfers was also known.

Using the modelling approach, it was evident that destitute households with no livestock at the start of the project but then receiving cash transfers might acquire and build some livestock assets during the project. For this to happen, these households would need additional and continued assistance such as food transfers. Furthermore, after two years, these livestock assets would be far below a minimum herd size. When the timeframe for the model was extended to five years, again herd growth was insufficient to reach minimum herd size, and this asset growth was still dependent on additional food assistance. In both scenarios, no shocks were included in the model. When the modelling was repeated for a household with low livestock assets at the start of the project (ownership of six small ruminants) receiving cash, again herd growth was insufficient to reach a minimum herd size after two years, and this growth was reliant on additional food assistance. A minimum herd could be acquired after five years but again, only with substantial food transfers. No shocks were used in either scenario. For families with no or few livestock, the only clear

option for using cash transfers to build a minimum herd was to increase the value of the transfers fivefold and continue food assistance for about two years. This result from the model was consistent with evaluations of restocking projects in Somali areas (e.g., Lotira, 2004; Wekesa, 2005). The model used was simple because it did not take account of shocks and did not examine labor requirements for managing livestock. In reality, household members would need to engage in diversified activities during the period of herd growth, and many of these activities are time-consuming.

One outcome of the modelling exercise was the prediction that regular cash transfers would have

positive impacts on household food security, but that meaningful asset building—at least in terms of the livestock herds needed by agropastoralists and pastoralists—was unlikely. Later, a quantitative impact assessment of the lowland component of the PSNP was consistent with these predictions. Food gaps declined in PSNP households in Afar and Somali Regions between 2010 and 2014, but average livestock holdings declined (Table 5). Notably, the same impact assessment was also consistent with the Moving Up, Moving Out analysis in terms of the distribution of livestock across wealth groups.

Table 5. Trends in food security and livestock assets in pastoralist areas of Ethiopia, pre-2016 El Niño drought (adapted from Kumar and Hoddinott, 2015)

PSNP impact indicator	Afar Region		Somali Region		Relevance to USAID resilience indicators
	2010	2014	2010	2014	
Households reporting no food gap	34%	56%	23%	59%	Relates to topline measure “moderate to severe hunger”
Mean livestock holdings (TLU)	14.5	10.8	9.6 ¹	9.0	Relates to resilience objective 1 “increased and sustainable economic wellbeing,” indicator “change in household asset ownership”

¹ Data for 2012.

In northern Kenya, a quantitative impact assessment of the Hunger Safety Net Programme was published in 2012 and covered the preceding two years of cash transfers; this included a year of drought and food price inflation (OPM/IDS, 2012). The assessment report noted that two years into the program, safety net beneficiaries were as likely to receive food aid as non-beneficiaries. Although the report claimed significant impact on livestock ownership, the absolute number of animals owned was not measured. Therefore, it was not possible to determine if the changes in livestock ownership had meaningful livelihoods significance, e.g., were consistent with a minimum herd size.

In 2015, a major drought began in parts of Afar and Somali Regions of Ethiopia, with high mortality of livestock and rising food prices reported, along with limited or no cash or food transfers from the PSNP in pastoralist areas between July 2015 and March 2016 (Catley, Cullis, and Abebe, 2016). At the time of writing this synthesis report in mid-2017, a second major drought was affecting southern Ethiopia. The ultimate test of large-scale resilience initiatives, including safety net programs, is whether these programs help to build financial assets among vulnerable populations before *substantial* shocks and protect key assets during these shocks.

3.3 Market-based Approaches

Feinstein's research on markets across dryland areas in conflict, post-conflict, and stable contexts represents one of our largest bodies of work and dates back to 2002. Much of this work covers livestock trade and markets, and includes regional

analysis of livestock trade and related policy and institutional constraints, detailed analysis of national or local markets in Sudan, Ethiopia, and Kenya, and reviews and evaluations of livestock marketing projects and market monitoring (Box 6).

Box 6. Feinstein research and analysis of markets and trade: An overview

International- and regional-level reviews and analysis of livestock trade:

- Multi-country audits of livestock marketing status and constraints (Aklilu, 2002a, 2002b; Aklilu, 2008);
- Contributions to analysis of how international standards constrain exports of livestock and livestock products, and alternative commodity-based approaches (Thomson et al., 2004);
- Descriptions of new cross-border markets and pastoralist adaptation (Aklilu and Catley, 2011).

Understanding the impacts of livestock exports—who benefits?:

- Multi-country analysis covering Ethiopia, Kenya, and Sudan (Aklilu and Catley, 2009);
- Ethiopia analysis (Aklilu and Catley, 2010); Shinile Zone (Catley and Iyasu, 2010).

Analysis of national and sub-national markets:

- The impact of conflict and long-term humanitarian assistance on markets in Darfur (Young et al., 2005; Buchanan-Smith and Fadul, 2008; Buchanan-Smith et al., 2012; 2013; 2014) and Somalia (Leyland et al., 2006);

- Post-conflict livelihoods and market analysis in Darfur (Fitzpatrick et al., 2016) and Karamoja (Rockemann et al., 2016);
- The Sudan (Behnke, 2011);
- The economic value of pastoralist livestock production for the national economy, exports, and local livelihoods in North Kordofan and East Darfur (Krätli et al., 2013);
- Pastoralist marketing and trade strategies (Young et al., 2016).

Reviews and evaluations:

- Pastoralist livestock marketing groups, Ethiopia (Aklilu, 2004);
- Livestock market infrastructure and management, Ethiopia (PLI Policy Project, 2010);
- Livestock value chain support, linked to safety nets in Ethiopia (Burns and Bogale, 2011; 2012);
- Feed the Future livestock market support and market-based approaches, Ethiopia (White et al., 2015; Rockemann et al., 2015).

This section of the synthesis report does not aim to review all of work that is outlined in Box 6 but looks specifically at the policy and programming implications arising from our research, reviews, and evaluations. In line with the Moving Up, Moving Out theme, the section focuses on livestock marketing in pastoralist and agropastoralist areas, and experience with projects that aim to improve

livestock marketing as a means to reduce poverty or strengthen resilience.

Pastoralism and market orientation

Across the countries covered in the synthesis report, nearly all pastoralists—whether poor or wealthy—engage in markets and sell animals. In part, this behavior relates to the seasonality of diets. During

wet seasons, livestock produce more milk, and so the direct consumption of milk is important pastoralists' diets. During dry seasons, milk production declines, and pastoralists rely far more on cereals. In general, these cereals are acquired through the sale of livestock. It follows that one way or another, pastoralists have to be connected to markets, either directly or via traders.^{xviii}

It is still common to find livestock marketing interventions in pastoralist areas that aim to reduce poverty by transforming pastoral producers into "market-oriented" producers. This approach is justified using narratives that describe pastoralists as universally market averse, unresponsive to market demands, and striving to keep large herds for reasons of social status. In terms of a pathway to resilience, the causal logic of these projects assumes that through greater market engagement and better production, poor pastoralists will acquire wealth through the sale of livestock or livestock products. However, the underlying assumptions and the causal logic are questionable.

Much of Feinstein's research, plus a substantial body of USAID-funded research on the economics of pastoralism in Ethiopia and Kenya^{xix} shows that for poorer herders the logical way to build financial capital is to maximize herd growth (e.g., Young et al., 2016; Aklilu and Catley, 2009; McPeak, 2005). In part, this is achieved by minimizing livestock sales and only selling animals when important domestic expenses arise, e.g., for food or medicines (e.g., Barrett et al., 2006). In addition, changes in poverty status are not linear but occur in distinct "step-ups" and after critical numbers of livestock have been acquired; herders lacking a minimum herd size and composition are frequently stuck in "poverty traps" (McPeak and Barrett, 2001). In terms of drought resilience, examination of Borana herd dynamics in southern Ethiopia, using panel data over a 17-year period, concluded that "A larger *ex ante* herd is the most effective means to ensure a reasonable *ex post* herd" (Lybbert et al., 2004).

More recent research by Feinstein reaffirms the earlier studies. For example, a livestock marketing study in the pastoralist Karamoja Region of Uganda in 2015 explained that

Karamojong (and other pastoralist) households do not tend to manage their herds/flocks to maximize productivity and profit. Rather, they tend to manage them like an investment portfolio with a variety of assets...their primary objective is to increase the value of the portfolio (in this case, the herd/flock). The income received from the portfolio is in the form of capital gains: a combination of increased asset values, and dividend income. Essentially, Karamojong pastoralists do not derive income from the sale of animals. Instead, the sale of animals merely monetizes their income, converting capital gains into cash. (Rockemann et al., 2016)

Feinstein's research in Ethiopia, Kenya, and Sudan is consistent with these conclusions and for example reports that middle-wealth and wealthy pastoralists are the main suppliers of animals to livestock markets (see Table 1). These findings demonstrate a fundamental flaw in the pathway to resilience or poverty reduction that underpins some market-based projects in pastoralist areas. Even if markets are accessible and prices are good, poorer herders do not necessarily sell more animals or products until they have escaped a poverty trap and acquired at least a minimum herd or more. During this period, there is particular emphasis on maintaining good-quality female breeding stock. Furthermore, if livestock prices increase but the price of other items remains constant, poor herders need to sell fewer, not more, animals to meet their basic domestic needs. Our research further indicates that the main beneficiaries of new or better market systems or facilities will be middle-wealth to wealthy herders. In addition, the Moving Up, Moving Out analysis proposes that livestock commercialization in pastoralist areas is one factor leading to a gradual redistribution of livestock from poorer to wealthier herders and various changes to resource access and social behavior that over time make it more difficult for poorer herders to build herds. In other words, as some household become more resilient, others become less resilient.

Based on these findings, the main strategy for poverty reduction among pastoralists should be to encourage herd growth, e.g., by preventing avoidable animal losses, enhancing production through better

veterinary care and drought management, and securing access to productive rangeland. As herd sizes grow, poorer pastoralists more easily meet their domestic needs and automatically move towards a position of having excess animals to sell. New markets do not pull poor pastoralists towards market engagement, but better production and larger herds encourage market offtake.

In terms of adapting to market demands, our research and the earlier and wider literature clearly shows how pastoral producers respond to market opportunities. In Somalia and eastern Ethiopia, pastoralists adapted to market demands in the Middle East in the 1970s (e.g., Reusse, 1982) and changed the species composition of their herds accordingly (e.g., Al-Najim, 1991). Also in Somalia, an extensive milk market evolved to supply milk to Mogadishu in the 1980s (Herren, 1990). More recently, peri-urban milk markets have emerged in Ethiopia (e.g., Abdullahi et al., 2013). Pastoralists in Kenya and Ethiopia have also responded to an increasing demand for camels in the Ethiopian highlands and Sudan (Aklilu and Catley, 2011; Mahmoud, 2013). Notably, none of these responsive behaviors were associated with aid or government projects but were driven by market demands. In common with market engagement in general, middle-wealth and wealthier producers can adapt more easily because they have larger herds and more flexibility in terms of meeting basic household needs while also responding to new opportunities.

Infrastructure and politics, and hard vs. soft inputs

Rather like new health and education infrastructure, new livestock markets can be an irresistible political pull for local leaders and aid projects with large budgets. Yet efficient livestock markets in pastoralist areas often need only basic market infrastructure, particularly at the level of primary markets. Our research shows how informal livestock bush markets with very limited or no infrastructure evolve in pastoralist areas according to changing demands for livestock or meat, and that local traders, sellers, and service providers can organize these markets efficiently. This finding fits with much earlier observations of local markets. For example, when describing how Somalia's pastoral economy was

responding to profitable export opportunities in the 1970s, in terms of bush markets it was noted that

The basic requirements, so far as market facilities are concerned, appear to be ample space for transactions and the provision of drinking water for market users. Little justification for investment in fencing, pens, scales or auction rings can be established since the system appears to work well in its present simple, highly flexible form. (Reusse, 1982)

Similarly, when describing pastoralist livestock marketing more generally in Africa in 1982:

Existing traditional livestock marketing systems are perceived to suffer from inefficiencies, abuses in market conduct and technical imperfections the relief of which would benefit the pastoral system. But, studies of traditional marketing systems show that, in spite of being complex and traditionally based, they generally perform well their function of distributing livestock and meat products at reasonably low costs. (Jahnke, 1982)

Since the 1970s however, the construction of livestock markets has been a common feature of pastoral development projects. In turn, pastoralist areas are littered with dilapidated markets because the markets could not be maintained by local authorities, or were wrongly positioned in terms of local needs or conflict issues. Where markets do exist, it is also common to see transactions outside of markets as traders and sellers avoid market fees and taxes. In part, this behavior reflects chronic problems with market management and market users being aware that often, tax revenues are not used to maintain market facilities (PLI Policy Project, 2010; Stites et al., 2017). It follows that the "soft" aspects of market development, such as effective systems for market management, are usually overlooked, including options for public-private partnerships.

While markets are critical, livestock trade is more enabled by other types of infrastructure development, particularly roads and communications. Better roads improve access to more remote areas and reduce transport costs.

Mobile phone networks improve the speed and accuracy of information flow between actors. For example, following the construction of a new asphalt road between Darfur and Central Sudan:

The livestock trade from Darfur to Central Sudan has been given a boost. Livestock can now be easily transported by large trucks from El Fashir to Omdurman, taking one to two days instead of being trekked on the hoof over a distance of 1000km. This has encouraged and enabled larger livestock traders from Omdurman to come and buy from North Darfur's livestock markets and has boosted the volume of livestock traded, especially sheep. This benefits rural areas beyond El Fashir. For example, sheep are trekked from Dar Zaghawa to El Fashir on the hoof, and are then transported by truck to Omdurman. This has also boosted the cross-border sheep trade between Chad and Dar Zaghawa. (Anon., 2017)

In terms of aid investment, the conclusion that better roads and communication outweigh the need to build livestock markets in pastoralist areas is largely based on the reality that new markets are often constructed on, or near to, the sites of existing markets. The added value of new markets depends heavily on changes in the volumes and

values of livestock traded, plus changes to market services. But critically, these changes have to be clearly attributed to these new markets, with good counterfactual analysis. Evidence from Ethiopia indicates that the overriding drivers of livestock trade are demands and prices (PLI Policy Project, 2010). These experiences point to a need for better pre-project analysis of options to support marketing, including comparative economic analysis of different options.

While aid projects continue to spend tens of millions of dollars on livestock market infrastructure, some major barriers to livestock trade are largely ignored. For example, across the region livestock is one of the most heavily taxed commodities, with traders facing an array of formal and informal payments as they move animals from rural areas to the main urban centers (Aklilu, 2002b). Similarly, cross-border livestock trade is usually viewed as illegal by governments, and there have been few attempts to support this trade by developing systems with government and traders that enable rather than interfere with trade. Theoretically, African regional organizations support the free movement of goods, services, and people, but these principles have not yet been formalized in cross-border areas.

4. Discussion and Conclusions

4.1 Economics, Markets, and Mobility

Moving Up, Moving Out was very much framed around processes of livestock commercialization among pastoralists, especially the substantial informal and formal livestock exports from Ethiopia, Somalia, and Somaliland. However, much earlier research in Kenya (Bekure et al., 1991) and Ethiopia (Coppock, 1994) predicted future increases in socioeconomic differentiation among pastoralists associated with commercialization around domestic markets. In another example, pastoralism and agropastoralism with localized market activity was evident in Karamoja for many years, up to 2008, but in a context of frequent livestock raiding and redistributions of animals between ethnic groups locally and cross-border with the Turkana and Pokot in Kenya. However, from 2008 substantial livestock losses of up to 47% were reported as a result of a unique system of “protected *kraals*,” introduced by the government of Uganda as part of large-scale disarmament program (Burns et al., 2013; Bushby and Stites, 2016). In 2016, the total livestock population in Karamoja was open to question, but major shifts in livestock ownership were reported, with the very poor owning no animals. For households with livestock, two wealth groups were described, with the “better off” owning substantially more animals than the “less poor” (Stites et al., 2016). The implication was that a Moving Up, Moving Out type process had occurred or was underway, associated mainly with conflict and leading to a relatively small number of households owning most of the livestock. Notably, very skewed patterns of livestock ownership were also reported in the Somali and Afar Regions of Ethiopia (see section 2.2). Most recently, a trend analysis conducted in Ngorongoro District, Tanzania, occupied by Maasai pastoralists, reported a Moving Up, Moving Out scenario but in a context of limited

livestock commercialization (Slootweg, 2017). In this area, the livestock population had remained fairly stable during the 55 years covered by the analysis, but human population had increased tenfold. The paper recommended the creation of economic opportunities outside of the study area and support to out-migration.

Across different areas, different trends in market and rangeland access, and different political and conflict contexts, a key driver for Moving Up, Moving Out in pastoralist areas is human population growth. The exponential nature of this growth means that at some point in a given area, a rapid increase in population places considerable pressures on finite, or declining, pastures and water, and livestock production. As noted by Little (2013), “In most pastoral districts in Kenya and elsewhere in the Horn, human populations have more than doubled during the past 20 years, without equivalent increases in livestock or territory.” Plus, the effective management of livestock depends on mobility across wide areas, but barriers to mobility and land fragmentation have been increasing for decades. Various factors, or combinations of factors, then work to concentrate livestock ownership among those staying in pastoralism or moving up.

As resilience initiatives emerged in the Horn of Africa from 2011 onwards, dual aid programming strategies became more evident in some pastoralist areas of Ethiopia and Kenya, and included support to both pastoral livestock development, and diversified and alternative livelihoods. At a relatively superficial level, these strategies fitted the Moving Up, Moving Out analysis. However, some important challenges remain at the level of development policy and strategy if the details of the analysis are considered. A particular challenge is the long-term trend towards increased socioeconomic differentiation.

Implications for asset building

In some areas, if there is a growing livestock asset gap between poor and wealthy pastoralist households, then the poor need to acquire more animals than in the past to enable a return to pastoralism and compete with those who have already captured market opportunities. This rising asset gap has various implications for projects that aim to support a return to pastoralism, e.g., through asset building and asset protection; this includes social protection programs. In cases where projects support diversified activities as a means to assist a return to pastoralism, the levels of income and savings that might arise from these activities need to be compared with the costs of buying livestock. There are also important labor-time considerations.

Moving out—but out of areas, not just out of pastoralism

The Moving Up, Moving Out analysis included historical references to pastoralist areas in other regions, mainly North Africa and the Middle East, where pastoralism had already adapted to a more commercialized form. These areas were characterized by out-migration of former pastoralists to urban centers, but ones that were largely *outside* of pastoralist areas, rather than the emergence of new livelihoods or employment opportunities *in* pastoralist areas. The implication was that out-migration was likely to be an important policy option in the areas of the Horn of Africa covered by the Moving Up, Moving Out research. However, this option contrasted with the livelihoods objectives of social protection programs in Ethiopia and Kenya, which seemed to assume that independent livelihoods could be created in pastoralist areas for many (or most) program participants. This assumption is questioned in section 2.2 and shows a need to enable out-migration for those people who choose this pathway. This means supporting positive diversification within and outside of pastoralist areas, and understanding trends in employment opportunities. It is an approach that questions the conventional notion of a “project area,” and needs pre-project analysis that considers opportunities within pastoralist areas, within different parts of a country, across borders, and internationally. The analysis also needs to tailor education and skills training to match these opportunities.

Market-based approaches

Markets are critical for pastoralists across the socioeconomic spectrum. Research shows how traders, brokers, and producers can respond effectively to new market demands, e.g., by creating simple and dynamic bush markets. Also, Moving Up, Moving Out referred to a substantial body of research on the economics of pastoralism in Ethiopia and Kenya, and livestock marketing behavior (e.g., McPeak, 2005; Lybbert et al., 2004). This research explained the economic logic of the herd growth objectives of poorer herders, and in part, how this is achieved by minimizing livestock sales and only selling animals when important domestic expenses arise, e.g., for food or medicines (Barrett et al., 2006). Analysis of market-based approaches from a poverty perspective, as well as reviews and evaluations of market development projects, shows that herd growth, not livestock sales, is the priority for poorer herders, and that the development of basic general infrastructure, i.e., roads and communications, is more useful than building new livestock markets. At the same time, more research is needed to better understand the relative impacts and benefit-cost of aid investments in livestock markets, including projects that focus on policy and institutional barriers to trade, e.g., inappropriate livestock disease control policies.

A particularly challenging aspect of Moving Up, Moving Out is that projects that support wealthier herders, even unintentionally, can also support the fragmentation and private control of rangeland and other processes that hinder livestock production by poorer herders. Changing social capital and moral economy is an important and widely reported facet of livestock commercialization.

Mobility matters

Moving Up, Moving Out describes the importance of access to rangeland for poorer herders, and points to the need to secure land and mobility. In practice, this has been very difficult to achieve in pastoralist areas of Ethiopia and Kenya. Some projects working with customary institutions have achieved localized successes, e.g., using participatory land planning, but scaling up and formal recognition of more enabling tenure and movement arrangements

remains a challenge. In some cases, substantial land fragmentation and private control has already occurred, and wealthier herders or owners—with political influence—are likely to resist a move back to communal management. As noted by Tache (2013) in Ethiopia, pastoral land can become a commercial commodity and “A continuation of this trend would result in socioeconomic differentiation whereby the rich get richer, and the poor poorer.” It seems that once this trend is in motion and with so many vested interests at play, private control is difficult to reverse.

In recent years, there have been numerous projects aiming to strengthen the political representation of pastoralists in policy dialogue, and policy and legislative reform, with a particular emphasis on land rights, and securing mobility and access to critical dry season grazing areas. However, the Moving Up, Moving Out analysis indicates that a new, more complex dimension of this type of work is evolving. Whereas in the past these debates might be labelled as “pastoralists vs. the state” or “pastoralists vs. farmers,” with land privatization there is now an element of “poor pastoralists vs. the elite.” The elite include a growing class of wealthy and politically connected herd owners.

4.2 Diversifying, Alternative Livelihoods, and Social Protection

Section 2.2 of the report summarizes an array of diversification options in pastoralist areas (Table 2) and, in common with other studies, distinguishes between positive and negative diversification. For some people living on the edge of pastoralism, often with relatively small numbers of animals, diversification can be a strategy for earning income, reinvesting in livestock, and rebuilding herds. For others, diversified activities are more permanent and a matter of necessity. A major challenge is that many of the diversification options open to poorer and more vulnerable households are negative diversification, which is environmentally damaging, places people at risk of abuse, or risks the livelihoods of others. Other activity, such as casual unskilled labor, is associated with very low wages and limited options for saving cash or buying livestock. As shown in Table 4, income levels can be at odds with potentially important future pathways to resilience

such as education. In general, negative diversification is associated with poverty traps. The diversification options available to women are particularly limited due to factors such as deep-rooted gender discrimination, lower levels of education, and higher risks of violence and sexual abuse. At the same time, women can value even low cash incomes from diversification activities because they can earn and control this income independently of men.

On an area-wide basis, the challenges facing projects and programs aiming to support diversification are in some ways similar to those facing social protection programs. First, in pastoralist areas of Ethiopia and Kenya, the number of people needing to find positive diversification or alternative livelihoods seems to far exceed the available opportunities in pastoralist areas, even when all the potential opportunities around a commercializing livestock sector are considered. Section 2.2 provides a glimpse of the numbers involved, with between 70% (Marsabit, Kenya) and 90% (Somali Region, Ethiopia) of households lacking a minimum number of livestock to function as pastoralists. Second, although better education is widely regarded as a core strategy for supporting alternative livelihoods and diversification, levels of education remain alarmingly low in pastoralist areas (see below). Third, populations continue to grow, such that non-pastoralist populations already (or will soon) outnumber pastoralists in “pastoralist areas” (Little, 2013). The challenge for aid programs is to support positive diversification and alternative livelihoods within and outside of pastoralist areas, including ways to overcome the negative social consequences of out-migration.

4.3 Health and Education

Although there have been efforts to improve health and education in some pastoralist areas of the Horn in recent years, there is little evidence that the health and education status of pastoralists has improved relative to people living in towns or in other parts of a given country. A chronic problem facing both health and education service delivery has been a “fixed-point fixation” and the belief that pastoralists can either access this type of facility or should change their movement patterns accordingly. Feinstein’s

research also indicates that access to secondary and higher education for rural households can often depend on having relatives in urban centers who can provide accommodation for students and other support, especially for girls. For poorer households depending on unskilled wage labor, research in Karamoja shows why secondary education can be unaffordable, simply because wages are so low (Table 4). Specific health concerns include the appalling impact of maternal health problems on pastoralist women and girls, and low levels of child immunization.

From a resilience perspective, better health status relates directly to the capacity of people to work and the critical importance of labor in the pastoralist sector and for people diversifying or seeking alternative livelihoods. Although resilience strategies have often been framed around drought and its impacts across populations, individualized household-level shocks (idiosyncratic shocks) such as the loss of a family member through disease are a major determinant of poverty traps. In 2017, droughts in pastoralist areas continue to be associated with outbreaks of preventable diseases such as measles and cholera, and related deaths in children. This situation is symptomatic of very weak healthcare in pastoralist areas, including an inability to plan healthcare knowing that drought is inevitable. Although there is often a strong technical and economic rationale for combining conventional fixed-point health delivery approaches with mobile community-based systems, governments and NGOs continue to struggle with pluralistic approaches, and controversies continue to surround approaches such as community health workers. Similarly, although the private sector can usually operate with far lower transaction costs, options such as public-private partnerships for health service provision are not often considered.

From a resilience perspective, education is central to finding higher-paid, more permanent and safer employment, especially for girls. Better education also relates directly to better health, especially for girls. Yet not only is education generally under-delivered in pastoralist areas, but also the specific cultural and physical barriers to education for girls remain. Girls' enrollment in school is consistently

lower than boys', and girls are far more likely to discontinue their education. In common with health services, the design of education continues to overlook the inevitability of drought and the removal of children from school during drought as households migrate.

In the past, the livelihoods approaches and strategies of aid donors and NGOs tended to exclude health and education, which, although being central to human capital in livelihoods frameworks, were often considered as separate entities. A similar exclusion seems to apply to resilience strategies, but many people in pastoralist areas are unlikely to reach the end of a positive resilience pathway unless they are healthy and educated.

4.4 Conclusions

Feinstein's research illustrates the increasing complexity of livelihoods in pastoralist areas of the Horn of Africa as populations grow and the core livelihood strategy of livestock production in some areas shifts towards commercialization and the associated individualistic behavior. From the perspective of aid policies and programs, there is a need to recognize this complexity when making practical decisions around program strategies and designs.

A key issue arising from the Moving Up, Moving Out analysis and other research is the value of seeing beyond pastoralists and other people in pastoralist areas as universally poor. This means identifying who, specifically, is poor and vulnerable and why, and understanding the key pathways to resilience for *poorer* households with different aspirations and assets—human, social, financial, and other. Using this approach, at least three broad groups might be identified: poorer households aiming to build livestock assets and function mainly as a successful pastoralist household in the future; poor households aiming to have “one foot in livestock” and “one foot in diversified activities”—especially positive diversification; and poorer households aiming to quit pastoralism and seek alternative livelihoods. The key point here is that although the realities of each of these three pathways will be far more complex than the summary descriptions, there is

the intent to understand *poorer* households and the main pathways to resilience for different types of poorer households. Implicit in this approach is the concept that projects that mainly benefit wealthier pastoralists can have negative impacts on the poor. Furthermore, within the various types of poor households outlined above, what are the specific pathways to resilience for women and girls relative to men and boys? Here the options lean more towards the need to support positive diversification and alternative livelihoods, while also addressing the entrenched gender-specific barriers to health and education.

Another key finding is the need to reconsider the spatial boundaries of livelihood systems and think beyond typical project areas. This approach recognizes that out-migration is an important pathway to resilience, but where and what are the opportunities for these households, how do we avoid poverty traps, how do we protect migrants from abuse and also strengthen existing or new forms of social capital?

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Endnotes

ⁱ The IGAD/FAO Livestock Policy Initiative was funded by the Department for International Development, UK.

ⁱⁱ In part, attention to the poorest people in a given area using livelihoods analysis was influenced by participatory rural appraisal and the book by Robert Chambers, *Rural development: Putting the last first* (Scoones, 2009).

ⁱⁱⁱ This is not to say that wealthier herders with more animals are completely protected against drought. In severe drought, or when drought occurs during a complex emergency, wealthier herders can be seriously affected to the point of destitution, e.g., see the impacts of the drought and conflict during the famine in Somalia in 2011 to 2012 (Majid et al., 2016).

^{iv} Data from the Somaliland Chamber of Commerce.

^v Now called Sitti Zone.

^{vi} See Annex 1 of this reference, prepared by Dawit Abebe.

^{vii} E.g., see the *Mobility Matters* training course with COMESA and government partners at <http://fic.tufts.edu/pacaps-project/comesa-policy-framework/mobility-matters.php>, developed with the International Institute for Environment and Development, Roy Behnke, and Save the Children US in 2008.

^{viii} E.g., see https://www.youtube.com/watch?v=LaR3_UIPaUY.

^{ix} Although humanitarian projects in response to drought or in complex emergencies have also included livestock support along with other non-food inputs, the amount of funding allocated to these activities is low relative to food aid (e.g., Catley and Cullis, 2012).

^x A comparable camel export trade was also emerging across the Kenya-Ethiopia border; see Mahmoud (2013).

^{xi} There are various definitions of TLU, although a common usage assumes that an animal body weight of 250 kg equates to 1 TLU (see Janhke, 1982).

^{xii} This approach is similar to that used in the recent analyses by McPeak and Little (2017), which uses 24 TLUs as the basis for categorizing households into those “left out” of or leaving pastoralism, versus those “staying with” pastoralism or combining livestock with other activities.

^{xiii} *Zakat* is the giving of alms to the poor and needy, and is one of the five pillars of Islam.

^{xiv} These trends also have implications for restocking projects after drought or conflict.

^{xv} The period between harvesting and planting when herds can be in a cultivating region.

^{xvi} For specific references for the statistics presented in Box 5, see the draft COMESA policy framework at <http://fic.tufts.edu/pacaps-project/Pastoralism%20&%20Policy/PFFSPA%20Consultative%20Draft%20Dec%2009%20final.pdf>.

^{xvii} Based on slaughter bull prices ranging from US\$222 to US\$473 (Rockemann et al., 2016).

^{xviii} With this level market engagement in mind, even poor pastoralists are not really “subsistence” producers if the definition of subsistence includes no sale of produce and home consumption of all domestic produce.

^{xix} For example, the Global Livestock Collaborative Research Support Program, from 1998 to 2010.

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