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Pastoralism demographics, settlement and service provision in the Horn and East Africa

Transformation and opportunities

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About REGLAP

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Acronyms

ASAL	Arid and semi-arid lands
GHA	Greater Horn of Africa
HDI	Human Development Index, UNDP
HPI	Human Poverty Index, UNDP
TLU	Tropical livestock unit
WFP	World Food Programme

Executive summary

The purpose of this paper is to review demographic trends as well as settlement and service provision patterns using quantitative data, where possible, and drawing on experiences, evidence and lessons from the Horn and East Africa regions. It addresses some of the most salient issues around pastoral livelihoods, emphasising the need to improve understanding in efforts to promote the resilience of these livelihoods. The paper draws out the underlying patterns and trends characterising the transition pastoralism is undergoing in the region and provides some highlights on the underlying factors; however, due to a lack of available data, it does not provide a detailed analysis of changes in pastoralist trends, but merely an indicative picture. This study recognises the complexity of the issues and does not aim to provide answers, but rather to highlight issues and pose questions that policy makers, politicians and other key stakeholders need to grapple with in order to put into practice measures to reduce risk and mitigate vulnerability. The paper emphasises the need for urgent action, as well as the opportunities that the transition offers for effectively addressing the issues of pastoralists in the region. A key constraint in synthesising this paper was the general dearth of data on pastoralists; even where data was available, significant challenges arose as pastoralists have been excluded from some databases and generally no indicators are provided that enable identification of pastoralists across databases. Conclusions are drawn from what data is available.

Demographic data and analysis. Demographic data for pastoralists is not sufficient to analyse or attribute trends in indicators to pastoralists. Issues pertaining to the accuracy of the data arise with respect to the impact of cultural biases, migration patterns and conflict, making it impossible to draw any absolute or even indicative conclusions regarding trends. Standardisation of regional indicators and analysis of external confounders needs to be achieved before an accurate analysis of demographic variables can be carried out.

Settlement patterns. Pastoralist populations seem to be responding to immense internal and external pressure by taking decisions that indicate a transition along the pastoralist continuum and a transformation of pastoral livelihoods.

Many pastoralists are exiting from traditional ‘highly mobile’ forms and entering into agro-pastoralism, sedentarisation or other livelihood options. A destitute pastoralist population is also emerging, as is the phenomenon of significant and unprecedented emigration. While there are similarities in settlement patterns and trends, differing patterns of response and transition are emerging in the arid and semi-arid areas.

Livelihood diversification. The diversification of livelihoods can either offer opportunities for pastoralists or, if not properly managed, add to the pressures on them. The semi-arid areas in particular represent marginal resources that have become the option for other economies, as evidenced by the mass in-migration of other populations and increase in market values. Pastoralists are diversifying, but their capacity is limited and reflective of their inherent pastoral skills base. Broader diversification is apparently the remit of in-migrating populations that have a wider skills base and access to investment opportunities. In arid areas, livestock-based livelihoods remain critical as fewer diversification options exist. There is a need to assess where diversification and destitution are occurring and what possibilities exist given the different resource opportunities.

Access to services. Service provision and infrastructure development is inadequate and often politically motivated or driven by policies that are relevant to sedentary agriculturists or that exclude pastoralists. The pattern of service provision and infrastructure development does not reflect economic growth within the pastoral system; instead, it may reveal that pastoralists are moving towards infrastructure and services, either to take advantage of the opportunity or in times of crisis. These services are not provided within a pastoralist framework, but within a sedentary agriculturalist platform; pastoralists are therefore leaving their own context and transforming—at least temporarily—into settled communities in order to seek out the services. The political linkage to infrastructure development and service provision leads to exclusion, as well as issues of transparency and accountability, both in terms of resource allocation and utilisation and in relation to desirability and adequacy.

1 Introduction

The Greater Horn of Africa (GHA) region is home to a significant number of pastoralists whose livelihood system is based on production in the arid and semi-arid lands (ASALs). These areas are characterised by low and erratic rainfall, high temperatures, and consequently, high evaporation rates. Across the region there have been tightening cycles and intensities of drought and flooding, and concomitant problems such as food insecurity, human and livestock diseases, and other crises. These have challenged the human capacity to cope, eroded the livestock, natural resource and other asset bases and gradually diminished the capacities of pastoralist communities to rebound. These impacts are exacerbated by other pressures, such as loss of land, widespread and endemic resource-based conflict, poor infrastructure and service provision, and general marginalization. The result is a state of vulnerability and often ‘crisis’ within pastoralist communities and areas.

This paper reviews the context of pastoralist livelihoods with respect to policies, political frameworks and available demographic data for pastoralists; it discusses selected trends of pastoralist demographics for some countries within East Africa and the Greater Horn of Africa.

This paper is divided into three sections. The first comprises an introduction to pastoralism, including working definitions of key terms, contemporary theories on the future of pastoralism, the framework and methodology behind demographic analysis and a review of the political and policy context in which pastoralism resides. The second section presents available data on demographic indicators, such as fertility, morbidity and mortality statistics, changing settlement patterns and access to basic services. The third section discusses the data and offers conclusions.

Definition of ‘pastoralist’

Pastoralists in the Horn and East Africa region are far from being a homogenous group. The complexity of heterogeneity is characterised by varying aspects of ethnicity and socio-cultural set-ups, production forms and strategies; these include the degree of mobility or sedentarisation, key livestock types, engagement and dependence on pastoral activities—especially levels of dependence on livestock for food and income—management practices, geographical location, engagement with the market or lack thereof, and numerous other factors, all of which contribute to the difficulty of constructing a versatile definition.

This paper¹ uses a combined economic and cultural definition

¹ The basics of this definition were agreed upon by the members of the Regional Livelihoods Advocacy Project (REGLAP) Consortium at meetings in October and November 2008, and modified through discussion with various members of the consortium.

of pastoralism, encompassing both those who earn part of their living from livestock and livestock products, and those for whom livestock does not provide the main source of income, but who remain connected to a pastoralist lifestyle. This lifestyle combines a dependence on livestock with social structures and traditional practices, specific beliefs and institutions, sets of laws and customs. By necessity, the definition involves a certain degree of fuzziness (Morris, 2008). In particular, it covers those who have dropped out of pastoralism through loss of livestock, but who have some desire to return to the lifestyle; agro-pastoralists who are involved in extensive livestock production, but for whom livestock is less important than cropping for household income and consumption; and those whose livelihoods and cultures are shaped by livestock dependency.

For purposes of quantification, this paper uses administrative units² focusing on those areas with significant pastoral areas. It recognises that not all the people within these populations are pastoralist and acknowledges the various ways in which the different countries across the GHA have addressed this issue. In Ethiopia authorities have superimposed a ‘pastoralist’ tag over geographical areas where these groups dominate. In Kenya, ASAL districts are clearly demarcated, but are not officially labelled pastoralist. In Uganda, while the general public is aware of different pastoral groups (often referred to by the derogatory term *Balaalo*), the government has only recognised the Karimojong and the Karamoja region as pastoral. Tanzania presents a unique situation where ethnicity is avoided in pursuit of national integration. The Tanzania National Population and Housing Census includes an indicator for ‘pastoralist’ but this review indicates that there is grossly inadequate capture under this indicator.

A key point of contention is nomenclature and a means of capturing data on members of pastoralist communities who exit from the core pastoralist activities, such as livestock keeping, and the associated lifestyle. These individuals are sometimes referred to as ex-pastoralists, but they are by no means a homogenous group; they range from destitute persons to those who have adapted other livelihoods and may be thriving within them. The debate also concerns the members of this group who have permanently exited, while other people move out to create wealth for re-entry into pastoral livelihoods or to support pastoral livelihoods.

Different agencies and governments take varying approaches to this issue. The World Food Programme (WFP), for example,

² Randall (2006) discusses in detail the pros and cons of different concepts and methodologies for quantifying pastoral populations in the Horn and East Africa region, suggesting that the use of administrative units provides the best means given the prevailing data challenges.

carries out periodical evaluations to categorise aid recipients who are moving to urban areas. As a general rule, WFP considers a 6–12-month ‘transition’ period; if subjects decided not to return to their original livelihood after that period, they will not be considered pastoralist for the purposes of food aid. Government officials in Kenya have a narrower definition, whereby pastoralists who move to urban or peri-urban areas become part of the urban population; consequently, urban policies (which could preclude food aid) and not ‘pastoralist policies’ (which may include food aid and other emergency benefits) will apply. In Ethiopia, it is the cultural and ethnic make-up which has prevalence; pastoralists thus continue to be considered as such even if they move to towns and forsake the livestock economy altogether.³

Clusters of ethnic groups that are predominately pastoralist are recognizable in the GHA region (see Figure 1). The significant ones include the Karamojong cluster, comprised of groups in north-eastern Uganda, south-eastern Sudan, north-western Kenya and south-western Ethiopia (Cluster 1). The Boran cluster includes peoples of southern Ethiopia’s border region and northern Kenya (Cluster 2; ICRC, 2005). The Somali cluster covers Somalia, Somaliland, Puntland, Djibouti, north-eastern Kenya and the Ogaden region of Ethiopia (Cluster 3). The Maasai cluster is found in southern Kenya and northern Tanzania and includes a small number of agro-pastoralist groups affiliated to the Maasai (Cluster 4).

Definitions of demography, settlement and service provision patterns

Demography is broadly defined as the statistical study of human populations, especially with reference to size and density, distribution and vital statistics (such as births, marriages, and deaths).⁴ A demographic trend describes the changes in demographics in a population over time and focuses on enumerations (censuses), which take stock of a population at a moment in time, and also flows of vital events – such as births, deaths, marriages and migratory movements.

For the purposes of this paper, **settlement patterns** are defined as the nature of distribution of the settlement structure of the population.⁵ Changes in settlement patterns are examined by looking at the ways in which spatial variations in the distribution, composition, migration and growth of populations are related to the nature of places. The typology of changes in settlement patterns may be categorized as follows:

- periodic: movement of dealers in produce and livestock;
- seasonal: pastoral displacement due to environmental hazards;

³ Interview with A. Kute, WFP, Nairobi, October 2008; interview with a high-level official at the National Coordinating Agency for Population and Development, Nairobi, October 2008.

⁴ See Encyclopedia Britannica (n.d.).

⁵ See Mayhew (2004).

- long-term: labour migration to the agriculture wage sector, mining, and other sectors; and
- definitive migration: agricultural land colonization, resettlement of economic nodes and land consolidations, and overspill into marginal areas of spontaneous migrants from population pressure areas.

All of these categorizations are specific to a particular migratory direction: rural–rural, rural–urban, urban–rural and urban–urban (Oucho and Gould, 1993).

Provision of **basic services** has been broadly defined to include services delivered at the national and sub-national level that directly contribute to poverty reduction or have a social impact (such as on primary and secondary education, health, water supply and sanitation, communication, rural roads, agricultural extension, labour, or social welfare) (UNESCAP, 2007).

The future of pastoralism: a synthesis

The debate over the future of pastoralism is dominated by two theses. The first is based on the assumption that the population growth/livestock decrease ratio has permanently disturbed the normal functioning of pastoral livelihoods, ensuring that traditional pastoralism will not survive under the current circumstances. The second is based on the adaptive capacities and the flexibilities of pastoralist livelihoods that, the argument goes, will enable pastoralists to transform, thereby averting collapse.

Pessimistic outlook: ‘Too many people, too few livestock’

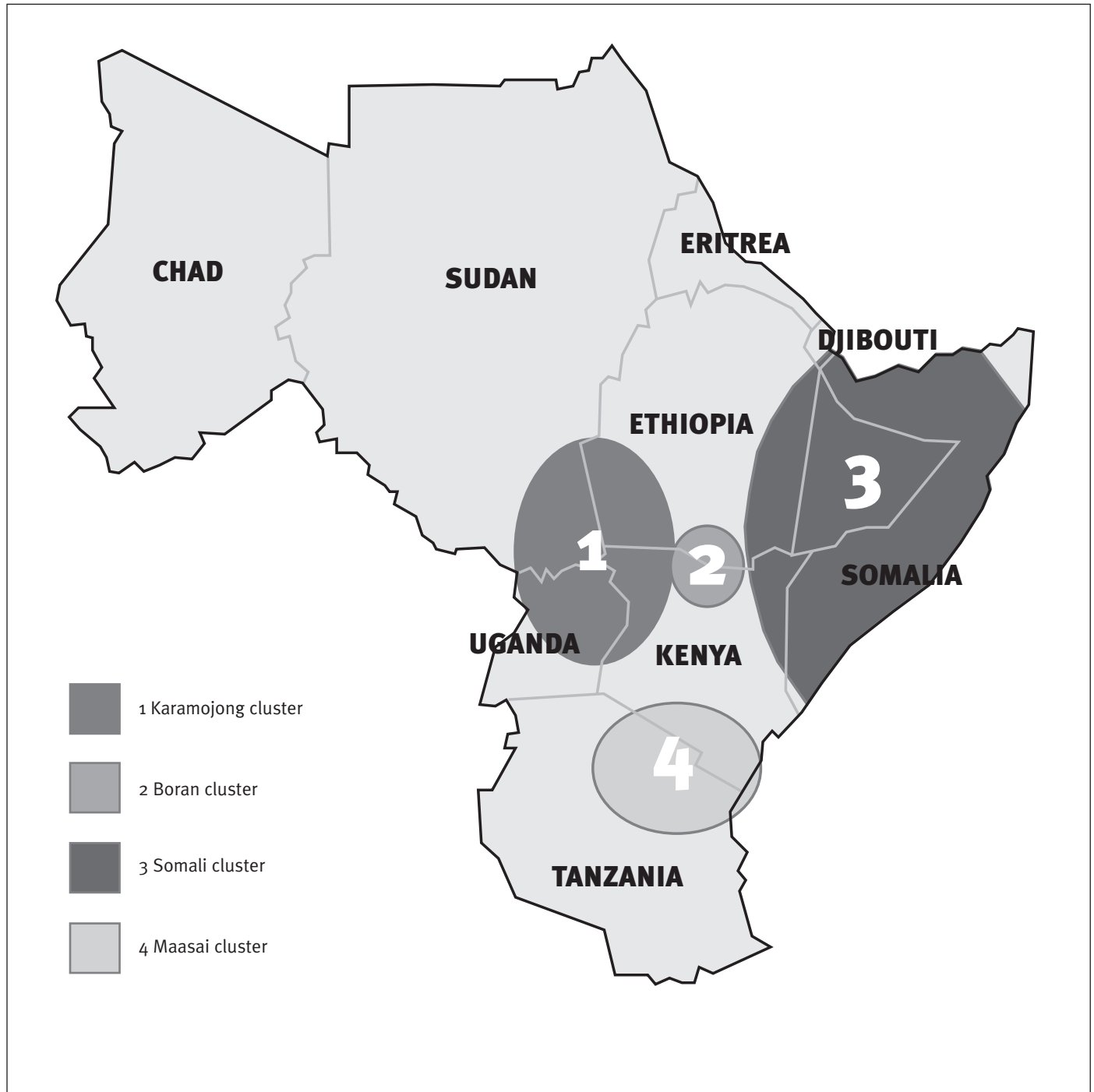
The major elements of this thesis⁶ are that people/livestock ratios have declined in pastoralist households to a level below the 3.5 to 4 TLU⁷/person that is deemed ‘viable’ for sustainable livestock production (Sandford, 2006). This has occurred due to a combination of human population growth and declining rainfall (Stenning, 1958; Shaw, 1989; Luseno *et al.*, 2003; Randall, 2008).⁸ Cattle rustling, endemic livestock diseases and climatic shocks have also affected livestock numbers. In this context, basic technologies for improving pastoralist production—such as range management and

⁶ The principal proponent of this thesis is Stephen Sandford. See Sandford (2006) and Sandford and Habtu (2000, chs. 1, 2).

⁷ Tropical livestock units (TLUs) provide a convenient method for quantifying a wide range of different livestock types and sizes in a standardised manner. The TLU exchange ratio represents the number of livestock required to make one TLU. Different weights are assigned to varying types of livestock based on a formula using metabolic weights so that 1 TLU = 1 camel, 0.7 cattle and 0.1 goats/sheep. The ratio of a minimum of 3.5 to 4 TLU/person referred to in this paper represents the minimum subsistence threshold livestock number that can maintain a given family in the pastoral production system (Sandford and Habtu, 2000).

⁸ It is recognised that for continued economic well-being population growth among pastoralists has to keep pace with herd growth. There is increasing evidence that pastoralists have been gradually losing their livestock to the point of destitution. The Pastoral Risk Management (PARIMA) project of the International Livestock Research Institute in the Horn of Africa has consistently collected data that confirms this trend. Interview with Dr Getachew Gebru, October 2008.

Figure 1: Pastoralist cluster groups in the Greater Horn of Africa



Source: Regional Livestock Study in the Greater Horn of Africa, ICRC, 2005.

veterinary services—are not sufficient to fill the gap and are unlikely to do so in the future (Sandford, 2006).

Moreover, the real prices of livestock products have not increased (and are unlikely to do so in the future, despite growing demand) to compensate for the lower numbers of animals per household (Sandford, 2006). With such small and decreasing herd/flock sizes, sales remain focused on immediate cash needs rather than on ‘commercial’ success. Pastoral economies remain poor, with limited circulation of cash, and so have little opportunity for growth through

diversification or expansion to other income-generating activities (Sandford, 2006).

This thesis further suggests that livestock-based production continues to be overtaken by cropping and agricultural activities. If these non-livestock-based production components were supported by irrigation schemes, they would provide some relief at least for pastoralists, but limited opportunity for irrigation exists. This thesis therefore proposes that exit from core traditional livestock-based pastoral livelihoods is currently the best option for pastoralists, but this process

requires management to avoid destitution and displacement. This solution would involve a combination of any of the following strategies:

- The emigration of a significant proportion of pastoralists from both substantial dependence on livestock and from pastoral areas.
- The development, within or near pastoral areas, of more productive and more sustainable rain-fed or irrigated crop agriculture to which previous pastoralists can switch their livelihoods.
- The development of diversified income-earning opportunities that may not be dependent on demand from within the pastoral economy.
- Reducing or reversing population growth.
- A much greater emphasis on and efficiency in improving range (per hectare, primary, edible) productivity, thereby allowing more livestock to be kept. This approach should be coupled with enhanced efforts to increase animal productivity.
- A programme to obtain higher prices for pastoralists' livestock products through the reform of the internal marketing system, through 'market development' (reaching new markets requiring higher-quality and more expensive products) or via a price stabilisation scheme (Sandford, 2006).

Optimistic outlook: adaptive livelihood responses

The proponents of the adaptive livelihood thesis argue that figures for the 'viable' people/livestock ratio should not be used, especially if these derive from settings and times that bear little relation to current circumstances (Scoones, 1995; Devereux, 2006; Scoones and Devereux, 2006). This criticism is related to the fact that most of the empirical data that backs up the pessimistic thesis originates in studies on relatively closed pastoral systems, where opportunities for trade, exchange and adding value to livestock production were limited. The critics also assert that the adaptive behaviour of pastoralists was not taken into account, and argue that the viability of pastoralist livelihoods depends on wider economic and livelihood systems as well as on patterns of mobility (Scoones and Devereux, 2006) which support core livestock-based livelihoods.

Moreover, this position asserts that contemporary livelihoods in pastoral areas are more diversified and more integrated with the cash economy than ever before, with most households having access to one or more sources of income that are not derived from livestock, as, for instance, remittances from abroad. Notions of 'viability' and 'carrying capacity' in this context would be inappropriate.⁹

Several different livelihood pathways, in addition to simply maintaining systems of subsistence pastoral production are

⁹ Randall also mentions that in demographic terms, 'carrying capacity' is not relevant for analysis, as the assumption is that pastoralist populations are flexible and, therefore, will move out from stressed environments in times of crisis. Author communication, October 2008.

identified of which are complex and wide-ranging. Devereaux and Scoones note these include: 'stepping up' to a more commercial production system through which profits may be made. This option is open to few, as it requires significant support from stakeholders to add value to the system through tax, market and export regulations; 'branching out' where by incomes are supplemented with a variety of activities, undertaken somewhat haphazardly. The livelihoods created in this way are vulnerable to cycles of accumulation and loss and might not be viable pastoralist livelihoods in the traditional sense, though they are a viable alternative to destitution and; 'moving away' from pastoralist systems. This response would be compatible with the diversification option but relies on the growth of urban sites, consumption and demand, and on the development of linkages within the pastoralism continuum that runs from nomadism to sedentarism. Consequently, it is necessary to provide mechanisms to start up pastoralist economies and allow them to flourish, accepting differentiation as a motor of growth. Stakeholders should bear in mind and accept that tradeoffs exist in the process of transformation.

The proponents of the adaptive livelihood thesis emphasise that the key policy imperatives are:

- new market dynamics and linking market opportunities to local growth;
- diversification and expanding livelihood portfolios in ways that encourage local growth linkages; and
- moving away, establishing new livelihoods that avoid destitution outside pastoralism and livestock keeping.

All in all, stakeholders need to recognise and work with pastoralists' responses to the stresses and shocks facing their livelihood system.

The options

The pessimistic and optimistic outlooks both capture some of the dynamics of the transition within pastoralist populations in the Greater Horn of Africa region. Indeed, the responses postulated by either thesis are some of the options that are already being seen within pastoralist populations. As Scoones and Devereux (2006) point out, the proponents of both theses agree on the necessity of a more sophisticated approach to pastoral development thinking that recognises major resource constraints and significant challenges to pastoral livelihoods. Morton (2008) points out that both theories place significant weight on livelihood diversification. At the same time, care must be taken in the use of Malthusian arguments lest they be used to promote coercive sedentarisation that, in the final analysis, could threaten the survival of pastoralist livelihoods.¹⁰ Critically, both theses assert that inaction is not an option.

¹⁰ Reference should be made to sedentarisation policies in Ethiopia, which have been unsuccessful and have proved the source of conflict among communities.

Demographic analysis framework

The objective of a demographic analysis framework is to look at the indicators of population change, age structure, dependency ratio, mortality, fertility and migration and use them to measure demographic change or trends within a population.

Population change is a component of demographic analysis and can be measured using the equation $P_2 = P_1 + (B - D) + (M_i - M_o)$ in which the four components being studied by this equation are population growth (P_1, P_2), births (B), deaths (D) and in-migration (M_i) and out-migration (M_o). The population at any time is equal to the earlier population plus the excess of births over deaths during the given period, plus the amount of in-migration minus the amount of out-migration.

The **age structure** of a population is partly the result of previous population movement and may be expressed in absolute or relative figures. Age structure is commonly measured in large age groups of 0–19 or 0–14, 20–59 or 15–64, and 60 or 65 and over. Developing countries tend to have young age structures. Low fertility necessarily leads to an old age structure, while high fertility always leads to a young population.

The **dependency ratio** is the ratio of those 0–14 years and 65 and over to those aged 15–64. Demographic aging occurs when the proportion of the population over age 65 increases.

The most frequent measures of **mortality** are the crude death rate, age-specific death rates and life expectancy at birth. Mortality rates by cause are usually expressed as rates per 100,000 population. Infant mortality is divided into neonatal mortality and postneonatal mortality, and its rate is a widely used indicator of the level of health achieved by a population.

Fertility is the component that most affects the size and age structure of a population. Common measures of fertility are the crude birth rate, the general fertility rate, the child–woman ratio and age-specific fertility rates. Commonly used measures of cumulative fertility include the total fertility rate, the crude reproduction rate and the net reproduction rate. The average number of live-born children and the probabilities of having another child are other measures. Indirect methods of estimating fertility and mortality have been developed to compensate for data shortcomings in developing countries.

Migration is the component of population change with the most rapidly produced effects on age and sex structure. It may be internal or international and is selective with respect to age and sex. The direction of migration is usually towards areas with higher living standards. Population distribution is not uniform across space; it may be measured by density, degree of urbanization, index or concentration (Mendoza, 1984).

Scope and limitations of the study: a dearth of data

Empirical data is crucial to all facets of development planning. When using demographic data in planning supportive strategies for development, two aspects of the interdependence of demographic and socioeconomic phenomena must be taken into account: the effect of demographic variables on development and the effects of development on demographic variables. Well-formulated development strategies should define concrete demographic objectives, but without taking a position on demographic indicators that prejudices the strategy for development. The dearth of data for pastoralist populations is an impediment to developing policies and interventions that accurately reflect and support the complexity of pastoralist livelihood options.

Although there is a wealth of studies and research on pastoralist issues, there is a paucity of large-scale and national quantitative data on population demographics on the broader national and regional patterns and trends. Evidence indicates that pastoralist populations that inhabit the ASALs have often been excluded from national databases. In Kenya until 2003, the Demographic and Health Survey did not cover northern Kenya, where most pastoralist districts are located. In Ethiopia, the Population and Housing Census of 1994 excluded some areas of Afar and Somali regions, which are classified as pastoralist. There was improvement in the Ethiopian 2005 Demographic and Health Survey, but still some skew in the sampling frame and coverage.

In addition to the lack of data on human pastoralist populations, there is also little reliable data on livestock numbers. Although livestock demography has received more attention with various censuses and surveys in the region, there are no indicators that enable specific analysis of livestock holding by pastoralists.¹¹ There have been livestock censuses in Ethiopia, Tanzania and Uganda, but Kenya has not had a livestock census for decades. Kenya's National Bureau of Statistics does not provide livestock data, referring requests to the Ministry of Livestock Development. There is a general belief that there is an erosion of numbers of livestock held by pastoralists. However, a project carried out by that same ministry, the Smallholder Dairy Project, conducted a mini livestock census in three high-potential locations in Kenya; the findings show that livestock numbers were more than twice the number of estimates that were being used nationally. Similar results were revealed through the first national livestock census in Niger, which uncovered 30% more livestock, effectively increasing Niger's GDP by 2% and making it one of the largest national stock holdings in West Africa. Data from Uganda also indicates that in some districts the total livestock holding has increased, although there is a decrease in the number of livestock per

¹¹ The Report on the Status of Pastoralism project in Uganda worked with the Ministry of Agriculture, Animal Industries and Fisheries and Uganda Bureau of Statistics to introduce some indicators that would provide pointers for pastoralists within the recently conducted livestock census.

household and in the number of households having livestock, with concentration of livestock wealth in fewer households (Muhereza, 2009).

In view of the scarcity of reliable data, this paper primarily presents data for Kenya and Ethiopia; it provides data for Somalia, Tanzania and Uganda wherever possible. This data includes fertility, mortality and population growth rates as well as data on migration and population change, life expectancy, gender, dependency ratios and access to basic services.

The context of pastoralist livelihoods: poverty, policies and political trends

Pastoral poverty

In order to review the demographic data contained within this paper, it is first necessary to provide some background and contextualization of the pastoral arena and influences on livelihoods, such as poverty, imposed policy frameworks that may or may not be appropriate and the attitude of governments towards pastoralism.

Understanding the complex relationships and causes of poverty in pastoral areas in the East Africa and GHA region is a necessary first step towards informed and effective policy making and programming. This section explores the complexity of pastoral poverty, noting that it fails to fit traditional definitions and that it cannot be measured using traditional tools.

Tools to measure poverty. The most widely used poverty measures rely on flow-based measures of well-being, typically using income as a proxy variable.¹² Poverty measures such as a headcount or a poverty gap are based on the idea that there is an income threshold that separates the poor from the non-poor. An example of such a threshold is the commonly used US dollar per person per day global extreme poverty line. This level represents a minimum for meeting basic human needs, and income below this level reflects a state of dire poverty. Using this measure of poverty, Little *et al.* (2006) found that the prevalence of income poverty in areas where pastoral production is the dominant activity is usually most pronounced among ex-pastoralists who are not directly involved in pastoral production. An examination of the relationship between herd ownership and household income reveals that there is an unconditional relation between household herd size and income level (Radeny *et al.*, 2006). This strong positive relationship between household per capita daily income and herd size underscores that the issue of poverty in pastoral areas is not poverty among active pastoralists; rather, it is poverty of those who have limited or no involvement in the pastoral economy.

Asset-based measures. The asset-based approach emphasizes that households can increase their income levels by asset

accumulation or by adopting opportunities that increase the returns to the assets they possess, whether through improved production technologies or more remunerative exchange relationships (Barrett *et al.*, 2006). In the context of pastoralism, those pastoral units that are relatively diversified and have reasonable market access may need fewer per capita livestock to sustain their enterprises. In cases where the pastoral economy is especially diversified, non-livestock forms of wealth (for example, cultivable land, salaried employment or business ownership) may actually be as good an indicator of welfare (or a lack thereof) as livestock ownership. With increased diversification into desirable assets and livelihoods (including education that leads to formal sector employment), households can remain active in the pastoral economy with smaller herd sizes without jeopardising human welfare. The asset-based approach also accentuates the important distinction between asset risk and income (or related food security) risk in pastoralist areas (McPeak and Barrett, 2001). Devereux (2006) notes that it is entirely possible for widespread food and famine vulnerability to co-exist with high levels of livestock wealth, the lack of market access and movement restrictions caused by conflict in the region being responsible for food insecurity.

There are also important distinctions between chronic and transitory (temporary) poverty and between structural and stochastic poverty; both forms are often misclassified and misreported. Transitory poverty is associated with movements into and out of income poverty, while chronic poverty reflects persistent deprivation. The former type usually results from a drought or other disaster that knocks a household into poverty for up to a few years. After the shock ends and recovery ensues the household rebuilds its herd and moves back out of poverty. In the case of chronic poverty, however, poverty persists in shock and non-shock years as households control too few assets (animals) and are insufficiently productive in using those assets to allow them to escape from poverty without external assistance. In the pastoral areas, these are typically the households with no or few livestock that cluster around settlements, receiving food aid and eking out a marginal living through informal employment and petty trade.

There are important differences in the methods employed to address structural or non-structural poverty. Structural poverty requires 'cargo net' interventions: asset transfers and technological and market improvements to the productivity of the structurally poor that lift or enable them to climb over the obstacles that trap them in chronic poverty. These are not short-term interventions such as food aid rations. The stochastic poor, by contrast, need only short-term assistance to tide them over a rough spot of transitory poverty; these 'safety nets' keep them from collapsing into chronic, structural poverty (Barrett *et al.*, 2006).

Little *et al.* (2006) find that while there are poor pastoralists, tools for measuring this poverty must be able to acquire an accurate picture; they argue that pastoral production should

¹² This is most appropriately a full income measure that includes the market value of all non-marketed goods consumed at home.

be improved and supported, not replaced, for the majority of pastoralists with the skills and interests to continue traditional livelihoods. This approach has been proven effective, and there are opportunities to enhance that effectiveness. Further, since it appears to be the economic activity of choice among those who are better off, anything that undermines pastoral production is likely to increase poverty, not reduce it. The second key element is to focus on residents of pastoral areas who are not actively involved in pastoralism or who are plainly exiting the system, often under considerable duress. They should be given support to identify and undertake alternative economic activities that support, complement or at least do not undermine pastoral production. At present, their livelihood diversification is forced and unremunerative, driven by desperation rather than by emerging opportunities appropriate to this subpopulation in the pastoral areas.

Total economic value framework. Another methodology for measuring pastoralist poverty is the total economic value framework (Hesse and MacGregor, 2006). Such a framework looks beyond the immediate benefits of livestock and livestock products to consider the whole range of direct and indirect values, regardless of whether they are measurable. The value of pastoralism is often considered equal to the value of livestock sales, sometimes also including the sale of certain by-products, such as dairy and hides. While these values can be difficult to quantify, and government data rarely disaggregates pastoral contribution to the economy from the rest of the agricultural sector, they do not capture the full value of pastoralism.

There is a multiple and extensive set of values associated with pastoralism. Some are tangible but many are not; some can be measured but many cannot—and those that can be measured are often underestimated. Assessing an economic activity’s total contribution to the national economy is one tool to identify, quantify and aggregate all values associated with that activity. Yet it is:

misleading to assume that this is simply a process of monetising all aspects of economic life. Rather, it proves a useful tool to explore the full range of costs and benefits emanating from an activity, which can also be used for lobbying in support of pastoralism (MacGregor and Hesse, 2006).

The Human Development Index (HDI) and the Human Poverty Index (HPI). HDI and HPI indices for pastoral districts across the GHA indicate that pastoralists are some of the poorest and most vulnerable populations in the region.¹³ Table 1 presents the HDI for Kenya’s pastoralist districts between 1999 and 2005. Many of the districts were ranked among the worst-performing throughout that period, indicating the entrenchment of poverty as measured by the Human Development Index. Table 2 (page 8) presents data on the HDI for Uganda, again highlighting the concentration of poverty in pastoral areas.

The HDI calculation raises numerous questions in relation to pastoralism and poverty and economic contribution. It provides a composite measure of three dimensions of human

Table 1 Human Development Indices (HDI) and Human Poverty Indices (HPI) for Kenya pastoralist districts

District	Type	HDI 1999	HDI 2003	HDI 2005	HPI 2005
Turkana	Arid	0.2455	0.198	0.172	36.2
Wajir	Arid	0.2593	0.346	0.256	n/a
Garissa	Arid	0.3427	0.441	0.267	n/a
Tana River	Arid	0.3780	0.382	0.307	36.1
Mandera	Arid	0.3246	0.427	0.310	n/a
West Pokot	Semi-arid	0.3350	0.241	0.334	n/a
Samburu	Arid	0.2982	0.256	0.347	41.8
Kajiado	Semi-arid	n/a	0.468	0.348	38.6
Marsabit	Arid	0.2890	0.195	0.411	42.3
Narok	Semi-arid	0.4462	n/a	0.502	40.1
Isiolo	Arid	0.4245	0.522	0.580	36.6
Transmara	Semi-arid	n/a	n/a	0.582	39.8
Laikipia	Semi-arid	0.5415	0.536	0.585	n/a
Moyale	Arid	n/a	n/a	0.674	n/a
Baringo	Arid	0.5062	0.508	n/a	n/a
National average		0.5035	0.550	0.532	42.3

Note: Coloured boxes represent districts that had the worst performance for the given indicator.

Source: Kenya, Republic of (2007). Kenya Integrated Household Budget Survey (KIHBS) 2005/06. Volume 1 Basic Report, January, 2007

¹³ The HDI is a composite measure factoring in life expectancy / survival, adult literacy rates / knowledge base, a combined gross enrolment index and an adjusted real GDP per capita index (RoK, 2005).

Table 2 Human Development Indices (HDI) for the worst-performing districts in Uganda, highlighting the concentration of poverty in those districts with significant pastoralist populations

District	Type (pastoralist dominated / non-pastoralist-dominated)	HDI
Moroto	Pastoralist	0.216
Kotido	Pastoralist	0.292
Abim	Pastoralist	0.292
Kaabong	Pastoralist	0.292
Nakapirpirit	Pastoralist	0.370
Gulu	Non-pastoralist	0.430
Amuru	Non-pastoralist	0.430
Kitugum	Non-pastoralist	0.439
Yumbe	Non-pastoralist	0.458
Bundibugyo	Pastoralist	0.459

Source: UNDP (2008)

development: living a long and healthy life (measured by life expectancy), being educated (measured by adult literacy and enrolment at the primary, secondary and tertiary level) and having a decent standard of living (measured by purchasing power parity and income). The index is not in any sense a comprehensive measure of human development. It does not, for example, include important indicators such as gender or income inequality; nor does it cover indicators that are more difficult to measure, such as respect for human rights and political freedoms. What it does provide is a broadened prism for viewing human progress and the complex relationship between income and well being.

Policies and political agendas

Since colonial times, various policies and interventions have shaped pastoralist demographics and settlement patterns. This paper briefly highlights broad policies, policy directions and interventions that have had an impact on the demographic and settlement patterns and trends over the past two decades.

Indicators that specifically identify pastoralists and processes that are of relevance to pastoralist populations have generally been excluded from national databases. There are no identifiers for pastoralists across the national databases within the region. In a typical household economic survey that uses indicators such as structure and tenure of housing and material possession ownership as indicators of wealth or poverty, mobile pastoralists are inevitably classified as poor because most of these are not appropriate investments for mobile people (Randall, 2006). Whenever pastoralists have been included in national censuses, there have been significant challenges in ensuring that sample frames are relevant to this population. This pattern has extended to pastoralist resources, especially livestock and natural resources. Kenya, for example, has not had a livestock census in more than three decades.

This exclusion and marginalisation in terms of representation within databases leads to exclusion from national development plans and, consequently, social service budgets and

programmes. Yet some efforts are being made to include pastoralist or nomadic populations in surveys such as those in Ethiopia (Gutu, 2008), Tanzania and Kenya (Randall, 2006). Key examples of areas of marginalisation and exclusion, particularly in policy implementation are given below

1. National governments' resistance to implementation of pro-pastoralist policies.

Between 1999 and 2006, Ethiopia, Kenya, Tanzania and Uganda took unprecedented strides to recognise pastoralism as a viable livelihood within their Poverty Reduction Strategic Plans, which were the national overarching development frameworks. While there is variation across the countries, the governments have proved largely resistant to adopting, investing in and implementing these policies (Morton, 2008). This resistance could reflect the fact that governments generally find it easier to deal with sedentary populations that are easily enumerated, meaning that usage of services is accountable and populations are taxable (Ahmad, 1998).

In **Ethiopia**, the Ministry of Federal Affairs has a Pastoral Development Department with a mandate to coordinate and oversee interventions in pastoral areas. This includes the Pastoralist Community Development Project, financed by the World Bank. Pastoralist departments and commissions exist at the regional level, but not at the district level (*woreda*). Ethiopia had a Pastoralist Development Strategy, launched in 2001. It was supposed to be replaced in 2005, but government officials say pastoralist policies have now been subsumed into agricultural development policies (as have land policies affecting pastoralists).

In **Kenya** there have been a number of thrusts to develop the ASALs and their populations, the majority of which are pastoralists. An ASAL development programme was launched in 1979; its mandate was to promote dryland farming, using drought resistant crops, small-scale irrigation projects and ranching on land that was used by mobile pastoralists (Markakis, 2004). Although its focus was on privatisation of

land and livestock development, by 2000 only 84 of 321 group ranches were operational. In 2004, Kenya published a draft National Policy for the Sustainable Development of Arid and Semi-Arid Lands that was more progressive on pastoralist development; it reinforced the views presented in the Kenya Economic Strategy for Employment and Wealth Creation, which also promoted pastoral development. However, there was no political will to implement the policy guidelines. In 2008, the Ministry for the Development of Northern Kenya and Other Arid Lands was formed and given the mandate to manage the ASALs. The Kenyan government has also launched Kenya Vision 2030 and the Medium-Term Plan for 2008–12, sketching a development blueprint for the country that includes economic, social and political pillars affecting pastoralists. The Vision includes the improvement of agricultural, livestock, water and sanitation policies with specific mention of the ASALs as part of the economic reshaping. At this writing, the Ministry for the Development of Northern Kenya and Other Arid Lands is drafting an annex to Vision 2030 and revising the 2004 draft ASAL policy.

In **Uganda** the Poverty Reduction Strategic Plan paved the way for processes to review the livestock sector policies. The Food and Agriculture Organization of the United Nations provided a framework for a pro-poor review, but the exclusion of pastoralists to date has made the very integration of pastoralists and their representatives difficult. Attempts to produce a rangeland policy and a pastoral code have been fruitless, with the drafts hampered by a very strong leaning towards livestock development. A robust political agenda against pastoralist development continues to prevail.

This general lack of adherence to implementation policies that include pastoralists has meant the continued exclusion of pastoralist communities in national development strategies and a persistent lack of access to social programmes in individual countries in the GHA region. Although governments appear willing to develop inclusive policies, these are occasionally inappropriate for the pastoralist population and not well thought out (see Box 1). In addition, there is a general lack of follow-through on implementation.

2. A focus by governments in the region on economic growth, modernisation and trade as the overriding development objectives.

This view has emphasised market values and promoted calls for sedentarisation of pastoralists, privatisation and commercialisation. These objectives are supported by strong political agendas and perhaps motivated by governments' preference for a settled population of farmers who could be taxed and conscripted, as opposed to the nomads outside the political community who might pose a danger to order and be less easily monitored (Ahmad, 1998). Box 2 describes the antipathy felt by members of governments in both Tanzania and Uganda regarding the maintenance of pastoralist livelihoods.

Box 1 The need for improved policy dialogue

The current focus on maximising livestock production alone needs to be replaced by one that recognises the multiple contributions livestock make to livelihoods. **This will require a greater understanding of the clients of livestock development efforts and services and their priorities.**

Lack of such understanding has led to a limited uptake of 'improved' livestock technologies, **which have been largely inappropriate to meeting the needs of livestock keepers in general and pastoralists in particular.**

Source: RoU (2004)

Box 2: Whose model of development?

'We will take deliberate measures to improve the livestock sector. Our people must change from being nomadic cattle herders to being settled modern livestock keepers. We will take measures to improve pastures, veterinary care, cattle dips and auction. It is the duty of all Regions, Districts and Local Authorities to set aside pastoral land, especially in those areas with much livestock.'

— *His Excellency Jakaya Mrisho Kikwete, President of the United Republic of Tanzania, at the inauguration of the 4th phase of Parliament on 30 December 2005*

'Pastoralists have not realised that things have changed; instead they continue to disrupt modernization. [...] They move away from development instead of moving towards achieving it. For example, even those that have access to water still continue to move. [...] There is a need to recognise pastoralism as a cause and a consequence of poverty.'

— *Hon. Mary Mugenyi, Minister of State, Animal Industries, Uganda, at the Pastoralist Analysis pre-Poverty Reduction Strategic Plan workshop, Jinja, Uganda, July 2003*

This resolute focus by some governments on the integration of pastoralists into the sedentary or non-nomadic population has provided policy makers with an excuse not to focus on the issues that render the pastoralist communities at risk today. As long as governments contend that pastoralism is untenable and therefore pastoralists must reform, they are not focusing on strategies to address problems occurring within the pastoralist livelihood framework.

3. International donor implementation of 'food aid'.

Internationally provided food aid has been a key strategy for resolving food shortages in the ASALs due to droughts

and other disasters; consequently, donors have not pursued livelihoods development that might protect the asset base. Some observers claim that emergency and relief aid has triggered the formation of slum-like urban settlements in the ASALs.¹⁴ Emergency and relief agency data shows an increase in the number of beneficiaries. However, the WFP and other agencies argue that there is only an increase in absolute numbers of recipients during stress seasons¹⁵ rather than an increasing permanent dependence on food aid.

Provision of emergency food aid to the pastoralist community as a response to drought precludes the welfare of pastoralists set in the dynamic context of risk, but it is often necessary and useful when implemented within planning systems that include this risk. Pastoralists' vulnerability is determined by seasonal and long-term trends (including droughts and other disasters) that affect their livelihoods. The livelihoods framework that supports development and ensures protection of assets emphasises that the overall livelihood of pastoral people depends on both: access to assets such as pasture, water, animal health services, markets, credit and education, and an environment in which these assets are combined for production and consumption purposes, namely the political, organisational and institutional infrastructure. The degree of vulnerability of pastoralists is denoted by the lack of resilience to the occurrence of uncertain events (risks), including long-term and seasonal trends such as drought. Vulnerability is therefore not only an important dimension of poverty and deprivation, but also a potential cause. Policy makers and the humanitarian community need to invest in the development

¹⁵ Interview with A. Kute, WFP Nairobi, Kenya, October 2008. Kute provided data on numbers of food aid beneficiaries in pastoralist regions in Kenya from September 2006 to March 2009 to support this position.

and implementation of risk management policies or strategies that take into account potential population growth in the pastoral lands. These risk management strategies should focus on risk reduction, risk mitigation and risk coping strategies (Rass, 2006).

4. Governance, security and justice systems — including land tenure institutions — that do not recognise or make provisions for the sharing of natural resource and conflict management.

This has led to the weakening of traditional governance, justice, law and order systems. The resulting lack or inefficiency of governmental structures has generated endemic insecurity and conflict that have put pressure on pastoralist populations.

Livestock raiding and armed skirmishes between pastoral groups have been going on for probably as long as there have been pastoralists. Armed conflicts — and the fear of them — leave large grazing areas unused, a pattern that only accelerates overcrowding and overgrazing problems in relatively secure areas.

The social and economic effects of conflict are experienced in many different ways. As noted above, trade routes and markets often are disrupted. In addition, retail shops often close and traders and transport owners may leave when conflict is severe. In addition to causing loss of life, especially among economically productive members of the community (such as young men), conflict also closes down schools, health clinics, development projects and other critical social and economic services. Once again, the poor who can least afford to lose their few animals and other assets during a conflict suffer the most from insecurity (Little *et al.*, 2006).

2 Data on demographic indicators, settlement patterns and access to basic services for pastoralists

This section presents demographic data along with settlement patterns and an assessment of pastoralists' access to basic services and infrastructure. Demographic variables were selected based on their relevance to changes in population and their links to changes in demographic structure. This set of demographic variables includes population, fertility, age structure, mortality and migration (in and out). This section also looks at settlement patterns and trends, particularly rural-to-urban movement and that is influenced by conflict or resource scarcity. Finally, it reviews data on access to basic services for pastoralists.

Demographic indicators

Fertility rates

This section presents raw data on the total fertility rates of pastoralist populations in Kenya and Ethiopia. While the total fertility rate is one of the variables used to determine population growth, other variables such as mortality rates, life expectancy and age structure must also be incorporated into the equation to present a complete picture.

In studies conducted by Henin in 1968 and 1969, pastoralists were recorded as having relatively low fertility rates (Henin, 1968; 1969). In their study on the effect of mobility on fertility rates among pastoral groups in Burkina Faso, Hampshire and Randall note that low fertility among the Fulani could in part be explained by sterility attributed to the acquisition of sexually transmitted infections by men migrating to cities in search of work (Hampshire and Randall, 2000). Meir (1987) and Randall (2008) returned to the issue some years later, analysing both sides of the argument. Their conclusion was that the imprecise and unreliable nature of the available data makes it impossible to be categorical about the fertility of pastoralists; this conclusion could call into question the validity of responses provided in national censuses. A review of available data reveals that pastoralists are generally fertile populations unless they are exposed to family planning and contraception or put under strain by marginalisation, seasonal stress, hardship of pastoralist life or lack of access to health services.

Ethiopia's Demographic and Health Survey, CSA 2005) recorded total fertility rates – the number of children per woman at the end of her childbearing years among pastoralists throughout the country. On average, each woman had 5.2 children, which is similar to the national average of 5.9 recorded in the 1990s. The following decade witnessed a slight drop to 5.0 in the 2000s, which was also lower than the national average of 5.4.

Kenya data shows a similar trend, with fertility rates increasing in the 1990s from the 1980s. No data was accessible on the individual districts as the Kenya Demographic and Health Survey aggregates to the provincial level. However, there was an increase in fertility rates across provinces except in Central and Coast provinces. The Rift Valley Province that includes Baringo, Kajiado, Laikipia, Narok, Samburu, Transmara, Turkana and West Pokot recorded a 9.4% increase in infertility; in 2003, Eastern Province – including Marsabit, Moyale and Isiolo – recorded a 2.1% overall increase in fertility. No data was available from the same source for North Eastern Province (see Table 3, page 12).

Growth rates

Data shows that pastoral populations are growing in Kenya and Ethiopia. In Kenya, growth rates in pastoralist districts in the current decade are generally higher than in the 1990s, but are similar in both arid and semi-arid districts, with some districts recording negative growth rates. On the other hand, some arid districts – Turkana, Garissa, Wajir and Mandera – had very high growth rates in the 1990s. All these are border districts, however, and the growth rates could be attributed to a reflux of refugees and other persons coming across borders.¹⁶ This reflux of refugees occurs as a result of conflicts in these areas. Populations move back and forth from neighbouring countries into Kenya, depending on the security situation. Enumeration of refugees is difficult in this scenario and there is a risk of double-counting, which produces data that exaggerates the actual growth rates (see Figure 2, page 12). A more detailed analysis of the real rate of growth and more data from other pastoralist communities are necessary to reveal a more accurate picture.

Infant mortality rates

Childhood mortality rates (infant mortality, child mortality, under-five mortality) are often used as broad indicators of social development or as specific indicators of health status (CSA, 2005). In Ethiopia, infant mortality rates have declined, with large decreases since 1990s; in contrast, Kenya saw an increase in this rate (see Table 4, page 13). In general, pastoralist districts had lower infant mortality rates. This could be attributed to cultural taboos that prevent speaking about the dead, which may lead to fewer deaths being enumerated than occurred.

Available data shows that Ethiopia has experienced significant decreases in infant mortality over the last two decades, yet

¹⁶ This analysis was corroborated by a senior official of the Arid Lands and Range Management Programme, based with the Ministry of Development of Northern Kenya and Other Arid Lands, Kenya.

Table 3 Total fertility rate in pastoralist districts in Ethiopia and Kenya

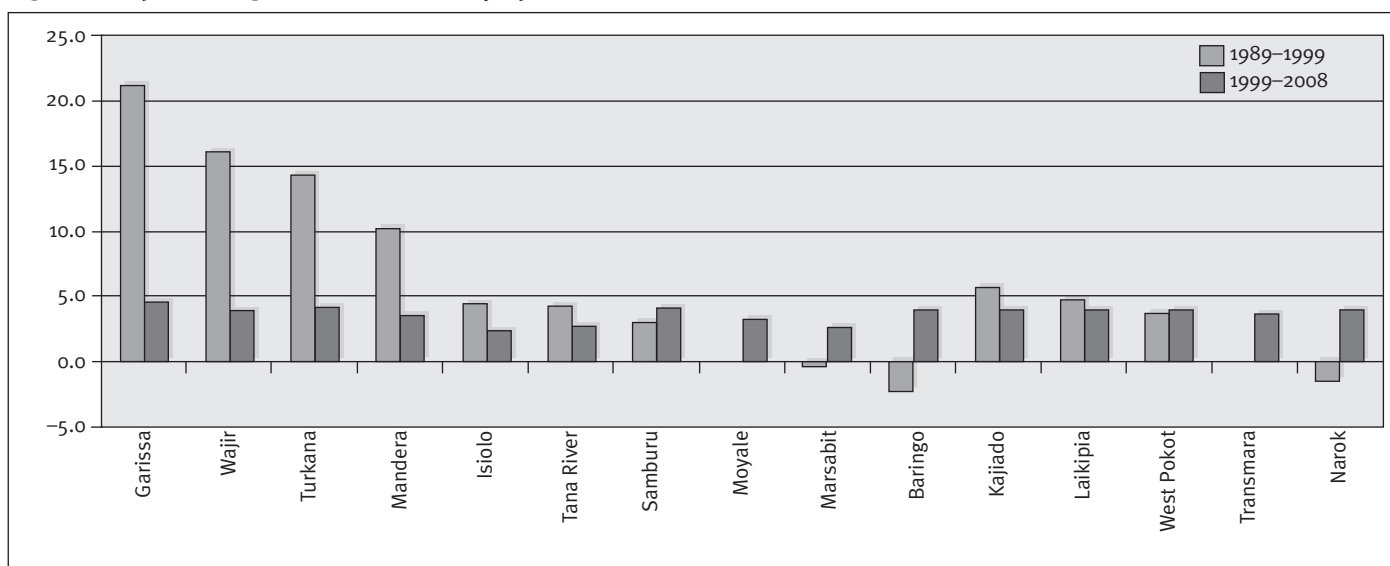
Region/district	Districts/ no. of districts ¹	Total fertility rate ²		
		1979–88	1995–2000	2001–07
Ethiopia	–	–	CSA DHS (2000)	CSA DHS (2005)
Somali	44	n/a	5.7 (2000)	6.0 (2005)
Afar	29	n/a	4.9 (2000)	4.9 (2005)
Oromiya	34	n/a	6.4 (2000)	6.2 (2005)
Southern Nations, Nationalities and Peoples' Region	6	n/a	5.9 (2000)	5.6 (2005)
Gambella (Zone 1)	5	n/a	4.5 (2000)	4.0 (2005)
Benshangul-Gumuz	3	n/a	5.4 (2000)	5.2 (2005)
Dire Dawa	1	n/a	3.6 (2000)	3.6 (2005)
Average for the selected pastoral districts	–	–	5.2 (2000)	5.0 (2005)
Ethiopia national average	–	–	5.9 (2000)	5.4 (2005)
Kenya ³	–	RoK (1988)	RoK (1999b)	RoK (2003a) ⁴
Rift Valley Province	–	–	–	5.8 with a 9.4% increase
–	Turkana	5.7	6.3	–
Eastern Province	–	–	–	4.8 with a 2.1% increase
–	Marsabit	6.2	6.6	–
–	Moyale	n/a	7.4	–
–	Isiolo	6.0	6.0	–
North Eastern Province	–	–	–	–
–	Mandera	7.9	7.6	–
–	Wajir	7.5	7.1	–
–	Garissa	7.5	6.4	–
Kenya pastoral districts average	–	6.8	6.7	–
Kenya national average	–	6.6	5.0	4.9

1 Given the large number of districts in some of the regions Ethiopia, it is not possible to list all of them.

2 The total fertility rate is the total number of births a woman would have by the end of the childbearing period. Source: Ethiopian Central Statistics Authority (data for whole regions and not specific pastoral districts as data aggregated to the region).

3 Data for the periods 1979–88 and 1989–99 are averages.

4 Kenya Demographic and Health Survey data for provinces and not individual districts.

Figure 2 Population growth rates in Kenya pastoralist districts

Source: RoK (2006)

Table 4 Infant mortality rates of pastoralist districts in Ethiopia and Kenya

Region/district	Districts/ no. of districts ¹	Infant mortality ² (per 1,000 live births)		
		1979–88	1989–98	1999–2007
Ethiopia	–	–	CSA (2005)	CSA (2005)
Somali	44	n/a	96.0 (1997)	57
Afar	29	n/a	118.0 (1996)	61
Oromiya	34	n/a	118.0 (1994)	76
Southern Nations, Nationalities, and Peoples' Region	6	n/a	128.0 (1994)	85
Gambella (Zone 1)	5	n/a	113.0 (1994)	92
Benshangul-Gumuz	3	n/a	140.0 (1994)	84
Dire Dawa	1	n/a	103.0 (1994)	71
Ethiopia pastoral district average	–	–	116.0	75
Ethiopia national average	–	–	112.9 (CSA, 2000)	80 (CSA, 2005)
Kenya	–	–	–	CSA ³ 2005–06
Rift Valley Province	–	–	–	61
–	Turkana	91.0	66.0	–
–	Kajiado	45.0	47.9	–
–	Narok	55.0	48.1	–
–	Laikipia	34.0	41.5	–
–	West Pokot	108.0	87.2	–
Eastern Province	–	–	–	56
–	Marsabit	37.0	43.9	–
–	Isiolo	73.0	75.1	–
–	Moyale	n/a	76.0	–
North Eastern Province	–	–	–	91
–	Wajir	69.0	69.9	–
–	Garissa	78.0	67.7	–
–	Mandera	72.0	67.4	–
Kenya pastoral districts average	–	59.2	62.8	–
Kenya national average	–	70.1	77.3	–

¹ Given the large number of districts in some of the regions Ethiopia, it is not possible to list all of them.

² Infant mortality is the probability of dying between birth and the first birthday per 1,000 live births.

³ Demographic and Health Survey data aggregated at the provincial level.

Kenya has in fact borne witness to an upward trend in infant mortality, both in pastoralist areas and over the country as a whole. Kenya's national average for infant mortality has risen from 70.1 (1979–88) per 1,000 live births to 77.3 in 1989–98. Ikamari argues that the situation is attributable to a combination of factors, including increased absolute poverty, adverse effects of economic hardship and cost recovery programmes associated with Structural Adjustment Programmes (SAPs), an increase in childhood malnutrition, a decrease in the use of maternity care services, a decline in childhood immunizations, the inability of the public health system to provide services, the HIV/AIDS epidemic and ethnic

violence in parts of the country (Ikamari, 2004). Though plausible, this analysis of the combined effect of many indicators lacks a quantitative statistical explanation.

Gwatkin (1980), Ezefor (1981) and Ruzicka and Hansluwka (1999) have argued that the explanation for the deceleration in the rate of decline of mortality in developing countries in the late 1960s and early 1970 lies in the relative contribution of socio-economic development and the application of imported medical technology. When mortality levels are high, health and medical interventions are effective in reducing mortality; when mortality falls to levels that are relatively low,

however, economic development, education and nutrition are crucial factors in influencing further decline (Caldwell, 1984; Hansluwka, 1987). Socio-economic factors, environmental sanitation and medical technology act in complementary ways to improve mortality rates in developing countries. A certain level of socio-economic development is necessary for health programmes to be effective. There is also a limit beyond which health programmes can have an effect on reducing mortality declines; once that threshold is reached, any further gains in reduction will depend on improvements in socio-economic conditions and education levels influencing personal behaviour (Ikamari, 2004).

Life expectancy

As mentioned in the discussion on infant mortality rates, data concerning deaths among pastoralists is more difficult to obtain due to cultural taboos. Until recently, the groups seldom spoke about the dead. As a result, there are only assumptions – similar to those affecting fertility, but including conflict and warfare – about the factors that influence mortality. Infanticide was practiced among some groups in the past. The data has to be compared with the increase (or decrease) in life expectancy among pastoralist populations in other countries in the region (see Table 5).

Male/female ratios

In both Kenya and Ethiopia, there are more men than women in the pastoralist populations than in the national population, in which there are generally more women than men. This picture raises a number of questions but could suggest that these

differences are related to issues or behaviour in nomadic versus agro-pastoralist/settled communities. Are the causes related to under-enumeration of women compared to men in pastoralist areas? A comparison of sex ratios illustrated as age pyramids in Figures 8 and 9 reveals that there are fewer females from the 0–4 level, and throughout the pyramids. This suggests that the sex ratio differences are systemic and could be related to care given to female versus male children from birth in pastoralist communities. Some West African communities practice differential feeding of boys and girls.¹⁷ In order to find a statistically rational explanation, more research needs to be done into enumeration and data collection, health care-seeking behaviour for girl and boy children and household dynamics around access to food and other staples.

The male/female ratio points to issues of resource allocation and ownership as well as the general pool and passing on of skills and knowledge – as related to male and female functions, roles and responsibilities within the population. What demographic processes, such as migration or marriage outside of the ethnic group (ethnic integration), are affected by this high male-to-female ratio?

Dependency ratio

The arid pastoralist districts in Kenya have very high dependency ratios, averaging 114.2. This figure represent people aged 0–14 years and 65 and over divided by those aged 15–64 and multiplied by 100. This ratio is high when compared to the national average of only 84.0 (see Table 7, page 17). The dependency ratio is lower for the semi-arid districts, an average

Table 5 Life expectancy in pastoralist districts in Kenya

District	Life Expectancy at Birth 1989–1999	
	Female	Male
Tana River	55	52
Isiolo	61	54
Marsabit	64	57
Moyale	57	56
Garissa	57	57
Mandera	59	61
Wajir	60	61
Baringo	66	58
Kajiado	68	60
Laikipia	70	60
Narok	67	59
Samburu	64	58
Transmara	58	60
Turkana	59	55
West Pokot	61	55
Total	61.75	56.6

Source: RoK (1999a)

¹⁷ Communication with Jeremy Swift, May 2009.

Figure 3 Age pyramid of Afar region population

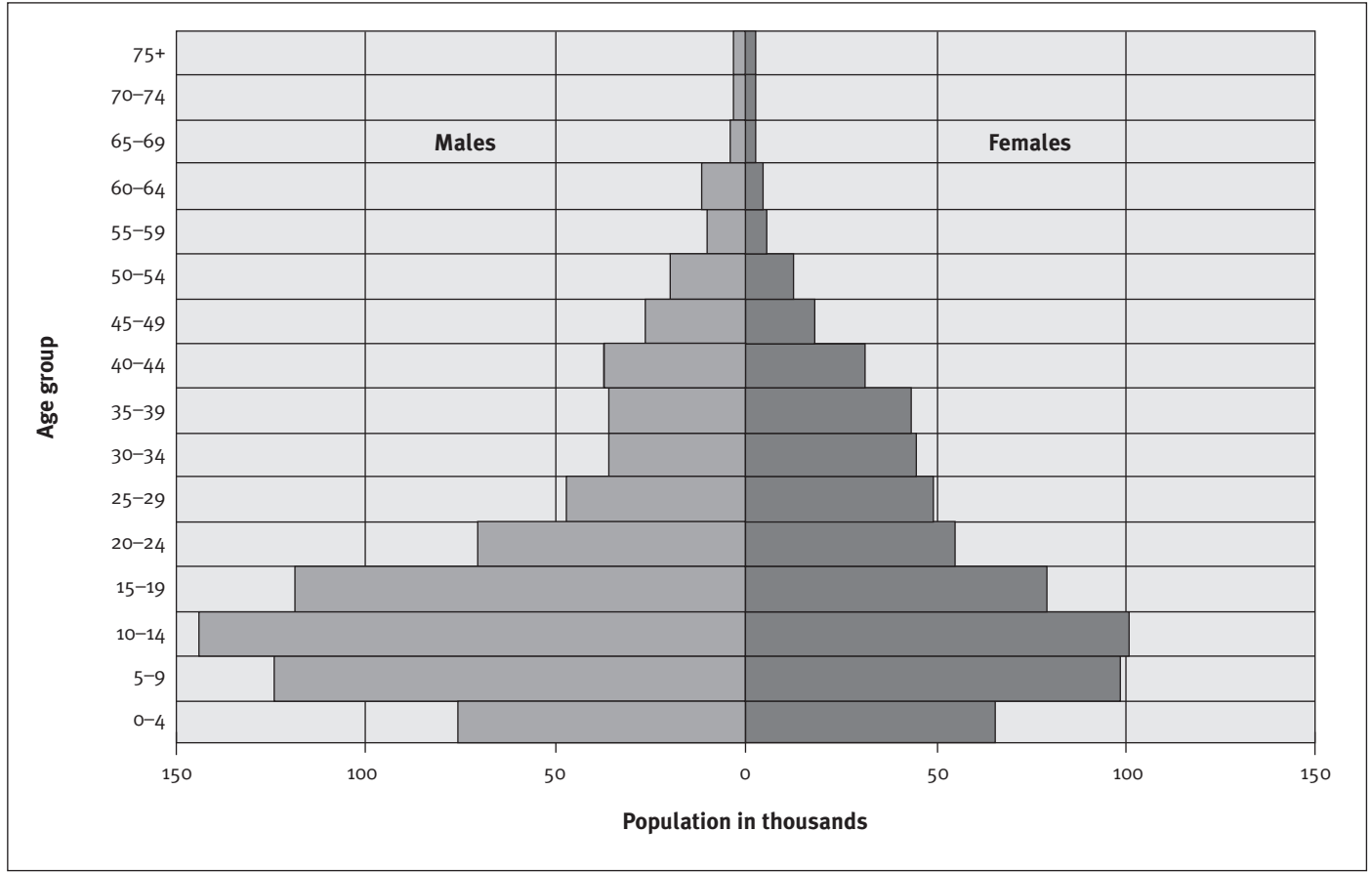


Figure 4 Age pyramid of Somali region population

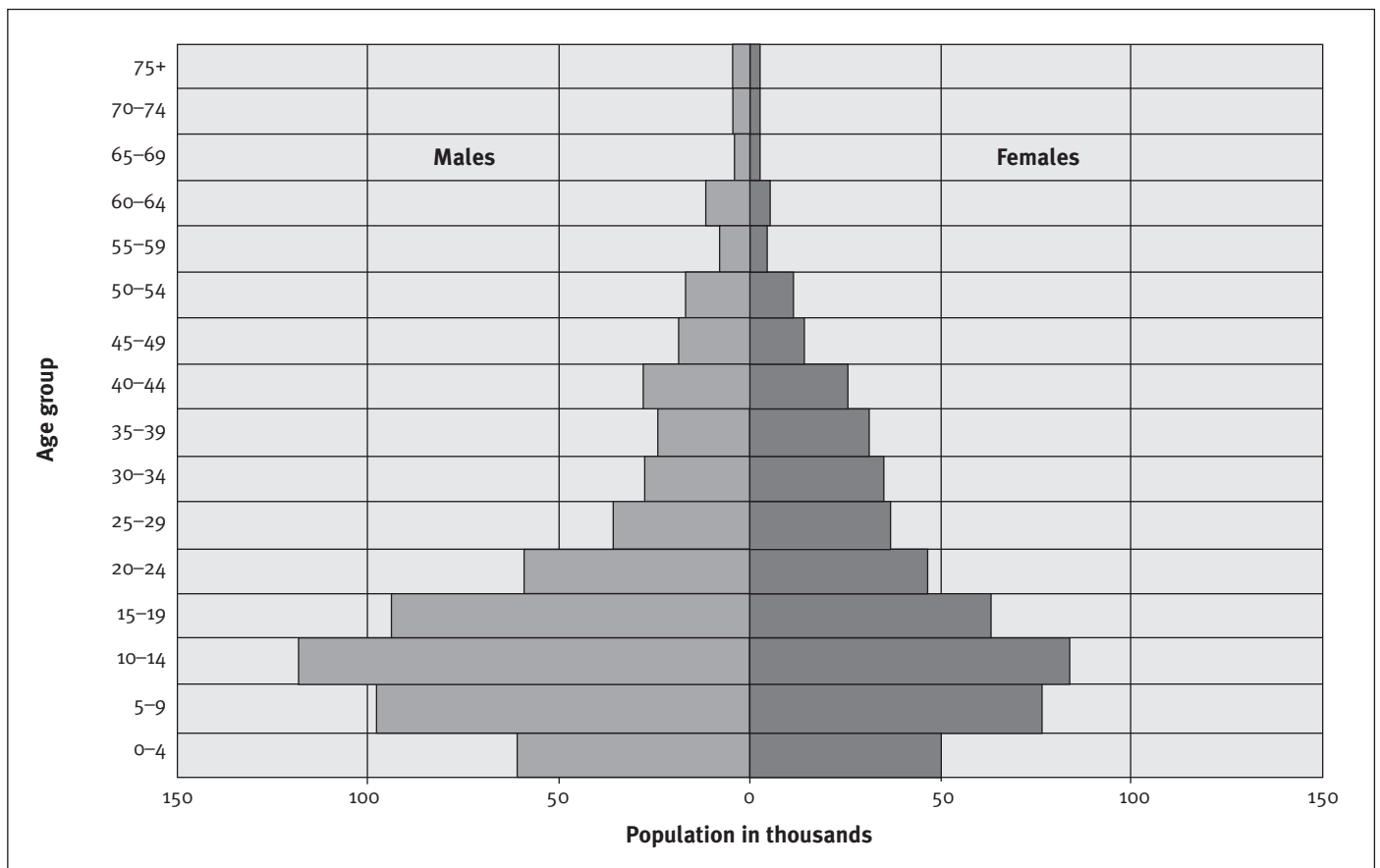


Table 6 Male/female ratios among pastoralist populations in Ethiopia and Kenya

Region/district districts	No. of	Male/female ratios	
		1988–98 Census 1994	1999–2007 Census 2007
Ethiopia			
Somali	44	120.0	125.3
Afar	29	130.7	126.0
Oromiya	34	101.5	101.4
Southern Nations, Nationalities, and People's Region	6	102.2	99.0
Gambella (Zone 1)	5	99.4	108.5
Benshangul-Gumuz	3	98.1	103.0
Dire Dawa	1	108.1	100.6
Ethiopia pastoral district average		108.5	103.8
Ethiopia national average		n/a	98.2
Kenya			RoK (2006)
Turkana	1	n/a	107.5
Marsabit	1	n/a	102.8
Moyale	1	n/a	106.2
Isiolo	1	n/a	104.1
Mandera	1	n/a	103.3
Wajir	1	n/a	109.6
Garissa	1	n/a	103.7
Kajiado	1	n/a	101.2
Narok	1	n/a	98.40
Laikipia	n/a?	n/a	116.19
West Pokot	n/a?	n/a	96.46
Kenya pastoral districts average			104.5
Kenya national average			97.2

Sources: Ethiopia: FDRE (1994; 2007b), PADS 2004, CSA 2007; Kenya: RoK (2006)

of 103.7, but still higher than the national average. This figure may not accurately reflect the traditional aspect of the work or labour force in the pastoral areas, where children participate in household and livelihood activities such as herding.

However, emerging information points to changes in the household labour force in pastoralist areas; these are driven by rising entry into education (perhaps in response to the opportunity to access free universal primary education and school feeding programmes). Pastoralist households are citing a decrease in family labour and greater dependence on hired labour. This phenomenon would raise the dependency ratio as children under 14 years of age exit the workforce.

Pastoralist settlement patterns

Sedentarisation and diversification

Rapid sedentarisation is taking place within pastoralist areas. Across the region, sedentarisation is often a prescribed and enforced policy intervention; however, it is also taking

place in response to a number of other internal and external pressures. Traditionally, pastoralists have practiced different degrees of mobility to enable access and utilisation of the heterogeneous landscape of the rangelands and to take advantage of the spatial and temporal differences due to the vagaries of the climate. The rangeland resources have shrunk due to a number of reasons, including alienation of pastoral land, conversion of wet-season pasture land to other land uses, and conflict and insecurity pressures that have rendered some areas inaccessible.

Consequently, there is an increase in the number of landless (even as opposed to destitute) pastoralists who own some livestock but have no access to large tracts of grazing land; they are forced to settle near towns and villages and graze their livestock on roadsides and around homesteads. Other pastoralists have lost most or all of their livestock assets and have therefore turned to cropping marginal land. There are reports of general loss of livestock assets (Sandford, 2006), yet other data indicates an increase in livestock numbers in

Table 7 Dependency ratios in Kenya's pastoralist-dominated districts

District	Type	Dependency ratio ¹ (RoK, 2006)
Turkana	Arid	89.4
Marsabit		107.9
Moyale		109.7
Isiolo		100.7
Mandera		141.7
Samburu		133.2
Wajir		139.6
Garissa		119.0
Baringo		86.4
Average for arid		114.2
Trans Mara	Semi-arid	123.7
Kajiado		90.7
Narok		121.5
Laikipia		76.9
West Pokot		105.4
Average for semi-arid		103.7
Pastoral districts average		110.4
Kenya urban average		60.2
Kenya rural average		91.2
Kenya national average		84.0

¹ The dependency ratio is the dependent population (the population aged 0–14 and 65 and over) divided by the population 15–64, multiplied by 100.

some areas but change in livestock holding patterns, with livestock wealth concentrated in fewer households, and most households owning fewer or even no livestock (Muhereza, 2009). Box 3 presents an example of what is happening in Uganda with respect to changing land use patterns for pastoralists.

Settled households are diversifying their livelihoods. Some are embracing crop production, others engage in commercial or craft activities. Some households send members of the family as labourers to towns or other regions, or even abroad (usually to Middle Eastern countries) to work and send remittances for the household. More and more households send children to school in hopes of improving their access to employment in the future. Some households move and settle close to food distribution centres to secure better access to food.

Settlement in non-propitious areas

Prolonged conflict over grazing resources has led to the emergence of large areas of no man's land – huge strips of more fertile land that are not settled or used – as pastoralists have been forced to settle in non-propitious areas that are less prone to resource conflicts and endemic insecurity. As early as 1985, the then Ministry of Energy and Regional Development reported this pattern in Kenya (RoK, 1985a; 1985b), identifying the settlement pattern among the Turkana against a backdrop of recurrent crises. The dominant pattern of settlement was in the harshest areas, due to a lack of security caused by raiding in areas that had better water

Box 3 Changing land use in Kiruhura district, Uganda

The area that is now Kiruhura district was formerly a traditional pastoralist area. Members of the Bahima community used to rely entirely on livestock for their livelihoods, with milk and blood making up a large part of their diets. Over time, the pastoralists began bartering livestock products for grain and today crop production is increasingly practiced, with bananas and coffee being the main crops.

Livestock in the district has increased although herds are increasingly concentrated in the hands of fewer households. Many wealthier cattle keepers have invested in improved water and pasture sources. Given the nature of the environment, however, cattle keepers will still have to move their animals to other areas to find water and pasture during the dry season. Once they have located a suitable area they set up a temporary grazing camp. During intense droughts, the herds are often accompanied by the entire family. Due to the extent of privatisation of land in Kiruhura, these grazing camps are often established outside of the district in areas where open communal land is more available. However, this practice has caused conflicts with neighbouring cultivators (Muhereza, 2009).

sources, rainfall and pasture. A similar pattern is evident among the Karamojong in Uganda. This pattern is exacerbated by the proliferation of small weapons in the region. (OGB and CBR 2007)

Migration and emigration

As early as 1999, Kenya data revealed a trend of net in-migration into semi-arid districts, and a net out-migration from arid districts (see Table 8). Since then, this phenomenon has escalated across pastoralist areas in the GHA. The following migration patterns have affected pastoralist settlement patterns.

Rural-to-urban migration. This pattern involves the migration of pastoralist households or individuals from pastoralist districts to other pastoralist districts or, more often, to urban centres. This phenomenon is perhaps best documented with respect to the Maasai of Kenya; young Maasai men have migrated to urban centres to take up wage-earning jobs and offer specific skills in niche employment sectors, such as security services. It is also evident among the Karimojong of Uganda, whose destitute women and children have migrated to towns such as Mbale, Iganga and even Kampala in search of food. Invariably these women have not been able to employ any specific skills.

This phenomenon has led to an emergence of urban centres in the ASALs, an observation that has been made in both Kenya and Ethiopia (see Table 8). Many settlements are slum-like with insufficient basic infrastructure and rapid population growth and density unrelieved by appropriate urban planning. These towns are mushrooming, despite the environmental and social problems they are encountering, and they are here to stay. Data indicates that this is mirroring a national trend of rapid urban growth, but the average annual increase in growth rate of 4.7% is higher than the average national urban growth rate of 4.4%.

Urban populations are growing twice as fast as those in rural areas. This process is irreversible, as a recent (2007) UNFPA report shows. African governments have to prepare to provide services for town-dwellers on an unprecedented scale in the coming years. Failure to tackle the issue will have serious implications at the political and social levels and add an entirely new spatial dimension to poverty.

In-migration to pastoral areas. Significant in-migration has changed patterns of pastoralist settlement, especially within the semi-arid areas. There is need for verification of the demographics of the in-migrating population, but a significant change in land use patterns suggests that much of the in-migrating population is composed of non-pastoralists. Land use is changing from pastoral land to ranching, even dairy farming with high levels of investment. Similarly rangelands are being bought up for residential use with increasing patterns of urbanisation.

In Kenya data shows a significant net in-migration into semi-arid areas: the demographics of the in-migrants need to be verified. In some cases the changes are significant; a case in point is Kajiado district, whose constituencies used to be predominantly pastoralist. In 2003, Kajiado North was rated among the wealthiest constituencies, ranking 34th out of 210 constituencies, while Kajiado Central and Kajiado South were ranked 78th and 87th, respectively (RoK, 2003b). In the more recent constituency ranking (2008), Kajiado North moved up to top the country rankings (RoK, 2008). Kajiado district borders Nairobi, and the northern section has become a fast-growing up-market residential area, which skews the demographics of the district.

Permanent emigration/exodus of pastoralist communities. This recent, unprecedented phenomenon involves large numbers of households, with cases of tens of thousands of livestock reported. In Uganda, there are unprecedented 'permanent' migrations from south-western and central Uganda to other parts of the country, right up to the borders with the Democratic Republic of the Congo and Southern Sudan, in search of pasture and water (Muhereza, 2007).

This trend is also being observed in Tanzania. Maasai from the north-eastern part of the country have been moving southwards as far as the coast; they can also be found in the south-west,

Table 8 Ethiopia: urban and rural population in pastoralist regions, 2006–08

	2006	2007	2008	Annual increase
Afar urban population	126,000	132,000	137,000	4.37%
Afar rural population	1,263,000	1,286,000	1,312,000	1.94%
Afar total population	1,389,000	1,418,000	1,449,000	2.16%
Oromiya urban population	3,523,000	3,691,000	3,865,000	4.85%
Oromiya rural population	23,030,000	23,613,000	24,202,000	2.54%
Oromiya total population	26,553,000	27,304,000	28,067,000	2.85%
Somali urban population	735,000	768,000	804,000	4.69%
Somali rural population	3,594,000	3,676,000	3,756,000	2.25%
Somali total population	4,329,000	4,444,000	4,560,000	2.67%
SNNP* urban population	1,277,000	1,338,000	1,401,000	4.86%
SNNP rural population	13,625,000	13,983,000	14,344,000	2.64%
SNNP total population	14,902,000	15,321,000	15,745,000	2.83%

* Southern Nations, Nationalities and Peoples' Region.

Source: FDRE (2005; 2006; 2007a)

Table 9 Social services in North Eastern Province vs. national average, Kenya, 2003

Service provided	North Eastern (%)	National average (%)
Primary education net attendance	36.3	78.7
Secondary education net attendance	2.2	12.5
Electricity at home	3.2	16.0
Access to safe drinking water	9.9	56.3
Women using antenatal care	31.7	89.9
Vaccinated children (12–23 months old)	54.3	92.6

Source: CBS, MOH and ORC Macro (2004); RoK (2007)

near the border with Zambia. Their Barabaig neighbours have moved in large numbers into Dodoma, Shinyanga and Singida districts (Markakis, 2004).

The migrations have led to escalations in land conflicts in the host communities, especially since some of the migrating populations are state-sponsored and well armed, and their movement facilitated. Many of the migrating pastoral populations in Uganda seemed to have ‘appeared’ among their host communities as they were transported by trucks and did not travel by the usual means of trekking.

In Uganda and Tanzania, these migrations were sparked off by massive disenfranchisement and privatisation of land occupied and belonging to pastoralist communities around 2000–05. During that period, Uganda’s local daily newspapers featured numerous announcements of huge tracts of pastoral land up for sale, often in square kilometres, underscoring the disenfranchisement and privatisation process. Many pastoralist households and communities were unscrupulously left landless. Dry-season grazing areas were bought, sold or fenced off, as were other pastoral resources, such as seasonal migratory paths and water sources. In some cases, pastoralists themselves sold their land for quick gain, perhaps believing they could revert to communal land.

In Tanzania, the privatisation process was largely state-sponsored, with pastoralist land being turned over to large-scale investments such as wheat and sheep production. Migration therefore became one of the key strategies for coping with distress, with households taking their livestock and whole homesteads to other parts of the country.

Politically induced migration is also responsible for the exodus of pastoralists from their traditional lands in Kenya. This issue is particularly important in Maasailand, where large tracts of land have been given over to wildlife parks. These bring in significant tourist revenue for the national economy, but pastoralists are only just beginning to benefit from this and have not been adequately compensated for the way in which these parks have undermined their livelihoods.

In some areas, larger government schemes – such as the Turkwell Electricity Project and the Olkaria Geothermal Project – have displaced pastoralists, again without compensation.

While these undertakings have been of considerable benefit to the national economy, pastoralists have been left out. The same is true of irrigation schemes that have helped farmers with their crops but have taken critically important resources from downstream pastoralists, often forcing them to migrate altogether from the affected area (Livingstone, 2005).

Access to basic services. Official statistics show that the ASALs are the regions with the fewest services in Africa (FDRE, 2005; 2006; 2007a; RoK, 2007). The example of Kenya is typical, with averages for pastoralist districts falling well below the national average (see Table 9).

The provision of some basic services has often been seen to be in the hands of aid agencies, which engage in pastoralist regions in times of shock. While most aid was intended as temporary and short-term, it has become permanent as a result of the increasing frequency of catastrophes (natural and man-made) and the failure of governments to respond adequately. This has occasionally led to the phenomenon of ‘aid dependency’, where pastoralist households depend on the provision of food and emergency aid to survive and where food aid becomes a coping strategy.

There is an assumption, however, that unmet, latent demand exists for publicly provided social services and that pastoralists are deprived by virtue of either limited cash income to pay for services or insufficient central government provision of infrastructure and services.

This view ignores an important set of factors. Social services are typically point-based and near towns, but the logic of mobile pastoralism requires limited sustained presence in a single setting, particularly around densely populated settlements. As a result, there is a direct conflict between improving one’s livelihood by acquiring a larger herd maintained through strategic movements, and access to town-based services. Growth and morbidity indicators among children in nomadic households are significantly better than those among sedentarised households although the latter typically have better access to social services. Access to town-based social services is desirable, all else being equal, but because a location impacts a household’s ability to practice mobile pastoralism, a tradeoff typically emerges (Little *et al.*, 2006).

3 Discussion

Summary

In order to capture an accurate picture of pastoralist demographic patterns and trends, relevant data must be collected. There is a need for reliable and integrated data on pastoralism, and for mainstreaming this information at all policy-making levels. Data capture and analysis must also reflect the realities within the pastoralist paradigm – as opposed to utilising only standard measures that are better suited to sedentary, crop-based or urban populations; in addition, they must be able to respond to the needs of the whole pastoralist continuum. The lack of data from which to draw conclusions about trends in fertility, mortality, growth and dependency ratios for the Greater Horn of Africa region is a reflection of the context of pastoralist livelihoods.

Given only data on Kenya and Ethiopia and a near lack of information from other GHA countries, it is difficult to produce an accurate analysis of demographic trends for pastoralist populations in the region. It does appear, however, that pastoralists are increasingly under pressure due to climate change, conflict and lack of access to resources that offset the effects of disaster. This can lead to changing settlement patterns, including a rapid ‘urbanisation’ that leads to concentration and increases in density, an entry into agro-pastoralism that places new demands on fragile resources in the short and long term, the emerging phenomenon of destitution and the opportunity for use of ‘no man’s land’ – fertile stretches of land in the arid areas that are avoided due to insecurity and other factors.

Settlement and population density patterns appear to be largely shaped by marginalisation and immense internal and external pressures. Pastoralist populations respond to these through decisions and actions, indicating that there is a transition along the pastoralist continuum and a transformation of pastoral livelihoods. Many pastoralists are exiting from the traditional ‘highly mobile’ forms and entering into agro-pastoralism or sedentarisation and other livelihood options. A destitute pastoralist population is also emerging, as is the phenomenon of significant and unprecedented emigration. While there are similarities, emerging patterns of differences of response and transition in the arid and semi-arid areas are also reflected in settlement trends.

There appears to be a stronger process of co-opting (rather than integrating) pastoralist resources (especially within semi-arid areas) into the cash and market economy, and a diversification of livelihoods within the broader remit of the ASALs. This process can either offer opportunities for pastoralists or, if not properly managed, add pressures to

the system. The semi-arid areas of the ASALs in particular represent marginal resources that have become an option for other economies, as evidenced by the mass in-migration of other populations and market values. Pastoralists are diversifying, but their capacity is limited and reflective of their inherent pastoral skills base. Broader diversification is apparently the remit of in-migrating populations that have a wider skills base and access to investment opportunities. In arid areas, livestock-based livelihoods remain critical as fewer diversification options exist.

Diversification of livelihoods is important to the survival of pastoralists, both for livelihoods that are related to livestock and those that are not; ownership of the diversification is also key. There is a need to assess where diversification and destitution are occurring and what possibilities exist given the different resource opportunities. Diversification should be seen as an opportunity for development of pastoralists and the ASALs.

Service provision and infrastructure development is inadequate. The lack of access reflects the extent to which pastoralists are marginalised and not involved in dynamic development planning processes. The pattern of service provision and infrastructure development does not reflect economic growth within the pastoral system. Pastoralists tend to make use of infrastructure and services when they are able to access them, either to take advantage of the opportunity or in times of crisis. Political agendas that do not include pastoralist development lead to their exclusion from infrastructure and service provision, in terms of resource allocation and utilisation as well as in relation to desirability and adequacy.

Infrastructure development and other investments within the ASALs should be analysed and framed within a planning paradigm, for example the planning of urban rural developments in the rangelands, the creation of security corridors that allow access to under-used parts of the range resource and the channelling of aid and development activities towards long-term interventions rather than exclusively in response to crises.

The way forward

In order to obtain a better picture of trends in pastoralist demographics, settlement patterns and access to services, this review offers the following suggestions:

- Accurate, standardised data needs to be collected for all countries with pastoralist populations in the region with respect to major demographic indicators, changing pastoral livelihoods and income diversification, education and access to other social services.

- A literature review should be carried out regarding all policies affecting pastoralist livelihoods, emergency coping strategies and inherent prejudice within these policies.
- A comprehensive analysis should be undertaken to assess the effect of conflict on demographic indicators in the region, with a particular emphasis on the border regions.
- Migratory patterns and their underlying causes (natural disasters, conflict, economic migration) should be analysed, as should the effect of these patterns on demographic indicators such as fertility and growth.

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