

A POLICY REVIEW ON PASTORALISM IN SUDAN: INTRODUCTION

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By Helen Young and Zoe Cormack

Series Editors: Helen Young, Laura Banks, and Merry Fitzpatrick¹

Contributing Authors: Roy Behnke, Zoe Cormack, Omer Egemi, Gaiballa A. Karamalla, Afaf Rahim, Yousef Takana, Abdelhafiz Mohamed Obeid and Helen Young

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Introduction

This policy review consists of this introductory summary report plus five commissioned Working Papers by national and international experts. By presenting the policy review as a Working Paper series, the review captures a broad range and depth of experience and insights into the main policy areas and the linked processes and trends that are influencing pastoralism and pastoralist livelihoods.

The objectives of this policy review are:

- To promote understanding of the rationale, scale, and nature of pastoralism and pastoralist livelihoods in Sudan
- To promote understanding of the key policies and related processes and trends influencing their mobility and livelihoods more broadly
- To identify main sources of literature and key scholars
- To serve as a source of reference for the adaptation of training materials, policy briefs, and research studies.

The region of former Sudan, which since July 2010 has become the Republic of Sudan and the Republic of South Sudan, hosts one of the largest pastoralist populations in Africa.² In this region, more than 45 pastoralist groups share a pastoralist identity, linked with transhumance—the seasonal migration of livestock (for example, between highlands and lowlands, or between dry season pastures and rainy season pastures). Patterns of availability of water and pasture vary between seasons, within seasons, from year to year, and even between decades. Annex 1 provides a preliminary identification and listing of pastoralist groups in former Sudan, with a description of their characteristics.

Even within the two countries, pastoralism is practiced in widely varying environments and coexists with other livelihood systems in a variety of symbiotic relationships, some traditional and others more modern. For example, some pastoralists use mobile and satellite phones to help access information on natural resources, market prices, and potential security threats. In other countries, pastoralists regularly use modern technology to help manage their herds in an economically and environmentally sustainable manner.

This summary report first reviews the concepts underpinning the Tufts/UNEP project, explains key terms and definitions, and explores the resilience of

² Recent global estimates indicate there are about 120 million pastoralists/agro-pastoralists worldwide, of which more than 50 million are found in sub-Saharan Africa. Sudan and Somalia have the largest pastoralist populations of seven million each, although the same report estimates that Sudan has a larger number of pastoralist livestock than Somalia. Nikola Rass, 2006, Policies and Strategies to Address the Vulnerability of Pastoralists in Sub-Saharan Africa, PPLPI Working Paper Number 47, Pro-Poor Livestock Policy Initiative, FAO.

pastoralist systems within the context of the non-equilibrium ecosystems in which they live. This section also considers the links between livelihoods and conflict, and the emergence of maladaptive livelihood strategies that enflame tensions and even conflict between groups. In a section that discusses definitions of pastoralism, the unhelpful labeling of pastoralists that is often linked to a crisis narrative is noted and rejected. Next, the paper describes the demographic trends of pastoralists in the region, which shows how methods used for counting pastoralists has shaped their identity, as well as contributed to their ongoing social and political marginalization. This marginalization is reflected in their limited access to education and health services. The demography of herds is also considered. Finally, this introductory paper presents summaries of the Working Policy Papers.

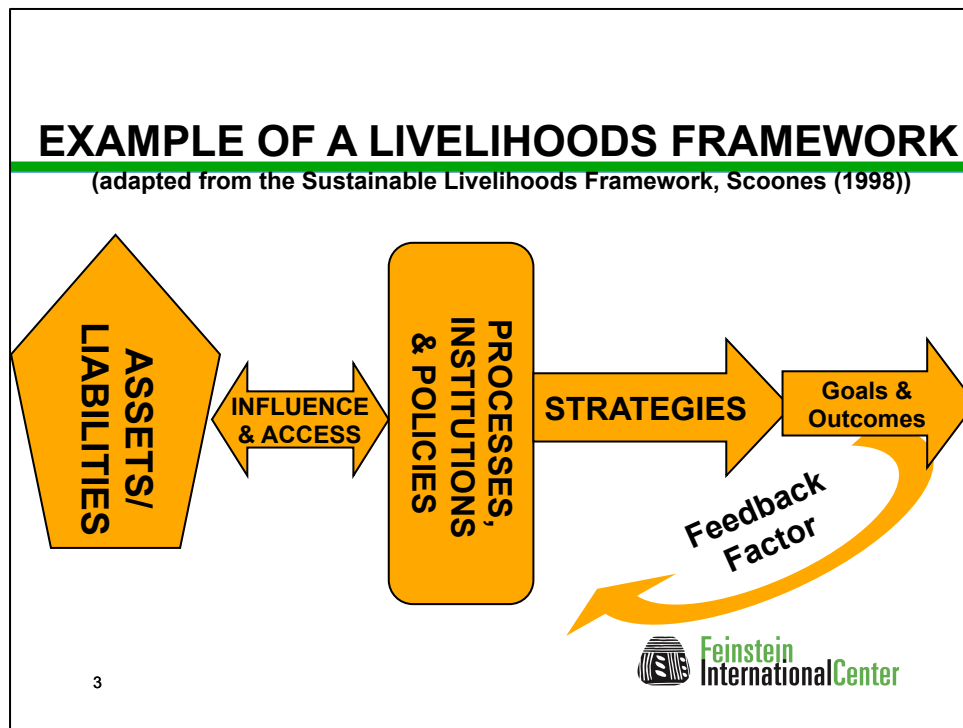
Key concepts: sustainable livelihoods, vulnerability, and resilience

Sustainable Livelihoods

There is a long experience of the application of livelihoods approaches in Sudan by national and international development and humanitarian actors. The focus of livelihoods analysis is the livelihood system; for example, sedentary farming or pastoralist livestock production; and, within these systems, particular livelihood groups that share in common specific livelihood attributes, such as livelihood strategies, assets, or goals (see Figure 1).

A livelihoods analysis of household decision-making (including livelihood strategies, assets, and outcomes) recognizes that local livelihoods are influenced and mediated by local, national, and international institutions, policies, and practices, as well as broader environmental, economic, and social processes. This produces a rich multi-layered analysis that is grounded in the local reality of peoples' livelihoods. The livelihoods framework is helpful in capturing the complex and dynamic relationships between household-level factors (assets, strategies, and outcomes), and the higher-level institutional and policy context. This is one of the strengths of the livelihoods approach, as in many policy debates the focus on local communities is sometimes neglected.

Figure 1.



The livelihoods analytical approach is particularly powerful when applied as a participatory exercise by local and national stakeholders, as it generates a shared analysis and understanding of local livelihoods and their influences. A common language and shared understanding is crucial to move policy debates forward. A series of livelihood workshops in the Darfur region in 2007 produced remarkably consistent livelihoods analyses (across workshops and stakeholders) and generated considerable momentum and support from national and international stakeholders (Young et al. 2007).

The roots of the livelihoods framework and approach adopted in this review originate with the now generic Sustainable Livelihoods approaches, which have been advocated by UK DFID and others (Carney et al. 1999; DFID 1999; Scoones 1998). Scoones' (1998, 6) definition of sustainable livelihoods states that:

A livelihood comprises the capabilities, assets (including both material and social resources) and activities required for a means of living. A livelihood is sustainable when it can cope with and recover from stresses and shocks, maintain or enhance its capabilities and assets, while not undermining the natural resource base.

Scoones builds on the work on coping and adaptive strategies by Davies (1993). According to Davies, coping is “a short-term response to an immediate and inhabitual decline in access to food. Adapting, in contrast, means a permanent

change in the mix of ways in which food is acquired, irrespective of the year in question...when adaptation occurs, such rule systems (or the moral economy) themselves change as do the livelihood systems in which these rules operate”(Davies 1993). Adaptive strategies therefore imply more permanent changes to livelihoods, rather than a temporary change before livelihood strategies revert to what they were before.

Vulnerability

Vulnerability is also an important term in the livelihoods literature. The original DFID Sustainable Livelihoods Framework includes a “vulnerability context” (DFID 1999). This reflects a dualistic view of vulnerability; where vulnerability has “an external side of risks, shocks and stress to which an individual or household is subject and an internal side of defenselessness, meaning a lack of means to cope without damaging loss” (Chambers, 1989).

In more general use, vulnerability means susceptibility to harm, loss, or damage; however, depending on the disciplinary or sectoral context, vulnerability is viewed very differently. In the context of natural disasters, vulnerability means susceptibility to damage or loss as a result of a wide range of hazards or shocks; for example, tsunamis, earthquakes, floods, and famine.³ This disasters discourse therefore clearly separates “disaster risk,” which is a function of exogenous hazard, from the endogenous capacity to anticipate, cope with, resist, and recover from the impact of a natural hazard (Blaikie et al. 1994).

This dualistic view of external hazards and internal capacity to cope has been linked with western cultural perspectives on the relationship between people and nature, which are often seen in opposition to each other. According to Oliver-Smith in his theorization of vulnerability (2004), “Society exists as a collection of human constructs and relations and the environment is ‘out there’ waiting to be acted upon in the cause of sustaining human life...this has led to a construction of hazards as disorder, as interruptions or violations of order by a natural world that is at odds with the human world” (Oliver-Smith 2004, 14).

Importantly, scholars of disasters and vulnerability have moved on and discarded the dualism in human-environment constructs, and given greater recognition to the mutuality in the relationships between society, economy, and nature (Oliver-Smith 2004; Bankoff, Frerks, and Hilhorst 2004). However, much of the dualistic disaster discourse continues to permeate international and national approaches to disaster prevention and development. (This type of

³ Famine is not only a natural disaster but may be a manmade disaster linked to a political crisis, population, or refugee displacement, etc.

approach fails to recognize the rationale underpinning pastoralism that is based on a reciprocal relationship between pastoralism and nature. Unlike disaster specialists, pastoralists are not trying to harness, tame, or otherwise overcome the apparent disorder of nature.)

Resilience

The concept of resilience has been applied in a number of disciplines, including psychology, engineering science, and the social sciences. Resilience is discussed in the social sciences in terms of society and ecology, and the interconnected nature of natural and social systems (Bahadur, Ibrahim, and Tanner 2010). Theorists differ in how they treat this interconnection, with some emphasizing resilience in ecological resilience, others social resilience (resilience in social systems), and those that see the two as inseparable, in terms of being part of “linked systems of people and nature” (Simon 2009, quoted in Bahadur et al. 2010) or a complete “socio-ecological system.” This systems approach to operationalizing resilience is potentially helpful as it explicitly recognizes the highly integrated nature of pastoral ecosystems (people, livestock, and nature), and is compatible with viewing pastoral systems as non-equilibrium environments. This socio-ecological system perspective of the resilience literature also acknowledges the potential arising from the disturbances (shocks and stresses⁴) to the system.

In a resilient social–ecological system, disturbance has the potential to create opportunity for doing new things, for innovation and for development. In vulnerable system even small disturbances may cause dramatic social consequences (Adger 2006). Old dominant perspectives have implicitly assumed a stable and infinitely resilient environment where resource flows could be controlled and nature would self-repair into equilibrium when human stressors were removed. Such static equilibrium center views provide little insight into the transient behavior of systems that are not near equilibrium. (Holling 1973, from Folke 2006, 254–255.)

This understanding has influenced understanding of the adaptive capacities of people and institutions, which are seen as determined by their capacities to adjust to shocks and stresses and mitigate any potential damage, as well as their capacity to take advantage of opportunities and cope with consequences of a

⁴ Shocks are characterized as sudden events that impact on the vulnerability of the system...disease outbreaks, weather-related geophysical events including floods, high winds, landslides, droughts or earthquakes...conflict-related shocks...or shocks related to economic volatility. Stresses are long-term trends that undermine the potential of a given system or process and increase the vulnerability of actors within it (DFID 2011, 8).

transformation. While this recognition of the possibility of exploiting the potential arising from long-term stresses is clearly important, it has major shortcomings, first failing to recognize the political implications of managing these opportunities, and the likelihood of winners and losers, or alternatively leading to maladaptations that undermine the wider socio-ecological system. The second shortcoming is the unhelpful characterization of drought and the variable distribution of rainfall, as undesirable “disturbances” (shocks and stress), when they are in fact a fundamental characteristic of the pastoralist ecosystem and the non-equilibrium environment that exists in many disaster-prone contexts.

Despite a vast literature theorizing and conceptualizing resilience, there is still a lack of good case studies that substantiate the theories that have been put forward. Outstanding issues regarding resilience include: a lack of clarity on the relationship between adaptive capacity, adaptation, and resilience; how to define the boundaries of the socio-ecological systems in question; and a lack of understanding as to how resilience should be “measured” (Bahadur et al, 2010).

Resilience and vulnerability are often presented in the development and disaster literature as linked but opposite concepts (Bankoff, Frerks, and Hilhorst 2004; Bahadur et al. 2010). Sustainable livelihoods are often characterized as “resilient,” meaning the capacity to recover or bounce back when challenged. Livelihood adaptation may involve either intensification of existing strategies, diversification into new livelihood systems, or it may be linked with migration (Scoones 1998). Adaptation is necessitated by the inherent variability in ecological and social systems—change is inevitable, thus prompting an adaptive response. Not all adaptation is positive; where shocks multiply (in particular as a result of human agency) and people can no longer cope, they must by necessity alter the ways in which they subsist, which tends to further exacerbate their vulnerability (Davies and Hossain 1997).

In a policy context, UK donor DFID have committed to embedding resilience-building in all DFID country programmes by 2015 (DFID 2011). This includes supporting

a coherent approach to risk: based on “a common analysis” shared across different areas of work, including disaster risk reduction, climate change adaptation, social protection, working in fragile contexts and humanitarian preparedness and response. (DFID, 2011)

Their working definition of disaster resilience is:

The ability of countries, communities and households to manage change, by maintaining or transforming living standards in the face of shocks or stresses such as earthquakes, drought or violent conflict without compromising their long-term prospects. (p. 6)

This paper also notes a link between climate resilience and conflict resilience, although this has yet to be fully explored.

Factors that enhance climate resilience are the same as those that enhance conflict resilience – including effective governance, equitable and strong social contracts. A comprehensive approach to resilience across natural and conflict-related areas requires a focus on strengthening institutions at national, regional and local levels incorporating political security, humanitarian and development considerations. (p. 10)

The paper acknowledges that more research is needed on the complementarities between strengthening disaster resilience and other development goals.

The resilience of pastoral systems within non-equilibrium ecosystems

Internationally, the debate about dryland development has shifted from an equilibrium model of range management concerned with animal-carrying capacity (the number of animals that can be maintained on grazing land without degrading the land so that it can no longer support the animals), to a non-equilibrium model that recognizes the resilience of pastoral livestock production systems under certain conditions (Mortimore 2009; Scoones 1996). This resilience paradigm recognizes that drylands are not characteristically at equilibrium, because rainfall is highly variable both spatially and temporally, and this determines the production potential of both grasslands and livestock. In non-equilibrium environments, it is livestock mobility, over space and time, that optimizes the use of rangelands. The intelligent harvesting of large and diverse ranges, comprising wet- and dry-season pastures, wild species, trees, and shrubs, requires both knowledge and complex institutional arrangements for managing these common property resources (Krätli and Schareika 2010; Mortimore 2009).

In wetter areas with more predictable patterns of rainfall, livestock populations are limited by available forage. If a certain number of animals is exceeded, this will result in negative effects on the vegetation, and in the longer term may lead



to more permanent damage. Thus mainstream range environment—the equilibrium model—is concerned with balancing numbers of livestock to the available water and pasture, which is the rationale for determining “carrying capacity.” However, 59 percent of all ruminant livestock in Africa are found in arid and semi-arid areas, within dynamic non-equilibrium ecologies (Scoones 1996).

Sudan’s climate is characterized by variable precipitation, which fluctuates over time and space, and in intensity. Isohyets gradually increase from 100 mm in the north on the fringes of the Sahara to 600 mm southwards into South Sudan, with the exception being the Mara massif—an extinct volcanic range that rises to above 3071 metres, with an annual rainfall in the range of 600 mm to 1,000 mm and covering an area of 100,000 square kilometres. While rainfall lasts less than two months in the north, it extends up to four months further south. This high rainfall variability in time and space has a remarkable impact on the distribution of vegetation, especially in more arid areas. Fouad Ibrahim’s major study in North Darfur in the seventies captures this variable distribution of pasture that pastoralism is able to exploit:

According to the information gathered from nomads, Jizu (succulent plants growing in the rainy season north of Wadi Howar) does not grow in the same area every year, but rather “shifts” from year to year; it is said to grow in the same areas every fifth year. (Ibrahim 1984, 137)

Sedentary farmers are also raising livestock, although herd sizes tend to be smaller and stock are kept in closer proximity to the village as compared with the larger herds of nomads. As noted by Lebon (1959, 69),

There are complicated customary arrangements regulating the use of water sources and pastures at different seasons and by different groups. Broadly speaking, however, the animals belonging to nomads do not come near villages, where grazing is reserved for the cultivators stock. Around all larger villages, intense grazing by animals, as they pass to and from more distant pastures, and firewood cutting, have produced local deserts generally called “village perimeters.”

This early reference to human-induced desertification linked with overgrazing clearly distinguishes between the grazing behaviour of herds with differing patterns of mobility.

An early study on desertification in North Darfur by Fouad Ibrahim also noted how human activity influenced desertification, again differentiating between farmers and nomads. He noted that:

The areas of the Basement Complex are less affected by desertification damages than the areas of the Nubian Sandstone Series. Owing to the occurrence of groundwater in the layers of Nubian Sandstone, water supply is secured in that area. This leads to permanent grazing and overstocking while in the area of the Basement Complex seasonal grazing is dominant on the basis of seasonal ponds (*raham, fula*) and the water reservoirs (*hafir, khazzan*).

The most far-reaching impact on the natural resources of the savanna is affected by rain-fed cultivation beyond the climatically adapted agronomic dry limit. The most serious damages in northern Darfur are not caused by the nomadic animal husbandry, but by the combination of rain-fed cultivation and sedentary animal breeding. As the latter is practiced in the surroundings of settlements, where soil is also exhausted through cultivation, a concentration of desertification phenomenon is to be noticed there. A further deterioration of the ecological resources in the farther surroundings of settlements is caused by the clearing of the tree-stock, for the inhabitants require great amounts of wood for building and cooking purposes (Ibrahim 1984, 186).

Ibrahim captures well the linkages between geology/soil systems, water supply, and livestock grazing patterns, and although he recognizes the value of seasonal grazing in limiting desertification damage, subsequent reviews of his work tend to overlook these important findings.

Since the secession of South Sudan, Sudan has become a predominantly dryland country. Overall, the landmass of Sudan has decreased by 26% (from 2.44 to 1.8 million km²), and the proportion of total land mass that is desert has increased from 46% before secession to between 60 and 67% (between 1.13 and 1.25 million km²) currently. The remaining land in Sudan (0.687 million km²) is typical of the Sahelian zone, and is divided between low rainfall savannah in the north and the rich higher rainfall savannah that extends southwards into South Sudan.



Livelihoods, conflict, and violence

War, conflict, and violence are known to seriously damage and even destroy livelihoods, either directly through burning, looting, and asset stripping, or indirectly by forced displacement, restricting access and mobility, and thereby hindering trade, labour, and production. There is a growing literature on livelihoods and conflict, that has applied either livelihoods analysis or commodity chain analysis to support a political economy analysis of the relative power and vulnerability of different groups and how that changes over time. This helps to explain how the situation and activities of one group in society affect others. This approach was first clearly articulated by Sarah Collinson, who explains;

Political economy analysis is concerned with the interaction of political and economic processes in a society: the distribution of power and wealth between different groups and individuals, and the processes that create, sustain and transform these relationships over time. When applied to situations of conflict and crisis, political economy analysis seeks to understand both the political and the economic aspects of conflict and how these combine to affect patterns of power and vulnerability. According to a political economy approach, vulnerability should be understood in terms of powerlessness rather than simply material need. Vulnerability and power are therefore analysed as a political and economic process, in terms, for instance, of neglect exclusion or exploitation, in which a variety of groups and actors play a part. (Collinson 2003, 3)

Others have also applied the livelihoods framework to shed light on how the dynamics of conflict and violence interact with local livelihoods. Sue Lautze and others (Lautze 1997; Lautze et al. 2003; Lautze and Raven-Roberts 2006) explored the links between a household's livelihood assets and potential violence and conflict. For example, predatory raids, asset-stripping, gender-based violence, and direct theft and looting in conflict settings are linked often with both criminal and political motives, or part of the tactics of war that are perpetuated by people who might be neighbours.

The work of Tufts in Sudan has built on this earlier work, and investigated the effects of conflict and related humanitarian crisis on the livelihoods of different communities in the region. The immediate impact of conflict was evident in the displacement, direct attacks, and looting associated with the 2003/2004 counterinsurgency tactics. More insidious were the indirect effects on livelihoods, associated with the general insecurity, intimidation, and violence,

which restricted mobility and crucially important access to farms, markets, forests, and pastures (Young, Osman, and Dale 2007; Young et al. 2009).

In this extreme context of conflict and violence, the Tufts study found that livelihood adaptive strategies were often influenced or linked with the ongoing conflict and/or the war economy. Examples of these strategies include rent-seeking, demanding protection payments, sales of illicit goods, exploitation and stripping of natural resources, and militarization. These maladaptive strategies have serious implications and negative consequences for the livelihoods and wellbeing of others, as well as the peaceful relations between livelihood groups.

Previously, the Tufts livelihoods research in Sudan has focused on livelihood vulnerability and risk, with the aim of understanding the deeper causes and processes that have contributed to vulnerability (Young 2009). This has been helpful in highlighting the underlying political vulnerability and social marginalization of pastoralists and the linkages between livelihoods and conflict at all levels.

Defining pastoralism

Pastoralist livestock production depends on strategic mobility or transhumance, as herders move their livestock in order to exploit the transient and non-uniform distribution of pastures in place and time. Pastoralism provides both the basis for food security and local livelihoods and the means of sustaining the natural resource base of drylands (Mortimore 2009, 765).

Some scholars see mobility as a key element in defining pastoralism as a livelihood strategy (Dyson-Hudson 1980, 16). More recently, the emphasis has been on the purpose of mobility, which has been described as “intelligent” harvesting, which is a rational response to the asymmetric distribution of natural resources on the range. This careful management is beneficial from an environmental, economic, and nutritional point of view (Krätli and Schareika 2010).

Livestock mobility does not have to take place over great distances to qualify as transhumance. There are many examples of different kinds of mobility within Sudan. Dinka pastoralists in Southern Sudan take their cattle short distances to dry-season pasture in the low-lying *toic* (flood plains of the Nile). The Misseriyya-Humr take their cattle a much greater distance across Kordofan State to find pasture (Cunnison 1966, 16). Some scholars have tried to apply a quantifiable

threshold, defining pastoralism as “a mode of production where livestock make up 50% or more of the economic portfolio of a small holder” (HCENR 2008, 1).

Pastoralism is often combined with a diverse range of other livelihood strategies, including for example agricultural production, horticulture, trade, labour migration, and remittances (Salih 1985). There is wide recognition of the involvement of pastoralist societies in the cash economy and the various means through which they gain income (Scoones and Devereux 2008).

Definitions of pastoralists also address the changing circumstances of pastoralists. In many parts of Africa, for many reasons, pastoralists are moving out of livestock production and settling in towns or practicing agriculture (Fratkin, Roth, and Nathan 1999). This throws up a definitional question about who is a pastoralist. Are settled pastoralists still pastoralists? The anthropologist Dorothy Hodgson defines pastoralists as anyone for whom pastoralism is an ideal, even if not a reality. This indicates that a definition of pastoralism should include those who have had to drop out of livestock rearing because of loss of herds, but have a desire to return to it (Morton 2008, 1). It also recognizes that herds are increasingly being managed remotely—even transnationally—by affluent individuals and traders who have opted to become sedentary.

Unhelpful labelling and crisis narrative

Pastoralism has suffered as a result of western cultural perspectives’ labeling of pastoralists as vulnerable, weak, or needy, and their livestock production systems as backward and non-commercial (Scoones and Wolmer 2006). This pastoralism crisis narrative about pastoralism often repeatedly represents pastoralism as being a way of life under imminent threat (Holt and Coulter 2011, 170) and as one requiring drastic untested solutions, including for example the complete sedentarisation of pastoralist societies and the technocratic interventionist paradigm where others know best.

One implication of this crisis narrative is that, despite legitimate concerns about drought, food insecurity, and famine, many scholars and aid agencies fundamentally misunderstand the underlying rationale for pastoralism. They see the position of pastoralists as precarious partly because they believe they are “forced to move” as a response to climate variability, or dryland resource scarcity, or even degradation in order to ensure their survival. For example, in 1939, Henderson, described the *baggara* or “cattlemen” as Arabs who have been “forced by circumstances to live in a country which will support the cow but not the camel” (Henderson, 1939, 5). Such views are widespread today, and quoted in scholarly works, such as the recent book by Komey (2010), which describes the *baggara* as constantly adopting “different strategies and coping mechanisms to survive changing ecological and human situations” (Komey 2010, 30). These

inaccurate views are partly shaped by western cultural perspectives⁵ that dominate urban discourses that see the relationship between nature and people as being in opposition and separate (Bankoff, 2001). Such views are at odds with a systemic view of pastoralism, which encapsulates how pastoralists strategically and successfully manage the variability in dryland resources in a modern global context. The widely held western perspectives are also shared by those who have a pastoralist identity but have long since ceased practicing pastoralism (if they ever did). Practicing pastoralist societies are often geographically and socially remote from their urban educated counterparts, whose views likely lean more towards the urban locus of power and authority.

An open conceptualization of pastoralism

Evidence shows that pastoralists are pragmatic, rational, and knowledgeable about herd and environmental management. This is in contrast to the rather idealized notion held by many national authorities about how “traditional” supposedly self-contained and self-sufficient pastoralist societies work. Their situation is often seen as precarious, partly because of their conservatism and unchanging patterns of subsistence in the face of increasing climate variability. This contrasts with the inherently rational nature of pastoralism as a means of managing the highly variable distribution of pasture and water over space and time (Mortimore 2009). Furthermore, there is considerable evidence of diversification, development, and change within pastoralist societies and production systems (Catley et al. 2013).

The most productive definitions of pastoralism remain open. They recognize that pastoralist societies are fluid and integrated into other systems. Stressing that “however defined, pastoralist groups, households and individuals are continuously shifting into and out of livestock-based livelihoods according to the vagaries of climate, disease, political and economic opportunity and constraint” (Homewood 2008, 1). These more open definitions help shed light on the diversity and adaptability of pastoralists and how they make use of other production systems and even state structures and institutions.

Pastoralist demographic trends in Sudan

Pastoralists constitute a significant part of the population of Sudan and South Sudan. The lack of detailed demographic data on pastoralist groups in Sudan is representative of a continent-wide deficit. Pastoralists populations, often small

⁵ See for example the discussion by Bankoff (2001) that describes the relationship.

and living in hard-to-reach areas, are frequently excluded from demographic surveys or are not identified as distinct populations (CRMA and FAO 2010, 201).

Some claim that pastoralism, even defined in the broadest sense (but particularly for very mobile groups) presents a unique demographic regime, as a result of the harsh environment, combined with spatial and political marginalization (Homewood, 2008). Pastoralists rarely receive the same standard of health care and education services as other rural and urban residents, and may have limited voice and representation within government and civil affairs. (CRMA and FAO 2010, 202).

The present lack of data makes it hard to identify detailed demographic trends, which hinders the planning of service delivery, investments, or even policies that influence pastoralist areas. This practical constraint is one reason pastoralist interests are often neglected in policy making. This perpetuates the cycle of invisibility and marginalization that pastoralists face. For example, in Sudan, it is the agricultural and settlement development policies that have caused some of the most serious problems for pastoralists (UNDP 2006, 4).

Even demographic data that appears neutral can be seriously biased against pastoralists and loaded with misguided assumptions.⁶ Conscious of the large numbers of mobile herders, population censuses in Sudan have tried to count these “nomads” and collect basic data about their households. These attempts to enumerate pastoralists in Sudan’s population censuses indicate some of the problems and the official thinking on pastoralists in Sudan.

Taken at face value, (Table 1) successive population censuses show a steady increase in the “nomadic” populations of Sudan, with a sharp decline in 1993 followed by a growth rate of 9.31% in 2008. Unlike all previous population censuses, the Sudan 2008 Census focused particular attention on the nomadic population, achieving a claimed “100% coverage with the long form questionnaire”(Elamin et al. 2008).

⁶ For example, in East Africa it is commonly thought that pastoralist children record higher rates of acute malnutrition than sedentary groups because of their body shape (with low ratio of sitting height to standing height). Thus an equivalent rate of malnutrition among pastoralist children is not considered as serious as the same rate among a sedentary population. Yet a comparative analysis of the results of more than 900 nutrition surveys showed that pastoralists suffered both higher rates of malnutrition and higher rates of mortality than farming communities (Chotard et al. 2006), thus debunking the tall, thin, and healthy argument. For more on this issue, see Young, H. and S. Jaspars, 2009, Review of Nutrition and Mortality Indicators for the Integrated Food Security Classification (IPC), Reference Levels and Decision-making, UNSCN Task Force on Assessment, Monitoring and Evaluation, WFP/FAO Integrated Food Security Classification System.

The apparent large decrease in growth rate for 1993, 11.4%, suggests that numbers of nomads were underestimated in 1993, followed by fuller coverage in 2008. These differences between censuses, which are likely a result of changes to the definitions or methods used, or indeed likely errors, makes it difficult to draw firm conclusions on trends.

Table 1. The nomadic population for the five censuses from 1956 to 2008 and their growth rates (Elamin et al. 2008)

Census year	Nomadic population	Growth rate
1956	1,405,951	-
1973	1,629,710	0.9%
1983	2,264,830	3.4%
1993	696,000	-11.4%
2008	2,778,774	9.2%

Looking at Table 2, which presents the nomadic population as a proportion of the total population, there appears to be a substantial decrease in the nomadic population in 2008 at 7.1% as compared with 11.9% in 1983. Analysts have suggested this may reflect a tendency towards sedentarisation (Elamin et al. 2008).

However, this downward trend also applies to the rural settled population, numbers of whom have declined as a percentage of the total population from 69.2% in 1983 to 60.3% in 2008. This decrease in the percentage of rural and nomadic is compensated for by the increase in the urban population from 20.3% to 28.3% from 1983 to 2008.

Table 2. Population by “mode of living,” for the 1973, 1983, 1993, and 2008 Censuses

Census year	1973		1983		1993 ⁷		2008	
		%		%		%		%
Total population ¹	14,113,590		20,626,446		25,594,097		39,154,490	
Nomadic population ²	1,629,710	11.5%	2,191,961	10.6%	696,000	2.7%	2,778,774	7.1%
Urban	2,605,896	18.5%	4,168,918	20.2%	7,471,988	29.2%	11,087,029	28.3%
Rural settled	9,204,492	65.2%	14,265,567	69.2%	17,426,109	68.1%	23,591,362	60.3%
Cotton picker	673,492	4.8%						

1. Includes North and South Sudan.

2. Note that as a result of the definitions of nomads, linked to tribal affiliation, they are only found in North Sudan.

If nomads were counted on the basis of their tribal affiliation, it seems unlikely that their numbers would decline between censuses, as tribal identity is unlikely to be sufficiently porous to generate such large shifts in tribal numbers. Such changes might be a result of counting anomalies, and the inclusion or exclusion of certain groups who fall within the nomad category. More investigation and clarification of this point is needed.

Who is a nomad?

Enumeration of nomads is fraught with difficulties. There are problems with the census departments' ability to locate mobile communities at the time of enumeration; in the 1973 Census, the nomadic population had to be counted again because the numbers were so low (el Tay 1980, 41, 47). In addition, pastoralists themselves often resist the headcount out of suspicion of the authorities or to remain off voting and taxation registers (DRDC 2010, 23).

Counting pastoralists is about more than numbers. It is a process of deciding who people are and what group they belong to, which subsequently influences their identity. In the first census (1955/56), the definition of a nomad was based on lifestyle/“mode of living,” both in “the current residence and in the place of birth” (UN 1964, 139). The rural population was divided into “sedentary” and “nomadic” populations. Census enumerators allocated people into one of these types of “mode of living:” “well-defined villages;” “scattered *tukls*” (both counted as sedentary); and “nomadic.” Each group was then sampled (UN 1964, 128–129).

However, there was an ambiguity between “*well-defined villages*,” “*scattered tukls*,” and “*nomadic*.” Many of the decisions made on how to define “mode of living” were seasonal (and subjective). It can be difficult to distinguish between

⁷ Data for 1993 is taken from <http://countryoffice.unfpa.org/filemanager/files/sudan/rep/co%20population.pdf>.

these “modes of living” at a given time and place, because farmers keep livestock, shifting agriculture is common, and most pastoralists also grow crops. These problems were noted in the Methods Report of the first census:

The classification of the mode of living depended upon the enumeration technique used. For example, the “village technique” was used for the enumeration of certain semi-nomadic groups, because the census in that region was carried out at a time when the groups were settled, if it had been carried out at a different time of year, they would have been counted by the “nomadic technique” and classified as nomads. (Quoted from Government of Sudan, H.W. Council of Ministers, Department of Statistics: First Populations Census of Sudan 1955/56. Methods Report, Volumes I and II. In UN 1964, 139)

Their problems were compounded in the South by insecurity and difficulties in transportation (Ibid.)

The second part of the definition recognized that people could move in and out of particular “modes of living.” Just being born a “nomad” didn’t mean you would be nomadic for your entire life. This threw up its own particular set of problems and discrepancies in enumeration. No current nomads were reported in the census in the South, even though nomadic status at birth was reported for a substantial part of the southern population. So, unless there had been mass sedentarisation and movement out of nomadism in the preceding decade (unlikely), something was odd with the way they were defining “nomad” and “sedentary” (UN 1964, 140–141).

By the 1970s, we see the assimilation of “nomad” as a northern identity. In the second census, the official definition of a “nomad” changed. Although nomads were still seen as having a distinct “mode of lifestyle,” the way they were defined for the census shifted from being based on lifestyle to being administrative criteria. In the 1970s (and possibly later) a “nomad” was defined as a person “who owes allegiance to a nomadic sheik;” (el Tay 1980, 35) therefore, a southerner could not be a nomad. A “nomad,” as defined, was something specific to the culture and administration of Sudan’s Northern Provinces.

In the 1955/56 Census, the definition and enumeration of “nomad” meant that it was possible to be born a nomad and then become sedentary. Identity was less fixed in official thinking. “Nomad” was defined as a “mode of living,” and there were two questions about it in the census: “mode of living” at time of birth and at time of census. Later censuses did not ask the two questions. Although the 1973 and 1983 Censuses recognized rural nomadism as a mode of living (in addition

to urban and rural settled), this was “mode of living” according to administrative organization rather than any empirical observation of how people lived. This meant that being a “nomad” was already determined before the census and was essentially fixed in policy terms.

In the 2008 Census nomads were defined as:

A group of the population, which consists of tribes characterized by raising and depending on animals. Their animals usually graze natural pastures and are watered from natural water bodies; nomadism is both a way of utilizing resources and a way of life. The nomads usually move with their animals for long distances, searching for water and pasture and consequently live in mobile homes or temporary houses made out of hair, tree branches, or the hides of their animals. The nomadic population is in many respects different from the settled one in their cultural, socioeconomic and demographic characteristics. (Elamin et al. 2008, 454)

No definitions of the rural or urban groups were found with which to compare to the above. While the above description clearly notes the importance of tribal affiliation as the basis for categorizing nomadic people, it also refers to their “way of life,” which is “characterized by raising and depending on animals,” which requires they “move with their animals for long distances, searching for water and pasture.”

Table 3 shows the distribution of the nomadic population by state for the 2008 Census as compared with the 1983 Census. Although direct comparisons between the 2008 and 1983 Census data are not always possible, because of the re-organization of states, some interesting trends are discernable. In 1983, nomads were present in all states in North Sudan, with the exception of Gedarif (which registered zero nomads). Proportionally, the largest numbers of nomads were found in Red Sea State, North and South Kordofan States, and North and South Darfur States (74.4%–1,631,261 people). By 2008, these regions accounted for 87% of the total nomadic population (2,418,173 people), suggesting a concentration of nomadic people within certain regions, and a decline in other regions. Interestingly, although no nomads were found in Gedarif in 1983, 18,612 were registered in 2008. This review could find no analysis of these regional trends.

Table 3. Numbers and proportion of nomadic people by state in Sudan for the 1983 and 2008 Census

	1983		2008		Percentage
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STATE	Total	Percent of total	Total	Percent of Total	change (from 1983 to 2008)
Total	2,191,961		2,778,747		
Northern State	10,528	0.5%	14,302	0.5%	35.8%
Nahr El Nil	39,741	1.8%	28,833	1.0%	-27.4%
Red Sea	380,478	17.4%	252,894	9.1%	-33.5%
Kassala	178,198	8.1%	195,678	7.0%	9.8%
Gadarif			18,612	0.7%	
Khartoum	88,000	4.0%	0	0.0%	-100.0%
Gezira	28,060	1.3%	4,276	0.2%	-84.8%
White Nile	132,237	6.0%	39,202	1.4%	-70.4%
Sinnar			27,694	1.0%	
Blue Nile	83,936	3.8%	31,978	1.2%	-61.9%
N. Kordofan	492,881	22.5%	378,580	13.6%	-23.2%
S. Kordofan	288,158	13.1%	166,511	6.0%	-42.2%
N. Darfur	178,390	8.1%	400,914	14.4%	
W. Darfur			237,564	8.5%	
S. Darfur	291,354	13.3%	981,710	35.3%	
Darfur region combined	469,744	21.4%	1,620,188	58.3%	244.9%

The Darfur region presents some of the most significant changes. In the 1983 Census, there were 469,744 nomads in the Darfur region (North and South Darfur States combined), representing 21.4% of the total nomads in North Sudan. By 2008, this number had increased to 1,620,188 nomads, representing a massive 58.3% of the total number of nomads in North Sudan. Most surprising of all is that the number of nomads in the Darfur region increased by 245 percent, while for all other states (except Northern State) there was a decline in their overall numbers between the censuses.

In both the 2008 Census and the 1983 Census, North Kordofan has one of the largest nomadic populations, as a percent of the total and in total numbers (378,580).

The 2008 Census reported zero people under the nomad category in Khartoum State, in contrast to 1983 when 88,000 nomads were reported living in Khartoum State. This suggests that in 2008, at least in Khartoum State, the definition of nomadic was linked to the relationship with animals and transhumance, rather than affiliation to tribal group, as there are many members of nomadic tribal groups resident in Khartoum. This is also confusing because in Khartoum State there is a significant number of people who report that animal

husbandry is their primary livelihood strategy, and there are large numbers of households owning sheep, and also camels, some of which are likely to be produced under a pastoral system of production.

In 2008, there was a strong move on the part of the census “to collect data for all persons whether in households, institutions, nomadic, internally displaced, homeless or refugee” (Elamin et al. 2008). Those populations not in private households or institutions were known as special populations. The largest numbers and percentages of Internally Displaced Persons (IDPs) are found in West and South Darfur at 6.5% and 2.66% respectively, although only a total of 624,000 displaced people were counted, which is significantly lower than the number of IDPs estimated by the United Nations less than one year earlier. The Darfur Humanitarian Profile (No. 27, 1 April 2007) reports a total number of 2,103,010 IDPs, which is broken down as follows: North Darfur–461,399; South Darfur–862,385; West Darfur–779,226.

These two anomalies or controversies (the perceived undercounting of IDPs in the Darfur region and the increased representation of nomads in Darfur and the number of Misseriya- Humr in Southern Kordofan/Abyei region) were taken by some observers to indicate a politicization of the census (personal communications).

A further issue is that the census definition of nomads according to tribal affiliation linked with mode of living potentially ignores the large numbers of livestock producers in both North and South Sudan, who practice pastoralism and whose households live in settled communities, i.e., they are not living in “mobile homes or temporary houses.” This includes the pastoralist groups of South Sudan, who have not been recognized as nomads since the 1956 Census.

In summary, there are certain anomalies when using the data from the different censuses to detect trends in the “mode of living” statistics. Although it appears that numbers of nomads is decreasing at a faster rate than the rural settled population (see Table 2), with the exception of the Darfur region and Northern State, this could be a result of the method of counting, rather than an actual trend in numbers of nomads. Miscounting might have resulted from:

1. Problematic definition of the nomadic group as explained in Chapter 13 of the 2008 Census analysis background document, making it liable to different interpretations by census enumerators. For example:
 - a. Pastoralists living in permanent settlements could easily be registered as rural residents.
 - b. Nomads who are away from their tribal home or tribal group may have been counted as urban or rural settled, whereas the

- likelihood of rural settled and urban being counted as nomads is highly unlikely.
- c. Female nomads are often resident in rural settlements, while males move with the livestock, and thus women may be registered as rural settled (which would explain the imbalanced (high) sex ratio for nomads).
 - d. Members of nomadic tribes that have adopted a more sedentarised lifestyle (by settling members of their family in urban areas, for example) while still practicing transhumance may be misclassified.
2. Factors that might be contributing to the documented fall in the percentage of nomads:
- a. Pastoralists practicing transhumance, strategically moving their livestock to take advantage of the variable distribution of water and pasture, may not consider themselves as nomads as their families are settled.
 - b. Pastoral nomads have a lower fertility rate, and higher mortality rate than rural settled groups.⁸

Social and political marginalization: lack of access to basic services

Pastoralists are a highly productive group and exploit land that is not suitable for agricultural production. Despite this, they tend to benefit far less from the services of the state as compared to other rural residents. This has a complex feedback effect into demographic characteristics of pastoralist populations whose human development indicators tend to be poor as a result.

Education

The Government of Sudan and UNICEF introduced mobile schools into pastoralist areas in 1980. The presence of mobile schools has been patchy. In 1994, there were 178 between Darfur and Northern Kordofan but only 11 in Southern Kordofan, all of which were being run privately (Krätli and Dyer 2009, 57). Mobile schools teach an adapted version of the national curriculum, which aims to prepare pupils to entry into conventional school at Grade 4. Trained teachers who ideally come from pastoralist communities themselves teach classes to a wide variety of ages and abilities (Larsen and Hassan 2001, 5–7).

⁸ According to Katherine Homewood (2008), “low pastoral nomad fertility is the most persistent theme throughout accounts of pastoralist demography” (p. 205), although she presents data showing examples of high fertility and infertility. She quotes two Sudanese studies by Henin (1968 and 1969) that found the more nomadic *Baggara* and *Kawahla* had lower fertility. R.A. Henin, 1968, Fertility Differentials in the Sudan, *Population Studies* 22:147–64 and R.A. Henin, 1969, The Patterns and Causes of Fertility Differentials in the Sudan, *Population Studies* 23: 171–198.

Although many pastoralists might view mobile schools as a positive gesture of goodwill and concern from the government, the considerable distances from administrative centres and staffing and communication difficulties mean that the standard of education in mobile schools is invariably lower (Krätli and Dyer 2009, 57). In March 2009, the Federal Ministry of Education, in collaboration with UNICEF, launched a “Nomadic Education Strategic Plan,” which aimed to increase the levels of pastoralist children in education from 32% to 70% by 2011. Among the provisions in the plan was a shift away from mobile schools to on-site boarding schools, where children would remain for several months of the year, and a renewed emphasis on girls’ education (Evans-Pritchard 2010).

Pastoralists might resist sending their children to school for a number of reasons. An important one is that it is the duty of young people to look after herds and learn about animal husbandry. In many areas, parents may strategize to send only some of their children or stagger their children’s enrolment in schools, e.g., in Butana Eastern Sudan (Larsen and Hassan 2001, 17). These are issues that will have to be addressed if more pastoralist children are to attend school. Reluctance to send children to school is a consequence of the lack of incorporation and the sense of non-participation pastoralist families feel about the state and government services.

The lack of schools and in turn lower educational levels is associated with higher fertility and reduced empowerment of women. This feedback loop entrenches marginalization.

Table 4 and Figure 1 presents some stark statistics on literacy levels among nomadic groups as recorded in the 2008 Census.

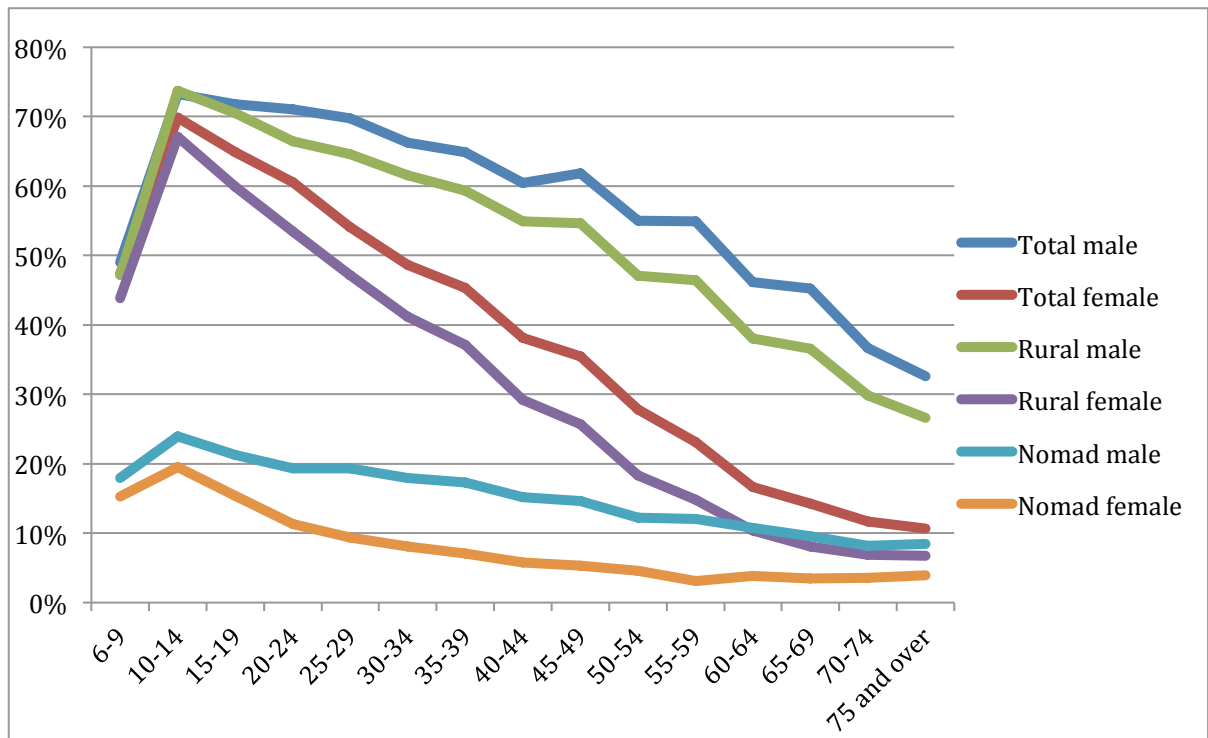
Table 4. Literacy rates by mode of living for all states in Northern Sudan, 2008 Sudan Census (population 6 years of age and over)

	Both sexes			Female			Male		
	Total no.	Literate no.	Per - cent	Total no.	Literate no.	Per - cent	Total no.	Literate no.	Per - cent
Total	24,965,967	14,273,638	57	12,387,254	6,315,667	51	12,578,713	7,957,971	63
Urban	8,435,796	6,477,330	77	4,106,717	2,918,172	71	4,329,079	3,559,158	82
Rural	14,277,856	7,444,915	52	7,265,874	3,277,900	45	7,011,981	4,167,015	59

Introduction

Noma d	2,252,316	351,393	16	1,014,663	119,594	12	1,237,653	231,799	19
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Figure 2. Literacy by age and gender, and for rural and nomadic groups (percent literate in different categories from the 2008 Sudan Census)



Both rural and nomadic groups show a sharp gender differential, with female literacy far lower than male literacy. Within the nomadic group, this gender difference appears to be greater roughly between the ages of 30 to 60 years.

While literacy rates among rural groups appear to have improved with age group, with literacy rates exceeding 60% among rural youth, the same is not true of nomadic groups, where females and males aged between 15 and 19 have literacy rates of 15% and 21% respectively.

Health Services

Health services are virtually nonexistent in Sudan's remote pastoralist areas. According to the Ministry of Health, community health workers and village "basic health units" headed by a trained medical assistant are planned to replace midwives. However, in "nomadic" areas, the community health worker system will remain (Flintan 2011, 15). The GoS current five-year Health Sector Strategy (2011) contains no specific provisions for mobile pastoralists. Although the 2006–2010 National Strategy for Maternal and Reproductive Health (2004) stipulated the provision of mobile clinics for maternal and neonatal health to pastoralist areas, which previously had no maternal health coverage.

The problem of adequate health care is more complex than government service provision. Lack of knowledge about disease and biomedical treatments is perceived to be one of the main barriers to health-seeking behavior among pastoralists (Darag 1988, 567). This is linked to lack of education. There is, in fact, a cycle of marginalization here that inhibits people from getting the kind of access to services that they could have.

Demography of herds

To a large extent, the human demography of pastoralists is tied to the composition of herds. Human populations cannot vastly exceed livestock population and a certain threshold of livestock numbers is needed to form new independent households (CRMA and FAO 2010, 202). This is one of the unique demographic parameters experienced by pastoralists. The crux of the argument that there is a demographic crisis facing pastoralism in the Horn of Africa is the belief that the growth rate of humans in pastoralist populations is outweighing the growth of the herd population and market capacity needed to support the human populations' nutritional needs (Sandford 2007). However, this view neglects some of the most important characteristics of pastoralism as a livelihood system: its openness, adaptability, and opportunism.

Pastoralist herd management strategies are designed to support extensive subsistence production (in contrast to the intensive commercial production strategies common in European and North American ranches). In general, figures for numbers of livestock associated with pastoralists are difficult to attain because people are often reluctant to reveal this kind of detail about their herds.

There are limits to the total size a single herd can be. Spencer and Cunnison estimate that the absolute maximum size for a cattle herd is 300; otherwise, time spent watering them takes up the time needed for grazing and it becomes unviable (Komey 2010, 254). However, richer pastoralists can employ people to look after their herds or distribute animals to poorer relatives to look after, so there is theoretically no limit to the number of cattle that can be owned by one person. In fact, few rich pastoralists keep all their animals in a single herd, because spreading them out is a way of minimizing risk.

The nutritional viability of pastoralism is based on animals as producers of milk, rather than meat. So keeping cows that will generate dairy products is of paramount importance. The fertility of cattle depends greatly on their health and the availability of food. Variable rainfall means that there is variability in fertility, and calving tends to occur at the same time of year relational to the peak grazing

season. Studies have given estimates for the total calving rates of pastoralist cattle based on age at first birth, gestation periods, and calving intervals—although a lot of other variables like infertility, constraints of movement, and transhumant movements also need to be taken into account (Komey 2010, 32). The age structure of the herd is also important, although this is can be hard to determine precisely, because it is hard to for researchers to know the age of animals. However, there are notable trends. Of the roughly 60% of female animals in a herd, approximately a further 60% of these (40% of the herd total) are adult females. This ensures a high calving potential and a high milk yield. Older animals are still useful for meat and may be slaughtered when needs require (Homewood 2008, 161).

Cattle mortality is closely linked to climatic variations. In years of drought and during the dry season, more animals will die (but rains also cause chills and bring more death from disease). For calves in their first year of life, Dahl and Hjort estimate an average of 20% mortality, which drops to 7% after the first year of life. This is low in comparison to sedentary herds, whose calves average 40% mortality in the first year of life. Most researchers' estimate a natural life of nine to fifteen years for cattle in a pastoralist herd, but getting to grips with the rate of mortality has been harder. This is partly because animals are sold and exchanged between herds, and it is difficult to investigate, and also because is it unclear if or how old animals that are slaughtered should be included (Komey 2010, 39–46).

The circumstances described by Dahl and Hjort are only a guide, and local circumstances may differ significantly. However, it is useful to try and understand the rationale in pastoralists herd composition for several reasons. At one level, it shows how pastoralists are highly selective about the makeup of their herds. They do not allow them to expand naturally, but engineer expansion through trade and social exchange. Herd composition is highly calculated. Understanding these dynamics can help researchers to understand why pastoralists will make particular decisions about their herds at particular times. This is potentially useful for understanding the effects and reception of historical processes that have affected pastoralist herds. It may help us to understand why particular interventions might have been favored while others would have been disadvantageous.

The Working Paper Series

Five working papers have been produced for this policy review, covering topics ranging from natural resource governance, the economics of pastoralist livestock

production, pastoralism in the new borderlands between Sudan and South Sudan, pastoralist institutions, and finally pastoralist groups in Darfur.⁹

Paper 1: Natural Resource Governance and Pastoralism in Sudan, by Gaiballa A. Karamalla

The primary elements provided by rangelands include pasture, trees and shrubs, minerals, and water. In the arid and semi-arid climate of Sudan, pastoralists need large areas to graze, and they move seasonally between them. Some of these transhumance routes cross state-level and international borders. Where pastoralists face competition over these resources, conflict often results.

Changes in climate, governance, and the economy have all affected land tenure and land use patterns. Each of these changes has contributed to deterioration in the health and productivity of the rangelands, though it is primarily the size of pastoral herds and practice of pastoralism that is blamed.

Decision-making bodies in the government that have been given responsibility to develop pastoral systems have been poorly supported. Pastoralists are also politically marginalized and poorly represented among policy-makers. The result is a series of land-related Acts that have left pastoralists' access to the natural resources vulnerable. A primary issue has been the ever-decreasing size and health of the rangelands, often accompanied by restrictions on access to water sources. Officially sanctioned as well as illegal expansion of mechanised farming into the rangelands has absorbed more of the land than any other use in some regions. Where these growing limitations threaten the viability of pastoral livelihoods, conflict is often seen as the only avenue open to pastoralists.

Additionally, many of the transhumance routes pass through the three disputed regions along the new international border between Sudan and South Sudan. Political tension relating to issues of sovereignty has overshadowed more pragmatic local issues and is impeding the mobility of many pastoral groups. Local solutions are necessary and urgently needed.

Historically, the Native Administration dealt with local land-use issues. Over centuries, various complex systems have been pragmatically worked out based on unique local community needs and dynamics. For the most part, these worked because communities respected the Native Administration and because of the high level of understanding among Native Administrators (local leaders). With

⁹ These working papers have been used to inform subsequent research studies by Tufts and partners and are available on request from helen.young@tufts.edu.

the demise of the Native Administration, legislative control and enforcement moved to the central government. Both the respect of the communities and the understanding among decision-makers has declined. Recent efforts to devolve authority and responsibility to the state level are an improvement, but have so far been largely ineffective due to budget constraints.

A closer review of customary law, traditions, and enforcement mechanisms may provide much-needed guidance for structuring new legislation that will meet the needs of pastoralists as well as farmers. Well-supported pastoral systems are a forgotten but potentially enormous source of revenue for the country. On the other hand, the continued neglect of the needs of pastoralists will perpetuate conflict.

Paper 2: The Economics of Pastoral Livestock Production and Its Contribution to the Wider Economy of Sudan, by Roy Behnke

This paper examines the contribution of livestock and pastoralists to the Sudanese national economy, and assesses the reliability of available statistical data. It reviews the impact of increased commercial pressure on herd management. It also looks at how government taxation policies and the trade embargo with the South affect pastoralists.

Estimations of the contribution of livestock to the national economy use livestock numbers, estimated production output from these animals, producer prices, and input costs. Production output includes both production for consumption by the producers and production for sale. This allows a calculation independent of official market statistics, which do not account for informal trade and consumption. The most critical element is the estimate of the national livestock population, but current figures are not reliable. The development of a strong case for the importance of livestock to the national economy depends on a new national livestock census.

Using available data, livestock contribute 60% of the value of the agricultural sector's domestic production. Although petroleum exports have become an important source of national revenue, the agricultural sector, of which livestock forms the largest part, continues to exceed petroleum, though livestock contributes less to national exports than to GDP. Still, 80–90% of this contribution has been attributed to pastoralists in the general discourse (Behnke 2012).

In 2009, livestock exports made up 47% of total agricultural exports. A reorientation of livestock production and herd management strategies reflects the increasing market opportunities provided through exports. Some

adjustments are signs of negative coping with changes in both resources and economic forces; other adjustments are helping pastoralists to get ahead and maximize herd productivity. All have an impact on social systems, power balance within pastoral groups, and the distribution of wealth.

Specific adaptations include moving from larger animals like cattle and camels to more marketable sheep. Migrant labour and remittances are sometimes seen as a strategy for failed pastoralists, but are often used as a way to increase herd size quickly, or to stabilize investments by owning purchased animals free of bride-price restrictions or dependence on animals partly controlled by elders.

Two primary policy avenues affecting pastoral producers are taxation or fees and the trade embargo with South Sudan. While animal sales are very heavily taxed, they are comparable to taxes on most crops. Comparing actual prices to estimated unimpeded free market prices, livestock does appear to be disadvantaged more than crops in general. The disadvantage is not because they are specifically targeted by the government; rather, it is because they are part of a class that is easily exploited. That is, they exist in small, scattered, politically marginalized groups. On the other hand, policies like the quarantine system have protected livestock producers from the bans due to outbreaks of Rift Valley Fever, which have had enormous economic costs in neighbouring countries.

Animal trade in South Sudan does depend in part on trade with the north, but is more integrated with its other neighbours. Even so, production in the South exceeds the demand from these other markets, making trade with the north an important additional outlet. Most recent livestock market analyses tend to overlook this impact.

Paper 3: Pastoralism in the New Borderlands: Adaptation, Conflict, and Peace-building, by Zoe Cormack and Helen Young

Pastoralists often need to move across national borders in order to sustain their livelihoods. In South Sudan and even more in Sudan, pastoralists generally move their herds south in the dry season to find grazing and north during the rainy season to escape insects and other health hazards. Most of them claim their primary residence (*Dar*) in their northern grazing areas. These groups in particular are affected by the new international border between Sudan and South Sudan. The border crosses many seasonal transhumance migration routes, effectively separating dry- and rainy-season grazing areas.

This new dynamic creates several related issues for the pastoralists in this region. First, citizenship criteria for both countries are based on factors that assume a fixed point of residency and are more easily applied to sedentary populations than mobile pastoralists. Dual citizenship is not permitted in either country. Pastoralists therefore risk exclusion from one area or another or even statelessness. Second, tension, uncertainty, and militarization along the new border are impeding access to critical natural resources.

Many groups with homelands in the north have been stopped from reaching their normal dry-season grazing areas in the south, stressing their herds and the land north of the border, particularly around Abyei. In frustration, they have attacked “southern” villages north of the border in Abyei, with reprisals from the military of South Sudan.

Border issues affecting livelihoods have received less attention than the political/sovereignty issues because of the perceived importance of the latter. In reality, though, as we see in Abyei, progress towards peace and stability in the region is dependent on the ability of the pastoralists and other transnational livelihood groups to cross the international border and have rights to access natural resources on both sides.

There are examples of successful programs supporting the rights of pastoralists with transnational migration patterns. These can be used as starting points for designing similar programs or legislation in Sudan and South Sudan. There are also a number of current initiatives attempting to address various facets of this complex issue.

If the border region between Sudan and South Sudan is to stabilize and sustainably support the livelihoods of its population, local aspects of the issue become as important as national aspects and deserve equal attention. Otherwise, progress made on national aspects risk being undercut by conflict originating from local groups who equate the sustainability of their livelihoods with their own survival.

Paper 4: Pastoralist Peoples, Their Institutions, and Related Policies, by Omer Egemi

This review describes the scale and distribution of pastoralism and pastoralist peoples in Sudan, and describes some of the key policies affecting pastoralist rights and institutions. The current situation of pastoralists and their institutions is described, as well as the related processes and trends influencing their

mobility and livelihoods. The Working Paper draws on the main sources of literature, including the work of both national and international scholars. It is intended as a source of reference for training adaptation, policy briefs, and research studies.

Pastoralism tends to vary along a north-south axis, with camel pastoralism (*abbala*) dominating the semi-desert areas and cattle herding (*baggara*) in the savannah belt towards the south. There are many pastoralist groups found in different parts of the country from north to south, and east to west. Livestock mobility has allowed pastoralists to establish a dynamic relationship between the drier and wetter parts towards the south.

Some routes extend as far as 600 km; for example, the routes of the camel herders of North Darfur, while sheep herders in North Kordofan move within a far smaller area. Important dry- season grazing areas include the banks of the White and Blue Nile, and other riverbanks including the Bahr el Arab in East Darfur. Pastoralists play a vital role in the national and local economy, food security, and environmental viability.

There are multiple challenges facing pastoralist livelihoods and livestock mobility, including: acquisition of rangelands for mechanised and irrigated agriculture; regressive land tenure arrangements; land degradation; conflicts; shrinking of rangelands and closure of migratory routes; and the challenges of a new international border post the secession of South Sudan in 2011.

Despite these myriad problems, pastoralist livestock production continues to be the major livestock production system in the country, and pastoralists are still maintaining their distinct lifestyles. Some new trends and adaptations are apparent, including: the shift towards sheep among some groups (Meidob and Misseriyia); the use of tankers and water bladders for transportation of water to enable use of pasture in water-deficit areas; use of artificial feeds; the growing tendency towards commercialization, especially with regard to sheep exports; and the heavy engagement in politics based on politico-military alliances.

A review of policies and approaches to the pastoral sector reveals two important characteristics. First is the lack of clear and explicit official policies related to pastoralists and the pastoral sector, reflecting their very marginal position in the policy orientation, and the failure of pastoralists to influence such policies. Second, existing policies are based on a poor understanding of pastoralism, and have a bias towards sedentary agricultural cultivation. As a result, since 1990 there has been a generalized neglect of pastoralism within national development plans. Another aspect of national policies towards pastoralists is the focus on

resettlement and sedentarisation of pastoralists, in order to clear the way for development projects.

The demarcation of livestock corridors was seen as the best way of minimizing conflict between pastoralists and farmers, rather than as an attempt to facilitate and secure the rights of pastoralists. As a result, farmers continue to hold the opinion that they have dominant rights to land, and the capacity of tribal institutions to address the issue of land rights has been eroded. Lack of investment in physical infrastructure, especially water sources along the corridors, has also proved problematic.

There is a wide range of institutions—with direct or indirect competencies—that are relevant for supporting the pastoralists to establish their informal tenure rights over land and natural resources, including the Range and Pasture Administration, the Pastoralist Union, and the Native or Tribal Administration. In 2007, the President established the Nomads Development Council specifically for Darfur. Institutions directly relevant to pastoralists, namely Pastoralist Unions and the Native Administration, remain weak and are increasingly incapable of representing and defending the rights of pastoralists.

Pastoralists have not been explicitly targeted in policy frameworks, and the policies implemented are mostly a response to the economic interests of the state in livestock as a source of revenue and for supplying growing urban markets with cheap livestock, or to reduce conflict with farmers.

Paper 5: Darfur Pastoralists Groups: New Opportunities for Change and Peace-building, by Yousif Takana, Afaf Rahim, and Abdelhafiz Mohamed Obeid

This paper examines the different pastoralist groups in Darfur and their engagement in conflict and peace. It includes an analysis of the effectiveness of traditional and new emerging institutions in the peace process, and discusses new opportunities for peace-building.

The dominant pastoralist groups in South Darfur are *baggara* (cattle herders), while *abbala* (camel herders) tend to dominate in North Darfur. The *baggara* groups include the Southern Rizeigat, Ma'aliyya, Habbaniya, Beni Halba, and Ta'aisha, each of whom has their tribal homeland recognized under customary law. In contrast, the Northern Rizeigat still maintain their nomadic lifestyle and are the only *abbala* or *baggara* group that historically is not associated with a specific *Dar* or tribal homeland. In West Darfur, pastoralist groups are of diverse ethnic composition and are also influenced by seasonal movements from North

Darfur and Chad, which can pose practical challenges for the native administrations. Apart from the Northern Rizeigat, other *abbala* groups in North Darfur include the Zayadia, Meidob, and the Zaghawa.

There are several historical factors contributing to tensions between tribes, local grievances, and conflict, including the erosion of the Native (tribal) Administration System, the introduction of local government administration, and the socio-economic marginalization of Darfur generally, and the sense of local marginalization by pastoralists. These factors were exacerbated by the extended drought of the 1980s, which prompted southwards mass migration and occupation of land by different groups. More recently, the Darfur civil conflict between national armed forces and rebel groups has further contributed to the politicization of tribal groups, setting Arab and non-Arab pastoralists against each other. At the same time, conflict between tribes (including inter-Arab conflicts) over land resources, land tenure, and natural resource use has continued.

The customary mediation mechanism in Darfur, *Judiyya*, has maintained an important role in managing conflicts, but its effectiveness has been eroded as the dimensions of the conflict increased. Furthermore, emerging new structures, which are dominated by young militants, have contested the leadership of traditional tribal chiefs and institutions. Additionally, government manipulation of tribal institutions and authorities has in many places weakened their local legitimacy and the role that they can play in mediation and peacemaking. The role of government in government-sponsored tribal reconciliation conferences has also changed, with a shift from a facilitator role towards a lack of neutrality, resulting in frequent failure of long-term conflict resolution; it is necessary to review the effectiveness of these conferences.

There are some changes taking place, with new institutions created to look after the interests of Darfur pastoralists, including the Nomads Development Council, decentralization and creation of five states, and increasing the representation of pastoralists in local governance. The National Assembly and pastoralists themselves are starting peace initiatives supported by state governments, which were in part a response to continued inter-tribal conflict. Additionally, political representation of Darfur pastoralists has increased significantly, with seven federal ministerial posts, the Chairman of the national Houses of Representatives, the House of Parliament, and the Council of States representatives all being Darfurian.

The shift in representation of pastoralists in key policy-making bodies provides a huge opportunity to influence the peace process and settlement agreements. However, to be successful will require commitment, and political representatives

will need to ensure they do not become detached from their own people, ensuring pastoralist communities are genuinely empowered to effectively participate in decision-making.