Modern and mobile

The future of livestock production in Africa's drylands

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International Institute for Environment and Development

SOS SAHEL INTERNATIONAL UK

Preface

For far too long, pastoralists in Africa have been viewed – mistakenly – as living outside the mainstream of national development, pursuing a way of life that is in crisis and decline.

The reality is very different. Pastoralists manage complex webs of profitable cross-border trade and draw huge economic benefits from rangelands ill-suited to other land use systems. Their livestock feed our families and grow our economies. And mobility is what allows them to do this.

Pastoralism has the potential to make an even greater contribution to the economic development of our nations, which is why the Inter-Governmental Authority on Development (IGAD) is in the process of establishing a semi-autonomous livestock unit. Governments in Africa must protect and invest in mobile livestock production if we are all to realise pastoralism's promise.

Mahboub Maalim

Executive Secretary, IGAD

C'est le mouvement qui fait vivre le pasteur. Lors des sécheresses de 1984-85, le président du Mali laissait entendre que le nomadisme avait atteint ses limites. Cela reflète la méconnaissance d'un fait : si l'élevage sahélien a pu survivre jusque là, c'est grâce à sa mobilité. Elle représente le seul moyen de concilier l'eau et le pâturage, le besoin de protéger les champs et celui de maximiser la productivité des animaux. Et l'impératif de la mobilité a imposé une culture et des règles qui ont permis à plusieurs systèmes de production de coexister avec le minimum de conflits. L'urbanisation, la poussée démographique, les conflits entre éleveurs et agriculteurs accroissent certes les défis des sociétés pastorales. Mais ils ne remettent en cause ni le principe de la mobilité, ni la capacité de ces sociétés à se moderniser. D'ailleurs, nos enfants vont de plus en plus à l'école, fréquentent les cybercafés et utilisent le téléphone portable sans abandonner leur bâton de berger, et tout en préservant l'essentiel.

Professeur Ali Nouhoun Diallo

Ancien président de l'Assemblée Nationale du Mali (1992–2002)

Ancien président du Parlement de la CEDEAO (2000–2005)

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Modern and mobile is the result of many individuals in East and West Africa, Europe and the USA, determined to make the argument for mobile livestock keeping in Africa's drylands. Many of these people attended the regional conference on livestock mobility held in Addis Ababa in November 2008, which was hosted by SOS Sahel Ethiopia and to whom we are also very grateful. It is difficult to acknowledge everyone's input, but we are particularly indebted to the following people who played a direct role in the design, writing and production of the book.

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Ced Hesse and Sue Cavanna – January 2010

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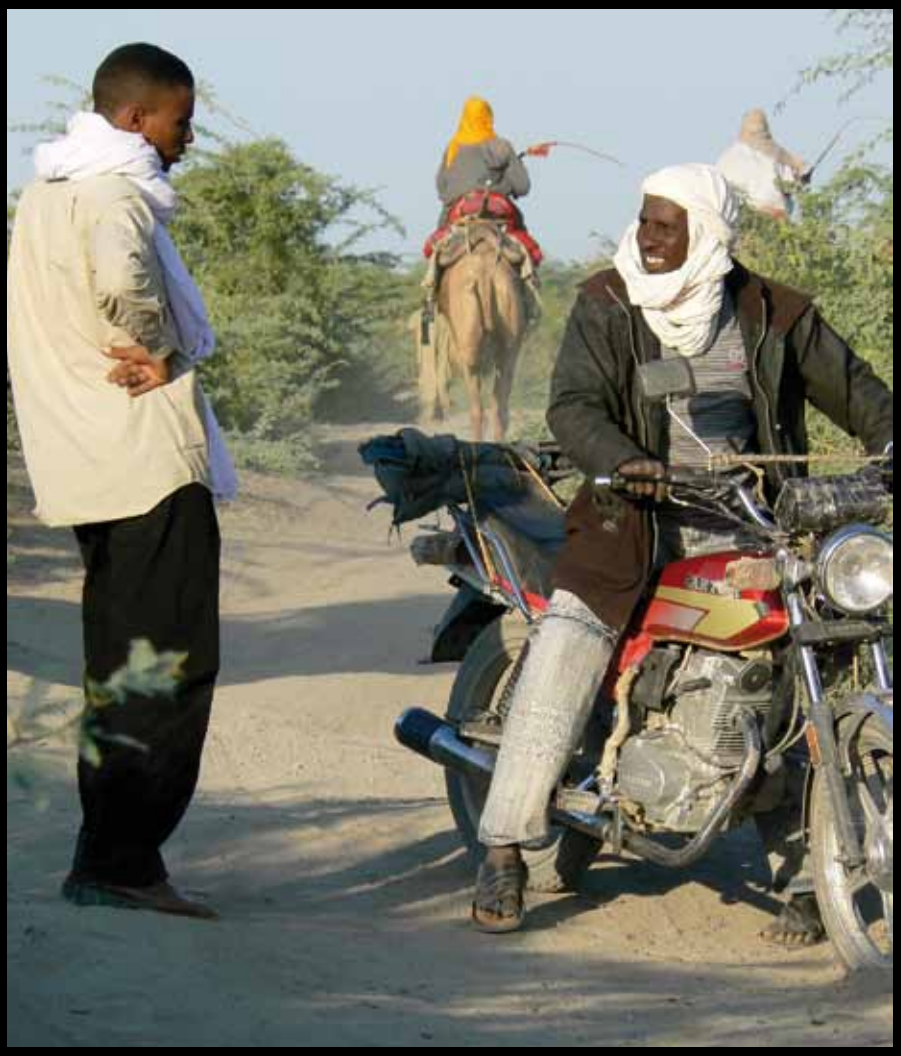


About this book

"Pastoralism is mobility: mobility is pastoralism"

A Borana proverb

This book is about the critical role mobile livestock keeping plays in the economic prosperity of Africa's drylands. Across East and West Africa an estimated 50 million livestock producers support their families, their communities, and a massive meat, skins and hides industry based on animals that are fed solely on natural dryland pastures. Where other land use systems are failing in the face of global climate change, mobile livestock keeping, or pastoralism, is generating huge national and regional economic benefits.

We live in an increasingly mobile world – fuelled by international finance, global technology and multinational business. Today's pastoralists download the latest market prices for cattle on their mobile phones, use cheap Chinese motorbikes to reach distant herds or lost camels, and trek their livestock thousands of kilometres by foot, truck or ship to trade them nationally and internationally. Prevalent perceptions about pastoralists are that they are a minority of people who practice an archaic and outmoded lifestyle. But even though pastoralists often inhabit harsh remote regions, they are fully integrated with wider global processes.

The Livestock Revolution that has exploded across Asia and South America has taken hold in Africa. Population growth and rising urban incomes are fuelling an escalating demand for meat and dairy products, and it is mainly pastoralists who are meeting this demand.

Yet Africa's pastoralists could do even better. Pastoralism relies on unique production strategies, with the ability to move being the most crucial. Moving is now becoming a serious problem. Grazing lands are being taken over for other uses, access to water and markets is increasingly difficult and the economic profitability of livestock keeping is being critically undermined. Animals are producing less meat, less milk and are more susceptible to drought and disease. Poverty, resource degradation and conflict are increasing.

New thinking, new policies and innovative practices for pastoralist mobility are beginning to take root in many parts of dryland Africa. The African Union and other regional institutions such as the Common Market for Eastern and Southern Africa (COMESA), the Economic Community of West African States (ECOWAS) and the Inter-Governmental Authority on Development (IGAD) are recognising the huge benefits to be reaped from supporting livestock mobility. This is encouraging several African governments to develop informed, progressive policies that reflect the needs of modern pastoralism. These governments are likely to benefit from the projected growth in demand for livestock products as well as reduce their poverty and secure food supplies.

Livestock mobility is a modern approach to poverty alleviation and accelerated development. Supporting mobility does not require huge financial investment: it requires refreshed thinking and clearer understanding. This book is a starting point.

Did you know that …?

- Drylands make up 43% of Africa's inhabited surface and are home to 268 million people; 40% of the continent's population.
- An estimated 50 million pastoralists and up to 200 million agro-pastoralists live from West to East across dryland Africa.
- In **Burkina Faso** 70% of the cattle population are herded by the transhumant Fulani.[1]
- In **Chad** pastoral animals make up over one third of exports and feed 40% of the population.[2]
- In **Ethiopia** the livestock sector ranks second to coffee in generating foreign exchange. In 2006, Ethiopia earned US$121 million from livestock and livestock products.[3]
- In **Kenya**, livestock raised by pastoralists is worth US$ 800 million a year.[4] During the 2002 drought in Kenya former president Daniel arap Moi opened the gates of the presidential compound to livestock.[5]
- In **Mali** exported live animals were worth US$44.6 million in 2006.[6]
- In **Mauritania** livestock contributes 70% of total agricultural GDP.[7]
- In **Niger** 76% of the national herd are pastoral cattle.[8]
- Cattle trekked for over 450 kms from southern Somalia account for 26% of the beef consumed in **Kenya**, and 16% of that consumed in Nairobi.[9]
- In Southern Darfur, **Sudan**, calf mortality in migratory herds is 11% whilst in sedentary herds it is 40%.[10]
- The traditional livestock sector in **Tanzania** produces 70% of the country's milk, which was 770 million litres in 2006.[11]
- **Uganda's** pastoralist and smallholder livestock producers contribute 8.5% of total GDP.[12]

- Specialized large-scale pastoralism had a central role in the wealth producing strategies of the elites of ancient Greece. The elites took care to provide the necessary legal infrastructure to protect and promote grazing in their own communities.[13]

- Almost all English words for money come from the world of pastoral nomads. Cattle, chattel and capital come from the same root. Pecuniary comes from the Latin word for cattle, pecus.[14]

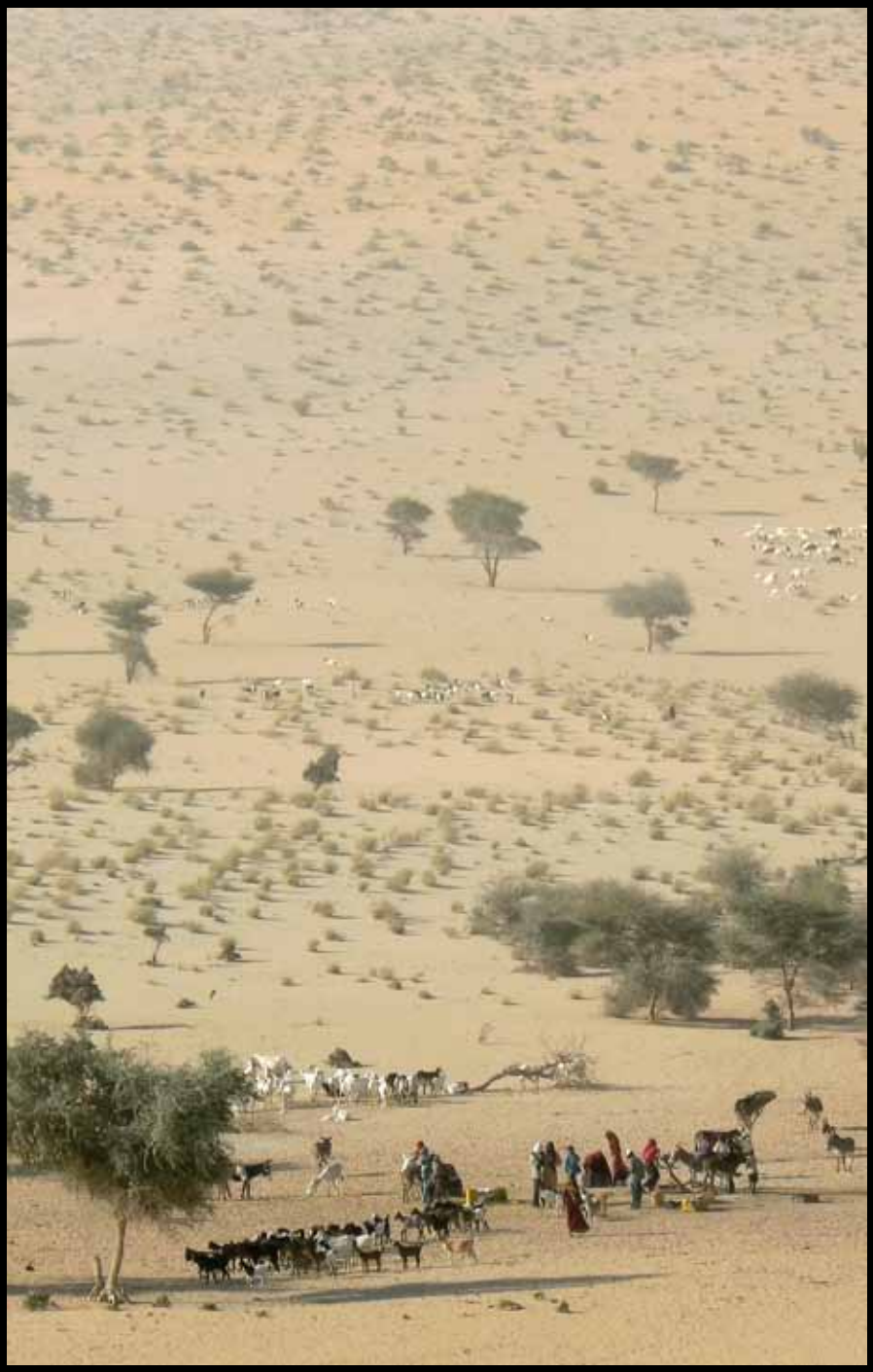
Part 1

The necessity of mobility

"Mobility is key if pastoralists are to make best use of water and grazing in these dryland areas. These strategies have evolved over hundreds of years and are known to be highly efficient and adaptive."

Dr Berhanu Admassu

Senior policy adviser, Tufts University



The necessity of mobility

Mobility is essential if livestock are to prosper in Africa's drylands.

Production

The major reason for mobility is to maximise livestock productivity levels. When on the move pastoralists are not just searching for food for their animals, they are tracking the very best grazing and water sources. High quality nutrients in dry rangelands are short-lived and predictably patchy. In order to exploit them efficiently pastoralists need to move often and quickly.

Trade

Livestock need to be bought and sold. The best markets where pastoralists can get good prices for their animals are often far from the best production areas. Trading can be local, national or international depending on the season and what is to be sold or purchased. Often trade involves extensive treks and the safe movement of animals is therefore key.

Survival

Livestock movement becomes absolutely essential to flee drought, disease or conflict. Prompt and often long-range mobility during these times is necessary for the survival of the herds and the pastoralists themselves.

Mobility is what enables producers to exploit the very top quality pasture. Mobile herders and their livestock can leap, so to speak, from spike to spike of nutritional content. In ordinary conditions and when left to their own devises, the most specialised producers move over the range with their selectively feeding animals hardly leaving any sign of their passage.[15]

For production

Understanding mobile livestock production systems can be a challenge, with most of the confusion being about why pastoralists always seem to be on the move. Essentially pastoralists move to take their animals to places where they can find the best quality grazing. This is not as simple as it sounds, and requires a great deal of preparation and years of experience in an environment where errors can be unforgiving.

It is commonly believed that pastoralists move in response to pasture shortage. While this happens sometimes it is not the main reason why they move. As a general rule pastoralists are much more concerned with the quality of the diet (grasses, shrubs, tree leaves and water), as measured by their animals' health and productivity. They usually move towards higher quality rather than away from low quantity. The better the diet of the livestock, the more milk there is of a better taste and a higher fat content. Livestock on a good diet will put on weight quicker, be healthier and reproduce faster. Animals must be fed particularly well during the rainy season, when the fresh grass is high in nutrients, so as to optimize their weight gain so they can survive the inevitable weight loss during the dry season.

In the dry rangelands the timing and distribution of the nutrients is highly variable and unpredictable. This variability is due not only to the erratic rainfall, but also different soil types, different plant species and even the different stages of a plant's growth cycle.

To an outsider the grasses, shrubs and trees of the drylands may look much the same, but in fact pasture quality varies on a daily, seasonal and annual basis, and most importantly is not evenly spread across the landscape. It is this scattering of different pastures over different places, at different times, which makes mobile livestock keeping so productive in what is otherwise a difficult environment. Because fresh green pasture does not sprout in the same place at the same time, it means it is available over a longer time period than would be the case if it rained everywhere at the same time. To sedentary livestock keepers who rely on uniformity and economies of scale, randomly variable concentrations of nutrients on the range would be a serious constraint to productivity, but to pastoralists, who are mobile and maintain populations of selectively feeding animals, it represents a resource.

By being mobile with their livestock, pastoralists can take advantage of the ever-changing diversity of dryland ecology. They track the random concentrations of nutrients in space and time. The result of this strategy, when unhindered, is that their livestock are able to feed on a diet that is substantially richer than the average nutritional value of the range they live on. They can thus attain a much better level of nutrition than livestock feeding off natural pastures that remain in one place. And this means their livestock are more productive – producing more milk and meat than sedentary animals reared in the same environmental conditions.

The skills behind mobility

Institutions, scouting and planning

Mobility is carefully managed and relies on large social networks and the rapid gathering of information on the concentrations of high quality pasture. When a movement is planned scouts are sent out to assess the state of the rangeland and negotiate with other groups. Pastoral Fulani like the WoDaaBe use particularly expert herders as scouts (garsoo). The scout must have a profound knowledge not only of the bush but also of the population of cattle belonging to his group. Intelligence collected by the scouts from other herders and from direct inspection is discussed within the migration group, but the final decision whether to move or not rests with the individual households.

"In my community, because mobility was very important, the 'sahan' or scouting system was well established. The best boys; the strongest and intelligent ones were selected and trained to do the job. Mobility was well planned and executed with precision."

Mohamed Abdinoor

Technical Adviser, Pastoral and Livestock Programs, USAID Ethiopia

"Before they move, mobile people plan their movement based on previous observations. People sit together, they discuss and plan their movement. Even before movement is decided, they send surveillance people who will check on the availability of water and pasture. People do not just move because they want to move. From Merti, Wasso, or Isiolo we can send a surveillance team as far as Moyale, and when the surveillance team comes back and reports back that there is enough pasture and water that is when the decision is made."

Haji Diba Kiyana Merti, Kenya.[16]

"When rain fell in another area we got information about it. Our 'ola' (camp) is composed of 28 households. Nine households wanted to shift, 19 said shifting has consequences, let's wait. We democratically decided to separate. Every movement has a big impact on women and animals so people are often reluctant to take a risk. The nine households sent a delegation to go and scout for pastures and water use rights, and meet with the communities where the rain was. We have to ask them for rights to camp with them. This 'scouting' is done by a very important person. They have to be truthful, observant, accepted by the new community and trusted by their own community. Once the community accepted for us to come they assisted us to settle. For one and a half months they provided us with grain and provided security, until our animals were lactating again. Later we heard that rain had fallen in our area so we went back to our pastureland."

Bor Bor Bule Borana elder, Ethiopia

Selective breeding and selective eating[17]

The WoDaaBe of Niger are successful pastoralists because they are highly skilled livestock managers and breeders. From one generation to the next, they very carefully breed cattle that are able to exploit the unpredictable environment in which they live: animals that can reach and find the most nutritious grasses available. Essential characteristics include the capacity to travel great distances and to cope well with little water and very high temperatures. But there is more to these animals' special capacity for drylands production.

The Bororo zebu kept by the WoDaaBe are bred and trained to feed selectively in order to get the most nutritious diet from the range. They pick and choose from over forty different plant species, including not only grass, but also shrubs and trees and even wild melons and water lilies. Their selectivity applies to the parts of a plant, to different plants of the same species and to combinations of species, as well as to different seasons and even different times of the day. Combined with mobility, these skills enable a herd to efficiently track and exploit the unpredictable concentrations (spikes) of nutrients on the drylands range.[18]

The WoDaaBe compare the relationship between grass and browse to the relation between their own staple food, millet porridge (nyiiri) and its accompanying sauce (li'o). Their cattle are stimulated to graze as much as possible. They graze better and more when they find what they like – soft, delicious grass – and when they are given the opportunity to range any time during day and night. They graze badly when disturbed, for example by the bad smell of droppings, by pasture infested with grasshoppers, by the smell of a carcass, by grass that is brittle or spiky. During the wet season when fodder is abundant and cattle are easily satisfied expert herders deliberately expose individual animals to their favoured 'bites' in order to keep their appetites high.[19]

"There are areas known to us with salty ground so people move there to have their animals lick the salty soil. Another reason why people move is that your livestock will just force you to move just because they know there is better grass in another place."

Eregey Hosiah Ekiyeyes Turkana, Kenya[20]

"What do camels and shoats live on? What do cattle feed on? What forces them to move, to look for pasture? Even human beings, when they eat pasta or rice for three days they need a change, they need another diet. Animals also need this kind of change; different types of pasture not only one species of grass.

The grass that is growing after a place has been burnt is sweeter and more nutritious for cattle. Just as liver tastes sweet, so does the grass that grows after an area is burnt. We usually manage our area by keeping the animals in different grazing patterns. We burn an area when we leave it so that there is fresh grass and good pasture when we return to that land. "

Haji Kararsa Guracha Liban, Ethiopia[21]

Technical notes

The Baggara of Sudan [22]

The Baggara are cattle herding Arabs that live in the provinces of Darfur and North and South Kordofan, Sudan. They also live in Chad. The Baggara typically move along a north-south axis. As in other parts of the Sahel, the rains tend to be stronger and to come earlier to the southern regions, and then spread northwards as the rainy season progresses. When the rains come, the Baggara are forced out of their southern dry season areas by a combination of annoying biting flies and heavy mud that severely bothers the cattle. The pastoral herds follow the flush of fresh grass that accompanies the northward progression of the rains. The pastures in the north, despite receiving less rain, are far more nutritious than those in the south, and the animals quickly put on weight and produce more milk. Depending on the year, these movements can take them far north, well beyond the town of Nyala in years of good rainfall.

At the end of the rains, the Baggara gradually move south driving their animals to places where fresh new forage is sprouting along the edges of seasonal water points that are now gradually drying up. These 'flood retreat' grasses are also highly nutritious, enabling the cattle to continue to thrive despite moving. The exact timing of the return trip is very carefully planned to make sure the herds return to their dry season areas with permanent water before the drying of temporary water sources makes movement dangerous. By the dry season, pastures in these southerly areas are rank and unpalatable, and they are burned to induce fresh re-growth suitable for grazing.

Because rainfall levels are unpredictable, how intensively pastures are grazed varies from year to year. If the rains are strong, more pastoralists move further north and spend a longer time there, before heading south. If the rains are weak and there is insufficient northern pasture, herders reduce the extent of their northern move, fewer enter the northern pastures, and they stay for a shorter time. They can do this because the light rains that bring less grazing to northern pastures also reduce the mud and insect problems in the southern grazing areas. Thus, in drought years the herds enter their southern dry-season grazing grounds earlier, stay longer, and move further south. What they are pursuing is not access to a predetermined area, but its key resources – the green grass that is to be found in different quantities at different latitudes in different years.

The Baggara's system allows cattle to feed almost all year round on fresh, green and highly nutritious grass. In the wet season herds chase the green flush northward, in the early dry season they graze the green margins at receding water lines, and in the late dry season they survive on green re-growth following burning. This system significantly outperforms in production terms the cattle reared by the agro-pastoralists who permanently reside in the northern pastures around Nyala town.

Mobile versus sedentary

The unique production system of the Baggara Arabs of Western Sudan allows their livestock to persistently outperform sedentary herds across a range of indicators (table 1).[23]

In Niger, West Africa, a comparison between sedentary, transhumant and truly nomadic cattle shows the same story (table 2).[24]

Livestock reared in areas of Australia and the United States with less than 500mm of rainfall, produced between 0.3kg and 0.5 kg of animal protein per hectare per year.[25] However in Mali, the transhumant livestock of the Fulani produced significantly more meat – between 0.6kg to 3.2kg of protein per hectare.[26]

Modern ranching is often believed to be an improvement over traditional livestock management. Many governments in Africa believe ranches will produce more and better quality beef and milk than pastoralism. Ranches, which control stocking densities and invest in high-yielding cattle breeds, water development and veterinary inputs, are able to meet the international health standards required for the export trade. But research in Ethiopia, Kenya, Botswana and Zimbabwe comparing the productivity of ranching against pastoralism all came to the same conclusion: pastoralism consistently outperforms ranching, and to a quite significant degree. Whether measured in terms of meat production, generating energy (calories) or providing cash, pastoralism gives a higher return per hectare of land than ranching. Whereas commercial cattle ranching tends to specialise in only one product – meat – pastoralism provides a diverse range of outputs including meat, milk, blood, manure, traction, which when added up is of greater value than meat alone (table 3).

Table 1

	Mobile herds	Sedentary herds
Calving rate	65 %	40 %
Females 1st calving under 4 years	65 %	29 %
Total herd mortality	15 %	35 %
Calf mortality	11 %	40 %
Meat production per breeding female	0.057 kg	0.023 kg

Table 2

	Sedentary	Transhumant	Nomadic
Annual rate of reproduction	61 %	65 %	69 %
Mortality calves under 1 year	11.1 %	0 %	5.9 %
Calf weight at 300 days	98.1 kg	80.6 kg	88.3 kg
Average number of days in lactation	285 days	295 days	321 days
Quantity of milk (per cow) for human consumption in one lactation cycle	575 litres	615 litres	668 litres

Table 3

	Productivity of pastoralism and ranching	Unit of measure
Ethiopia (Borana)[27]	157 % relative to Kenyan ranches	MJGE/Ha/yr (Calories)
Kenya (Maasai)[28]	185 % relative to east African ranches	Kg of protein production/ ha/yr
Botswana[29]	188 % relative to Botswana ranches	Kg of protein production/ ha/yr
Zimbabwe[30]	150 % relative to Zimbabwean ranches	US$ generated/ha/yr

Cowboys on horseback round up the cattle and move them from one fenced pasture to the next before the grazing runs out. "Those cows know. When you go in there and start whoopin' and hollerin' they know it's time to move."

Technical notes

Mobile ranching in Arizona, USA[31]

In the US State of Arizona, Indian tribes used to practice nomadic pastoralism on unfenced communal land until the Bureau of Indian Affairs put an end to their system. In dryland Arizona these days the livestock are fenced in, but mobility between the enclosed areas is the essential element of the production system.

Don Glasgow is the General Manager of Maughan Ranches, which has 16 ranches across Arizona. Each of his ranches moves its animals to a different schedule – some move every 20 days, others in larger enclosures every 45–60 days. The cattle are kept moving all year round: up to higher, cooler elevations (7000 feet) in the pine trees during the heat of summer and down to warmer high desert elevations (3000 feet) for the winter. While they are up in the high country, the grass in the low country – fed by the monsoon rains – has a chance to recover. Winter snowpack at higher elevations waters the new pasture there with spring meltwater.

In the US ranching is an expensive business, and is now only economically viable above 500 head of cattle. In Arizona many smaller ranchers have gone out of business in recent years, leaving the ranching business largely in the hands of a wealthy few. Rex Maughan, owner of Maughan ranches, made his fortune elsewhere. This means Don is not forced to make many of the more difficult decisions his smaller counterparts must make. Expensive inputs – employee salaries, fuel, veterinary costs, winter supplements, upkeep of the land, fencing, herbicides, grazing permits, trucking water – and even drastic measures such as moving 200+ animals by truck 150 miles to and from their summer pasture – can all be more easily absorbed.

But there is one commodity that even the richest man in Arizona cannot come by without some assistance: sufficient grazing land. There are many grants and subsidies that make ranching possible. But the largest and most valuable by far are the permits various state and federal agencies sell to ranchers that allow them to graze their animals on public land. "It's $3.79 per cow per month," Don says. "That's pretty cheap really. You can't feed a cow for $3.79 a month. But when you have a lease you're also responsible for maintaining the fences and taking care of the water and the land – so there are other expenses."

47.2% of Arizona is 'public land'. The land remains public and anyone can drive, walk, camp or hunt on it – but only the paying ranch can graze cattle there. The vast majority of ranches are made up of attached to state and government owned land. Each agency has its own rules, and its personnel work with ranchers to set rotation schedules and stocking rates. These are based on their assessment of weather, terrain and pasture conditions.

As in Africa, in Arizona the key to success in the arid lands is to have access to different types of productive land in different seasons so that the cattle can keep moving and accessing nutritional pasture. Without access to these rich areas – and without mobility – neither livelihood can exist. But, the big difference is that while Arizona's ranchers depend heavily on subsidies to produce meat, pastoralists in Africa don't. Through hard work and skills honed through experience, they not only meet most of their country's meat requirements but also export thousands and thousands of tonnes to neighbouring countries and all without any help from subsidies.

Markets matter for pastoralists: In Burkina Faso, Mali and Niger pastoralists regularly cover up to 40-60 kilometres in order to go to their nearest or preferred weekly market, where they know the mediator, where they know the prices are higher and where they expect to be able to share information on the conditions of the range. Pastoralists will buy all of their food, clothes, blankets, tobacco, veterinary drugs, feed supplements and salt for the herd, cooking utensils, torches, radios, batteries, beads for making jewellery, collapsible beds, tarpaulins for the camp and sometimes even their herders' sticks, from a market.

For trade

The livestock trade is crucial to the national economies of dryland Africa. In East Africa the intra-regional livestock trade is a major and growing industry, with an annual value in excess of US$65m (exceeding officially recorded live animal exports from the region by a factor of at least 10).[32] The profitability of this trade is dependent on livestock being mobile, particularly across borders. The livestock and the livestock products produced by pastoralists are based considerable distances from the sources of demand, and need to be trekked from dryland zones to border markets. From there they can be trucked on to urban centres. The safety of livestock on the move, and a lack of roads is often a major stumbling block to increased trade.

Livestock sales are also critical for pastoralists themselves who need to sell the milk, dairy products and meat they produce from their animals. Pastoralists cannot live on their animals alone and need cash to buy grain to eat, and for all their other requirements. The distance that pastoralists travel to a local market will depend on their immediate needs, as well as the season. Deciding to sell or consume the day's milk, for example, may depend on their current distance from a market. In pastoralist society women tend to control the sale of dairy products (milk, butter, ghee) and the small stock trade (sheep and goats). Men tend to be involved in the sale of cattle, camels and long distance trading. The sale of hides and skins is linked to the sale of livestock for meat.

Large livestock are usually sold at regional and border markets where the price is better, with herders trekking them for hundreds of kilometres and often into neighbouring countries. Traders with pastoralist backgrounds play a major role in the industry. In West Africa cross-border livestock movement is fairly organized, but in East Africa official customs posts and border crossings are very few, and herders and traders have to divert their animals massive distances in order to use them. As a result most East African cross-border trade remains hidden and unofficial, with governments failing to recognise its importance. In West Africa the official cross-border livestock trade is worth in excess of $150m and the potential for expansion is even greater. A 250% growth in demand for livestock products is anticipated for the Sahel and West Africa region by 2025 due largely to a growing urban population particularly in the coastal countries.[33]

Livestock herders and traders face many challenges and inefficiencies – high marketing transaction costs, the loss of weight by animals on long treks, and the threat of animals being stolen on route due to insecurity in the borderlands. But despite this the livestock trade is a profitable business. Recognising the potential for profit, many civil servants and businessmen are now also buying livestock and employing pastoralists to herd them. This is changing ownership patterns, but it doesn't change the fundamental need for mobility.

Technical notes

Tanzania's nyama choma industry (roast meat businesses) is an important player in the national economy. In Arusha, there are 601 nyama choma outlets, employing 5,600 people, with an estimated 25,000 dependents. An estimated 2.4 jobs are supported for each nyama choma worker – people involved with ancillary services in butchery, middlemen, traders and primary meat production. It is estimated 6.6% of the population of Arusha receive livelihood support through the meat supply chain for nyama choma from livestock reared in the pastoral system. Assuming these data are applicable to the entire country, 2.2 million people obtain some of their income from the pastoral meat supply chain through 15,600 nyama choma businesses with an annual turnover of USD 22million.[34]

The benefits of trade

In many countries of the Sahel livestock's contribution to total agricultural GDP is above 40%.[35] In the majority of cases pastoralists own the livestock that makes up the national herds. These figures are sizable, and yet they still fail to capture the full contribution of pastoral production systems to national economies. National accounts are based only on the value of final products such as meat and hides, and leave out the many social, security and ecological benefits mobile livestock production adds to economies.

Livestock trading is hugely important for food security in dryland areas. Revenues earned from cross-border livestock trading are used primarily to finance imports of grain. The trucks taking the livestock to Nairobi/Mombasa for example will return with cereals and other foodstuffs to sell on the markets in the grain deficient dry pastoral areas, in what is known as back-loading. As well as grain, cross-border livestock trading also provides many people with imported food items that cannot be supplied officially or cheaply by domestic markets. Rice, wheat flour, pasta, vegetable oil, and sugar are some of the major food items imported across the Djibouti and Somaliland borders and sold in many places in eastern Ethiopia. The value and importance of this back trading is such that when cross-border livestock sales are banned governments often discover that they have to bring in food aid.

Trade networks also support a huge number of livelihoods. Middlemen provide a valuable link between pastoralists and buyers. They keep pastoralists up to date with market information, and assure buyers that the pastoralists are the true owners of the livestock. Surrounding each market is a huge network of additional buyers and suppliers - butchers, abattoirs, vets, people supplying forage and water. A large number of government officials are supported too. Herders, traders and wholesalers pay a series of fees and taxes from the border to the terminal market, with the whole activity contributing substantially to employment and public revenues.

Underpinning all the trading benefits is livestock mobility.

"We value the livestock industry as contributing about 12% of [Kenya's] GDP, about 50–60 billion KShs every year, but the government, planners and lawmakers have not been very sensitive to what the livestock industry contributes. But one fact remains: it employs about 7 million people directly, yet the livestock industry is still given a raw deal."

Mohamed Abbas

Executive Director, Kenya Livestock Marketing Council[36]

Technical notes

Modern livestock marketing in eastern Niger[37]

Livestock-export is on the rise in eastern Niger. According to national statistics, Nigeria is absorbing 95% of Niger's animal-production, but in Diffa the demand for camels from North African markets – predominantly Libyan – has grown markedly in recent decades. The camels are convoyed on the hoof from N'Guigmi to Dirkou (540 kilometres to the north), and from there generally are loaded on trucks for the remainder of the trip. The value of this trade is not captured by official statistics.

The modern pastoralist in Diffa region has a cell phone. Ensuring rapid access to commodity prices on the region's markets is critical. It is not only information exchange that has improved. Pastoralists are also investing in motorcycles, rented or purchased, driven by young men in order to move around quickly. The wealthier urban-based families are buying 4-wheel drive vehicles. Well-informed on livestock and grain prices in different regional markets, these pastoralists are able to sell their camels in a northern market (where demand and thus prices are high) and to buy their grains and other provisions more than 100 kilometres away (where prices are lower) in a southern market.

The most savvy, forward-looking of Diffa's pastoralists have honed a highly efficient sales strategy. To sell at a profit the proprietor must weigh different factors so that he is able to present the right type of animal to the right market at the right time period. The effective seller also possesses sufficiently diversified stock—in the case of camels, the north-bound animals are generally young (5 to 7 years old), consisting of males and females suitable for reproductive purposes, and strong enough to make the trans-Saharan trek; south-bound camels are generally aged or for some other reason are undesirable for anything but slaughter. Where group coordination is well organised, extended families include well-informed and commercially astute town-dwellers who assist their rural cousins in obtaining the most advantageous sale conditions possible for their livestock.

The cross-border livestock trade in the Horn of Africa[38]

To supply the Kenyan markets of Nairobi and Mombasa, herders from Somalia trek to the border market at Garissa, a trek that can be 400–600 km and take 9–10 days. From there the cattle are taken onwards by truck. Research initiated in 1998 made the first systematic effort to document the extent and nature of the cross-border trade in the Horn of Africa. Based on interviews with 84 traders it was possible to calculate the costs and returns to traders at different levels in the market chain, and to determine where the risks are. The highest risks in the cattle trade were shown to be the initial purchase and transport of the animal.

The herder who sells his cow at Afmadow market (the first bush market) receives US$128. The trader who then moves the cow to Garissa is able to sell it for $176, but after accounting for costs makes only $20 or 15% profit. On this journey the risk of loss of the cow through theft and drought is calculated to be $8 (or 6% of its value). The second trader who moves the cow from Garissa to Nairobi is able to sell it for $233, but again after costs his profit is only 16%, with at least $20 (or 12% of the value) having been spent on transport.

The original herder's share of the final price (Nairobi sale price), in the Somalia cross-border trade it is about 46 percent, or less than half of the final price in the market chain. Yet without this commerce the prices that herders would receive for their commodities would be considerably lower. Despite the seemingly small returns the cross-border trade in the Horn of Africa is extremely profitable, with a huge number of people benefiting from the supply chain.

Elema Khana, 47 walking home during the drought in 2008. Before the drought she had 15 cattle at home. Ten of those have died. She is returning from visiting a further two cows she has with a relative two full days (ie 48 hours) walk away. On the way back home she has checked on two of her cattle that she had taken to a Save the Children feeding centre here in Bor Bor. Elema lives two hours away from Bor Bor in Safar village.

There is very little grass around. What Elema carries on her back is what she collected piece by piece walking for two days and two nights. She is bringing the grass home for the three cows at home that are too weak to stand.

For survival

During periods of drought or disaster mobility becomes absolutely essential for pastoralists, when they are forced to move in order to survive. Drought is a normal occurrence in drylands, and is a key reason why mobile livestock keeping, rather than crops, is the production strategy of choice. When rains fail in one area completely, livestock need to be moved to find water and grazing elsewhere, often across borders. The movement may be short or long depending on where the alternative grazing is, and may be temporary or permanent depending on the period of the drought.

During drought large numbers of animals will die. Unable to save all their animals, pastoralists focus instead on saving a core stock of breeding animals that together will be capable of reconstituting the herd after a drought. In the absence of any alternative 'insurance' the nucleus of their breeding herd is their main capital base. In times of drought pastoralists have to make harsh choices so that they can recover quickly. It is not uncommon to see pastoralists take their children out of school, or not eat themselves, in order to buy fodder to save the breeding nucleus. The more efficient way of conserving it however is to move it to another area away from drought.

In Africa drought is often closely, and very visibly, associated with famine. In many places, where long distance opportunistic movement is no longer possible, droughts cause significant localized environmental degradation with large numbers of animals converging on certain pastures, especially round wells. Weakened animals are more susceptible to disease, and more deaths occur. Well meaning efforts to deliver relief supplies to the affected pastoralists (food aid), not only fail to help pastoralists preserve their core breeding herd, but often have the additional effect of keeping populations in place who might otherwise have moved. The combined effect is the excessive loss of animals and livelihoods and a breakdown of the traditional coping strategy – mobility.

Pastoralists exist along a gradient of willingness and capacity to move, with those that shift rapidly in response to a coming drought being more likely to conserve their herds.[39] When the disaster facing pastoralists is due to conflict they also have to move at considerable speed. The capacity to flee requires an effective combination of open access across the rangeland, wide social networks and disciplined livestock capable of rapidly covering long distances without falling prey to exhaustion or thieves.

"If the market is facilitated and our lifestyle is supported we don't need famine relief. We don't need anyone supporting us. In fact we would be paying taxes and supporting the government."

Mogolle Haibor Rendille[40]

Technical notes

Drought

The impact of the 1984 drought in Niger[41]

Research carried out in 1987 in eastern Niger following the catastrophic drought of 1984, contrasted the herd structures of 350 Fulani families. It found that during the 1984 drought those that had moved quickly with their animals to Nigeria, and even Cameroon, not only had on average much larger herd sizes, but also had more viable herd structures. Two years after the drought Fulani families who had not managed to move long distances during the drought had on average between two and seven cattle per family, compared to the more highly mobile WoDaaBe who had on average 44 cattle per family.

Equally importantly, the WoDaaBe herd structures were also better balanced with a more even spread of male and female animals of different ages. This allowed them to sell (to buy food) just a few adult male cattle after the drought when prices were high, thereby preserving their female breeding stock. The Fulani were unable to use this strategy due to imbalanced herd structures dominated by females.

"Droughts don't stop and the world has existed for a long time: droughts will continue…"

Ardo Manzo

The elderly leader of the Weltouma Fulani in eastern Niger who has lived through the droughts of 1957, 1973–4, 1984–5 and 2005.[42]

Famine

Owners share their rations with livestock, Chad.[43]

Some of the refugees from Darfur who managed to reach camps in eastern Chad brought their livestock with them but found little water and pasture available. In interviews, some refugees explained that they were using some of the food ration they received in order to keep their animals alive as a vital source of milk and cash.

SPANA (2007)

Press release, Society for the Protection of Animals Abroad, London.

Conflict

Escape mobility among the Borana[44]

Twenty days ago we had a fight with the Gabra. We knew that there would then be a revenge attack on us and that we must move. We checked which luggage it was essential to take, and as we had no time to rent pack animals [camels], we left the rest. We also decided which of the cows could not move fast – those lactating or too old – and left them also. The movement was very fast, travelling in one day and one night a distance that would normally take three days. We left the old cows and the small lambs for the wild animals. After some days we went back to collect any luggage or animals that hadn't been taken. Because it was an 'escape move' the people in the new area have a duty to do 'an emergency programme' for us. There is a religious and moral responsibility to help. If you don't help someone [in this situation] you are cursed. The problem with escape movement is never at the receiving end. If you refuse to help someone you can be put under sanction and the message sent out to other areas so they won't help you [in the future].

Bor bor Bule Elder, Ethiopia


BUTCHERY

Mobility is a necessity for production, trade and survival

Africa along with the rest of the developing world now demands more and better food. The consumption of meat and dairy products is escalating in urban centres and mega cities, fuelled by rising incomes. Africa's pastoralists, whose livestock graze solely on natural pastures without the benefits of subsidies, are meeting this demand. But because the nutritional quality of grazing in the drylands is highly variable and unpredictable, livestock have to be mobile. By being mobile livestock feed better, produce more meat and milk, are healthier and have more calves than sedentary animals.

To meet the demands of cities in Africa, the Middle East and elsewhere, pastoralists have to trade their livestock products and trade also requires mobility. The huge and often hidden livestock trade provides benefits for many additional livelihoods and is extremely important for food security.

Mobility is also absolutely essential during times of crisis, particularly drought and conflict. Drought is a natural occurrence in drylands and as long as they can move pastoralists will be in a better position to survive it.

"Pastoralists contribute significantly to domestic and export livestock markets. Cross-border livestock trade is critical to regional economies as well as important for the national economies of different countries, and ensures food security and poverty reduction to the local community."

Cris Muyunda

Agricultural Advisor, COMESA Secretariat

Part 2

The obstacles to mobility

"There is a proverb in our language. Life is in mobility. I want people to understand one thing, if the animals don't move, that's the end of the animals."

Nura Dida Borana[45]

Drought exacerbating conflict among pastoralists

Kenya

ISIOLO, 2 February 2009 (IRIN). Clashes over water and pasture have significantly increased in the drought-affected pastoralist areas of north-eastern Kenya, officials said.

"The conflicts surround access to water and pasture," Titus Mung'ou, acting Kenya Red Cross Society (KRCS) communications manager, told IRIN. Dozens of people, he said, had died in clashes over water in Mandera since September 2008. The traditional conflict resolution mechanisms were failing to rein in warring communities as competition for resources intensified.

Clashes blamed on militias

Southern Kordofan

JUBA, 16 January 2009 (IRIN). Clashes this week in Southern Kordofan, reportedly killing at least 16 people, followed attacks by militias on joint armed units deployed in accordance with the North-South peace agreement, a southern Sudanese military spokesman said. Without specifying the armed militias, Parnyang denied they were mere nomads. "We call them militias because these people are well armed." he added. Southern Kordofan is mainly occupied by the Nuba, various central highland communities and pastoralist Baggara Arabs comprising the Misseriya and Hawazma.

Widespread insecurity, grievances about lack of access to services and employment, and the blockage of pastoralist movement towards the South had led a number of Misseriya youth to resort to armed violence.

Violence between nomads and farmers kills fifteen

Burkina Faso

10 June 2008 (IRIN). Clashes between nomads and farmers in Poni and Bougouriba provinces in southwestern Burkina Faso have left fifteen dead since 25 May. The clashes started in the village of Perkoura in Poni province when nomadic herders brought their animals to graze on farmers' land and spread across the region, reaching Tinakoura last week. In August 2007 a similar clash at Gogo, a village in Zoumweogo province left four dead, 70 wounded, and displaced 3,000 others.

Farms that supply Europe accused of stealing from depleted river

Kenya

The Guardian 21 October 2006. The great river Ngiro was just ankle deep yesterday as nomadic farmers walked through waters which have become the focus of conflict. Kenya's second largest river is a life-sustaining resource for these farmers, but it also sustains big business for flower farms supplying UK supermarkets. The greatest impact is being felt on the nomadic pastoralists, says John Ole Tingoi of Hope, a Maasai human rights group. "The flower farms have taken over land that the pastoralists used and there is now less water."

People flock to see shepherd protest

Spain

The Guardian, Monday 10 September 2007. Spanish farmers herded around 1,000 sheep and other farm animals through the city centre yesterday. Alongside farmers from across Spain shepherds from 40 countries, including Mongolia, India, Kenya and Mali, took part in the event. They came with a universal message – their land and livelihoods are in the hands of governments and developers intent on modernisation at any cost. The farmers argue that as populations become more sedentary and pastoral farming dies out, so does the land, causing desertification and dwindling food supplies.

The obstacles to mobility

Pastoralists are regularly in the news. However, a careful look at these incidents shows the problem is often more complex than initially appears and that in many cases it is obstacles to the safe and free movement of livestock that is the starting point.

Incidents of crop damage by pastoral animals are escalating into violent conflicts between herders and farmers. Confrontations over access to water are becoming more frequent and turning bloody. Pastoralists are clashing with private owners or government officers over access to conservation areas. Border skirmishes are intensifying in frequency and ferocity.

Instead of being mobile and productive, pastoralists are increasingly constrained. Farms frequently block access to their grazing areas; national border controls hinder their trade patterns; and the areas they traditionally preserve for times of drought are now national parks or agricultural schemes. In other areas national government policies actively encourage pastoralists to settle and be 'modern'. These policies are often driven by unfounded perceptions that pastoralism is economically inefficient and environmentally destructive. Alternative land uses, including large-scale agriculture and national parks, are believed to bring in more national revenues and to have less environmental impact. But this is not evidence based.

More and more prime grazing land is falling under the plough due to rising population levels and declining crop yields combined with a policy environment favouring farming over pastoralism. The loss of rich pastures is restricting mobility and making pastoralism less viable thus pushing poorer pastoral communities to raise crops to feed their families which only further undermines the wider pastoral system.

1 Loss of grazing to agriculture and conservation

Farming is one of the biggest challenges to pastoral mobility. The slow but inexorable advance of family farms, combined in places with the establishment of large-scale commercial farming, is swallowing up vast areas of grazing lands. The United Nations Environment Programme (UNEP) has called for a moratorium on the expansion of large mechanised farms in Sudan's central semi-arid regions, sounding a warning that it was a 'future flashpoint' for conflict between farmers and pastoralists.

As rains become increasingly erratic through climate change, subsistence farmers across the Sahel experiment with different techniques to ensure a minimum harvest. To hedge their bets against a bad rainy season farmers scatter fields over a wide area, in the hope that some will produce a harvest. This fragments the open grazing land and makes livestock mobility a much harder task. Animals now have to be supervised at all times to prevent them from entering fields and destroying the crops. Sowing late-maturing varieties of crops and flood-retreat sorghum in low-lying areas or along seasonal riverbeds also seriously delays and disrupts the movement of herds, who now cannot move until they are harvested.

Particularly in East Africa, the loss of land to national parks, game reserves, hunting blocks and conservation severely restricts pastoral mobility, as much of this land either consists of critical dry or wet season grazing or cuts across seasonal migration routes. The creation of Uganda's Kidepo Valley National Park in the 1980s, on the border with Sudan and Kenya, severely restricts the movement of the Toposa from Southern Sudan to dry season grazing in Uganda's Kaabong district. Within Kaabong District, Dodoth pastoralists have also lost critical wet season grazing in the Timu forest when it was declared a Forest Reserve in 2000.[46] Yet a lot of evidence suggests that pastoralism is far more compatible with wildlife than other forms of land use, particularly crop farming.[47]

2 Fencing off the rangeland

Both non-pastoralists and pastoralists are enclosing the rangelands. From the Boran in southern Ethiopia, to the Fulani in Niger and Burkina Faso, and Somali groups in Somaliland, pastoral families are fencing grazing land. Poverty, due to shrinking herd sizes, is driving thousands of pastoral families throughout East and West Africa to fence off the rangelands to practice rain-fed agriculture and, where water is available, dry season gardening. In Somaliland it was a common choice of returnees after the war. Others are enclosing land from a fear of losing out as more and more land is taken, or are seeking to protect the rangeland from farming or the cutting of trees for charcoal.

Charcoal production is a significant driver of rangeland enclosure as is the growing trend of urban-based business interests investing in livestock for commercial reasons. In Niger, Nigerian, Arab and Libyan businessmen invest in thousands of head of livestock for relatively short-term gains.

It is not known how much former pastoralist grazing land has been lost overall, but much of it is in the form of wheat farms, sugar farms, irrigated tobacco, cotton and sorghum schemes, flower and vegetable farms, game and cattle ranches, national parks and forest reserves.

And it is not just the sheer extent of the lost land that is so important; it is the nature of that lost land that is so critical. Much of the alienation concerns strategic areas such as wetlands or riverine forests. Here, because of higher and more stable moisture, pastures of higher nutritional content can be found, particularly in the dry season when the surrounding range is dry and poor.

These areas represent 'islands' of high quality pasture where livestock feed until the arrival of new fresh grass with the next rainy season. The loss of these areas undermines the profitability and resilience of the whole pastoral system.

Little research has been carried out to calculate the economic and environmental impacts the loss of these areas have had on national economies, and whether the expected benefits from the new land use systems are greater than the benefits lost as a result of displacing pastoralism.

"In the past, there were many places where you could take your animals without going so far away. There were fewer people so there was a lot of space. The other problem today is that some people are fencing off land so there is less space to roam with animals. People are fencing off land because they want to burn it and use it for charcoal burning."[48]

Land loss in numbers

- **In Ethiopia** the Afar have lost over 408,000 hectares of prime dry season grazing along the Awash river to irrigated farming and the Awash National Park, whilst in the Somali Region over 417,000 hectares of prime grazing land have been converted to rain-fed and irrigated agriculture in the last 60 years.
- **In Senegal** thousands of hectares of riverside land were converted to commercial irrigated farming 1950s, seriously disrupting the seasonal movements of livestock and denying them access to highly nutritious dry season grazing.
- **In Mali** the state run cotton company (CMDT) expanded into the region of Kita in 1991. Thousands of agricultural migrants flocked to the area occupying former pastoral lands and investing their profits in livestock that now compete with pastoral owned animals for access to pasture and water.
- **In Chad** it is estimated that in 20 to 30 years about 2 million hectares, 5% of the total land area, will have been lost to pastoralism because of agricultural expansion.
- **In Tanzania** over 30% of land is classified as national parks, game reserves, hunting blocks, protected forests from which pastoralists are either excluded or have restricted rights of access.

3 Encroachment onto cattle corridors

Cattle corridors are essential for maintaining effective and orderly mobility when livestock need to move through other land. Historically pastoralists used stock routes or livestock corridors to facilitate access to markets and the seasonal movement of their animals between dry and wet season grazing. The dina, the theological state ruled by Cheikhou Amadou in the 19th century in the central Niger delta of Mali, established one of the best known and most sophisticated networks of stock routes allowing the peaceful movement of animals in and out of the delta according to seasons. In Chad and Sudan stock routes referred to as muraahil (or murhal in the singular), cover hundreds and hundreds of kilometres, allowing animals to be driven from the fringes of the Sahara desert to the deep south, crossing international borders into Cameroon and the Central African Republic. The Wadid Howar to Dar Ta'isha route, for example, is 673 kilometres.

Corridors always used to be well managed by customary institutions, but over the last 50 years they have fallen into disrepair, or been encroached upon. This causes huge problems as herders seek alternative routes – often through fields – causing conflict. In recent years countries that have recognised the importance of livestock corridors have begun passing legislation to protect them, and so regulate livestock mobility.

The closing of corridors is not just a problem being faced in Africa. In Madrid an annual protest calls for the protection of Spain's traditional grazing routes. Spanish law supposedly

protects thousands of miles of ancient paths, including some that traverse the capital, so farmers can move their livestock from summer to winter grazing land. But, just as the coastline has been devoured by property speculation, so have these grazing routes.

"Paths do not belong to us anymore. They have become risky, because at any moment herders can find themselves hemmed in, without being able to move, because all the land is privatised."

Bouréima Dodo Executive-Secretary of Billital Maroobe in Niger[49]

Animals waiting to drink at the borehole in Lehey, Somali Region, Ethiopia. Thousands of livestock come to the borehole every day. The Aba Hirega is responsible for the timetable which allocates different days for different villages – olas – to bring their livestock to drink. He also determines whose turn it is to take their queuing animals to the trough. Because so many animals use the borehole during the dry season, local elders have set up a restricted area that extends in a 12 km radius around the town. Only during the wet season, when ground water is more plentiful and need for the borehole is less, are pastoralists and their animals allowed to be inside the restricted area.

4 Poor water point management

Across pastoral Africa the development of inappropriate water points creates very visible flash points for conflict, and often constrains mobility. In pastoral areas access to water is a critical factor, particularly in the dry season. Animals have to be watered on a regular basis and so if the distance between water points is too far, or access to the water is too difficult, pastoralists cannot take the risk of moving to alternative grazing areas constraining livestock movements.

Water point development in dryland Africa has often been driven by a well-meaning desire to increase the area available for dry season grazing. But developers have frequently failed to recognise that areas used as wet season grazing areas do not need permanent water points. Developers' water points are also offered as public access, either for free or for some form of payment. This severely disrupts the traditional pastoralist systems, which strongly control access to water and consequently the pasture that surrounds it. Providing uncontrolled public access to water results in large concentrations of livestock, the settlement of people around water points and environmental degradation. Somali pastoralists in Wajir District in northern Kenya, claim they lost of 75% of the most palatable pastures as a result of the proliferation of mechanised boreholes. Milk yields in their community declined between 66% and 75% since the 1940s.[50]

In other areas the privatisation of water points, and surrounding pastures, also severely limits pastoral mobility and fuels conflict. In Mali and Niger wealthy livestock traders, customary chiefs and well-placed civil servants are increasingly investing in water development as a way of controlling the surrounding pastures thereby ensuring priority, and in many cases exclusive access, for their own livestock.

Technical notes

Traditional water management in Ethiopia

Pastoralists traditionally control stocking rates by controlling the number of animals that can drink from a permanent dry season water point. This water management ensures sustainable use of the rangeland in dryland areas.

Among the Boran in southern Ethiopia, the Abba Herrega, an elected water manager, controls the clan's traditional deep wells that provide permanent water in the dry season. The Abba Herrega ensures that strict watering regimes are followed. The livestock of the well's owner are watered first, followed by the most senior member of the clan responsible for traditional administrative issues, and then others according to the membership of the given Borana clan. Setting the watering rotation is the responsibility of the well council. All those who graze in the same grazing circumference as the well have access rights to the water point. People who come from other grazing areas are not denied water, but they will need to negotiate the conditions of access.

5 Borders and boundaries

National borders are a huge obstacle to pastoralist mobility and effective trading, and are often a source of conflict. Official concern about cross-border pastoral mobility places a lot of emphasis on security, theft and the spread of epidemics, and attempts to regulate cross-border mobility tends to focus more on checking arms traffic than on enhancing pastoral production systems. Many of Africa's national borders were arbitrarily created under colonialisation and took no account of existing populations and their needs. At the Berlin Conference in 1885 the European powers split pastoral communities apart, dividing their seasonal grazing lands, and cutting through trading routes. This weakened pastoralists politically and economically. Pastoral groups that try to maintain their mobility, to access pastures or visit members of their family or clan across the border, are seen as threats to political or military security.

National borders are not the only problem. In-country administrative boundaries, such as districts, can also be a hindrance. Newly established local government authorities in Mali and Niger – created through decentralisation – are heavily taxing transhumant pastoralists that pass through their territories as a way of raising funds. In this way, local government authorities are using non-resident, and thus non-voting, transhumant pastoralists to subsidise the costs of local development among their constituents. When poorly applied, village-based land use planning approaches, such as that implemented in Tanzania through the Village Land Act, can also create artificial borders. When the planning process is limited to the area of land under village control it fails to accommodate the fact that pastoralists need to move with their livestock to and from different ecological zones in different seasons, if their animals are to remain productive and healthy. The danger of village land use planning is that it boxes pastoralists into 'islands'. This was a major problem in Burkina Faso when it implemented its gestion de terroir approach in the 1980s.

6 Conflict

Conflicts are also a major block to mobility, altering grazing patterns, reducing productivity and increasing environmental degradation. The enduring conflicts in Chad and Sudan mean pastoralists move together in larger groups for security but have subsequently found it more difficult to access high quality pasture and water. Sudan's conflict with Egypt also reduced access to key grazing areas for Beja pastoralists in Red Sea state. Where grazing areas cannot be accessed the underutilisation of pasture leads to bush encroachment. Where pastoralists become squeezed into smaller grazing areas, competition for a dwindling resource increases and conflict becomes inevitable and self-perpetuating.

In the Karamoja region of Uganda armed violence is now endemic. Most reports explain the violence as traditional cattle raiding coupled with recent widespread access to semi-automatic weapons, but the violence is strongly rooted in diminished access to rangelands.[51] The Karimojong have lost 40 per cent of their grazing land since colonial times, forcing

them to change their movements and graze their animals in areas where they do not have historically developed access rights. New tensions have arisen with other groups and the traditional dispute mediation mechanisms (controls on violence previously exercised by clan elders) have broken down with warriors now distanced from their home communities. Military commanders have also become sandwiched between groups, demanding permission for cattle to be moved between new, artificially demarcated, districts.

7 Social change

Pastoral mobility is also being affected by changing aspirations and economic need. Rural communities are altering with an increasing number of farmers owning livestock themselves, whilst an increasing number of pastoralists are to turning to agriculture or trade after losing their animals and being unable to reconstitute a herd.

Pastoralists have always had reciprocal arrangements with farmers to obtain access to crop residues and to sell their dairy products, with farmers relying on pastoralists to buy their grain and provide manure. The new trend is for farmers themselves to invest in livestock. In Mali, for example Dogon and Soniké 'farmers' now have large herds and are learning the skills of animal husbandry with the help of paid Fulani herders. In many areas local farmers now carefully guard crop residues for their own animals and have less need for manure. A further problem is that as many of these farmers' herds are relatively sedentary, local pastures are being continuously grazed throughout the year. With reduced exchanges between groups, there is less dialogue and negotiation and thus less understanding and compromise. This increases mistrust and allows minor clashes to escalate in violence.

Changing personal aspirations are also affecting mobility and creating a trend for more sedentary livelihoods. Women in Laaye, Somaliland, say that girls are now more reluctant to repeat the hard lives of their mothers and grandmothers and prefer a life in town. For younger men, activities such as charcoal burning provide a more immediate source of income than livestock.[52]

The Mohamid Arabs in eastern Niger still see a future in a mobile way of life, and hope that their children will follow it too, but they recognise that some of the younger generation have other ambitions such as setting up a business in town trading. Some youth want an easier life: to have access to running water, a nearby clinic and good mobile phone networks. But it is also because they no longer want to be under the control of their parents. Young women generally don't dream of moving to town. Rather, their ideal is to fulfil their role as wives and mothers in a pastoral setting. The older generation are pragmatic. They know that while some of their children will follow their lives and gain fulfilment and freedom from living a mobile lifestyle in the bush, others will see their future and freedom in town.[53]

Obstacles to mobility reduce productivity

When livestock are unable to access grazing or cross borders, the whole pastoral system becomes less efficient and the economy suffers. When livestock are forced to remain in one place, pressure on natural resources increases, particularly around water points. Faced with the threat of destitution, pastoralists make every effort to remain mobile, and this can result in conflict if their way is blocked.

Across the drylands inappropriate policies are blocking livestock mobility. Enduring perceptions of pastoralism as an outdated, economically inefficient and environmentally destructive land use system continue to drive rangeland and livestock policy in much of Africa. Yet, none of these perceptions are evidence-based, informed by past failure or reflect current scientific knowledge of the dynamics in dry land environments and livelihood systems. Nor are they designed with the participation of pastoral communities. These persistent beliefs must be left behind in the 20th century.

"Mobility is the backbone of pastoralism. Pastoral mobility is now being undermined because many of the decision makers and policy makers from governments, donors, international and local agencies do not understand the importance of mobility in the pastoral livelihoods. They design, implement or fund 'projects,' that do not take into consideration the importance of mobility in pastoral livelihoods. While 'development' is necessary and important in pastoral areas, such developments should not undermine or destroy the pastoral livelihoods rather it should be planned and implemented in a context that is desirable and suitable to pastoral livelihoods."

Mohamed Abdinoor

Technical Advisor, Pastoral and Livestock Programs

USAID Ethiopia.

Part 3

The opportunities for mobility

"Pastoralists are like guinea fowl: if you surround them they all fly off. The challenge is to find ways of supporting them whilst allowing them to keep moving."

Nemaoua Banaon

Director of the Centre d'Etudes, de Formation et de Réalisations Agro-Pastorale, Burkina Faso[54]

Opportunities for mobility

In many parts of dryland Africa national governments are beginning to value pastoralism and the importance of mobility for productivity. Innovative policies now recognise and reflect pastoralism's crucial role within local, national and regional economies, and new activities put these policies into practice.

Cross border mobility is now becoming easier with several international institutions providing guidance for national governments. Policy and legislative changes are now formalising the rights of pastoralists and levelling the playing field. Pastoralists themselves are finding new ways to keep mobile, adopting new technologies and adapting to social change. Physical infrastructure (livestock corridors and water points) helps reinforce the right of movement, whilst civic and legal training for pastoralists and non-pastoralists brings new understanding. Experiments with private sector finance and asset insurance identify realistic future options.

As more and more initiatives achieve success it is possible to identify some of the key stages and principles in securing mobility. Taking sufficient time, building consensus and retaining flexibility is crucial.


Communauté Economique
Des Etats de l'Afrique de l'Ouest
Economic Community
of West African States
PAYS
COUNTRY
CERTIFICAT INTERNATIONAL DE TRANSHUMANCE DE LA CEDEAO
ECOWAS INTERNATIONAL TRANSHUMANCE CERTIFICATE
DECISION DES CHEFS D'ETAT ET DE GOUVERNEMENT NO. A/DEC.5/10/98 DU 31 OCT. 1998
DECISION OF HEADS OF STATE AND GOVERNMENT NO. A/DEC.5/10/98 OF 31 OCT. 1998
CODE DES NATIONS UNIES POUR LES PAYS
UNITED NATIONS CODE FOR THE COUNTRIES
PAYS/COUNTRIES
CODE
SECRETARIAT EXECUTIF CEDEAO
ECOWAS EXECUTIVE SECRETARIAT

Progressive regional integration

Recognising that pastoralism frequently needs to cross international borders, and that regional trade needs support, several international institutions are formalising cross-border pastoral mobility. This provides nation states with a benchmark to design their own policy and legislation. The Economic Community of West African States (ECOWAS) has led the way, providing an institutional framework to facilitate cross-border livestock mobility.

The ECOWAS International Transhumance Certificate (ITC) facilitates cross-border livestock mobility between its fifteen member states in West Africa. Cross-border movement is authorised by granting a certificate that controls the departure of pastoralists from their home countries, assures the health of local herds, and informs the populations of 'welcoming areas' of pastoralists' arrival in a timely manner. In theory herders can obtain the certificates from their local authorities without great difficulty. The challenge is to make this work in practice.

East Africa's COMESA (Common Market for East and Southern Africa) now has a livestock trade initiative aimed at addressing the constraints to development in the livestock sector, and improving livestock trade in its region. There are plans to introduce a livestock 'green card' to ease cross-border movement of livestock, modeled on the ECOWAS cattle certificate.

"The wind is now blowing towards the pastoralists, but it has not yet rained."[55]

The African Union is developing a Pastoral Policy Framework for Africa. It is supported by a Specialist Task Force comprised of representatives of pastoral civil society and pastoral policy actors from different regions of Africa. The task force is hosting regional and national consultations to help design the policy framework. The Inter-Governmental Authority on Development (IGAD) also has a Livestock Policy Initiative that is addressing the policy and institutional changes needed for the poor to benefit from enhanced livestock production. It has established in country 'policy hubs' to coordinate national level processes.

Technical notes

The pastoral code of Mauritania

"… Pastoral mobility is protected under all circumstances and can only be limited temporarily and for reasons of safety of animals and crops, and this in accordance with the provision of the law." (Article 10).

Tanzanian National Strategy for Growth and Reduction of Poverty 2005

"Achievement of sustainable and broad-based growth will incorporate the following strategic actions: Promoting efficient utilization of rangeland, empowering pastoralists to improve livestock productivity through improved access to veterinary services, reliable water supply, recognizing pastoralism as sustainable livelihood …"

The Malian Pastoral Charter

"Throughout the country, livestock may be moved for sedentary livestock keeping, transhumant livestock keeping or nomadic livestock keeping". (Art 14). "Livestock mobility takes place on livestock corridors. These are local corridors and transhumant corridors." (Art 15). "Local government is responsible for managing livestock corridors with the help of pastoral organisations and in collaboration with all concerned stakeholders."(Art 16). "Any form of occupation, blockage or use of a livestock corridor or any infringement whatsoever is strictly forbidden. Pastoralists and their organizations should monitor that those areas reserved as livestock corridors are used for their intended purpose and contribute to their maintenance in collaboration with the local government authority." (Article 17).

Constitution of Ethiopia

"Ethiopian pastoralists have the right to free land for grazing and cultivation, as well as the right not to be displaced from their own land. The implementation shall be specified by law." (Article 40 (5)).

Niger's pastoral law

"… mobility is a fundamental right of herders, nomadic pastoralists and transhumants, a right recognised and guaranteed by the State and local government authorities…Mobility is a rational and sustainable manner in which to use pastoral resources and can not be prevented except on a temporary basis and for reasons threatening the security of people, animals, forests and cultivation in conditions as described by law." (Article 3).

National policy reform

Over the past 15 years the pace of policy reform in West Africa has been considerable. The governments of Burkina Faso, Guinea, Mali, Mauritania and Niger have all passed specific pastoral laws to protect pastoral land and to facilitate livestock mobility both within countries and across international borders. The Pastoral Charter of Mali devotes a whole chapter to the right of pastoral communities to move with their animals both within and between countries. In addition, Mali's agricultural orientation law promotes the modernisation of the livestock sector whilst recognising pastoralism, and the need to facilitate livestock mobility within and between countries. In 2003 Burkina Faso and Niger signed an agreement to establish a commission to ensure the smooth and conflict free movement of livestock between their respective countries.

In eastern Africa too there is some progress. The Poverty Reduction Strategies of Ethiopia, Kenya, Uganda and Tanzania all recognise pastoralism as a livelihood system deserving of support. The Constitution of the Federal Democratic Republic of Ethiopia guarantees the communal land holding and collective rights of pastoralists, while that of Uganda recognizes customary land tenure and provides for community land associations to be registered as landholders. East Africa has also established influential pastoral parliamentary groups that offer oversight of government policy. Pastoralists Day in Ethiopia and Pastoralists Week in Kenya are now regular features on these countries' political calendars.

Kenya has created a new Ministry for the Development of Northern Kenya and other Arid Lands intent on supporting pastoralism and mobile livestock keeping. Tanzania has created a new Ministry of Livestock Development and Fisheries with a department for pastoral systems development.

Local government reforms through decentralisation or regionalisation programmes in East and West Africa have introduced a radical new agenda involving civil society in areas traditionally controlled by government. The devolution of authority for the management of local affairs including land and the provision of key services such as water, health and education in Mali, Niger, Sudan, Ethiopia, Tanzania and Burkina Faso offer hope for the more active involvement of pastoral communities in the implementation of policies that affect their lives in many countries. These reforms show initial acceptance at policy level, and in some cases legislation, of pastoralism as a valuable and essential livelihood. This recognition places pastoralist production on a more level playing field with other land use demands. It also vindicates pastoral indigenous knowledge and practice, as well as the scientific research that confirms the critical role of livestock mobility in maximizing productivity and preserving the environment from degradation.

"A policy framework by definition cannot be enforced. It is a value system to inform national processes."

Michael Ochieng Odhiambo

Executive Director of Resources Conflict Institute, Kenya.[56]

Mobility innovations

Pastoralists are very good at embracing change and adopting technological advances. Although the governments of the drylands may be undertaking policy and legislative reform at varying speeds, pastoralists are constantly innovating: adapting new strategies and approaches to overcome obstacles and keep on the move. Mobile phones are now everywhere. Whether Fulani, Maasai, Tuareg, Arab or Turkana, pastoralists use their phones to check on pasture and water conditions, to compare market prices and to minimise livestock theft from bandits.

Tirina ole Kailonko is a Maasai herder who lives in Mbirikani in Kajiado district of southern Kenya. When Tirina wants to sell his cows he has a choice of 3 markets: Emali which is 50 km away, Mombasa 350 km away and Nairobi 150 km away. With improvements in communication infrastructure, Tirina no longer relies on friends and middlemen. He uses his cellphone to speak to his contacts or queries the national livestock marketing information system for prices of cattle in the markets. Based on the cost of transporting the animals by truck and the time it takes to get his cattle to the market, he is then able to make a decision on which market to deliver his load of animals. According to Tirina, prior knowledge of the expected average prices in different markets has improved his bargaining power. He has gradually become independent of middlemen in the livestock marketing chain, and has improved his income.[57]

In West Africa the Fulani and WoDaaBe of Niger are increasingly WWW-aware. These groups develop their own websites to reach out to a wider public, to defend their way of life and to explain the key role of mobility. The WoDaaBe have adapted their traditional gathering of clans and created an internationally renowned General Assembly. Donors, NGOs and tourists are all invited to attend what has become a cultural festival, further raising the political visibility of these emerging new forms of social organisation.
See: http://www.djingo.net/en/index.htm

Inter-ethnic marriages within and between pastoral and other communities are also much more prevalent today than forty years ago as pastoralists seek new ways to secure access to resources. Inter-ethnic grazing is another new approach, with Toubou and Arab pastoralists in Chad and Niger now paying Fulani or Tuareg herders to manage their animals as a way of pasturing their animals in these groups' territories.

These innovations are assisted by new thinking amongst development agencies who, after decades of development failure, now facilitate more holistic interventions in pastoral areas. Projects that focused solely on water development, animal health or range management have been replaced with concern about social, institutional and governance issues. Projects now strengthen the capacity of customary leaders and experiment with ways to protect key pastoral assets in the event of drought or disease. The importance of markets has also finally been recognised with innovations ranging from pastoral credit provision to drought insurance.

"HELLO, NAIROBI? YES, THIS IS AHMED, LISTEN, I CAN'T TALK FOR LONG RIGHT NOW – TELL AMIN NOT TO BRING THE CASH! NO, NOT TO BRING IT – THERE ARE BANDITS... YES, BANDITS! TELL HIM TO MAKE THE DEAL WITH THE DAHABSHIL STORES, LIKE LAST TIME!"

Technical notes

IRAM in Niger[58]

Building social consensus for inclusive and reciprocal management of pastoral resources in Niger (pastoral water programmes funded by French Development Agency, AFD).

Following initial contacts with local government authorities and other development organisations in the area, the following steps were taken:

1 **Present and validate the project's objectives** and participatory and iterative approach. Research is conducted to better understand how the local actors in each commune perceive the challenges to livestock mobility and what they consider to be the main priorities for action.

2 **Meeting those transhumant groups** that habitually pass through the areas. This is critical for understanding how their system works, how it is changing, what are the problems and their priorities for addressing them.

3 **A series of commune-level meetings** to identify a preliminary list of water points, livestock corridors and pastoral grazing areas to be developed or rehabilitated, and to discuss the principles underpinning their future management in line with provisions within existing laws (Rural Code, Pastoral Law and decentralisation) and with the transhumance systems.

4 **A series of inter-commune meetings** where the results of deliberations are then discussed at district level. These meetings are essential to ensure livestock corridors and watering and resting points are rationally located in relation to each other at the higher district and inter-district levels from an ecological perspective and to ensure animals can move smoothly across the country. Principles for the equitable management of these resources are also discussed to ensure all local authorities apply the same rules and conditions.

5 **Two feasibility studies** are now carried out. A technical study to establish the practicability, cost effectiveness and environmental feasibility of rehabilitating or developing the proposed water points, and a social study to determine the likely land tenure issues to arise and the likelihood or not of resident communities accepting the livestock corridors across their land, requiring a long negotiation process.

6 **Results of the studies are then presented** and discussed in each commune with the participation of representatives of transhumant pastoralists. At these meetings, final decisions on the location of livestock corridors and watering and resting points are made. Decisions are communicated to higher-level government authorities.

7 **Works start following a tendering process** and local management structures and rules for the equitable use and maintenance of the infrastructure are established.

8 **Facilitate the creation of local water and land commissions** at the level of the Communes as provided by the Rural Code. Local management rules are agreed to ensure equitable use and maintenance of water points.
These commissions provide oversight, ensure local agreements are respected and monitor the good use and management of the infrastructure.

Re-opening or creating livestock corridors

Multiple projects in Burkina Faso, Mali, Niger, Chad and Sudan are securing livestock mobility and enhancing production by re-opening traditional transhumance routes or demarcating new ones. These initiatives work within the logic of the pastoral system, incorporating the different reasons that underpin mobility as well as the different itineraries the livestock may follow. Livestock routes will typically enable the movement of livestock between and within different ecological zones, according to season. For example, corridors will link the highly nutritious rainy season pastures of the northern Sahel with the dry season grazing found further south in the farming belt.

These new generation projects also work hard at strengthening existing management structures or creating new hybrid ones combining customary and modern institutions. Much attention is paid to addressing land tenure and establishing appropriate institutional mechanisms at the outset, to reconcile the competing interests over resources often found in Africa's rangelands.

Africa's rangelands are part of what is broadly called the 'commons' – natural resources that are owned, managed and used collectively by different users, either simultaneously or sequentially often under different tenure arrangements. Through experience, projects now acknowledge that rules for the management of these areas must recognise and secure these multiple interests.

Before spending any money on physical infrastructure (demarcation beacons, water points) it is essential to invest in the time it takes to build consensus among all the users, even those who may only visit an area for a few weeks from time to time.

"The murhal was 20 metres in width before the demarcation; now the width is 100 metres. It took a large portion from my agricultural land. At the beginning I refused that and I asked for compensation, but finally I accepted under pressures from the Sheikh and the villagers. Now I do feel the benefits of the demarcation for me personally, for the people of the village and also the pastoralists. The demarcation should include all the murhals in South Kordofan so that conflicts could be minimized and peaceful co-existence promoted."

Hussein Hamid Nabag North Village, South Kordofan.[59]

There is much debate on the merits of using physical signs, such as metal signs on poles sunk in concrete, to demarcate the boundaries of livestock corridors. Critics argue that they are expensive, risk detracting investment in the time necessary to build social consensus and that marked out corridors can in fact limit pastoralists mobility – forcing them to take the corridors where they could previously take any route. Supporters argue that corridors marked with beacons act as a visible reminder of pastoralists land rights and increase their security in the eyes of other land users, traditional and state responsibilities.[60]

Technical notes

Supporting pastoral customary institutions in southern Ethiopia[61]

Only forty years ago the southern rangelands of Ethiopia were highly productive grasslands. Today many are invaded by woody scrub, are ploughed up for farmland and in some areas are over-grazed as a result of permanent settlements and a decline in livestock mobility. As a result pastoralists are more vulnerable to unpredictable, variable and scattered rainfall, and to drought and climate change. It is critical for rangeland productivity to be restored in this area so as to increase levels of livestock production and sales, and allow communities to break out of a declining spiral of vulnerability and destitution.

After several false starts, Save the Children/US, with support from SOS Sahel Ethiopia, adopted a participatory rangeland management approach - putting customary institutions and leaders centre-stage in the decision-making processes. These institutions vary from one pastoral community to another but are not the 'political institutions' so well documented by social anthropologists. Rather they are more informal 'landscape assemblies' responsible for the day-to-day management of livestock and rangelands. Among the Boran they are known as the jaarsa dheedaa, traditionally responsible for managing natural resources in their area.

The approach is founded on helping the landscape assemblies to map the key features of the pastoral systems in their areas (seasonal grazing areas, water points, salt pans, forests, livestock routes). The maps are then used as the basis of community discussions to identify and plan remedial actions. In Liben, Borana assemblies have discussed the key role of livestock mobility and the problems associated with current settlement patterns, and decided to return inappropriate private enclosures to communal ownership, while opening up stock routes to water points and salt pans.

These initial activities have triggered the meeting of other landscape assemblies, independently of Save the Children/US, after some thirty years of inactivity. Assemblies can involve as many as 350 pastoralists and last as along as three days. Discussions focus on rangeland management issues including mobility, the dismantling of private enclosures, and the re-opening of formerly closed stock routes to water and mineral licks. Local government authorities regularly attend the meetings and as a result it has also been possible to mobilise community labour to rehabilitate wells, select and train community animal health workers and to discuss (and in some cases resolve) low-level inter-ethnic conflict.

Establishing water points and resting areas

When creating livestock corridors it is essential that basic services be provided along the routes to facilitate the movement of animals over long distances. These include water for livestock and people, grazing areas where animals can rest before continuing their journey, as well as access to markets and health services. The demarcation of the livestock corridors by themselves is insufficient to secure livestock mobility.

Watering points along livestock corridors and in grazing areas need to be strategically located, well managed and well spaced. Management systems need to address two critical issues: ensuring equitable access to water - avoiding the privatisation or appropriation of the water by any particular group to the detriment of another group; and, ensuring regular supply, particularly in the dry season through a viable maintenance system. In many cases the overriding issue is whether the management responsibility should lie principally with the users or with the government. Experience from Chad where both approaches are being used highlights the difficulties.[62]

The users pay approach is based on the principle that if primary users take responsibility for the construction and subsequent management of a water point, they will have a strong incentive to maintain it. The National Livestock Programme (Programme Nationale d'Elevage) in Chad asked users to contribute to a water point through cash, providing labour and collecting raw materials. A management committee was then created from the community to levy fees for maintenance and repair charges. Pastoralists and some other actors are highly critical of this approach. They claim the system is open to abuse by richer members of the community, or those in power, who by contributing financially to the construction are able to extort higher fees or exclude other users. There is also no guarantee that a fee-based system makes a water point sustainable and that the money is reinvested.

The water as a public good approach is favoured by pastoralists and promoted by the French development cooperation (Agence Française de Développement) and IRAM (Institut de Recherche et d'Applications des Méthodes de développement). It is the State's responsibility to ensure sustainable provision of water, while the role of the community is to ensure its equitable and peaceful management. Customary leaders nominate well 'managers' who regulate access to water according to customary principles: priority rights of access are for members of the clan associated with the water point, while third party access is ensured through negotiation. Access to water, while free in monetary terms, is carefully regulated to balance livestock numbers against pasture availability. Emphasis is on the maintenance of social relations and the promotion of reciprocal arrangements, a central strategy for maintaining pastoral mobility. It is also a pragmatic response to the fact that pastoral communities, often living in very isolated environments, don't have the skills and time to ensure the maintenance of their water point.

Technical notes

"The fact that the training was completely delivered in Pulaar, my mother tongue, allowed me to benefit even though I am illiterate. Imagine that I was able to challenge with sound arguments Hardin's theory of the tragedy of the commons! The pastoral training dealt with my life. The training gave me confidence to challenge government officials' views on such issues as destocking, sedentarisation, over-grazing. Just recently, I attended a district-level meeting but when I heard pastoralists and their animals being accused of degrading the environment, I couldn't help myself and demanded to be heard. I was able to explain that contrary to their views, animals can have a positive effect on the environment, that pastoralism is the most adapted system for climate change and that it is less destructive that farming. In short, I explained some of the things I had learnt from the training and when I'd finished I sat down to thunderous applause! Since then, I've made a radio programme for our community radio station, Gaynaako FM and I've just been elected as a rural councillor, which now gives me the chance to defend the interests of pastoralists in my area."

Mamadou Koly Ba

56 years old, illiterate, member of Arwannde Dental Aynaabe, a pastoral association in Senegal

"After the training the pastoralists realised that they themselves now have the skills to defend their own interests…they decided it was necessary to establish an association which brought together all the associations in the Bankass district. We put them in touch with the Chamber of Agriculture and they founded an association called the Bankass District Coordination of Professional Livestock Organisations (COPE)."

Baba Maiga of Sahel Eco in Mali

"Usually, if the Coordination (COPE) encounters problems with the different activities it carries out in the district, it contacts us. Just recently, for example, they contacted us about the occupation of livestock corridors in the commune of Socura, in the commune of Baye and in particular in the commune of Ouenkoro. There, the resting places had been occupied by farmers who had tried to clear fields in the forest. The sub-Prefect intervened very quickly to stop their activities which are of a sort to damage the development of livestock production in the sector."

Mr Meissa Fane Sub-Prefect of Bankass

Understanding and respecting rights to pastoral mobility

A common objective of many new projects in East and West Africa is to build the capacities of pastoral communities and civil society organisations to engage with national policy and local development processes. Activities typically include adult literacy, civic education and training on pastoral systems. A well organized and informed pastoral civil society supported by local government authorities following the rule of law is essential if pastoralists, particularly transhumant herders, are able to exercise their rights to livestock mobility.

Training

Improving policy makers' and practitioners' understanding of the significant economic, environmental and social benefits of livestock mobility is the subject of a training programme initially designed by ARED in Senegal and subsequently adapted to eastern Africa by IIED, Resources Conflict Institute (RECONCILE), the Training Centre for Development Cooperation (MS-TCDC) and Tufts University. The training is now being delivered in French, English, Pulaar and Kiswahili by a range of organisations in East and West Africa.[63] The training explicitly builds the skills and confidence of pastoralists and their leaders to explain the scientific basis for livestock mobility in the 'language' of policy makers and development practitioners. Pastoralists acquire a more equal footing with government and the development community, and confidence to challenge outsiders' perceptions of pastoralism.

Civic education

NGOs and civil society groups are experimenting with new activities to improve the formal justice system. The legal empowerment of communities through techniques such as mobile legal clinics, mobile courts and the training of community-based paralegals is beginning to bear fruit. EVEIL in Mali (in collaboration with Sahel Eco) have trained over sixty community-based change agents (the Ya-Pinal) in basic legal concepts, making them very effective in defending pastoralists' rights. Paralegals are members of the communities in which they live and work. They have some formal schooling and are literate in French and in the local language, fulfuldé. To function effectively as advisors paralegals must be well respected and discrete. They must have the confidence of village heads and the local mayor who play important roles in non-judicial conciliation processes. And they must collaborate with the District Judge, who has the power to make local conciliation agreements legally binding.

"… paralegals' operations are completely legitimate. If these paralegals didn't exist, they would have to be created. These paralegals help village leaders in their mission to resolve and prevent the conflicts over land tenure, which break out in the heart of these communities. It helps us to relieve our courts of the very many cases which can be settled at the local level."

Sory Diakité A judge sitting on Mopti's Administrative Tribunal

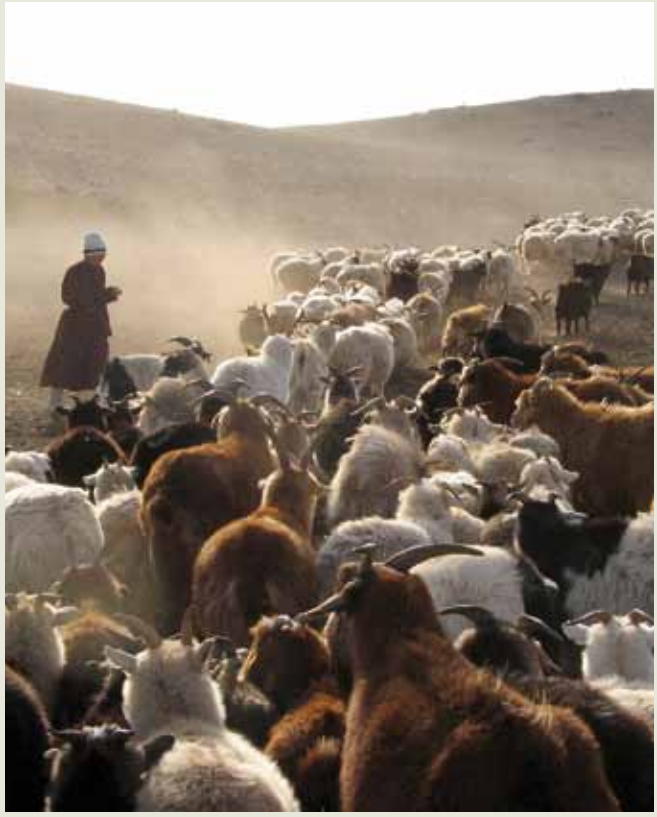
Technical notes

Destocking using private traders[64]

During the Horn of Africa drought in 2006 two private livestock traders were linked with pastoralists to purchase their cattle. Led by the Department of Fisheries and Livestock Marketing, Save the Children US provided two traders US$25,000 each in loans to buy cattle. This led to the purchase of an estimated 20,000 cattle valued at $1.01 million. Approximately 5,405 households benefited, each of which received on average $186 from the sale of their cattle. The income from this destocking accounted for just over half of household income, and was used to buy food, care for livestock, meet various domestic expenses, support relatives and either pay off debts or add to savings. Expenditure on care for the remaining livestock amounted to 36.5 per cent of the local expenditure, and included significantly, the private trucking of livestock to better grazing areas. The buoyant export trade in live cattle and chilled meat was considered to be an important driver of the accelerated off-take, demonstrating a positive linkage between livestock and meat exports, and pastoral vulnerability during drought.

Mongolia: Herders purchase insurance for asset protection[65]

The base insurance product (BIP) is a commercial policy sold and serviced by insurance companies. The product pays out when the mortality rates in their region exceed a specified trigger (7% in the initial year). The maximum payment for the BIP is at an agreed level (30%). If losses in the region exceed this level, the government's Disaster Response Product (DRP) compensates all herders (including those who don't buy private insurance). For example, take a herder who has 36 sheep, where the value of a sheep is 28,320 Tugrik (approx. US$24). The herder decides to insure the total value: 28.320 Tg × 36 animals = 1,019,520 Tg. The premium for the BIP is 1.4%, so the herder would pay 1.4% × 1,019,520 = 14, 273 Tg – the value of half a sheep. If the animal mortality rate in the herder's soum (county) during a bad year equals 35%, the payment rate for the BIP equals 30% - 7% = 23% and thus the BIP payment is 23% × 1,019,526 Tg = 234,490 Tg. He would receive the other 5% under the government's DRP (50,976 Tg).



Market based approaches to keeping pastoralists mobile during droughts

Millions and millions of US$ have been spent in pastoral drought relief in dryland Africa since the 1970s. Nearly all of this money has gone on buying food aid, which while saving pastoral lives has failed to save their livelihoods. For many pastoral communities, the return of the rains after the drought has not allowed them to return to mobile livestock keeping. Having lost their animals during the drought, they either remain in or around the towns from which they received the food aid that saved their lives, sometimes succeeding in a new livelihood, or they try their hand at agriculture, charcoal making or, in extreme cases, adopting a violent lifestyle. This failure is not only a human tragedy but an economic one too, as governments bear both the price of livestock production foregone and the cost of supporting these communities.

Groundbreaking work by a consortium of agencies in eastern Africa has been experimenting with market-based approaches to protect the key livelihood assets of pastoral communities. By providing cash for work, as opposed to food for work, or by facilitating controlled de-stocking of pastoral livestock through the market with private traders, pastoralists in Ethiopia and Kenya managed to save their core breeding herd though the drought of 2006. These initiatives take a livelihoods approach to emergency response, which not only helps to harmonise relief and development interventions, so often contradictory, but also strengthens pastoralists' resilience to drought.

Pastoralists can now buy private insurance to cover the loss of their herds to drought, and receive compensation in the event of animals dying because there is not enough pasture to feed them. This service, available to pastoralists in Mongolia, is being considered for dryland Africa too. The International Livestock Research Institute, among others, is exploring how index-based insurance can help pastoralists and other communities reduce the risks of destitution as a result of drought by protecting their livestock assets.

Index-based insurance is based on a fixed trigger mechanism not directly related to any individual production unit, such as a family herd or farm. Rather, the trigger for payment is based on calculating, for example, average livestock mortality levels in a particular area or the cumulative rainfall in a season in a specific area. In this situation, compensation is automatically paid to all those individuals if data shows that livestock mortality or total seasonal rainfall is below the threshold set by the insurance company.

Securing mobility: how to make it happen

There are successes and there are failures. In some places, pastoral mobility is being secured, in others it is not. But a wealth of experience is developing on the practicalities and tactics of supporting livestock mobility, strengthening the resilience of pastoralism, and resolving conflict. This experience is being better captured and shared. Learning networks are emerging which cross institutional boundaries – bringing together government authorities, communities and their representatives, parliamentarians, the private sector as well as the research and development community. Research is supporting dialogue and informing debate on the significant economic contribution of pastoralism. As a result there is not only a growing consensus on the necessity of livestock mobility in Africa's drylands, but a better understanding of what needs to be done in practice to support it.

1 Take the time to build consensus

When identifying rules of access, or resolving disagreements over the use of natural resources, involvement of all the users is of fundamental importance. Leaders of mobile pastoral communities are hard to identify and even harder to get together in one place. The leaders of sedentary pastoral and farming communities are easier to find but do not necessarily represent or fully understand the interests of mobile livestock keepers. The fact that users are further differentiated along lines of gender, income, power and age adds to the challenge. What is essential in any intervention involving pastoralist communities and fellow resource users is allocating the time that it takes to build consensus. Multiple exchanges will be needed between the many people at community and local government levels before any action can be taken at all. Investing in extended consultations accounts for only a fraction of project costs but underpins the success of all the subsequent costly interventions in infrastructure, legislation, etc.

2 Work at the right geographical scale

Initiatives that seek to secure livestock mobility must work at the appropriate scale and according to the logic of the pastoral system. It is essential to incorporate the full geographical area within which pastoralism is being practiced. Sometimes this will require a cross-border approach. All the different reasons underpinning mobility as well as the different itineraries being followed must be accommodated in the planning stage. To get the full picture it is essential to involve the leaders of all transhumant groups, customary leaders from both pastoral and farming communities and the different levels of local government authority. Given the distances that some pastoral groups travel, this will require consultations that start at village government or commune level, and will progressively involve the district, the region, and in the case of cross-border movements, relevant government authorities, customary leaders and civil society organisation in neighbouring countries.

3 Combine formal and customary governance

Initiatives should work through customary institutions wherever possible, integrating transhumant communities with formal local authorities. Where necessary hybrid mechanisms should be built for long-term management of mobility. Though weakened, and not formally recognised by the State in many countries, customary institutions still regulate pastoral mobility in many parts of East and West Africa. Customary institutions have the knowledge, skills and, most critically, the legitimacy to make and enforce informed decisions on livestock mobility and the management of water and pastures.

4 Address land tenure issues

If livestock are to move freely across the range and between different grazing areas, the land must remain under some form of collective control that is either under customary or government tenure arrangements. To avoid conflict, institutional arrangements for the management of the commons, including the rangelands, have to recognise and secure the many multiple interests and demands involved. If arrangements are to work effectively they have to be identified and agreed upon by all the users who use the land for however short a period of time. The full involvement of all will ensure the rules and regulations for accessing and managing the resources are appropriate, and even more importantly, will be considered legitimate and thus respected and adhered to.

5 Retain flexibility

Pastoralism is by definition flexible and dynamic. Pastoralist mobility responds to changing circumstances, and initiatives need to be equally mobile. This goes for providing formal services (health care, education) as well as building infrastructure aimed at reinforcing pastoral mobility. Corridors shouldn't be marked with concrete beacons when cattle trails traditionally change course from one year to the next according to local climatic and social conditions. Agreements for the preservation and management of pastoral resources that enable livestock mobility (corridors, watering and resting points) need to be formalised without being overly prescriptive and rigid. Local conventions have been used with some success in the Sahel to ensure an adequate level of formalisation, in line with both formal law and customary practice; preserving a level of flexibility that enables agreements to be re-negotiated as necessary.

Opportunities are increasing for mobility

Innovative thinking and practice that looks at pastoralism holistically, and works within the logic of the pastoral system, is securing pastoral mobility. The re-opening of livestock corridors with appropriate long-term management systems in place, and accessible water points and resting areas, is making a huge difference. The provision of appropriate training has improved the confidence of pastoralists and increased respect for the system from non-pastoralists. These initiatives now need to be replicated all across the drylands.

The changes to the institutional framework of pastoralism at national and international levels are a very significant step. The challenge now is to turn commitments into practice, designing laws and regulations that ensure that mobility is enhanced and protected on the ground. Changes in practices and attitudes are critical in this respect if policy commitments are to be turned into reality.

"The Arid Lands Resource Management Project, which is implemented by the Government of Kenya with the support of the World Bank, is fully behind livestock mobility as a key strategy to ensure food security and peace in ASAL areas while also contributing to the wealth of the nation."

Ms Fatuma Abdikadir

National Project Coordinator, Arid Lands Resource Management Project, Government of Kenya

Part 4

The global challenges and mobility

"Unsustainable practices are woven deeply into the fabric of modern life. Yet we have the human and material resources to place our economies and societies on a sounder footing."

Kofi A. Annan

in *NorthSouthEastWest – a 360 degree view of climate change*. 2005

Global challenges and mobility

African governments have to reconcile a vast number of conflicting national demands and also deal with the weighty task of confronting the major challenges of today's world. Where pastoralism is secured through mobility, it can play a very positive role in the 'big picture' issues.

Although at first glance pastoralism and pastoralists may appear to be outside the mainstream of economic development, they are in fact major economic players and fully linked into national, and regional processes. Pastoralism has a key role to play in ensuring food security and driving economic development through production and trade.

But pastoralism also has a major role to play in other issues of global importance – climate change, regional peace and security, and lifting African economies out of poverty and donor dependence. Unlike other land uses, pastoralism is uniquely capable of adapting to a climate change.

Secure pastoralism is climate sensitive

Climatic trends

Although climatic variability is the norm in Africa's drylands, human induced climate change is beginning to pose a serious challenge. Climate is becoming more variable and less predictable. Successive poor rains, shifts in the beginning and end of the rainy seasons, increased rainfall intensity which often runs off in floods and damages crops and infrastructure, increases and decreases in rainfall in varying parts of the continent, and increases in drought related shocks, are all current trends observed across the continent. These trends are likely to continue over the short to medium term. [66]

Adaptation

Pastoralists that are mobile are in a better position to quickly and successfully adapt to a changing climate than those tied to sedentary land uses. For 7,000 years pastoralists have used mobility to respond quickly to variations in the drylands' climate, and used specialist risk spreading strategies as an insurance against the potential loss of their stock. Whether pastoralists will successfully adapt to the current climate change will depend on how the environmental challenges are tackled and whether mobility is secured. To continue to adapt, pastoralist communities need to be informed of changes to come, be involved in planning for the future including measures to secure mobility together with access to grazing and water, and explore new ways to secure their livelihoods.

Methane emissions

The livestock sector, and by implication pastoralism, has been accused of contributing to global warming through methane emissions. The FAO's high-profile report *Livestock's Long Shadow* found livestock to be responsible for 18% of green house gas emissions measured in CO_2 equivalent, a higher share than transport. [67] When the data is unravelled, however, it becomes clear that livestock have been globally aggregated with European intensive milk production, south-east Asian high intensity pig farming, US beef burger feedlots and ranching and African pastoralism all lumped together. The environmental management problems associated with global livestock production are therefore also combined in the analysis, including, most significantly, the deforestation taking place in South America to make way for livestock ranches or soya bean production to feed animals reared in China or the Netherlands. Until we have a better understanding of the environmental impacts of the different livestock sectors, it is a mistake to conclude that mobile livestock keeping in Africa's drylands does more harm, through its contribution to global warming, than good, through its contribution to national food security, economic growth and carbon sequestration.

Carbon sequestration

There is now increasing interest in exploring the value of pastoralism in mitigating the impact of climate change,

with the carbon sequestration capability of Africa's pastures emerging as a real opportunity for the drylands. Thirteen million km² of grasslands are found in Africa.[68] Grasslands store approximately 34% of the global stock of CO_2 – a service worth $7 per hectare.[69] What is important to note is that grasslands' capacity to store carbon is significantly reduced in heavily degraded areas, or where rangelands are converted to croplands. Converting rangelands for crop production reduces carbon storage capacity by 95% for carbon stored above ground, and by 50% for carbon stored below ground.[70]

Environmental services

Rangelands, and pastoralism in general, are increasingly seen as having positive environmental impacts. The grazing action of livestock is recognised as having helped maintain healthy populations of wildlife – the cornerstone of much of Africa's tourism industry. East African savannah landscapes have been largely shaped over the course of the past 3,000 to 4,000 years by pastoralist land management practices. Well managed grazing opens up pastures, stimulates vegetation growth, contributes to seed dispersal and pasture diversity, and enhances nutrient cycling through the ecosystem. Where mobility is reduced and pastoralists are confined to limited spaces, evidence of overgrazing becomes apparent.

"As rain is the key determinant factor for survival of pastoralists they are climate sensitive compared to all people around the world. Using their indigenous knowledge, they forecast climate outlook and adopt effective coping mechanisms. Governments and policy makers concerned with climate change need to listen and learn from this useful knowledge"

Yusuf Ahmed Country Director, Islamic Relief, Ethiopia

Securing pastoralist livelihoods will reduce conflicts

When pastoralists lose their livelihoods, through lost access to pastures and water, destitution threatens and they turn to violence. Poverty is a major driver of conflict, exacerbated by other factors including the proliferation of small arms, breakdown in customary control and the absence of State governance in remote border areas. Without livelihoods, pastoralist have an incentive to be drawn into existing conflicts, taking up opportunities to become mercenaries, militants, gun traders or drug runners. Poverty motivates people into violence, and in pastoral areas conflict is increasingly becoming a 'maladaptive' strategy to gain power and access resources in the absence of alternatives.[71]

Conflict also disrupts and destroys livelihoods that were not originally under threat. Violent attacks, livestock raiding and restrictions on pastoral movements are common in remote areas. Pastoralists begin to lose their livestock to theft, starvation and disease as the ranges across which they previously moved shrink for security reasons. When they are unable to feed their herds adequately they are forced to sell their livestock at reduced prices before the onset of starvation. Conflict thus throws vast areas of the drylands into disuse, "disrupts the livelihoods of thousands, causes the loss of assets and production means, and seriously undermines the ability to translate production into wealth for both dryland communities and for the state."[72]

Where conflict occurs, governments also have to divert considerable sums away from productive use towards military interventions. In Uganda alone, the government spends an estimated 50% of its national budget on military interventions to reduce conflict in pastoral areas, amounting to $100 million a year, representing the single highest expenditure item on the budget.[73] On some borders governments turn a blind eye to the increasing militarisation of their pastoralist communities, accepting that the borders are being patrolled for free and that demilitarisation would make the situation even more unstable.

Mobility will help restore government legitimacy because when governments "cannot guarantee their populations' most basic needs: safe drinking water, staple food crops, and fodder and water for the animal herds on which communities depend for their livelihoods… extremist groups like the Taliban find ample recruitment possibilities in such impoverished communities."[74]

"Pastoralists have a non-violent lifestyle, earning their living from the environment. But if the stress becomes too much then people invest in a violent lifestyle, becoming traders in small arms. And when they become traders in small arms and trade where there is political tension going on, that is a recipe for disaster."[75]

Dekha Ibrahim Founder of Wajir Peace University Trust

If pastoralist livelihoods were more secure there would be less incentive for pastoralists to be drawn into conflicts. If mobility were secured, conflict would not be in a pastoralist's long-term interest, with its restrictions to normal grazing patterns, reduced ability to trade, and blocked access to cross-border dry season/drought areas.

Securing pastoralist mobility would help reduce poverty

Across the drylands pastoral poverty is pervasive and visible, raising questions about the viability of pastoralism as a long-term livelihood for millions. Pastoralists whose herds can no longer support them move into subsistence agriculture, or join the ranks of the (peri-) urban poor. As well as the huge social cost to the state in terms of lost productivity and the need to provide food aid, this has negative feedback loops: ex-pastoralists tend to resort to activities that further undermine other pastoralists – charcoal, agriculture, and fencing off rangeland. Only a small fraction of pastoralists have the education – up to secondary or post secondary level – which would allow them access to salaried jobs unrelated to livestock. The majority of pastoralists who leave the system have no viable alternatives besides unskilled, low paying, short-term and uncertain livelihoods.

The prevalence of pastoral poverty led to a high profile debate that suggested there is a limit to the number of people that can be supported by pastoralism.[76] The "Too Many People, Too Few Livestock" argument is based on the notion that a certain number of 'tropical livestock units' would support a given number of people, but has a number of flaws. We know that herd productivity is not dependent on absolute numbers of animals, or areas of grazing land, but on the ability of pastoralists and their cows to skillfully access the highly variable nutrient sources of the drylands. We also know that pastoralism is not a closed system: pastoralists have a diversity of income sources generated by different members of the household thereby lessening their whole scale dependence on the herds.

In the majority of cases it is not natural laws on growth that are impoverishing pastoralists, it is political decision-making hindering their mobility. When pastoralism is adequately supported and alternative training, education and employment options are found for those who want out of the system, the majority of pastoralists with their risk minimising strategies will almost always be better off than their sedentary counterparts. Given the huge numbers of people directly and indirectly dependent on pastoralism it makes very real economic sense to keep in pastoralism those people who want to do so.

"In East Africa particularly you're not just talking about national livelihoods, you're talking about regional livelihoods. So if you undermine the basis for the survival of this system then you are also undermining the national economy."

Michael Ochieng Odhiambo

Executive Director, Resources Conflict Institute [77]


USA

Mobility is globally significant

Where mobility is secured, pastoralism has massive environmental benefits, can adapt to climate change, and presents African governments with the very real possibility of grasslands generating revenues as carbon sinks. When their livelihoods are secure pastoralists freely patrol inhospitable, remote border regions and can help reduce conflict. And when their herding strategies and practices are secured, pastoralism allows the economic independence of millions of people in the drylands, who would otherwise have little alternative but to fuel urban poverty and undesired social dynamics.

Future policy decisions need to take into account the many valuable services and benefits provided by pastoralism. If the pastoral system is allowed to flip into irreversible destitution there is a real danger that all these benefits and services will be lost. Losing pastoralism is not in the public interest.

"Pastoral production systems have maintained effective use of natural resources, have negligible impact on the environment and sustained the livelihood of millions of people around the world. National governments should recognize them as a sustainable livelihood system, and design appropriate policies that help preserve and promote this system."

Yusuf Ahmed

Country Director, Islamic Relief, Ethiopia

Part 5

The way forward for mobility

"The problems of under-development in arid lands cannot be solved by the same approaches, mindsets and methods that created them."

Hon. Mohamed Ibrahim Elmi

MP, Minister of State for Development of Northern Kenya and other Arid Lands[78]

The way forward

1 Re-orient policy in line with the evidence

Mobile livestock keeping is a sophisticated, rational and productive use of dryland resources. If properly supported, it sustains millions of people at low cost to governments, contributes positively to sound environmental management, generates substantial revenue for national economies, and keeps the peace in remote and sparsely populated regions. It has significant comparative advantages above alternative methods of animal husbandry or land use in drylands. Policy should be directed towards realising these advantages.

2 Listen to pastoralists

International scholars now agree that mobility is key to pastoral production not only in the drylands of Africa – but equally in the drylands of the USA or Australia. This book includes numerous examples of the deep indigenous knowledge that informs pastoral systems. Policy-making processes need to be informed by this knowledge, and will benefit from the experiences and insights of pastoralists and their representatives.

3 Understand and protect the whole system

Mobile livestock production is a complex system that requires a holistic response. Securing access to relatively small but highly productive areas – along rivers, on hills, or in alluvial plains – during the critical dry season/drought allows pastoralists to access much larger areas at other times. Protecting these ecologically valuable areas from appropriation or exploitation by other users, and facilitating livestock's access to them, particularly during periods of drought stress, is essential to maintaining the health of the system as a whole.

4 Marry the formal and the customary

Pastoral areas operate under two competing systems of institutions and laws – formal and customary. Both systems regulate access to common property resources and manage relationships between competing groups.

The two could be integrated in such a way that they create a more efficient and effective governance framework capable of mediating the interests of all livelihood groups.

5 Work at the resource-use level

The highly variable nature of resources in pastoral environments means that governance systems should be organised at the level of the lowest competent authority. This will require significant and sustained investment in the capacity building of local structures, both state and non-state.

6 … but also strengthen inter-state institutions

Pastoral ecosystems transcend international borders. Cross-border mobility allows pastoralists to manage risks such as

drought, disease and conflict and to access markets. However, this movement is currently informal and unregulated and therefore vulnerable to abuse. Effective inter-state institutions help to formalise and facilitate this movement. They also provide a forum where governments can coordinate and harmonise the impact of policies on neighbouring populations.

7 Reinforce the economic viability of pastoralism ...

Pastoralism has the capacity to provide secure livelihoods and generate significant economic wealth. Areas of investment that will enhance this capacity include credit facilities, veterinary inputs, social protection, tenure security, infrastructure, sound drought management systems, and service delivery models that accommodate mobility. Investment in more effective and efficient marketing infrastructure and processes will greatly contribute to securing livelihoods and promoting greater regional trade and development.

8 ... but also provide alternatives

Rising populations are putting pressure on pastoral systems. More households are herding smaller-sized herds in ever-smaller areas. While acknowledging pastoralism's flexibility and adaptability, there is a limit to the numbers of people it can sustain at productive levels. Other options are needed for those who choose to leave the pastoral system. Serious investment in education systems that work in areas of low population density and with a largely mobile population is one solution.

9 Incorporate climate change adaptation into development plans and strategies

Climate change models for pastoral areas of Africa suggest increasing variability and unpredictability. In theory, mobile livestock production should be better adapted to deal with this variability than other land use systems. Development planning, from the design of physical infrastructure to the location of key services and resources, should be used to reinforce this adaptability.

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Credits

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Back cover Bernard Bonnet

"Mobility cannot be dropped. Those who say that herding is finished speak empty words." Rouada Aliu