



# BRUSSELS RURAL DEVELOPMENT BRIEFINGS

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# Pastoralism

Resources on new challenges and  
opportunities for pastoralism in the  
context of African countries<sup>1</sup>

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With support from Isaura Lopes (Young researcher at the CTA Brussels Office)





## **Briefing n. 26**

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## 1. Introduction

Pastoral systems support the livelihoods of millions of people living in harsh environments where alternative land use systems are highly risky or simply not possible. Livestock reared in pastoral systems also contribute significantly to national and regional economies and provide important environmental services such as carbon sequestration, and biodiversity conservation. Extensive pastoral production is practiced on 25% of the global land area, from the drylands of Africa (66% of the total continent land area) and the Arabian Peninsula, to the highlands of Asia and Latin America<sup>1</sup>. It provides 10% of the world's meat production, and supports some 200 million pastoral households who raise nearly 1 billion head of camel, cattle and smaller livestock, about a third of which are found in sub-Saharan Africa<sup>3</sup>. Apart from African regions, an increased and renewed interest in pastoral production systems is reported in the Mediterranean, western and central Asian regions. With a few notable exceptions (e.g. Somalia and Mongolia), pastoralists are usually a minority in their countries occupying marginal land along national borders, and ruled by a political elite often representing an agricultural majority who live in higher rainfall zones.

Official statistics tend to overlook many important economic benefits of pastoral livestock. These benefits include household consumption of livestock products, especially, milk, which is a particularly valuable food for children, and pregnant or nursing mothers. Livestock are also used

for transport and ploughing, and work animals can be hired out to traders or farmers. Manure improves soil fertility and can be dried and used as fuel. Livestock skins have a variety of domestic uses. Livestock are also the basis for traditional social support systems in many pastoral communities, providing a form of traditional insurance system in the face of shocks. Nearly all important social events in pastoral areas include the use of livestock, as exchanges within or between families, or for ceremonial purposes.

There is also increasing attention to the economic value of the ecosystem services in pastoral areas, associated with global climate change and the concept of carbon sequestration and maintenance of biodiversity.

Other global challenges facing pastoralists include: expansion of trade, integration of markets and increasing regional interconnectedness, together with high and increasing demand for animal proteins all over the world. Technological developments enhancing mobility and telecommunications, but also improvements in genetics, which enable 'new' animal and plant organisms offer new opportunities for pastoralists.

Regional stability, security and geopolitical interests play an important role in determining pastoral livelihoods and are a precondition to the implementation of any favourable policy...

### 1.1. Policies in support of Pastoralism

Drawing on extensive regional expert consultations conducted since 2007, the African Union **Policy Framework for Pastoralism in Africa**, which was adopted by the AU Assembly of Heads of State and Government in February 2011, in Addis Ababa, Ethiopia, is the first continent-wide policy initiative which aims to secure, protect and improve the lives, livelihoods and rights of African pastoralists. The policy framework is a platform for mobilizing and coordinating political commitment to pastoral development in Africa, and emphasizes the need to fully involve pastoralist women and men in the national and regional development processes from which they are supposed to benefit. The framework also emphasizes the regional nature of many pastoralist ecosystems in Africa and therefore, the need to support and harmonize policies across the Regional Economic Communities and AU Member States.

The AU **Policy Framework for Pastoralism in Africa** contains guiding and cross-cutting *principles*, key *objectives*, and a set of *strategies* to attain the objectives which are: (a) secure and protect the lives, livelihoods and rights of pastoral peoples and ensure continent-wide commitment to political, social and economic development of pastoral communities and pastoral areas, focusing on the need to recognize the rights, existing and potential future economic contributions of

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pastoralists to development, with related political and policy processes needed to develop appropriate pastoral policies and fully integrate pastoralism into national and regional development programmes and plans; and (b) reinforce the contribution of pastoral livestock to national, regional and continent-wide economies, which focuses on the core assets of pastoral areas viz. pastoral rangelands and livestock; emphasizing the need to improve the governance of pastoral rangelands and thereby secure access to rangelands for pastoralists; with the involvement of traditional pastoral institutions as central to this process; and with protection and development of pastoral livestock, risk-based drought management, and support to the marketing of pastoral livestock and livestock products in domestic, regional and international markets constitute important strategies to achieve this objective.

In the **CEMAC region**, specific cooperation instruments are also emerging such as the cooperation agreement creating CEBEVIRAH (Economic Commission for Livestock, Meat and Fish) across CEMAC countries. In **COMESA**, a draft *Policy Framework for Food Security in Pastoralist Areas* was released in late 2009, under the Comprehensive Africa Agriculture Development Programme (CAADP) Pillar 3. This framework proposes regional harmonization of national policies to support regional movements of pastoralists to enable efficient use of

transnational rangeland ecosystems, and for livestock trade. In **IGAD**, a *Regional Policy Framework on Animal Health* was finalized in late 2009 which although not directly focused on pastoralism, was very relevant to the large pastoralist areas of IGAD Member States.

In **West Africa**, governments have passed a series of pastoral laws to protect pastoral land and enhance livestock mobility as well as priority use rights over resources. Progress has been made in West Africa, in formulating legislation to enable pastoral mobility through the *ECOWAS International Transhumance Certificate*. In COMESA certification systems for regional livestock movements are evolving. Related to the livestock trade and surveillance aspects of regional livestock movements is the issue of *Transboundary animal disease (TAD) control*. However, in many countries, policies on TAD eradication or control need to be reviewed. In **Central Africa** supportive policies range from government mobile schools to provide education services to the children of pastoralists during transhumance in Chad to the allocation of land and appropriate veterinary services to pastoralist communities. More positive policy experiences are also beginning to emerge in **Eastern Africa**, with related efforts to improve coordination and understanding of pastoralism across central government.

### EU policy in support of pastoralism in Europe

Backed by scientific evidence, European Union (EU) policies officially endorse low intensity, transhumant livestock management in Europe as a source of diverse environmental, economic and cultural benefits. Far from seeking to eradicate mobile pastoralism, the European Union explicitly attempts to preserve it, through economic subsidies to livestock farmers, and programmes aimed at marginal grassland areas.

Farmers whose management of land and livestock meet certain CAP criteria are eligible for EC payments, through a number of different, sometimes complex and overlapping schemes. A major redirection of EC agricultural policy since 2003 has altered the incentive structure for how land and livestock are managed, as farmers no longer receive subsidy payments per head of animal owned (which prioritised farm output), but can now receive payments according to the category of the land they use and the husbandry methods they practice. These new policies deliberately favour environmental protection. European pastoralists who raise traditional livestock breeds grazing on pastures, and use low levels of inputs, in territories which cannot easily be used for arable farming, are rewarded for income foregone in not converting to more intensive high input farming.



## 2. Defining pastoralism

Nomadic pastoralists are defined as households which (i) depend on livestock for their livelihood; (ii) are mobile for part of the year at least; (iii) use community managed grasslands at least for part of the year; (iv) recognize customary rules and norms as a source of authority. The data are very bad, but it is estimated that there are, according to this definition, at least 20 million nomadic pastoralists in Africa, and 50 million world-wide (Jeremy Swift).

Nomadic pastoralism is a highly specialized livelihood system which depends on the knowledge, skills and experience of individual herders. It has high economic returns, but also high risk. Mobility is a key feature, enabling animals to reach the best pastures and to react to drought. Pastoralism makes a substantial contribution to national economic activity.

The point at which pastoralists stop being considered as such upon moving to urban or peri-urban areas is currently a matter of intense debate. Development experts and pastoralists themselves maintain that the term 'pastoralist' refers to people who still have economic and cultural links with the pastoralist system, even if they have left pastoral areas or have settled. Some, however, disagree. Agencies such as the United Nations World Food Programme, which carries out periodic evaluations to categorise aid recipients moving to urban areas, has set a 6-12-month 'transition' period after which, for purposes of food aid, the subject is no longer considered a pastoralist

if he/she chooses not to return to their original livelihood.

Governments do not have a uniform approach to defining pastoralists. In Ethiopia the authorities have superimposed a 'pastoralist' tag over geographical areas where these groups predominate. In Kenya, ASAL districts are clearly demarcated, but are not officially labelled pastoralist. In Uganda, while the general public recognises different pastoral groups (often referred to by the derogatory term '*Balaalo*'), the government has only recognised the Karamajong and the Karamojong region as pastoral. Tanzania presents a unique situation where ethnicity is avoided in pursuit of national integration. This study supports a combined economic and cultural definition of pastoralism. Pastoralists include those who earn part of their living from livestock and livestock products. They also include those who are still connected to pastoralist culture, even if livestock does not provide their main source of income.

Pastoralism is practiced all throughout the world, from India to Mongolia, Saudi Arabia to Africa. The areas in which pastoralism is practiced in Africa include: the Niger Delta, Afar/Middle Awash, Southern Somalia, Kenya, Maasai, Uganda, Karamajong, Southern Ethiopia, Borana, Sub-Saharan Africa, and the Horn of Africa<sup>4</sup>

Pastoral areas are found in the following natural zones of Africa:

- The Mediterranean and Saharan zone in North Africa stretching

from Morocco in the west to Egypt in the east, and passing through Algeria, Tunisia, and Libya;

- The sub-Saharan tropical and equatorial zone stretching from the edges of the Sahara desert in the north to the edges of the Kalahari desert in the south;
- The southern zone comprising Namibia, Botswana, Zimbabwe, Mozambique, Swaziland, Lesotho and South Africa.

Sub-Saharan Africa uses cattle, camels, sheep, and goats mainly, but these are reducing due to the advancement in agriculture in the region. In North Africa and the Horn of Africa, small ruminants are used but this is also declining due to agricultural advancements. Because of their mobile lifestyle, pastoralists are usually not tied to one ecological zone. In West Africa, groups are dispersed when it is the rainy season and there is pasture. These are two crucial resources for their livestock. During the dry season, pastoralists gather in areas where food and water resources continue to be plentiful.

### 2.1. The various forms of pastoralism

There are essentially two forms of pastoralism; **nomadism and transhumance**:

**Pastoral nomads** follow a seasonal migratory pattern that can vary from year to year. The timing and destinations of migrations are

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determined primarily by the needs of the herd animals for water and fodder. These nomadic societies do not create permanent settlements, but rather they live in tents or other relatively easily constructed dwellings the year round. Pastoralist nomads are usually self-sufficient in terms of food and most other necessities. 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.<sup>5</sup>

**Transhumance pastoralists** follow a cyclical pattern of migrations that usually take them to cool highland valleys in the summer and warmer lowland valleys in the winter. Transhumance<sup>6</sup> is the regular movement of herds among fixed points in order to exploit the seasonal availability of pastures. In montane regions such as Switzerland, Bosnia, North Africa, the Himalayas, Kyrgyzstan and the Andes this is a vertical movement, usually between established points, and the routes are very ancient. There is strong association with higher-rainfall zones; if the precipitation is such that the presence of forage is not a problem, then herders can afford to develop permanent relations with particular sites, for example building houses. Horizontal transhumance is more opportunistic, with movement between fixed sites developing over a few years but often disrupted by climatic, economic or political change.<sup>7</sup> A characteristic feature of transhumance is herd splitting; the

herders take most of the animals to search for grazing, but leave the resident community with a nucleus of lactating females. There are many variations on this procedure, and the development of modern transport has meant that in recent times households are not split so radically; members can travel easily between the two bases. Whether milking females, weak animals or work animals are left behind depends substantially on the system being followed, and may even vary within an individual system on a year-by-year basis.

Transhumance pastoralists usually depend somewhat less on their animals for food than do nomadic ones. They often do small-scale vegetable farming at their summer encampments and are more likely to trade their animals in town markets for grain and other things that they do not produce themselves.

However, not all pastoralist societies can be accurately described as following a nomadic or transhumance way of life. As conditions change, pastoralists usually adjust. This can result in a traditionally nomadic society or some families within it becoming more or less transhumance in their migratory patterns if the opportunity arises. Likewise, a society that prefers a transhumance way of life may be forced by circumstances to change to a nomadic pattern for some or all of its livestock.

Transhumance has been transformed by the introduction of modern transport in many regions of Eurasia. For example, in the United Kingdom,

the transhumance of sheep between the lowlands and highland areas for rough grazing is now conducted entirely by trucks that carry the animals from one grazing point to another. Wealthier countries in the Persian Gulf, such as Oman and Saudi Arabia, make vehicles available at subsidized rates to assist pastoralists with animal transport.

### Agropastoralism

Agropastoralists can be described as settled pastoralists who cultivate sufficient areas to feed their families from their own crop production. Agropastoralists hold land rights and use their own or hired labour to cultivate land and grow staples. While livestock is still valued property, agropastoralists' herds are usually smaller than those found in other pastoral systems, possibly because they no longer rely solely on livestock and depend on a finite grazing area which can be reached from their villages within a day. Agropastoralists invest more in housing and other local infrastructure and, if their herds become large, they often send them away with more nomadic pastoralists. Agropastoralism is often also the key to interaction between the sedentary and the mobile communities. Sharing the same ethnolinguistic identity with the pastoralists, agropastoralists often act as brokers in establishing cattle tracks, negotiating the "camping" of herds on farms (when crop residues can be exchanged for valuable manure) and arranging for the rearing of work animals, all of which add value to overall agricultural production.





### 2.2. Social and cultural norms

Pastoral groups have their own languages and traditions, a rich body of oral and written stories, poetry, songs and music. Pastoral culture is a core part of Africa's culture, history and heritage. The livestock and natural resource management practices used by pastoralists require well organized collective action, especially in the harsh environments in which they live. They organize themselves to split herds and move animals to distant grazing areas, to control access to communal grazing areas, to manage the watering of livestock, and to provide security. Partly for these reasons, pastoralists have very strong social organizations and leadership. In pastoral ecosystems of the Mediterranean, Saharan and sub-Saharan zone, Islam is a common religion and the rules of access to pasture and water resources are often inspired by Islamic laws. Typically, pastoral tradition dictates that land is a communal resource.

Although conflict between pastoralists and sedentary farmers is commonly reported, there are also numerous examples of peaceful co-existence and mutually beneficial economic exchanges. For example, pastoral communities based in the Sahelian zone can practice transhumance which is based on peace agreements between their traditional rulers and the traditional rulers of crop farmers. This practice can be seen in the common exploitation of pasture land extending from the wet plains of the Logone River in the far north region of Cameroon to Lake Lere in Chad.

The social assets of pastoralist groups also include the indigenous social support systems which to varying degrees, are intended to assist poorer members of the community. These systems may target households with relative few animals or those which have suddenly lost animals due to disease, flooding or other causes. Female-headed households may also be targeted. These local systems are based on loans or gifts of livestock or livestock products, and for Muslims, the giving of alms includes richer households donating livestock to poorer households. (Policy Framework for Pastoralism in Africa.)

#### Role of women in pastoral societies

Despite the well-known exception of the Saharan Tuareg, the great majority of pastoral societies are patrilineal and male-dominated. The reason for this is much debated, but the root cause appears to be related to the importance of not dispersing viable herds. In an exogamous system, if women can own significant herds of their own, then on their marriage they will take these away to a new camp and potentially deplete the herd of an individual household. Women are typically responsible for milking and dairy processing and feed the family. Men are responsible for herding, and selling meat animals and in systems when a herd is split, women usually stay in a fixed homestead while men go away with the animals. Many pastoral policies have ignored the important roles that women play in pastoralism including the decisions women make, and the labour they contribute to raising children, maintaining households, treating disease, animal care, managing water resources, and in providing resources such as

construction material and fuel wood. As such, the views, experiences and needs of women are often left out of decision-making processes. Some ways to improve the gender gap between men and women in pastoralism include supporting women's equality, funding education and ensuring women's active participation and involvement in the process.<sup>8</sup>

### 2.3. Significance of pastoralism in Africa

Few countries have official agricultural data that is disaggregated to show the contribution of pastoralism, even it is significant. The contribution of pastoralism to national economies is most commonly expressed in terms of proportion of GDP, which in turn, is calculated from national livestock populations and production coefficients. Therefore, GDP indicators are indirect measures and in part, depend on estimates of the proportion of the national herd found in pastoral areas of the country concerned. In general, pastoralism contributes 10 to 44 percent of the GDP of African countries. The pastoralist population in Africa is estimated at 268 million (over a quarter of the total population), living on area representing about 43 percent of the continent's total land mass.<sup>9</sup>

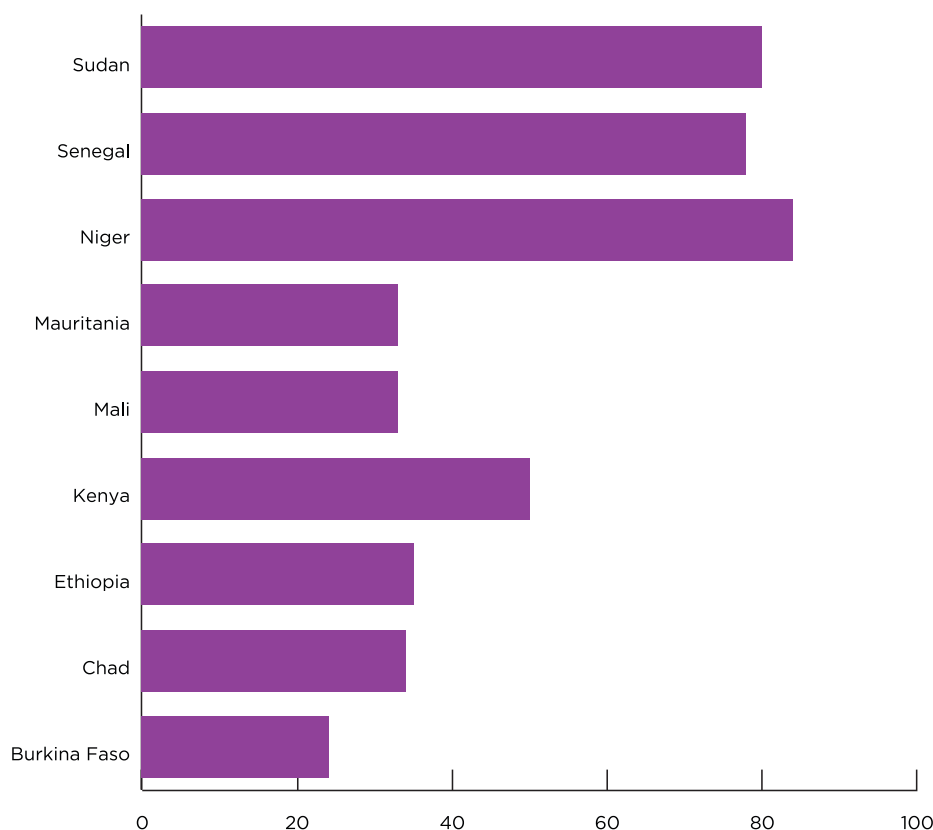
#### Western Africa

In Western Africa, there is a wide variation in the size of national economies. The contribution of the livestock sector to agricultural GDP, ranges from 5 percent in Cote d'Ivoire to 44 percent in Mali. The livestock



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## Pastoralism as a percentage of agricultural GDP<sup>10</sup>



sector also provides employment for about 50 percent of the economically active population. Livestock is an important factor of integration in the region as cattle, sheep and goats are major items exported from land-locked Sahelian countries to humid and sub-humid coastal countries. However, the regional supply of meat and dairy products is far lower than demand, resulting in a large net importation livestock products; this trend is expected to increase in future.

### Central Africa

In central Africa, particularly in Chad, Cameroon and CAR, pastoralism plays a major role in livestock production. The contribution of livestock to the GDP in these

countries is estimated at 27 percent in Chad, 13 percent in Cameroon and 9 percent in CAR. The level of poverty in pastoral communities remains higher than the average level of 44 per cent. Intra-regional trade in livestock and livestock products is a feature of this region, with these three countries having the opportunity to export to the Republic of Congo, Gabon, Equatorial Guinea, and Sao Tome and Principe. However, significant price differentials have been observed ranging from 32 percent between Cameroon and Gabon, to 118 per cent between Chad and Equatorial Guinea. Despite the high purchasing power in the oil producing countries (e.g., Republic

of Congo, Gabon, Equatorial Guinea, and Sao Tome and Principe) their capacity to absorb livestock products from Chad, Cameroon and CAR is limited due to small populations. For this reason, Chad sells most of its cattle on-the-hoof to Nigeria, a highly populated country with a much larger market.

In the humid forest zone of Central Africa, countries emerging from conflicts (e.g., DRC, Rwanda, and Burundi) have multi-faceted development challenges. For example, levels of poverty range from 57 percent in Rwanda to 71% in the DRC; in DRC the level of poverty among pastoral communities (80 percent) is higher than the national average. In Burundi the livestock sector contributes 14 percent to national GDP and 29 percent to agricultural GDP.

### Eastern Africa

The multipurpose socioeconomic and cultural features of pastoralism are better exploited in East Africa compared to other regions. The region includes Sudan and Somalia which are major livestock exporters to the Gulf States, whereas Ethiopia has a substantial informal export trade through Somalia, and a growing formal export trade to the Gulf States, Egypt, Sudan and other countries. Most of the livestock entering these markets are sourced from pastoral areas. Livestock export facilities along the northern Somali coast and Djibouti continue to grow, often with private sector investment. Eastern Africa is also characterized by exploitation of pastoral areas for wildlife conservation and tourism, especially



in Kenya and Tanzania, although the extent to which revenues benefit pastoralists is unclear. The region also has substantial oil, mineral and natural gas reserves in pastoral areas. In Sudan, the pastoral-dominated livestock sector contributes 80 percent of the agricultural GDP. In Ethiopia the livestock-dependant leather industry is the second largest source of foreign currency after coffee. Recent reviews of the livestock sector in Ethiopia conducted by government

indicate a substantial under-valuing of the sector. In Uganda, pastoralist and small livestock producers contribute the fourth largest share of foreign currency earnings. Kenya and Tanzania have vast arid lands occupied by pastoralists, who supply the substantial domestic meat markets.

### **Southern Africa**

In South Africa pastoralism account for about 60 per cent of the national cattle herd, where the livestock

sector, including pastoralism, is an important meat export market for neighbouring Namibia. In Namibia pastoral-dominated livestock sector contributes 3 per cent of GDP and 28 percent of the agricultural GDP. Namibian pastoralists hold 80 per cent of the national cattle herd, which contribute about one-third of income in traditional households. Pastoralism seems to play a less important role in the economies of Lesotho, Mozambique, Zimbabwe and Angola.

## 3. The multiple values of pastoralism

### 3.1. Direct values of pastoralism

**Direct values** consist of measurable products and outputs such as livestock sales, meat, milk, hair and hides. They also include less easily measured values such as employment, transport, knowledge and skills.

#### Animal and milk sales and consumption

The value of animal sales is consistently one of the highest direct values of pastoralism (see part on markets).

Milk sales/consumption is an important direct value of pastoralism in developing countries but not in developed economies where the dairy sector is highly intensive and use specialized breeds. In those conditions, milk production from pastoralist systems is less competitive, although it is noted that some industrialised countries maintain a vibrant pastoral dairy sector through the production of niche products, such as organic cheese (e.g. Switzerland and France).

This underestimation problem is exacerbated by the fact that in Ethiopia the milk consumed by pastoralists represents about 77% of the total milk production and that amount is not captured by markets or statistics.

The level of consumption of milk within the pastoralist group seems to depend on different factors. For example in Spain, most of the bovine milk is consumed by the family farmers because it cannot

compete in the market with milk from specialized breeds, but on the other hand most of the milk from sheep and goats (species mainly kept in extensive pastoral systems) is sold to processors to produce expensive cheese with special labels, and only between 5% to 13% of the milk is self-consumed. Market access and the capacity to add value to the milk is also guiding the level of consumption of milk among pastoralists in Kyrgyzstan.

Specific studies about the milk commercialization and consumption as well as the market chain in the different pastoral regions of Mali are needed. Specifically in the case of Mali, attention should be given to how the market has responded to cessation of powdered milk import from the EU until mid-2007, which was marketed at lower rates than pastoralist milk, to the extent that pastoralists themselves bought it.

#### Hides and skins sales and consumption

The sales of hides and skins and its use in the pastoralist production unit is an important direct value of pastoralism. The trade of hides and skins is usually linked to the animals' sales for meat. In addition, in some pastoral systems, the animals lost to disease can provide skins for processing although the meat is not commercialized, thus creating a bias between the numbers of animal sold and the number of skins produced. In terms of the overall monetary, Ethiopian hides and skins account for 85% of the country's livestock exports. Specific studies about the market chain of hides and skins in pastoralist areas are necessary to inform interventions aimed

at enhancing commercialization channels and increasing the revenues of pastoralists. From the different studies it is clear that some research is needed to 1) estimate the skins produced at informal slaughterhouses, 2) analyse the value chain of skins and hides 3) quantify in monetary terms the value of the final goods produced considering the importance of leather handicrafts in pastoralists areas.

#### Transport and traction

The cost of transportation is high in pastoral areas and is one of the highest production/transaction costs and a major constraint for market access. The importance of the animals for the livelihood of the owners is significant, although rarely quantified in monetary terms. Livestock provide power for **transport and traction** for many pastoralists. Ownership of a camel and a cart is a good source of income, sufficient to support a family. Other uses of camel power include threshing, lifting of water and powering of oil mills. The camel is also used as riding animal, where it exerts considerable draw tourists.

#### Manure and agricultural productivity

Use of livestock manure is one of the major methods used throughout history to maintain soil fertility and it is still a common practice in many production systems. Manure is a product of pastoralism that could be categorized as a direct value if considered as a final commodity able to be valued using market prices, or as an indirect value if manure is considered as an input needed for some natural processes, e.g. nutrient cycling, or as a production factor for agricultural activities. Manure



from different animal species can be collected, kept, dried and sold or used by pastoralists in order to complement their income or contribute to their livelihood.

### 3.2. Indirect values

**Indirect values** associated with pastoralism include tangibles such as inputs into agriculture (manure, traction, and transport) and complementary products such as gum arabic, honey, medicinal plants, wildlife and tourism. They also include less tangible values including financial services (investment, insurance, credit and risk management), ecosystem services (such as biodiversity, nutrient cycling and energy flow) and a range of social and cultural values.

There are many products that come from pastoralist lands which are increasingly sought after. Many of these products have a high value on global markets and, for the most part, they are passively managed by pastoralists. Production or collection of these commodities is often central to pastoral livelihoods and could be considered a direct value of pastoralists. However, here they are considered as indirect values of pastoralism (as a production system), which mobile livestock keeping can enhance.

Medicinal plants and other high value plants provide important supplementary incomes to many pastoralists, as well as have importance for traditional remedies in areas that are typically poorly served with modern medical services. Apart from local knowledge, one of the important roles to be played by

pastoralists is in ensuring sustainable harvest of plants since this sector is susceptible to unlicensed over-exploitation by outsiders.

One of the greatest values associated with pastoral systems may be the tourism value. Three obvious aspects are **wildlife tourism** (safaris) particularly significant in Africa; **cultural tourism** which is an increasingly important aspect of the tourist industry (Maasai of Kenya and Tanzania, the Dinka of Sudan, the Tuareg of West Africa), and (iii) **aesthetic landscape value** of great value to the tourist industry and can be enhanced and protected by pastoralism.

In East Africa, although the tourism industry provides employment and small payments to pastoralist groups to conserve wildlife in their land, the owners of large tourism facilities are often outsiders and most of the profits are transferred outside of pastoralist areas. In these conditions, the participation of pastoralists in tourism related activities has been suggested as an income diversification strategy that could significantly contribute to their livelihood.

#### Contribution of pastoralism to agriculture

There is a clear linkage between pastoralism and agricultural production such as on the value of livestock for traction and the value of manure to agricultural production in pastoralist areas.

#### Trading of genetic resources:

Animal trading for cross-breeding or stocking programs has been promoted in many countries as a way to improve productivity of

local breeds or provide alternatives to enhance the livelihood of smallholders. In many cases, the consequence of these programs is the loss of indigenous breeds because of a substitution process guided solely by market forces focused on productivity traits. Peru is the largest world producer of Alpaca wool and also has the largest population of these animals. Recently, Peru has been exporting live alpacas to countries with similar environmental conditions such as Ecuador, or to developed countries such as Australia, Canada, USA and Switzerland. In few years, these countries have started to compete with Peruvian Alpaca wool in international markets. The Peruvian pastoralists consider that the future of Alpaca production is threatened because of the capacity of developed countries to make use of biotechnology to assist reproduction, initiate research programs to enhance the quality of fibre and start intensive exploitations with more homogeneous final product. The future trends of alpaca pastoralism in Peru seems to be focused on maintaining the country supremacy in the global market through a) the promotion of pastoralists association to enhance access to technical information and credits b) Control and regulate the exports and illegal trading of live animals and genetic resources i.e. embryos c) Implement mechanisms to certify the quality of the fibre.

#### Payments for Ecosystem Services

Sustainable pastoralism maintains a number of critical ecosystem services. However, these services are typically not valued or traded on markets. Tools such as economic valuation and payments for

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ecosystem services can internalize the value of biodiversity and ecosystem services, and provide a strong economic incentive for conserving biodiversity. Payments for ecosystem services involve financial payments in proportion to the approximate value of the ecosystem services to those who manage their lands in a way that maintains the service (e.g. water quality, carbon storage). In order to implement effective payments for ecosystem services it is necessary to implement pricing policies for natural

resources that are appropriate at the national level and are sensitive to social needs, and to establish market mechanisms to reduce the loss of ecosystem services in the most cost-effective way.

**Carbon Markets** Pastoralists are the custodians of more than 5000 million hectares of rangelands which currently account for about 30% of the world's soil carbon stocks. Improved rangeland management, as a carbon sequestration strategy, has the potential to store up to

2000 Mt of CO<sub>2</sub> equivalent by 2030. In order to participate in the international carbon market, pastoralists will need to develop appropriate institutions to aggregate carbon assets, and develop and demonstrate improved land management techniques. At the same time, international carbon markets will need to recognize the potential of carbon sequestration in rangelands and improve data and information on the carbon sequestration impacts of different land management techniques.



## 4. Pastoralist markets and marketing

The orientation of pastoralists towards the market has been extremely variable across the world, according to accessibility and ecology. Pastoralists have always had to exchange some products with outsiders for basic foodstuffs and minor household goods. Extreme weather pastoralists have generally reduced this to minimum because of the difficulties of such trade. However, West African pastoralists seem to have coevolved with highly sophisticated long-distance trade networks, and indeed make use of them to pass information about both market conditions and forage resources.

Prior to the evolution of modern transport, animals were the only method of moving large quantities of goods across land. Consequently, pastoralists often became involved in trade caravans, guiding, managing and supplying the appropriate livestock and sometimes themselves becoming traders.

In the Sahara and Arabia, this evolved into a quite sophisticated form of blackmail, whereby the nomads both guided the caravans and extracted monetary payments to prevent them from raiding those same caravans. By no coincidence at all, pastoralism has also been associated with another type of trade, namely smuggling. The consolidation of national borders and the evolution of contradictory tariffs in neighbouring countries makes nomads the ideal group to smuggle contraband between these countries. This is particularly highly developed in the Near East and Central Asia, where extremely different.<sup>11</sup>

Many pastoralists are increasingly engaging in market activity and livestock are being increasingly seen as a commodity for sale. Despite the constraints to marketing, most pastoralists throughout the world supply markets, whether international, national, local or household. Marketing practices are well established, although the choice of market varies over time, depending partly on which market yields the highest returns. There is a tendency to talk of 'the marketplace', yet in reality livestock markets are composed of many different types of market and pastoralists can, under the right conditions, exercise a degree of choice (McPeak and Little, 2006).

### 4.1. Domestic trade

The rapidly increasing proportion of the World's population that lives in urban centres is generating a growing demand for livestock products which leads to higher per capita consumption of meat and dairy products. There is a global increase in demand, but a significant part of that increase is in developing and emerging countries, offering important marketing opportunities for pastoralists.

Pastoralists in most countries appear to be integrated into their national market to some extent. However, many countries with pastoral populations are not self-sufficient in animal products and it is safe to say that, given the great underinvestment in the pastoral system, there is scope to increase the supply to national markets through appropriate investment in production and marketing. Indeed, securing domestic market share may be a

great deal less risky than investing in global markets, where competition is fierce and consumer standards can be both costly to attain and fickle.

In many countries the best returns are obtained by home consumption. For example, across Southern Africa, evidence assembled shows very good reasons for the general lack of involvement in selling livestock: people keep livestock not to make money, but to save money. The main determinant of this strategy is high retail food prices, itself a function of remoteness, high transport costs and poor marketing systems (Behnke, 2006). Specifically, in Botswana, despite government policies that make the livestock sector artificially attractive, few pastoralists engage in sales. This may owe in part to tough standards set by Botswana's export-oriented livestock economy, with the high subsidies provided to that sector and the restriction on livestock movement that go with it. However, evidence also suggests that livestock fattening (to enhance live animal sales) will deflect milk away from human consumption, losing a staple part of the diet (Behnke, 2006). Diversification into off-farm or non-farm cash earning, particularly through labour employment, appears to be a global trend amongst pastoralists.

### 4.2. Regional Trade

Pastoralism is often associated with border areas and as a result the opportunities for informal trade are great: indeed, they are sometimes the only opportunities available. However, such trade is rarely captured in official statistics and is frequently considered as something

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illegal and undesirable. By failing to recognise and legitimise cross-border trade, government is more likely to promulgate inappropriate policies that result in economic loss to the national government.

Instead of facilitating this trade to stimulate local economies, and investing in those economies, government tend to impose tariffs and restrictions that ensure the trade remains in the informal, or black market, sector, relying on bribes at border posts where necessary. The cost to pastoralists of these policy failures is that “legal ambiguities” generate inefficiency in the market, which creates opportunities for markets to be disrupted by rent-seeking behaviour (McPeak and Little, 2006). More open, integrated and competitive markets are required, yet in government circles ‘trans-border commerce often is still portrayed as smuggling and illegal and consequently remains subject to disruptive border closures and animal confiscations’ (Little and Mahmoud 2005).

Such cross-border trade is common in Central Asia. Cross-border trade is essential to food security in eastern Africa, where the export of livestock finances the import of essential foodstuffs such as rice, wheat flour, cooking oil and pasta. When the export of animals declines or is interrupted, food supplies dwindle and become expensive (Little, 2002). However, the benefit of cross-border trade to pastoralists is restricted by weak spatial integration, which results in a greater proportion of the proceeds of livestock sales accruing

to non-pastoral agents. Pastoralists face unfavourable terms of trade as a result of declining prices for their animals and rising prices of their major purchases, and improving food security in the region requires greater market access for both sales and purchases (Little et al. 2001).

**Cross-border trade** seems to be highly dynamic with very adaptive and forward-thinking actors; it has responded to technological opportunities (e.g. cell phones) and marketing opportunities (e.g. fattening systems; selective breeding). It has its own regulatory institutions, market information systems and financial services. Cross-border trade in livestock is strongly linked to trade in other commodities such as grains and other foodstuffs.

### 4.3. Global trade

In many countries pastoralism contributes significantly to export earnings. Ethiopia’s leather export market, dominated by the pastoralist sector, provides 12% of total trade (EPA, 2003). Uganda’s fourth export earner, hides and skins, relies on pastoralists and small holder producers for 95% of its produce (Muhereza, 2004).

Where global prices offer sufficient incentives, pastoralists are engaged in significant global trade. The trade of live animals from Somali and Ethiopia to the Middle East, driven by high oil-based disposable incomes in the Middle East combined with geographic proximity, provides a useful example. Over the last three

to four decades Somali pastoralists have experienced a significant change from a livestock subsistence society, which lived mainly on milk and meat as staple foods complemented occasionally with a little grain, to a livestock export oriented market economy developing comparatively sophisticated trade links (UNDP 1998).

The Southern African ‘block’ of Botswana, Namibia, Zimbabwe and Swaziland have preferential chilled beef quotas with Europe, which although dominated by commercial operations, allow limited participation by pastoralists when the latter have large enough herds. However, these countries have failed to meet their export quotas and despite huge investments and subsidies into intensive livestock systems they are seeing their competitiveness in global markets eroded (Behnke, 2006).

Global trade in pastoral dairy products are rarely given much attention, yet camel milk is a greatly under-exploited commodity in many pastoralist systems that offers great potential for economic gain, in both domestic and international markets. The global market for camel milk alone, most of which is produced in drylands areas, is estimated at 10 billion US\$, with 200 million customers in the Arab world alone (FAO, 2006). Two countries with a dominant pastoralist population and a large national camel herd, Somalia and Mauritania, have both successfully established commercial camel milk enterprises that collect milk from fully mobile producers.



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### Tiviski Dairy Products, Mauritania

In 1989, when there was no fresh milk in the capital Nouakchott, a private enterprise decided to bridge the gap between pastoral milk and newly settled urban consumers, and started to collect raw milk from herders and sell it pasteurised in cartons. Tiviski, the small mini-dairy, started with a €230,000 investment, and had to face many severe challenges: general LDC difficulties, besides issues more specifically linked to pastoral conditions, such as milk collection distances, the lack of infrastructure, raw milk quality, climate, seasonal swings, as well as pressure from dairy imports and the lack of Government support.

Despite the hurdles, the dairy's collection system, quality policy and general Business approach proved powerful, leading up gradually to total investment of €4 million and turnover exceeding €3 million, a thousand faithful suppliers, 200 employees, a considerable impact on the rural economy.

However, marketing has not been smooth: invasive UHT milk imports, competition on a too-small market, European market barriers, and the lack of regional outlets have squeezed sales well below production capacity, and also below milk supply, despite the development of a unique camel cheese and a €3 million investment in a UHT plant with a Candia franchise.

### 4.4. Constraints in marketing

A number of market constraints are common to the majority of pastoral systems:

- Marketing in pastoral areas is typically complicated by high **transaction costs** due to the long distances that the pastoralist must travel and the poor infrastructure that is generally found in the marketplace.
- **Transport costs**, of livestock and of goods purchased, are often prohibitive and act as a deterrent to traders.
- **Perishability** and high transport costs of goods: lack of processing facilities mean that access to certain markets is limited.
- **Lack of financial services**: producers do not have the necessary capital to underwrite

cash expenses associated with marketing, they lack insurance and thus face risks of taking livestock to market, and they lose choice over the timing of sales.

- **Lack of organised national markets**: a critical factor is the lack of price information, and resultant exploitation by middlemen brokers, exacerbated by lack of livestock holding facilities, feed and water.
- Excessive **government bureaucracy** and fees: the extractive nature of government's involvement in trading leads domestic traders to seek unofficial channels.

In particular, trends towards tracking meat and milk products from the source to market require a formal monitoring system which is not compatible with most pastoral systems. Market access for pastoralists can be supported through: (1) the marketing of specialty products, (2) the inclusion of sustainability

considerations in purchasing decisions, (3) support to supply chain coordination, (4) facilitating access to credit, (5) capacity building for pastoral producer associations, and (6) providing veterinary services to maintain the quality of meat and milk products.

#### Livestock marketing in the Horn of Africa<sup>12</sup>

Besides meeting the subsistence demands of millions of pastoralists, the region is generally self-sufficient in meat production, with the exception of Djibouti. Yet the level of exports of meat from the region is low. In contrast, all countries in the region, excluding Kenya, import significant volumes of milk to meet domestic demand. Poor communication and a lack of infrastructure are major constraints for pastoralists seeking to access major markets and urban centres, where demand for livestock products is growing fast. A lack of cooling, storage, processing and packing facilities, as well as

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poor transportation and handling, all limit ability to add value to the product, compounding the problem. Currently, most livestock products from the region are marketed locally and internationally with little value addition – a consideration associated with low earnings and limited investment by industrial enterprises in the livestock sub-sector.

Trade restrictions due to the prevalence of transboundary diseases and stringent livestock trade standards are another major constraint to international trade. Veterinary authorities in importing countries are recommended to require the presentation of an international veterinary certificate that should attest that the entire consignment of meat complies with a set of criteria which are difficult to achieve in pastoral production systems.

The considerable potential to supply international markets is severely constrained by a lack of national capacities to meet

international standards which, under present circumstances, are largely unachievable. For example<sup>13</sup>, in the region as a whole there are only a small number of export abattoirs, and certification processes are cumbersome and expensive. Therefore, the livestock commodities supply chain mainly supplies national markets, with informal cross-border trade on a daily basis. More affordable, practical and appropriate rules and tools should be developed to manage the risk of spreading animal diseases through trade.

- Only 20% of the livestock trade in Ethiopia passes through formal channels, compared with the estimated 80% of export trade that passes through unofficial, informal channels. Excessive regulation and formal and informal taxation of the livestock trade acts as a major disincentive to livestock owners and traders. An approach is needed that recognises stakeholder needs and interests.

- Somalia depends on exports of meat and live animals to generate the foreign exchange needed to finance the country's imports of food and goods. Most of its exports are to destinations in the Middle East, including Yemen, the Gulf States and Saudi Arabia. However, in common with other countries in the region, the trade in live animals for export is constrained by poor marketing infrastructure and insufficient facilities, leading to increased losses, higher costs and reduced quality of live animals upon arrival at destination markets.
- Hides and skins are easier to export than fresh meat or milk. Ethiopia, Kenya and Sudan have 60 tanneries which generate a combined annual revenue of more than \$135 million. However, most countries have very poor processing facilities, adding little value to the product.



## 5. Pastoralists and the environment

### 5.1. Impacts of Climate Change on Pastoralism

Pastoralism<sup>14</sup> is facing a number of threats, not the least of which is from climate change. For example, diseases affecting livestock which are projected to increase in scope and scale as a result of climate change, including, trypanosomiasis. Furthermore, increased frequency of extreme weather events including floods and droughts may overwhelm the existing resilience of pastoral systems. Additionally, as a result of changing precipitation patterns, wildfire frequency is expected to increase in areas such as the Mediterranean basin, affecting vegetation upon which pastoral peoples depend.

There remains, however, a great deal of uncertainty with regard to the impacts of climate change on pastoral livelihoods. For example, projected decreases in precipitation may increase exposure to drought however, projected increases in grassland production as a result of the CO<sub>2</sub> fertilization effect may offset this. There is also a need for climate models that are scaled to provide meaningful information to policies that affect pastoralism.

There is a need for increased and continued monitoring of the observed and projected impacts of climate change on pastoralism. In applying the precautionary approach, there is also a need to examine existing policies and practices in order to ensure that the natural adaptive capacity of pastoral systems is maintained or restored through, for example,

conserving indigenous livestock breeds and fodder varieties, maintaining freedom of movement, and identifying and supporting traditional coping mechanisms such as water capture and management, and market access.

### 5.2. Maintenance of biodiversity

Pastoralism makes an important contribution to livestock genetic diversity. Effective grazing management has been shown to improve biodiversity and can be a tool to prevent land degradation and desertification. Grazing and animal impact can stimulate pasture growth, reduce invasive weeds and may improve mulching and mineral and water cycling, although knowledge on the true assessment of these impacts remains contested<sup>15</sup>. Because pastoralism often takes place in areas such as drylands, conventionally defined as water-stressed regions, locally adapted livestock breeds are critical for productivity. Such breeds tend to have higher resistance to disease, drought and parasites since they have evolved in parallel to such pressures. As such, despite being viewed as having limited productive potential, drylands maintain 46% of global livestock diversity. In the Near East, 90% of livestock diversity can be attributed to dryland pastoral systems. By continuing to manage indigenous livestock breeds, pastoralists maintain not only genetic diversity but also important indigenous knowledge regarding the health, management and reproduction of livestock.

The marginal lands that were previously the province of

pastoralists are increasingly coming into focus as reserves of biodiversity. Their very inaccessibility has permitted the survival of species, especially macrofauna, eliminated in high-density agricultural areas. Consequently, there is pressure on governments to declare increasingly large regions as reserved areas, both because of the conservation lobby and the potential income from tourism. This has probably gone furthest in East Africa where large mammals are still most abundant and the tourist industry most highly developed.

The immediate consequence is conflict between pastoralists, government and conservation lobbies. Uncertainties about pastoral tenure have made it difficult for pastoralists to lodge effective land claims and very often potential grazing land is simply appropriated. Pastoralists then enter conservation areas which they consider traditional grazing areas and encounter game or forest guards with predictable results. In marked contrast to the high values placed on wildlife and wilderness in the affluent North, rural communities in rangeland areas have a long-standing and deep-rooted antipathy towards potentially dangerous and destructive wild animals.

#### Environmental services

The predominant discourse on pastoralism and the environment concerns the degradation caused by pastoralists rather than the services provided by pastoralism, which usually go un-valued. However, there are many environmental services that are provided by pastoralists and pastoralism that are

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poorly understood and that national accounts do not capture, and most country partners in this study did not have the expertise to assess their values in quantitative terms. The most serious challenge for the valuation of environmental services provided by pastoralism is their joint provision, as in the case of grasslands, where livestock grazing

can contribute to maintaining healthy vegetation, which captures carbon, reduces erosion, maintains soils and facilitates water holding capacity. Biophysical studies are required in order to estimate the joint production of these services to avoid double counting and then to assess their relative value in terms of contribution to human wellbeing.

In spite of the difficulty, some attempts to estimate individual environmental values in grasslands have been made, providing an idea of the order of magnitude of the value of these services and thus offering a starting point for further studies and policy development, as discussed below.



## 6. Education and capacity building of pastoralists

Pastoralist communities have their own traditions of education, much of which has remained intact to the present. Their knowledge and values are generally passed on to the younger generation. Reported enrollment rates consistently show that levels of formal education for pastoralists are nearly always lower than the national average. Several barriers in accessing education exist such as:

- *Remoteness*: the remote and sparsely populated areas make it more difficult to recruit and retain teachers. Teachers often lack the training to adapt curriculum modules and are often themselves from outside the socio-cultural context.<sup>16</sup> The use of schooling, from the view of the pastoralist, can be seen as a form of sedentarization and transformation of the pastoralist community.
- *Labor demand for children and gender inequalities*: the high labor demand from pastoralist children may be an important obstacle to the provision of education than mobility.
- *Job Opportunities*: the availability of job opportunities and the acquiring of knowledge and skills becomes important in the decision-making process of sending children to receive formal education.
- *Insecure environment*: Especially in the Horn of Africa, conflicts have affected and delayed the development of school provision.<sup>17</sup>

Formal school education for mobile pastoral groups has to consider the interconnections between access to education mobility, and livelihoods of mobile peoples, empowerment of women and different determinants of participation.

### 6.1. Pastoralist Field Schools

In 2001, the International Livestock Research Institute (ILRI) developed and adapted the Farmers Field Schools (FFS) methodology for livestock production systems in Kenya with support from the Animal Health Programme of the UK's Department for International Development (DFID) and FAO. Following the successful experience of the Smallholder dairy project ILRI and Vétérinaires Sans Frontières Belgium (VSF-B) embarked on piloting the adaptation of FFS to the pastoralist situation in arid and semi-arid parts of Turkana District.

A PFS can be described as a 'school without walls', where groups of pastoralists learn through observation and experimentation in their own context, based on methods of adult education. This allows them to improve their management skills and become knowledge experts on their own resource use practices. The approach empowers pastoralists using experiential and participatory learning techniques rather than advising them what to do. The purpose of the PFS is thereby to improve the decision-making capacity of participants and their wider communities and to stimulate local innovation. A PFS usually

comprises a group of between 30 and 40 pastoralists (including elders, men, women and youths) who meet regularly over a defined period of time to make observations that relate livestock production to the rangeland ecosystem. A trained PFS facilitator, usually from or living in the local community, guides the learning process. Unlike some other extension approaches, PFS is more about developing people than developing technology. PFS training is hands-on and continues throughout the different seasons. Usually the PFS cycle starts before the onset of the dry season, continues through the migration during the dry season and carries on after the dry season ends, enabling participants to observe and assess their coping strategies at each stage of the cycle. In this environment, the PFS learning cycle typically takes about one-and-a-half to two years, and ends with the graduation of the group members.

The PFS group provides animals and other resources to use in simple comparative experiments. These animals form the groups' study herd, on which different (but not risky) treatments are tried and observations made. Changing environmental conditions and factors affecting the study herd, such as disease outbreaks, dictate the topics to be addressed each week during the PFS session. Folk media, including songs and storytelling, is used to disseminate information on technical and social issues. Tools such as illustrations, practical demonstrations and real-life exhibits are further used as learning aids adapted for illiterate group members.<sup>18</sup>

### 6.2. Capacity Building and empowerment

Pastoralists have developed a number of complex institutional arrangements to manage pastoral lands. As laws, ecological conditions, and social structures have changed, these institutions have had to adapt. It is important to recognize and legitimize the roles and responsibilities of existing local institutions.

In addition to supporting community institutions, there is a need to extend capacity building to individual pastoralists. This is especially true when considering often marginalized groups such as women and youth. Individual capacity building can take the form of education, in a manner that respects the mobility of pastoral communities, awareness-raising on the rights and responsibilities of pastoralists, improved access to health care, and improved access to veterinary services through

community-based animal health workers (CAHWs).

Another important element of individual capacity building relates to access to credit which, when implemented in a way that respects traditions and community institutions, can serve as an important tool towards building the capacity of individuals to manage risk and expand livelihood options.

#### **Integrating indigenous and local knowledge, innovations and practices**

Many pastoral systems are steeped in traditional management and practices. Pastoralism is a livelihood system tied to ecosystem services with complex systems of social, political and economic organization. Centralized decision-makers are often unaware of the challenges pastoral communities face in achieving and/or maintaining sustainable livelihoods as there are few mechanisms for local communities to transmit their knowledge to outside decision

makers, and the communities are often economically and politically marginalised. In fact the erosion of indigenous and local knowledge, innovations and practices can reduce both the environmental and economic sustainability of pastoralism. As such, when managing pastoralism for biodiversity conservation and poverty reduction, it is important to ensure that the appropriate policy framework is in place to support and preserve indigenous and local knowledge, institutions, innovations and practices.

Pastoralists in African countries have customary loaning and insurance arrangements, and working institutions for redress and debt collection. These assist individual households to survive in bad times and to rebuild after losses. Such institutions may be enhanced through policies to broaden micro-credit and investment opportunities, and to enable access to financial services such as banking and insurance.<sup>19</sup>



## 7. The future of pastoralism: policy considerations

Currently, **many pastoral communities are undergoing profound socio-economic and cultural transformations**, with varying degree of success. Generally, government interventions include promoting integration of pastoralists into the main stream through sedentarization, mixed marriages and involvement in political processes. As in other African communities, the social organization and social support systems of pastoralist groups are not static. In some areas traditional leadership faces pressures from government administrations or disaffected youths, while local safety nets can be weakened when overall livestock holdings are reduced due to major disease outbreaks, drought or conflict.<sup>20</sup>

Unfortunately, the perception that pastoralism does not produce significant economic gain means that many governments fail to make the necessary public investments in market infrastructure, roads, security, education and human and institutional capacity building.

**Policy must be informed by a more comprehensive understanding of the multiple values of drylands and pastoralism**, beyond the narrow focus on commercial products. Environmental services (such as carbon sequestration, biodiversity, combating desertification and erosion) are increasingly highly valued in the global context and their promotion could represent an important economic potential.

Achieving the economic potential of pastoralist regions requires the provision of enabling incentives, including land and resource rights, access to credit and banking services, relevant research and extension and improved access to government, providing these rights and services are adapted to the pastoral context. The advantages and values of local breeds also need to be recognised, protected and capitalised on, for example through local breed improvement as opposed to exotic breed importation.

Pastoralists need to be sufficiently empowered to **influence policy** and implementation on the national stage. To this end, enabling policies are needed to provide the necessary environment for empowerment and accountability. Changes in health, social services and education policies favourable to pastoralists are needed. Extension and training tools need to be developed that are suited to the extensive nature of rangelands environments and which capitalise on existing pastoral knowledge.

In addition to traditional markets, ongoing international policy discussions may be yielding new opportunities for **financial incentives for sustainable pastoralism**. One such opportunity may arise from climate change mitigation, while ongoing programmes for payments for ecosystem services represent another possible financial mechanism.

Many pastoralists have also been quick to take advantage of **new**

**technologies**, particularly mobile phones which allows them to get market information about livestock prices at different regional markets and identify which points-of-sale offer the best prices for their livestock and livestock products. The use of geographic information systems (GIS), the global positioning system (GPS), and thematic maps of seasonal movements of livestock allows to accurately predict animal deaths and supports efforts to provide livestock insurance for pastoralists. For example, the index-based livestock insurance program developed by ILRI and other partners will use satellite imagery to determine potential losses of livestock forage and issue payouts to participating herders when incidences of drought are expected to occur. The growing systems around remittances and migrations are also assisted by mobile phone communication. Increasingly, the private sector is exploring options for delivery financial services, including banking, via mobile phones, with systems already in place in some countries.

In the light of the opportunities offered by ICTs to groups leaving in very remote areas, increased public and private investments are needed on ICTs applications and upscaling of successful experiences.

In the African context, the implementation of the Policy Framework for Pastoralism in Africa, will offer unique opportunities to engage with key stakeholders in view of (i)



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strengthening and/or establishing an appropriate institutional framework to provide coordination of follow up activities and facilitate mutual learning by member states as they develop/review their pastoral policies in accordance

with the Policy Framework; (ii) putting in place appropriate measures/mechanisms for mobilization of financial resources and partnerships in support of promoting pastoral policy development and implementation

at regional and country levels; (iii) supporting pastoral groups and networks in their efforts to initiate regional and/or continental pastoralist forums.



## Selected resources available online (English and French)

*En italique les documents disponibles en français*

### African Union

African Union. 2010. Policy Framework for Pastoralism in Africa: Securing, Protecting and Improving the Lives, Livelihoods and Rights of Pastoralist Communities. Addis Ababa, Ethiopia.

<http://www.tnrf.org/files/policy%20framework%20for%20pastoralism%20final.pdf>

### Department for International Development (DFID)

DFID PastoralismProgressing Policies that favour Pastoralist 1.Opportunities for Development  
<http://www.dfid.gov.uk/R4D/PDF/Outputs/MediaBroad/PastoralismInformationNote1.pdf>

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<http://www.dfid.gov.uk/R4D/PDF/Outputs/MediaBroad/PastoralismInformationNote2.pdf>

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<http://www.dfid.gov.uk/R4D/PDF/Outputs/MediaBroad/PastoralismInformationNote3.pdf>

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<http://www.dfid.gov.uk/R4D/PDF/Outputs/MediaBroad/PastoralismInformationNote4.pdf>

### European Commission

Communication from the Commission to the Council and the European Parliament - Strategy for Africa: an EU regional political partnership for peace, security and development in the Horn of Africa  
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### European Parliament

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Arid Land Information Network  
<http://www.alin.or.ke/>

Common Market of Eastern and Southern Africa (COMESA)  
<http://www.comesa.int/>

Drylands Coordination Group  
<http://www.drylands-group.org>

European Forum on Nature Conservation and Pastoralism  
<http://www.efncp.org/news/news20100601.php>

IFAD-Pastoralism  
<http://www.ifad.org/lrkm/theme/pastoralism.htm>

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### The Technical Centre for Agricultural and Rural Cooperation (CTA)

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<http://www.cta.int/>

- Agritrade  
<http://agritrade.cta.int/>
- Brussels Development Briefings  
<http://brusselsbriefings.net>
- Knowledge for Development  
<http://knowledge.cta.int/en>

### European Commission

European Commission – Agricultural and food prices  
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[http://ec.europa.eu/agriculture/foodprices/index\\_fr.htm](http://ec.europa.eu/agriculture/foodprices/index_fr.htm)

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### European Parliament

European Parliament – Committee on Development  
<http://www.europarl.europa.eu/activities/committees/homeCom.do?language=EN&body=DEVE>

*Parlement Européen – Comité Développement*  
<http://www.europarl.europa.eu/activities/committees/homeCom.do;jsessionid=2B0B15C610AA75156276381888A9AF21.node2?language=FR&body=DEVE>

### United Nations Organizations

FAO – Agricultural Development Economics  
<http://www.fao.org/economic/esa/en/>

FAO – Global information and early warning system (GIEWS)  
<http://www.fao.org/giews/english/>

FAO – World Food Situation  
<http://www.fao.org/worldfoodsituation/wfs-home/en/>

IFAD – Rural Poverty Portal Pastoralism  
<http://www.ruralpovertyportal.org/web/guest/topic/article/tags/livestock/pastoralism.htm>



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IUCN - International Union for Conservation of Nature  
<http://www.iucn.org/>

IUCN -.World Initiative for Sustainable Pastoralism (WISP)  
<http://www.iucn.org/wisp/>

UNDP - United Nations Development Programme  
<http://www.undp.org/>

*PNUD - Programme des Nations Unies pour le développement*  
<http://www.undp.org/french/>

UNECA - The United Nations Economic Commission for Africa  
<http://www.uneca.org/>

*CEA - Commission Economique pour l'Afrique*  
[http://www.uneca.org/fr/fr\\_main.htm](http://www.uneca.org/fr/fr_main.htm)

UNESCAP - United Nations Economic and Social Commissions for Asia & the Pacific  
<http://www.unescap.org/>

World Health Organization - Nutrition for Health and Development  
<http://www.who.int/nutrition/en/>

UNDP Dryland Centre  
[www.undp.org/drylands/](http://www.undp.org/drylands/)

### NGOs

Agency for Cooperation and Research in Development (ACORD)  
<http://www.acordinternational.org/>

CELEP Pastoralism  
<http://www.celep.info/?tag=pastoralism>

CORDAID  
<http://www.cordaid.com>

Oxfam - Pastoralism  
<http://www.oxfam.org.uk/resources/learning/pastoralism/index.html>

Vétérinaires Sans Frontières (Vets without Borders - Belgium)  
<http://www.vsf-belgium.org>

Resource Conflict Institute  
[www.reconcile-ea.org](http://www.reconcile-ea.org)

European Forum on Nature Conservation and Pastoralism  
<http://www.efncp.org/>

### Research Organisations and Networks

Arab Centre for Studies of Arid Zones and Drylands (ACSAD)  
<http://www.acsad.org/>

CGIAR - Consultative Group on International Agriculture Research  
<http://www.cgiar.org>

*CGIAR - Groupe Consultatif pour la Recherche Agricole Internationale*  
<http://www.cgiar.org/languages/lang-french.htm>

CIRAD  
<http://www.cirad.fr/>

*Conseil Mondial des Eleveurs/World Herders Council*  
[www.condial.org](http://www.condial.org)

Drylands Coordination Group  
[www.drylands-group.org/About\\_DCG/index.html](http://www.drylands-group.org/About_DCG/index.html)

Drylands Research  
[www.drylandsresearch.org.uk](http://www.drylandsresearch.org.uk)

Eldis - Pastoralism:  
<http://www.eldis.org/pastoralism>

European Forum on Nature Conservation and Pastoralism (EFNCP)  
<http://www.efncp.org/>

FARA - Forum for Agriculture Research in Africa  
<http://www.fara-africa.org/>

*FARA - Forum pour la recherche agricole en Afrique*  
<http://fr.fara-africa.org>

IIAASTD - International Assessment of Agricultural Knowledge, Science and Technology for Development  
<http://www.agassessment.org>

Institute of Development Studies IDS  
<http://www.ids.ac.uk/go/home>

IIED - International Institute for Environment and Development  
<http://www.iied.org/>

INRA - French National Institute for Agricultural Research  
<http://www.international.inra.fr/>

*INRA - Institut National de Recherche Agricole*  
<http://www.inra.fr/>

IRAM - Institute for applied research in development methodology  
<http://www.iram-fr.org/index-english.php>

*IRAM - Institut de Recherches et d'Applications des Méthodes de développement*  
<http://www.iram-fr.org/>

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International Arid Lands Consortium  
[www.ag.arizona.edu/OALS/IALC](http://www.ag.arizona.edu/OALS/IALC)

Intergovernmental Authority on Development IGAD  
<http://igad.int/>

IGAD Livestock Policy Initiative  
<http://www.igad-lpi.org/>

International Bureau for Animal Research  
[www.cape-ibar.org](http://www.cape-ibar.org)

International Institute for Sustainable Development  
[www.iisd.org/natres/security/pastoralism.asp](http://www.iisd.org/natres/security/pastoralism.asp)

International Land Coalition  
<http://www.landcoalition.org/>

IISD Pastoralism and Conflict Initiative  
[www.iisd.org/natres/security/pastoralism.asp](http://www.iisd.org/natres/security/pastoralism.asp)

Land Tenure Centre  
[www.ies.wisc.edu/ltc](http://www.ies.wisc.edu/ltc)

League for Pastoral Peoples  
[www.pastoralpeoples.org](http://www.pastoralpeoples.org)

Natural Resources Institute  
<http://nri.org/projects/pastoralism/pastoralism.htm>

Pastoral Development Network  
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Pastoralist Communication Initiative  
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Programme for Land and Agrarian Studies  
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[www.vsfe.org](http://www.vsfe.org)

Women Pastoralists  
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World Initiative for Sustainable Pastoralism (WISP)  
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World Alliance of Mobile Indigenous Peoples (WAMIP)  
<http://www.wamip.org/>



## Glossary

### Agro-pastoralism

Production system where all of the family and livestock are sedentary and where crops usually contribute an important part of the livelihood.

### Animal Trampling

Herds of livestock modify the soil structure and cause erosion through repeated walking on the same places.

### Arid Zone

The areas where the growing period is less than 75 days, too short for reliable rainfed agriculture. The coefficient of variation of the annual rainfalls is high, up to 30%. Abiotic factors, specially rainfall, determine the state of the vegetation. The non-equilibrium theory applies in this environment. The main systems found in these zones are the mobile systems on communal lands. Some cases of ranching are present.

### Biodiversity

The word 'biodiversity' is a contraction of biological diversity. Diversity is a concept which refers to the range of variation or differences among some set of entities. Biological diversity therefore refers to variety within the living world. The

term 'biodiversity' is commonly used to describe the number, variety and variability of living organisms.

### Bush encroachment

The expansion of woody vegetation, normally at the expense of grazing area. Often associated with grazing by livestock species at a rate that is unsustainable within the prevailing environmental and climatic conditions.

### Carbon sequestration

Typically, the investment in planted forests (or in forest preservation) as carbon sinks. Carbon sinks can also occur in non-forested areas. Recent research has indicated that improved deep-rooted pastures, and pasture-tree combinations, can also be significant in carbon sequestration. The Kyoto protocol authorised the creation of an international market in carbon sequestration schemes whereby developed countries can purchase the externally certified reductions in emissions of developing countries and use them to meet their own national emission limits.

### Communal areas

Areas governed by a system of land tenure where title to the land is held

by groups (e.g. villages) rather than by individuals.

### Cut and Carry

Production systems relying on the cutting of feed at one location and transport to another where it is used by livestock.

### Deforestation

The process of removal of forest cover.

### Grazing Fee Regimes

An approach to controlling grazing pressure through charging for licenses to graze communal land.

### Grazing systems

The grazing system is predominantly dependent on the natural productivity of grasslands, and therefore defined largely by the agro-ecological zone.

### Pastoralism

Predominantly extensive production system that depends for more than 50 per cent of income on livestock, includes nomads, transhumants and semi-transhumants.

## Acronyms

AEZ	Agro-ecological zones
AfDB	African Development Bank
AGOA	African Growth and Opportunity Act
ASAL	Arid and Semi-Arid Lands
AUBP	African Union Border Programme
AUC	African Union Commission
AU	African Union
AU/DREA	African Union/Department for Rural Economy and Agriculture
CAADP	Comprehensive Africa Agriculture Development Programme
CAP	EU Common Agricultural Policy
CAHWs	Community-Based Animal Health Worker(s)
CBO	Community based organization
CEBV	Economic Community for Meat and Livestock
CELEP	Coalition of European Lobbies for Eastern African Pastoralists
CEBEVIRAH	Economic Commission for Livestock, Meat and Fish
CILSS	Permanent Inter-State Committee for Drought Control in the Sahel
CGIAR	Consultative Group on International Agricultural Research
COMESA	Common Market for Eastern and Southern Africa
CSOs	Civil Society Organizations
EAC	East Africa Community
ECOWAS	Economic Community of West African States
FAO	Food and Agriculture Organization of the United Nations
IBAR	Inter-African Bureau for Animal Resources
IFAD	International Fund for Agricultural Development



IFC	International Finance Corporation
IIED	International Institute for Environment and Development
ILRI.	International Livestock Research Institute
IMF	International Monetary Fund
IUCN	International Union for Conservation of Nature
MDGs	Millennium Development Goals
NEPAD	New Partnership for Africa's Development
ODA	Official Development Assistance
OECD	Organisation for Economic Co-operation and Development
OIE	World Organization for Animal Health
PENHA	Pastoral and Environmental Network in the Horn of Africa
PWC	Pastoral Women's Council
SADC	Southern African Development Community
SPS	Sanitary and Phytosanitary Standards
TBT	Technical Barriers to Trade
UNCCD	United Nation Convention to Combat Desertification
UNCTAD	United Nations Conference on Trade and Development
UNFCCC	United Nations Framework Convention on Climate Change
UNHCR	United Nations High Commissioner for Refugees (UNHCR)
VSF	Vétérinaires Sans Frontières
WB	World Bank
WFP	World Food Programme
WISP	World Initiative for Sustainable Pastoralism

## Footnotes

1. This Reader is not intended to exhaustively cover the issue of Pastoralism in African countries but to provide some background information and selected information resources, focusing on the implications for rural development.  
  
The Reader and most of the resources are available at <http://brusselsbriefings.net>
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