



# Review of the literature on Pastoral Economics and Marketing:

## The Horn of Africa and Southern Africa

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## Introduction

This report takes the proverbial trip from the Cape to Cairo, pastoral style. For pastoral purposes we begin the journey in Somalia on the Horn of Africa and finish in the Republic of South Africa. Along the way we encounter both conceptual forests and conceptual trees.

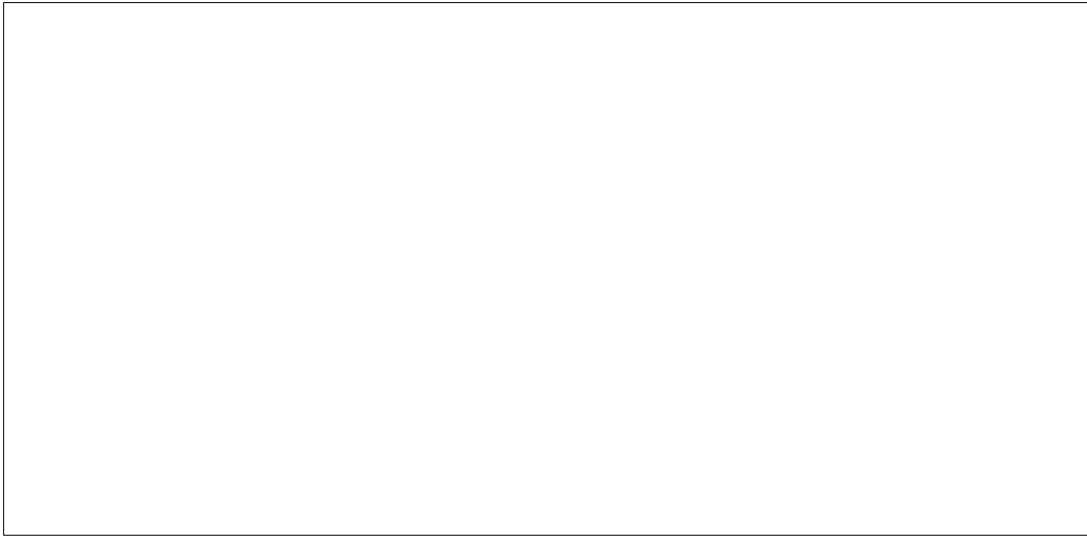
The trees that might prevent us from seeing the forest are represented by individual Africa countries. With respect to livestock marketing and commercial involvement, each of the countries reviewed in this study is remarkably distinct. For example, the four major livestock producers and exporters in southern Africa – Botswana, Zimbabwe, Namibia and South Africa – differ one from another as a result of variations in climate, natural resource endowment, colonial history and current levels of national economic development. The country case studies in this report emphasize these differences.

But there is also a forest to report on, in the form of a single, overall pattern that emerges from the sub-continental breadth of this review. In terms of variations in the level and kind of pastoral commercial involvement, there is a clear regional difference between the Horn and southern Africa.

The national economies of Ethiopia and Somalia are poor, technologically underdeveloped, but integrated nonetheless into global capitalism. In terms of livestock exports, these countries produce relatively unprocessed raw commodities – hides, skins and live animals – for regional markets. Weak, non-existent or (from the perspective of livestock producers and traders) parasitic national governments do little to promote their livestock industries. Tc valu9 Tc Tw r52 nproce

might otherwise aspire to regularly sell meat, milk or maize for profit must compete head-on against large, mechanized, well financed farms or ranches with privileged market access and secure land tenure arrangements – the heirs to southern Africa's dualistic settler economy.

**Figure 2**



- About a third of total livestock off-

exports and 52% of sheep exports for the eastern African region (Zaal and Poderman 2000: 17-18 cited in Little 2002); Somaliland was the regional centre for small ruminant exports. Since 50 to 60% of the small stock leaving Berbera originate in Ethiopia, this trade made an important contribution to the Ethiopian as well as the Somaliland economy.

### **Benefits of cross-border trade**

Little argues that cross-border trade is essential to regional food security, with the export of

**Table 2: Ethiopia Number of Livestock 2005**

Livestock	Number
Sheep	17,000,000
Goats	9,626,000
Cattle	38,500,000
Horses	1,500,000
Camels	470,000
Asses	3,800,000

***Table4: Ethiopian live animal and meat exports***





of GDP and about 28% of the total agricultural gross product (Panin 2000 quoting CSO 1995). In the 1990s the contribution of cattle to the average annual rural household income was estimated at 33% and the contribution of small ruminants at 15% (Panin and Mahabile 1997). The ownership of goats is less skewed than cattle ownership. In one study area 85% of the households reared goats while only 40% kept cattle (Panin 2000).

**Table 5: Botswana Livestock Production 2005**

Livestock	Number
Sheep	400,000
Goats	2,250,000
Cattle	1,700,000
Horses	33,000
Camels	0
Asses	330,000

Source: FAOSTATS

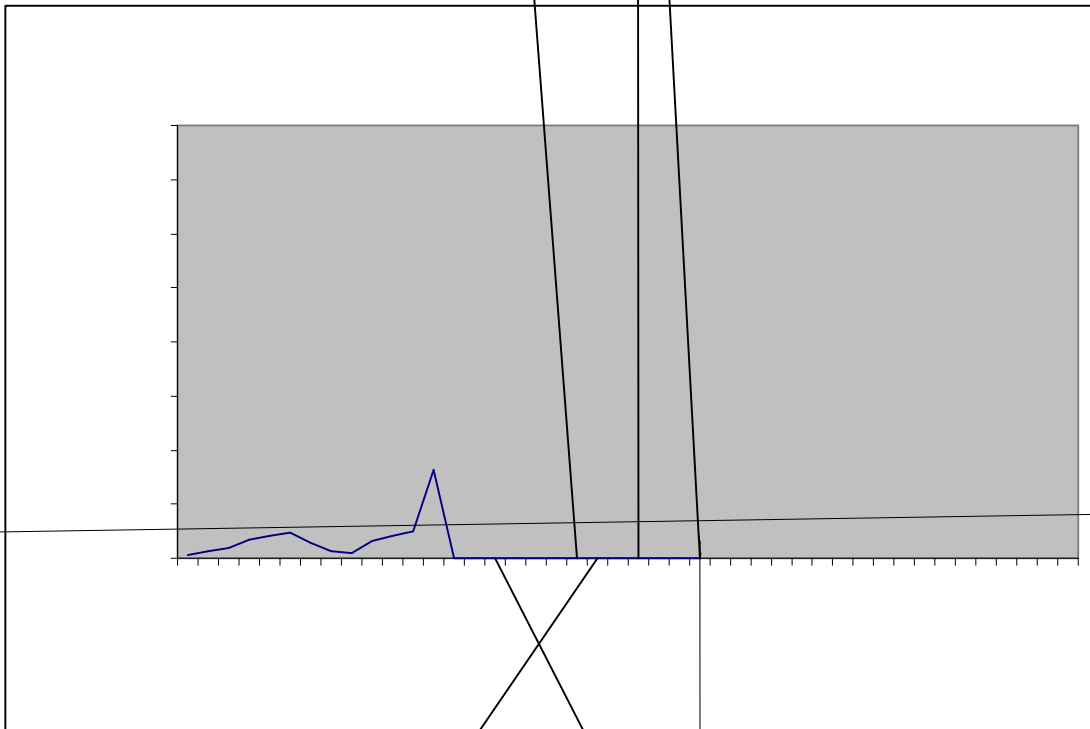
**Table 6: Botswana Livestock Populations 2005**

Production	Metric tonnes	Kg/person/ year
Meat liveweight		

- Indirect subsidies: interest subsidised loans from the National Development Bank; tax advantages for livestock owners (losses may be written off against profits elsewhere)
- Land rents; 'artificially low' ... ranch rents [paid to the state by ranch lessees]
- Dual grazing: the continuation of dual grazing rights allowing ranchers to move their livestock onto communal lands
- Pricing policy: beef producer prices have been artificially high as the Botswana Meat Commission's slaughter policy is geared to meeting the high-priced beef exports quota market such as the EU, and avoiding open but low priced markets (Cullis and Watson 14, 15).

As a result of the government's supportive policies and the country's harsh climate, beef is essentially Botswana's only agricultural export (Figure 3).

**Figure 3**



The real, inflation-adjusted price for beef has remained stable in Botswana's European markets for three or four decades; at the same time Europe has demanded increasingly expensive sanitary and phytosanitary standard (SPS) requirements to meet the escalating health concerns of safety obsessed European consumers (Stevens and Kennan 2005; Perry et al. 2005). As a consequence of this cost-

Part of the support for this conclusion comes from compara

**Table 8: Comparison of the economic returns from goat and cattle-rearing enterprises, 1995**

	Total value goat enterprise in Pula (P1.00 = US\$.36 1995 exchange rate)	Total value cattle enterprise in Pula (P1.00 = US\$.36 1995 exchange rate)
Total cost of enterprise	809	2812
Net profit per enterprise	445	2492
Profit per animal	22	156
Percentage return on capital	28	30

Source: Panin 2000.

The difficulties of increasing commercial cattle output are also evident if we examine the comparative performance of large and small cattle herds in communal areas. Summarizing a wide range of studies available in the mid-1980s Behnke (1987) concluded that large cattle herds were operated on a commercial basis and small herds were managed in order to meet family subsistence needs:

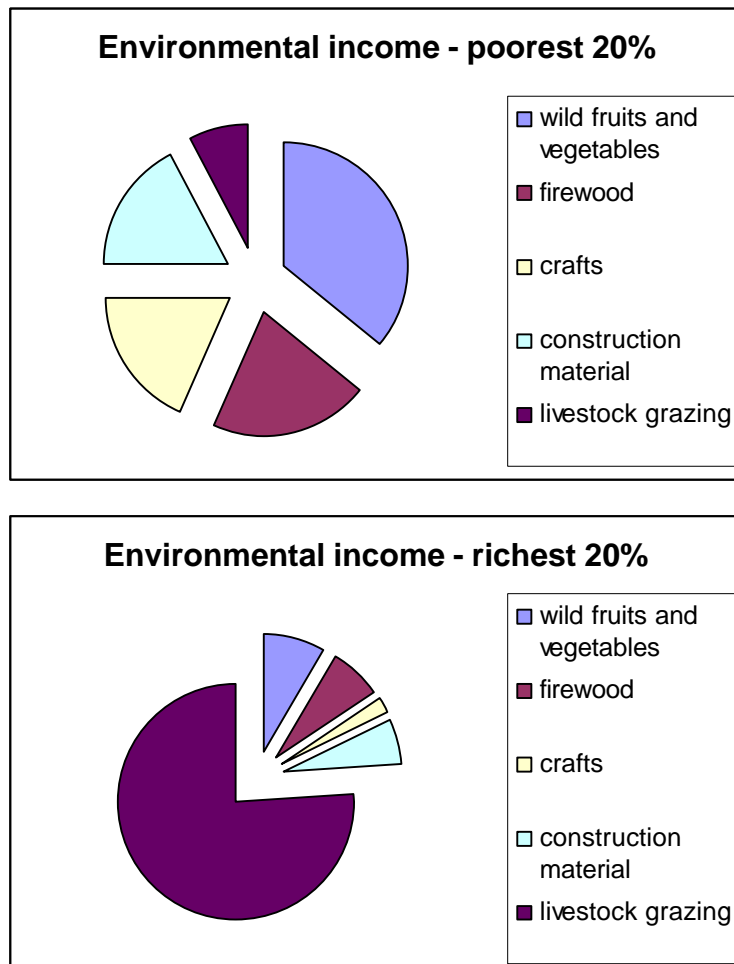
- Large and small herds produced different kinds of products. In addition to producing animals for sale, small herds produced a diverse array of goods which had a use value in the domestic setting but had either low or unrealizable cash value. Large herds specialized in the production of a single, valuable commodity: live animals suitable for slaughter.
- Large and small herding operations relied on different amounts and sources of labour. The mixed system of market and subsistence production characteristic of smaller herds was labour-intensive and gave low returns per unit of labour invested in the herding operation. For small herders the principal 'input' in the herding operation was domestic labour. The family sustained the herd and the herd sustained the family. Large herd operators, on the other hand, realized economies of scale with respect to the employment of labour, and followed less labour-intensive management practices.
- Large and small herds demanded different levels of cash expenditure. With less cash on hand, small herd owners adopted few of the recommended modern practices which required them to spend money. Large herd owners, on the other hand, were in a position to spend money in order to make money.
- Because of the intensive way they were used, small herds maintained rough productive parity with large herds on a per animal basis. They did this despite major disadvantages of small scale, poverty and restricted access to critical landed resources.
- Because of their poverty, small subsistence-oriented producers actually sold under duress a greater percentage of their herd than did large commercial operators.

In Botswana increasing commercial involvement did not mean that herds could be managed more profitably per head or even that animals could be sold at a higher rate. It simply meant that purchased inputs displaced domestic labour in the production process, and that specialized single-commodity production replaced the production of a diverse array of goods for home consumption. Subsistence production was advantageous to small herd owners because in-kind animal produce consisted largely of replenishable products. By concentrating on live-animal produce, small herd operators hoped to both maintain a reliable income and maximize long-term herd growth. Only by achieving herd growth was it economic for them to commercialize their operations.

Increased commercial production from communal rangelands therefore requires an increase in the average size of cattle herds. This growth could be achieved either through expansion of the national cattle population or by a concentration of cattle wealth among fewer owners. The national cattle herd has, in fact, contracted in the past quarter century (Figure 4), but there is evidence of increasingly uneven distribution of cattle ownership. It seems unlikely, however, that changes in ownership patterns will occur rapidly enough to produce the required increase in Botswana's commercial beef offtake.

Figure 5 contrasts the different strategies of environmental exploitation employed by the richest and poorest residents of one communal area in Botswana (Kerapeletswe and Lovett 2001: Table 1, page 7). Grazing is the least important source of income for the poorest and the most important source of environmental income for the richest.

**Figure 5: Environmental incomes from one communal area in Botswana**



(Source: Kerapeletswe and Lovett 2001)

We are now in a position to identify a final benefit derived by rural Tswana from livestock – they provide a route out of poverty, in several stages. The poorest of the rural poor have no livestock and depend for support largely on gathering wild produce and on public and private transfers of cash. The rich have significant livestock wealth which provides direct benefits and the means to engage in arable production (Kerapeletswe and Lovett 2001). Because they require little start-up capital, goats help poorer households begin the process of stock accumulation (Panin 2000). As small livestock owners shift to cattle, the process of accumulation can be maintained by the labour-intensive extraction of live-animal products from small cattle herds, followed by regular commercial sales when herds have grown sufficiently to sustain offtake (Behnke 1987).

### **Zimbabwe: livestock as agricultural inputs**

84% of Zimbabwe's agricultural land is pastures (FAOSTATS); more than 6% of the population of Zimbabwe live in areas suitable for rangeland-based production systems based only on livestock (ILRI 2002). More broadly, in the mid-1990s 70% of Zimbabwe's human population lived in communal or smallholder farming areas receiving less than 650 mm of average annual rainfall (Francis et al. 1999). More than 85% of these communal area farmers used animal draft power for tillage and transport. Oxen provided more than 75% of this power, though cows and donkeys were becoming more important (Francis et al. 1999).

***Table 9: Livestock populations in Zimbabwe, 2005***



**Table 12: Average cash and subsistence gross income from livestock per household per year (\$Z)**

	Subsistence income	Cash income	Total income	% contribution to total livestock income
Manure	382	0	382	7
Milk	810	48	858	15
Meat	457	14	471	8
Transport	1062	36	1098	19
Draft	2588	86	2674	47
Hides	16	0	16	0
Animal sales	0	228	228	4
Overall	5318	412	5727	100

**Table 14: The economics of livestock production in the communal areas**

Activity	Z\$ per working beast per annum
Ploughing	112
Manure	10
Milk	290 per cow
Calf production	105 per cow
Work	68
Sale for beef	350 (at age 8 years)

Source: Scoones 1989

Based on the estimates in Table 14, Scoones calculated that the average per annum output of a beast over a lifetime of eight years was Z\$353 for a female and Z\$140 for a male, i.e., values that bracket Barrett's estimate of Z\$210 for a beast of unspecified sex.

These calculations are important for understanding the relatively insignificant role of cattle sales and slaughter in communal area production systems. According to Barrett quoting official statistics from the 1960s and 1970s, the combined sales and slaughter offtake rate from communal herds was only 6%, a figure broadly in line with later estimates by other authorities (Mutiwanyka 1988). The contrast with the commercial ranching sector in Zimbabwe is clear:

*Annual slaughter offtake from the commercial herd has been in the range of 15 to 23 per cent, while from the communal herd it has been less than three per cent....In the decade since independence the commercial cattle herd has contracted significantly while the communal herd has increased...This has caused a significant reduction in the supply of slaughter stock to the meat industry, leading to regular meat rationing on the domestic market and public pressure to reduce exports (Barrett 1992).*

In light of the preceding discussion, low offtake rates do not necessarily indicate that communal area livestock producers are economically irrational, conservative or inefficient. They simply produce a broad range of goods and services from their herds, but especially traction and transport inputs that are essential for their primary economic activity – arable agriculture. In this agroTc 02utransport input.796 Tter in com9 pontorenterTc 0ight of the preced

Herd owners also tend to concentrate on in-kind production of goods for home consumption rather than commodities for sale, and they do this for sound economic reasons. Home produced products that are consumed directly have a value comparable to their retail price, which is what it would cost householders/herd owners to purchase replacement or substitute goods. Production of commodities for sale, on the other hand, is discouraged because these goods generally fetch a much lower farm gate price. As long as households have non-agricultural sources of cash income (typically through remittances, employment, the informal economy or state social security), it pays them to use their agricultural output to conserve scarce cash resources rather than earn money through sales.

These production systems employ generous amounts of labour but few purchased inputs, produce a broad spectrum of live-animal products, and are oriented to satisfying household consumption needs. They appear superficially to be archaic survivals of traditional subsistence pastoralism, and are often mistakenly interpreted as such. In fact this assessment is accurate only to the extent that these production systems preserve indigenous techniques of animal management and exploitation. From an economic perspective, these are modern adaptations to a specific niche within industrializing economies: survival on the semi-arid margins of economies characterized by industrial food supplies and limited or low-wage employment opportunities for unskilled labour.

### South Africa: feeding and employing a labour reserve

84% of South Africa's agricultural land is pasture (FAOSTATS); over 6.3 million people or about 16% of South Africa's total population live in rangeland areas (ILRI 2002).

**Table 15: Livestock populations in South Africa, 2005**

Livestock	Number
Sheep	25,316,424
Goats	6,407,000
Cattle	13,764,000
Horses	270,000
Asses	150,000

Source: FAOSTATS

**Table 16: Livestock Production in South Africa, 2005**

Production	Metric tonnes	Kg/person/year
Meat liveweight (exclude pigs and poultry)	801,547	17.7
Milk	2,552,000	56.3
Wool	44,156	
Hides and skins	94,620	

Source: FAOSTATS

Perry et al. provide the following capsule summary of livestock import/export in South Africa:

*South Africa is a net importer of livestock products and also imports large numbers of live animals from Namibia: currently around 400,000 cattle, 200,000 goats and 900,000 sheep annually. However it also exports some livestock products, including beef, lamb, goat and pork, targeting high value niche markets. Although the commercial sector is probably close to maximum production, 40% of the national herd belongs to emergent black farmers. Increasing the productivity of and market access by this sector of the national herd is seen as essential to provide the volumes of meat needed by growing international, regional and domestic markets, and will also make a positive contribution to poverty alleviation in this previously disadvantaged sector of society....*

*The South African Meat Industry Company (SAMIC) established in 1997, is the national representative organisation of the South African red meat industry and serves as an umbrella organisation in order to promote the effectiveness and growth of the South African meat industry....One example of SAMIC's achievements was the successful application to the United States for tariff-free exports under the African Growth and Opportunities Act....SAMIC also played an active role in re-establishing the export of beef to Saudi Arabia after a ban was imposed in 2000 due to rumours of rinderpest in South Africa....SAMIC is also involved in the audit of premium quality brands of meat products. Branding as a marketing tool is becoming increasingly important in the South African meat industry and several suppliers have successfully developed niche markets for their branded products....Currently a range of brands are audited by SAMIC including Woolworth's 'Free Range' meats, Pick 'n Pay's 'Country Reared' beef and lamb and the Kalahari Kid Corporations 'Desert Lamb' (Perry et al. 2005: 24-25).*

From this description it is clear that South Africa possesses the most technically advanced and sophisticated marketing operation of any livestock exporting country covered in this survey. As Perry et al. note, 40% of the national herd may be held by emerging black farmers in a position to profit from selling their produce. But those who remain behind in the communal areas have little opportunity to profit from these sophisticated marketing arrangements. This conclusion is supported by a recent government survey of agricultural production that compared output in the former black homelands and the former white areas of the country (Table 17).

According to this survey conducted in 2000, there are an estimated 698,000 farming operations keeping livestock in South Africa, 84,000 in the former RSA and 614,000 in the former homelands. 88% of all farming operations that keep livestock are therefore in the former homelands, despite these farms producing only 18% of the nation's meat, 1% of its milk, and 14% of the hides and skins. Quite clearly, these are very small livestock operations and they produce primarily for home consumption, 96% of meat and 85% of milk being used in this way. Only animal fibres – wool and mohair – are predominately sold by communal farmers, who contribute a negligible amount of these commodities to national production (Table 17).

To find out more about how these small, communal area farmers operate we must turn from national surveys to research studies of specific areas and communities. C.M. and S.E. Shackleton have been involved in many of these studies and in methodological debates about the valuation of rural in-kind production systems in South Africa (Dove et al. 2005; Shackleton et al. 2002; Shackleton et al. 2001; Shackleton et al. 2000; Shackleton et al. 1999).

**Table17: The production and use of livestock products and maize meal in South Africa**

Products	Total production former homelands x 1000	Total production former RSA x 1000	% homeland production kept for home consumption	% homeland production in total national production
Maize meal kg	53965	233274	98	19
Meat kg	30691	139454	96	18
Milk litres	25665	2955134	85	1
Butter kg	107	101	100	51
Other dairy products kg	20	116	100	15
Wool kg	2645	57990	1	0
Mohair kg	53	16182	3	0
Hides and skins number	86	520	64	14
Other animal products	32	16	99	66

Source: Statistics South Africa 2002, calculated from Tables 8.3.2 and 8.3.3.

Note: 'Former RSA' refers to the whites-only area of the old apartheid state and therefore excludes black homelands.

Conclusions to emerge from these studies include:

- Communal area residents hold livestock for a variety of reasons including 'cash from sales, a form of employment, milk for home consumption, for funeral purposes, as a form

employed and living away from home, while their families live cheaply in the rural areas. When they are too old to hold down formal jobs, many of these workers also retire to the rural areas to care for grandchildren and engage in agricultural production to supplement their pensions. From the perspective of the national economy, the communal areas are a source not of commodities but of affordable labour. It is difficult to imagine how the situation could be otherwise given the overcrowding and small land areas available to communal area farmers and herders.

## Namibia: a research deficit

98% of Namibia agricultural land is pastures (FAOSTAT), and 54% of the national population resides in semi-arid rangeland areas (ILRI 2002). Ruminant meat production per capita is the highest of any African country covered in this survey (Table 19).

**Table 18: Livestock populations in Namibia, 2005**

Livestock	Number
Sheep	2,900,000
Goats	2,100,000
Cattle	2,500,000
Horses	48,000
Asses	120,000

Source: FAOSTATS

**Table 19: Livestock Production in Namibia, 2005**

Production	Metric tonnes	Kg/person/year
Meat liveweight (exclude pigs and poultry)	96,333	47.4
Milk	109,000	53.6
Wool	2,200	Wool

The balance of livestock numbers held on commercial ranches and in the communal areas has shifted since independence:

*The latest National Livestock Census shows that the number of cattle in the communal areas continues to increase, whereas in the commercial areas numbers continue to fall. The number of cattle in communal areas has climbed steadily to reach an estimated 1,659,292 in 2000 compared to the post-1990 low of 943,735 in 1993. In the commercial sector the highest number of cattle was reported in 1992 (1,178,875) while the lowest estimate was in 1996 (743,057). The situation whereby the number of cattle in commercial areas exceeded the number of cattle on communal land has changed dramatically. Communal cattle now outnumber commercial cattle by almost two-to-one (Institute for Public Policy Research 2002: 4).*

There are significant impediments to marketing northern livestock for export purposes:

*Because of the red line, animals in the northern communal areas go through cumbersome processes before they can be auctioned. The livestock are quarantined for 21 days, during which farmers have to pay for their fodder, while after slaughter, the frozen meat is quarantined for a further 21 days. Farmers say not only do their animals lose body mass, but they also pay lots of money to transport their livestock to the quarantine facilities....[Commercial] off take from these areas is less than three percent compared to an off take of 25 percent south of the fence (Tjaronda 2006).*

The Namibian economy is diversified and depends upon a mixture of agriculture, mining, fishing and tourism. While the economic contribution of the livestock industry to this mix is modest but significant, its contribution to employment is much larger:

*Depending on rainfall, between 30% and 80% of the market demand for cereals has to be imported. The country is thus far from self-sufficient in food production. However, the value of agricultural exports – beef accounted for more than 70% of agricultural exports since 1990 – has exceeded the costs of importing basic food stuffs several times over since Independence....The contribution of the agricultural sector to GDP is modest and has not exceeded 10% since Independence. However, the economic impact of the sector is much larger than these figures suggest due to forward and backward linkages with the wider economy. In order to capture these linkages a multiplier of 1,8 is generally accepted. This means that the sector has contributed up to 18% to the GDP since 1990. Approximately 70% of the Namibian population depends on the agricultural sector in one way or another (Werner 2003: 6).*

By almost any standard – per capita ruminant meat production, the extent of rangelands, the growth of communal livestock holdings, contribution to GDP or employment – Namibia's developing pastoral sector is important and should constitute an important case study for this review. Unfortunately, the availability of data does not reflect the importance of Namibia's communal livestock sector.

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NOLIDEP-KFSR/E summarizes the literature up to 1997 on the contribution of livestock to the livelihoods of people in the Okavango Region. Okavango receives more rainfall than

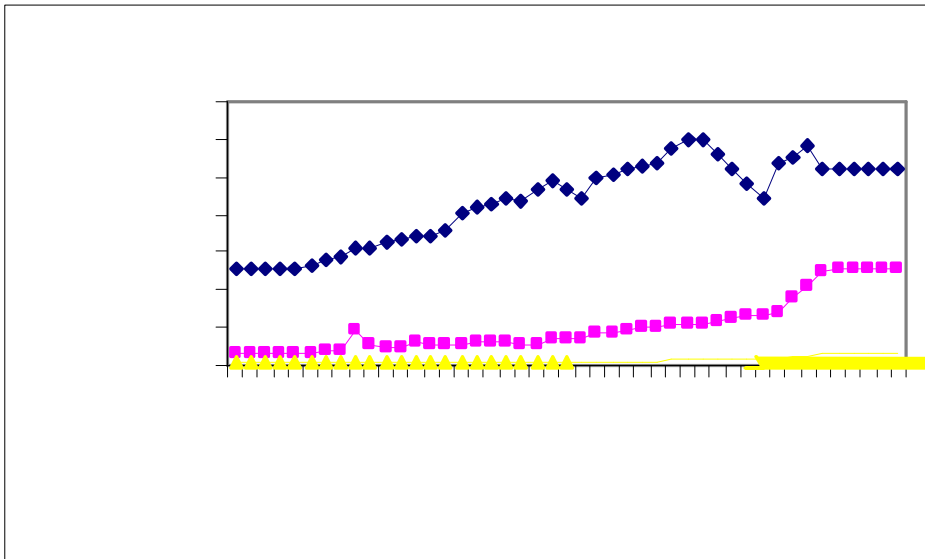


**Table 22: Livestock populations in Zambia, 2005**

Livestock	Number
Sheep	150,000
Goats	1,270,000
Cattle	2,600,000
Horses	0

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Figure 6





assistance. In these villages animals may be held in collective village herds, individually kraaled only when they are being worked, fed on natural forage and standing crop residues, and moved seasonally short distances up and down-slope to avoid flooding and obtain fresh vegetation. These are 'range-based' husbandry systems that are situated in areas that can receive 1000mm of rain per year. Evaluation of the importance and organization of indigenous oxenization is, to the best of my knowledge, under-researched. Most published reports are on donor projects that are adept at self-promotion but may contribute less to long-term change than initiatives undertaken by the farmers themselves.

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