



International
Institute for
Environment and
Development

Drylands Programme

Issue Paper no. 73

**Nomadic
pastoralists in
Kenya: Human
ecological aspects
of the East Pokot**

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May 1997

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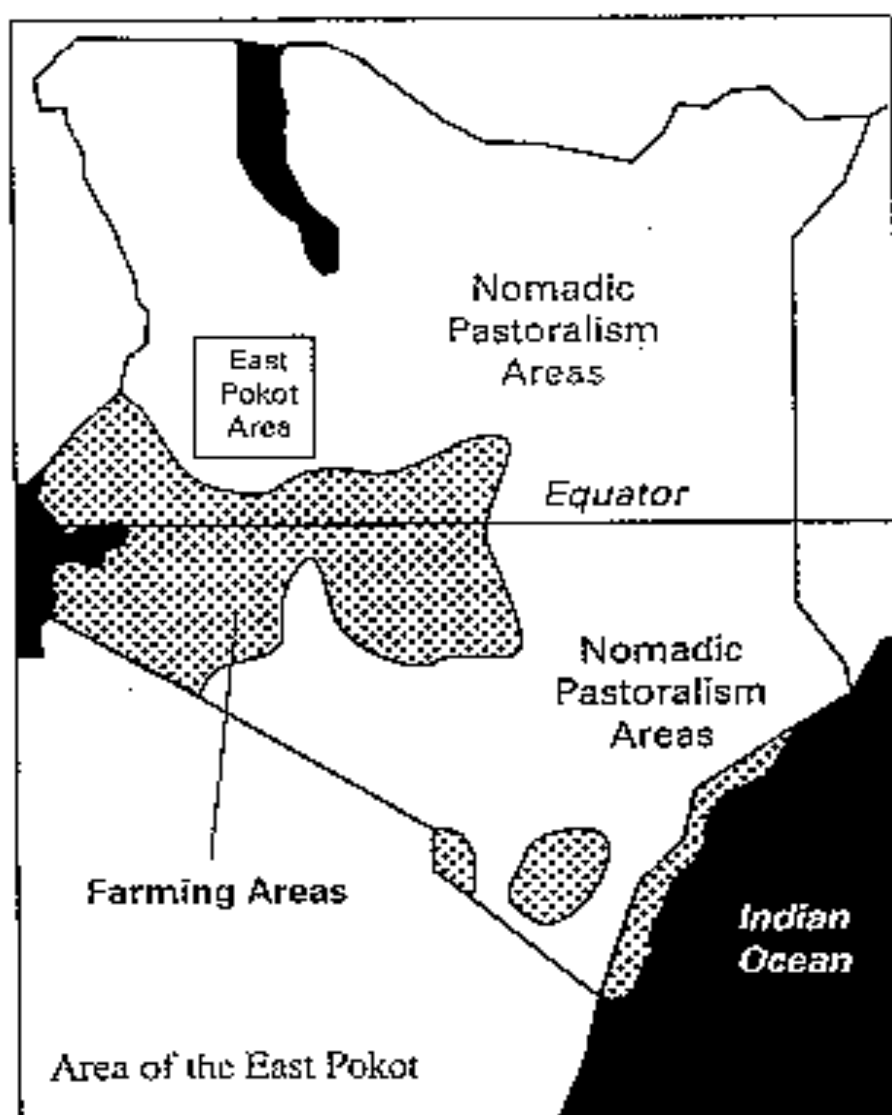
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List of Abbreviations

FAO	Food and Agriculture Organisation of the United Nations
FSP	Food Security Programme
GTZ	German Agency for Technical Cooperation
ITDI	Intermediate Technology Development Group
KFFHC	Kenya Freedom from Hunger Council

Map-1: Kenya with agricultural and pastoral areas and outline of the East-Pokot territory*



* Taken from Schwartz 1986:30

Preface

This study offers a general idea of the life of the East Pokot and a basis for understanding their nomadism, based on the results of 9 months fieldwork.

The first stay of 7 months was a combined study of the natural resources in Nginyang Division/Baringo District for German Agro Action involving mapping and assessing the vegetation of Nginyang Division and collecting information about its use. A fair amount of information, maps, climatic data and literature were also collected in Nairobi and other locations.

During a second stay, interviews were conducted with local people (East Pokot, Tugen, Njemps) about their migration patterns, perceptions of the natural environment, livestock production, food supply, day-to-day existence, survival strategies etc. This information was compiled for the 'Kenya Range Management Handbook' edited by GTZ and the Ministry of Livestock Development.

I would like to thank all the people who made this study possible, especially Dr. Donner (German Agro Action), the staff members of FSP IV and last but not least Dr. Walther (then with GTZ, Kenya Range Management Handbook). I am also grateful to all the Catholic Missions in the area for their hospitality and owe special thanks to Father Sean Mc Govern, Father Jerry Foley and Sister Rebecca Janacek.

INTRODUCTION

Pastoral herders have often been accused of destroying their environment. However, close examination of the lives of pastoral herders disproves such claims. Examples such as that of the East-Pokot, a nomadic pastoral people of north-west Kenya, show their acute awareness of the environment and an ability to preserve the scarce resources of the area they inhabit. Behaviour is by no means irrational and traditional strategies of adaptation and flexibility are well-adjusted to the risk-prone conditions of this dry area.

The life of nomadic pastoralists involves a close interrelationship between humans, livestock and the environment. The results of interviews with the East-Pokot about their day-to-day life show how the natural habitat and humans influence each other: on one hand, the high variability of the climate demands a flexible reaction from people, such as increased mobility, while in the other hand, people also have the capacity to modify their environment according to their needs through careful management.

There is a long list of prejudices against nomads who are reputed to accumulate herds in an irrational way, cause deterioration of pastures and be resistant to any ideas of development from the outside. This view ignores the existence of external factors which have put the nomadic system out of balance. As Dahl remarks: "pastoralism remains viable as long as the population (human and animal) stays static, or as long as population growth can be met with territorial expansion. Today, however, most pastoralists live in a political situation where grazing land cannot be expanded, and furthermore, pasture qualities seem to deteriorate. The balance is upset by exogenous factors." (Hjort 1980)

The main problems are due to population expansion from the central regions of Kenya into the semi-arid zones, causing increasing land scarcity. As a result, the traditional strategies of nomads are gradually losing their role because they cannot be applied in an appropriate way. For example, the flexible expansion of pasture areas is no longer possible because of population pressure.

This paper highlights the East-Pokot's mechanisms of adaptation to their environment. After analysing their 'survival strategies', it makes recommendations for the survival of nomads and the preservation of their lifestyle and addresses the role that economic aid can play in supporting them.

PHYSICAL FEATURES OF THE EAST-POKOT TERRITORY

The East-Pokot live in northern Baringo District in north-west Kenya. The area they inhabit falls within the administrative boundary of Nginyang Division and covers 4400km². However, the area within which they migrate is much bigger and they also cross into other nomadic peoples' land (Turkana, Njemps, Samburu and Tugen) which sometimes causes conflict (see outline of the East-Pokot territory, map-1).

Landscape

The main part of Nginyang Division covers the floor of the Rift Valley at a level of 700-900m which is interrupted by two lines of volcanic activity. Because of its location in the middle of a faulting system the area shows marked changes in relief. The landscape is important to people living in this area because of different altitudes and resultant types of vegetation which offer different opportunities for use as dry and wet season pastures.

Climate

The climate in Nginyang Division is typical for semi-arid areas (Sahel) but unusual for its tropical position (about 0 30' to 1 30' N). The average annual rainfall is about 600mm falling in a short and a long rainy season. But high variability of rains according to distribution, amount, intensity and length - from year to year - make any forecast impossible. There may also be no wet season. High daily temperatures (yearly average in Marigat/Baringo District about 24 °C), strong winds and low cloud cover lead to very high rates of evaporation.

The Pokot divide a year into three seasons (from Meyerhoff 1981, Bollig 1991a):

<i>kömöy</i> (dry season, hunger)	January - March
<i>pengat</i> (wet season)	April - July
<i>kitokot</i> (transition to dry season)	August - December

Vegetation

Factors determining vegetation formations are mainly the local climate and the location of the area involved. In the lowlands, thornshrub savannah is the dominant vegetation type. This formation is well adapted to stress and can withstand high grazing pressure. At higher altitudes, more favourable

climate conditions exist, permitting the growth of vegetation which is richer in species and reveals a larger spread of herbs, bushes and trees.

The natural vegetation of Nginyang Division has been modified considerably by human and livestock use since the immigration of the East-Pokot and their herds into Nginyang Division at the beginning of 19th century. Previously, the area was mainly covered with perennial grasses and trees only occurred as part of riverine vegetation. However, the vegetation cover has changed through a series of ecological catastrophes like droughts and locust invasions from 1921 to 1938. Since that time the condition of the pastures has increasingly deteriorated (Herlocker 1991).

Pokot pasture management (rotational grazing, burning) attempts to optimise land use by expanding the area under grass and avoiding bush encroachment. "The bushes eat our grass!" This quote from an East-Pokot highlights their main problem: the vegetation is tending increasingly towards bushland, suppressing the growth of grasses, particularly perennials. The reason for this is not only overgrazing but also undergrazing. Without livestock, the vegetation would probably show a higher rate of woody plants with increased total biomass but lower pasture quality.

In his examination of the vegetational changes in the Masol plains in West-Pokot, (Conant 1982) emphasises the phenomenon of 'green desertification', by which is meant widespread growth of Acacia bush. This region was not used for grazing at all from 1974-78 because of a series of cattle raids between the Turkana and Pokot which increased the risk of grazing there. Within 5 years encroachment by bushes set in, making grazing impossible and compounded by contamination with ticks and tsetse-fly. Thus regular grazing and pasture burning can be understood as means of preserving pastures in a useful state.

Water resources

In addition to looking for pastures, the search for water resources is a decisive factor in the mobility of nomadic pastoralists. Since the early 1980s, Christian missions and other development agencies have been working on the improvement of water supply by building and digging wells and boreholes. However, traditional techniques of obtaining water are still important for the East-Pokot.

To meet daily water needs of an average household of 12 members (Barrow 1985) women have to fetch 20 litres 4 times a day. Most of the water is

consumed by young animals not able to forage with the herd. Humans only use fetched water only for cooking and drinking.

Natural water sources

The most important natural water sources are the larger rivers like Kerio, Nginyang, Amaya and Mukutan which normally have sufficient groundwater during the dry season. The highlands are sparsely populated by pastoralists due to lack of water with only a few springs available in the mountains which usually dry out in January or February. During the dry season when most of the dams have dried out, people have to dig for water in the dry river beds. This is the main traditional method of fetching water during this period. In addition, depressions on loamy soils or vaulted rocks in some places can retain rainwater.

Artificial water sources

Nginyang Division has been equipped with over forty dams in the last 10-15 years, which greatly increases the quantity of water available. Only in the northern area of Akoret and Tiatl is the distance to water sources more than 10km.

During the dry season the East-Pokot also use a number of water harvesting techniques particular to hilly areas. They dig small dams often using and widening natural depressions and obtain water from the Paka volcano. Here they use the steam escaping from volcanic cracks (*fumaroles*), condensing it using a piece of corrugated metal with the water running off collecting in a clay hollow.

SOCIAL ORGANISATION AND ECONOMIC ACTIVITIES OF THE EAST-POKOT

The East-Pokot have been pastoralists since their ancestors moved from West-Pokot (Cherangani Hills and Mt. Sekerr), their agricultural homeland, to Nginyang Division about 150 years ago. They are totally dependent on livestock; all their activities are adjusted to and sustained by livestock production. Only in hilly areas like Tiati, the Chepanda Hills and around Churo is there any agricultural activity.

Social organisation

The East-Pokot family is the smallest social and economic unit. They live in polygynous households, the average size of which is about 10-12 members: 3-4 adults and 6-8 children (Barrow 1985).

A household (kisw.: *manyatta*) consists of single huts surrounding the central animal kraal (*boma*). Only camels are kept outside the kraal. The *boma* and the whole *manyatta* are fenced by loosely laid Acacia bush branches.

The social organisation of the East-Pokot is based on three major principles (Bollig 1990c): clans and patrilineal lineages, generation-sets and age-sets, and widespread individual networks

A lineage (*or*) is based on a common ancestor normally five to seven generations back. In Nginyang Division there are about 200 lineages. The households of a lineage are not usually concentrated in one place but spread over a large area. The pastoral Pokot benefit from this dispersal by being able to receive reliable information about the condition of grazing grounds and water sources from all sites. They are also able to leave parts of their herds with a brother in another area where conditions are better, for example in times of drought.

Several lineages form a totemic clan (*ilō*) which can not be traced back to a common ancestor. There are 21 clans in Nginyang Division. A clan appeals to a common clan totem (such as rain or buffalo) and uses the same distinguishing mark for its livestock. Members of a clan have a strong feeling of affiliation and solidarity towards one another. The East-Pokot follow the rule of strict clan exogamy which means that a man or woman is not allowed to marry into the father's clan (Bollig 1990c).

The generation-set is based on the collective transition ritual of male circumcision which occurs every 25-30 years and lasts 2-3 years. This ritual establishes formal entrance into a generation-set. Sons must not belong to the same generation-set as their fathers (Bollig 1990a). Solidarity among the members of the same age- or generation-set is important.

The yearly circumcision of women is not combined with comparable age-sets. Women may marry only after being circumcised and get the status of adult woman by integrating into the husband's household and bearing the first child. With marriage, a woman is attached to the same generation-set as her husband (Beech 1911:6), but still belongs to her father's clan.

Individual networks

The importance of widespread individual networks has already been emphasised by Dyson-Hudson (1980). It is a basic security measure involving livestock transactions (Bollig and Reckers 1991). These 'stock-friendships', called *tilia* in Pokot language, imply long-term contact between two households (brideprice, *kapkoyogh*) or two individuals (*ghashyö*). Livestock is exchanged in both directions, which strengthens friendship and solidarity between the two partners. Accordingly, every person eagerly tries to extend their individual network. Outstanding debts are not considered a liability but seen as a 'positive savings balance'.

Another intention of stock-exchange is to build up friendly relationships with non-relatives (Bundt et.al. 1979). Among relatives stock exchange is obligatory so that *tilia* is not necessary (Schneider 1957). *Gashyö* relationships are hereditary from father to son (Bollig 1990c). After allocation and inheritance of stock brideprice, *gashyö* debt relations and stock presents form the majority of all exchanges.

Political structure and decision-making

Neither generation-set and age-set, nor clan and lineage are decision-making institutions. Instead this is the responsibility of a council of old men. These old, experienced men, the *keruwukon* or 'wise advisers' (Beech 1911), retain political and ritual 'power' and are elected by general agreement of the neighbourhood group. The system is based on the generation- and age-set hierarchy and the underlying principle of respect (*tekotön*) for the elders who provide a moral framework for daily life.

The neighbourhood group holds their meetings at the *kokwo* for all community members. Here questions are discussed and decisions made about, for example, which areas should be avoided in the dry season, when dry season grazing grounds should be opened or closed, which pastures should be burned, where wells are necessary (in times of water scarcity)...etc. The organisation of cattle raids against the Turkana¹ or defence against predators is also decided upon by common agreement. Visitors to the *kokwo* from outside the neighbourhood-group (*mangoi*) provide information about other regions and guarantee transfer of important news throughout the whole Pokot territory.

Pasture management

The traditional land use systems of the pastoral East-Pokot are based on pasture management and livestock husbandry. In the dry season cattle are moved to pastures in the highlands, swamps or special grasslands. Camels and goats are more flexible feeders on bushes and can stay in the lowlands near the homestead together with sheep which can still find enough grass in the plains.

Although land is communally held, individual communities tend to use certain specific areas and set up grazing rules for "their land". The dry season grazing grounds are kept closed during the wet season so that the vegetation can recover. The elders decide when to open and close these pastures, select together in September suitable grazing lands for the dry season.

The pastures to be used are chosen after inspection of the various areas, and decisions regarding use are communal up to a certain point. But as the drought continues and people can no longer find enough pasture on their common grazing grounds, everyone is free to decide individually where to go and migration becomes widely extended. Some hillsides are restricted for use by calves and weak cows (see also Niamir 1990), and closed areas are guarded with fines imposed by the elders when illegal grazing occurs.

All other decisions concerning pasture and herd management (individual herd splitting, migration routes etc.) are made by the individual herd owner.

¹ At the beginning of the 20th century a series of cattle raids or *ngoroko* between the Turkana and Pokot began, the last *ngoroko* phase lasting 15 years from 1968-83.

Livestock production

The majority of livestock in Baringo District stems from unimproved local breeds with low productivity but which are well adapted to the harsh environment. The ideal herd consists of cattle, goats, sheep and sometimes camels, cattle being the most important form of livestock.

As well as being the basis of subsistence and guaranteeing economic independence, the herd is important to the East-Pokot for participating in social networks (bride-price, livestock presents and loans) and in cultural tradition, including ritual slaughter. Oxen usually enjoy the highest prestige, and may have their hide painted and be given a name. Often a young warrior takes the name of a famous oxen as his second name.

The size of a herd needed for subsistence is usually taken at about 4-7 TLU² per person (Bollig 1990b and Dietz 1987). A Pokot herd seldom falls short of this size, with average herd size of:

- 20-30 cattle
- 50-60 goats and sheep
- sometimes 1-2 camels

The East-Pokot satisfy nearly all their food needs with animal products. Milk, not meat, is the most important product and is often the only food during the wet season. Consequently, the herd structure shows a high proportion of adult female animals (over 50% with 20-28% lactating) (Bollig 1990c and Young 1988), producing milk and reproducing the herd. Female animals are productive capital while male animals are used more for sacrifice and for meat and can also be easily converted into money through sales.

A comparison of livestock numbers (36,000-46,000) with the population figures (37,000) shows a proportion of about 1 cattle per head or 10 cattle per family³. This contrast with data from Schneider (1984) who found 3 cattle per person. The human population has increased while cattle numbers have probably fallen due to the drought of 1984 leading to a fall in the number of cattle per person.

² Tropical livestock unit: 250 kg = 1 Zebu.

³ Census data from 1987/88 and 1989, respectively.

Livestock market system

The infrastructure for livestock commercialisation in Baringo District is not well established and markets are irregular and far from the Pokot's territory. Commercialisation among the Pokot is further hampered by lack of opportunities for investment, economic insecurity and quarantine regulations.

The traditional markets are situated outside East-Pokot territory in the bordering Elgeyo-Marakwet and in Tugen territory within the Baringo District, where the East-Pokot exchange livestock, skins and milk against grain, spears and calabashes. In recent times, the use of money has become more common. Most of the animals are sold to buy food such as maize, tea and sugar. Other reasons include the purchase of beads, payment of *Harambee* contributions to the state, fines and school fees. At the beginning of dry season in October many households sell a big oxen (2500-4000 KSH) and try to get through the dry period with the acquired maize flour. However, they usually have to sell some more goats at the end of dry season. Camels are seldom sold alive, and if they are obliged to slaughter a camel, the Pokot will sell the meat. The Pokot are selling more animals than in the past because demands have increased with the supply of new goods in the shops (tea-kettles, plastic containers, clothing etc.).

There are great regional and seasonal fluctuations in livestock prices, except for camels. In the dry season, prices drop dramatically and even more so during droughts. This is the time when pastoralists badly need to sell animals to be able to buy maize to compensate for falling milk yields. Also, the selling of hides increases because meat is eaten more often during this period and the East-Pokot have to slaughter more sick animals. Another reason for forced sale is epidemics among the animals, which can affect the prices to an even greater extent because of the sudden oversupply.

Livestock traders are almost exclusively non-Pokot which makes the East-Pokot heavily dependent on external traders. The monopoly on livestock trade between the pastoral areas and urban centres has shifted from Tugen to other traders, some of whom come directly from big cities like Nakuru and Nairobi. The East-Pokot sometimes express their displeasure about fixed low prices by boycotting markets or auctions (Ahuya and Odongo 1991).

Rainfed agriculture and apiculture

Rainfed agriculture is rare in Nginyang Division, although the East-Pokot were formerly farmers before they settled in Nginyang Division. Only in higher regions like Tiati, the Chepanda Hills and around Churo do some Pokot practice agriculture. In the lowlands occasional chance sowing of crops takes place after the first rains in March or April, with a harvest in September or October. But the yields are low and there is no saleable surplus.

The East-Pokot have been keeping bees in traditional beehives made from hollow logs from around 1920. Before that, honey was only collected occasionally and people had to buy honey for cultural feasts from elsewhere. Each Pokot family is estimated to possess 3 or 4 beehives, giving a total number of beehives in Nginyang Division of 11,000.

Acacia honey is harvested once or twice per year after the rainy seasons, in April and December. A traditional beehive can produce 5 to 6 kilos of raw honey. The honey is used as a sweet, a medicine and for brewing beer. In some regions like Maron, honey has become an important commercial product, and is marketed in the central towns of Nginyang, Chemolingot, Kositei and Tot.

INTERACTION OF THE EAST POKOT AND THEIR ENVIRONMENT

Survival Strategies

This section shows how the environment influences East Pokot behaviour in terms of lifestyle and economy, and will describe more fully the strategies and methods they use to deal with risk.

The strategies of pastoralists are based mainly around managing seasonality and variability, the characteristics of a semi-arid climate. The pastoralists' answer to these conditions is adaptation and flexibility. Every day strategies may become survival strategies against threats like drought. The most important strategies are summarised in the following table.

Table 1: Flexible strategies of the East-Pokot dependent upon the climate

<u>Drought, dry year</u> Vegetation in poor condition, Low water availability	<u>Normal year, rainy year</u> Vegetation in good condition, Good water availability
Selection of remote highland pastures combined with greater distances and longer stay	Selection of good lowlands or highland pastures near by; duration of stay mostly the whole dry season (6 months)
Distribution of herds among other clan or lineage members	Little distribution of herds among other clan or lineage members
In extremely bad times, small ruminants accompany the cattle herds	Small ruminants does not accompany the cattle
Rising share of lactating females herd	Share of lactating females in the migrating herd as small as possible
Frequent trespassing of borders	Rare trespassing of borders
Rising demand for manpower	Little demand for manpower
Wild foods eaten	Low reliance on wild food
Cutting of branches as feed	Little cutting of branches as feed
Need to sell animals	Little need to sell animals

Adaptation in herd management

Herd accumulation

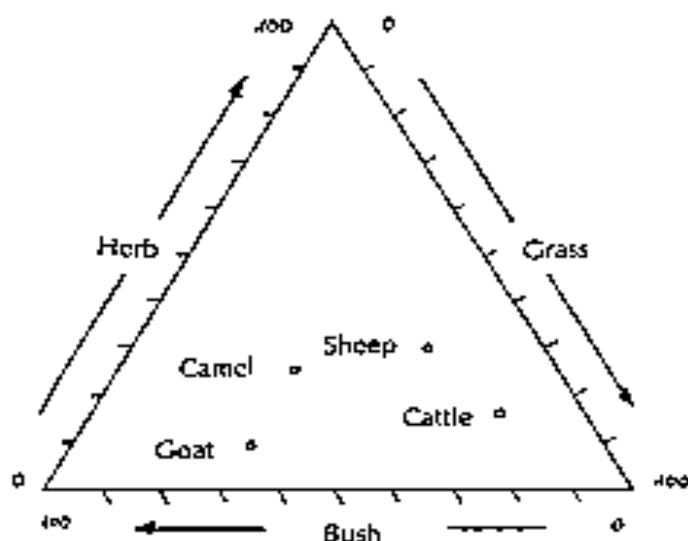
A common strategy of many nomadic people is herd accumulation. Herd owners' affinity with their cattle is quite rational. Livestock is a risky investment in dry areas subject to high variation and the more arid an area, the bigger the herd has to be to avoid the risk of starvation.

Herd accumulation does not lead to overaged herd structures, at least for the Pokot. Oxen do not stay with the herd longer than 6 years and male cattle are mostly castrated after 2 years and sold after another 2 years. Bulls seldom belong to the same herd for more than 4 years to prevent them serving their own offspring. Cows are kept in the herd as long as they continue to produce calves and milk, and normally leave the herd at the age of 8-10 years after having born 6-7 calves (Reckers 1994b and Dietz 1987).

Herd diversification

The East-Pokot keep cattle, goats, sheep, sometimes donkeys and increasingly camels. Herd diversification makes more efficient land use possible, offers a broader spectrum of animal products and secures a steadier supply of food. The different animals do not compete for pastures because of their different feeding requirements (see diagram below). They also vary in their susceptibility to disease, dry conditions and theft.

Figure-1: Food demands of the different animal types (derived from Dyne, van 1980 and Sato 1980).



The advantage of a mixed herd is most clearly visible in the different capacities of each type in terms of production and reproduction. Camels and goats give milk even in dry periods while lactating cows can hardly be milked at these times. As well as the overall milk yield, the waiting time for the first availability of milk after a drought is vital for the nomadic household: goats lactate after 5 months, cattle after 9 months and camels, who lactate the longest, only after one year (Tully according to Dietz 1987). The other aspect of a herd's productivity is its fertility. Camels are fertile at 4 years old, cattle at 3 and sheep and goats at 1 year old. Moreover, goats which have a 30-40% yearly reproduction rate can easily compensate for the high cattle losses which occur in times of drought. Since they can be exchanged later against cattle, they play an important role in post-drought recovery.

The following table lists the main advantages and disadvantages of different animals according to local interviews.

Table 2: Advantages and disadvantages of various animals from the East-Pokot perspective

<u>Types</u>	<u>Advantages</u>	<u>Disadvantages</u>
Camel	<ul style="list-style-type: none"> • High milk production rate even in dry season. • Low reproduction rate. 	<ul style="list-style-type: none"> • High mortality rate of camel calves. • Prone to disease (e.g. trypanosomiasis). • Need for attentive herding (camels wander in spite of a waiting calf).
Cattle	<ul style="list-style-type: none"> • High milk production rate in wet season. • High exchange value. • Important social and cultural factor (brideprice, rituals). 	<ul style="list-style-type: none"> • High risk of catching diseases on dry season pastures.
Goat	<ul style="list-style-type: none"> • Milk production even in dry season. • Drought resistance. • No need of leaving the homestead during dry season. • Low risk of catching diseases on dry season pastures. • Easy to sell and to slaughter. 	<ul style="list-style-type: none"> • High reproduction rate.
Sheep	<ul style="list-style-type: none"> • Supply of fat. 	<ul style="list-style-type: none"> • Low milk production for household consumption.

It is important to note that the East Pokot tend to keep more camels as grass is being progressively replaced with bushland. (Bundt et.al. 1979)

Livestock breeding and animal health care

Another strategy for minimising risk is the selective breeding of livestock. In interviews, the East-Pokot stressed the importance of drought and disease resistant animals with only strong and healthy bulls used for breeding. While the productivity of a herd is important, its ability to survive is crucial for the nomadic household.

Animal health care

The Pokot treat their animals with local plants in case of illness and although modern medicine is available, there is continued reliance on

traditional methods for animal health care.¹ The government runs vaccination programmes against Rinderpest and Foot and Mouth Disease; these annual campaigns are well used by the East Pokot and a number of cattle dips have been installed in Nginyang Division.

Herd dispersion

All forms of herd dispersion have the same goal: minimising risks by spreading them. The system of *tilia*, by which parts of herds are regularly exchanged between herders avoids the danger of losing the entire herd through drought, epidemics or raids. In most instances both partners have rights to the offspring of the loaned animal. Alongside the *tilia* system, which is usual among clan members, an additional network is set up beyond the clan level where steers are favoured animals for exchange. The cattle herd is divided up during the dry season. The lactating part - about 1/4 of the herd - does not migrate to dry season pastures but stays close to the family. A few lactating cows accompany the herders to supply them with milk during the time away. However, in hard times like drought, when there is very little decent pasture to be found, the whole herd has to migrate. It is frequently subdivided into parts which are then put together with the herds of other clan or lineage members. Using recipients who live far away from each other helps to cope with drought, since regions are mostly affected very differently.

Labour organisation

The dominant strategies pursued by nomadic pastoralists are labour intensive (Dietz 1987). Work is carried out almost entirely by household members, wage labour is practically unknown and each member of the family has a special task according to age and sex.

Both boys and girls are trained to look after calves and goat kids from the age of four years. Later their tasks are divided into women's and men's work: boys between 6 and 12 years old have to herd ruminants near the homestead while the girls take on women's work. The East-Pokot are very reluctant to send their children to school as they need them as part of the work-force. Young men aged between 12 and 25 are sent with the foraging cattle herd to the dry season grazing grounds. The "elders" who have established their own household are responsible for the management of their herd. This includes duties like looking for a suitable pasture, veterinary

¹ For example, Aloe and *Albizia anthelminica* (*kapakiteng*) are used against East Coast Fever (ECF) and worms.

medicine and dealing with outstanding debts (e.g. exchange of stock through *tilia* agreements).

Women's have numerous responsibilities. They do all the work concerning animal products like milking, processing the milk, caring for the hides and skins of slaughtered animals and other typical domestic duties like cooking, fetching water, collecting firewood, constructing huts and buying additional food. *Shamba* (small agricultural plot) work is both men' and women's responsibility. Traditionally, it was mainly women's work, in times when men had to cope with other "big jobs" like tribal wars, defence against wild animals and long seasonal migrations. The common pattern of labour duties for different months are listed in the following table.

Table-3: Labour calendar for the pastoral East-Pokot

<u>Rainy season</u>	<u>Men/boys</u>	<u>Women/girls</u>
April	<ul style="list-style-type: none"> returning to plains; harvesting termites; collecting honey; seeding 	<ul style="list-style-type: none"> milking; harvesting termites; seeding
May	<ul style="list-style-type: none"> herding in plains 	<ul style="list-style-type: none"> weeding; milking
June	<ul style="list-style-type: none"> herding in plains; weeding 	<ul style="list-style-type: none"> milking
July	<ul style="list-style-type: none"> herding in plains 	<ul style="list-style-type: none"> weeding; milking
August	<ul style="list-style-type: none"> herding in plains 	<ul style="list-style-type: none"> milking
September	<ul style="list-style-type: none"> herding in plains/highlands; harvesting 	<ul style="list-style-type: none"> milking; cutting branches for fodder; harvesting
<u>Rainy season</u>	<u>Men/boys</u>	<u>Women/girls</u>
October	<ul style="list-style-type: none"> looking for dry season pasture; selling an oxen, storing harvest 	<ul style="list-style-type: none"> fetching water; collecting fodder; storing harvest
November	<ul style="list-style-type: none"> herding in dry season pastures 	<ul style="list-style-type: none"> fetching water; collecting fodder
December	<ul style="list-style-type: none"> herding in dry season pastures; collecting honey 	<ul style="list-style-type: none"> fetching water; collecting fodder
January	<ul style="list-style-type: none"> herding in dry season pastures; cutting branches for fodder 	<ul style="list-style-type: none"> fetching water; collecting fodder
February	<ul style="list-style-type: none"> herding in dry season pastures; cutting branches; clearing bush and burning grass grounds 	<ul style="list-style-type: none"> fetching water; collecting fodder
March	<ul style="list-style-type: none"> herding in dry season pastures 	<ul style="list-style-type: none"> fetching water; collecting fodder

Adaptation in pasture management

Mobility

Mobility of herds is the basic requirement for pastoralism to avoid over-exploitation of pastures. In this part of northern Kenya, it is not only population pressure from the south which causes the shortage of pasture but also the increase in *ngoroko* areas subject to raiding, which are avoided by the nomads. Being under-used for a longer period, bush encroachment occurs in these areas and they progressively lose their value as pasture (Schlee 1982).

* Daily migration

The head of the household chooses a different grazing route at least every 2 days according to the herd's forage needs. This method is used for small stock (goat and sheep) and camels as well as for cattle during wet season. Daily migrations rarely exceed 5 km distance from the homestead. The reason for changing the route is to prevent deterioration of pasture.

* Seasonal migration

The East-Pokot usually migrate long distances to dry season pastures, not only because of the scarcity of grasslands and water supplies, but also because these movements are part of their traditional lifestyle and pasture management. At the end of the rainy season (October), young Pokot men leave their home to move the household's cattle herd towards the highlands looking for good dry season pastures. Only lactating cows with new-born calves are left at home to provide the family with milk. The rest of the herd, camels and ruminants, stay near the homestead all year round. The young men - mostly two or three - move their mobile "cattle camps" whenever an area is grazed down. Some few weeks after the rains have started (April) and the grass is sprouting, they return back to the plains. Mobility is required for and combines in effect with the livestock dispersion by means of exchange already mentioned, occurring particularly in dry seasons and droughts.

* Shifting of household

Migration of the entire household occurs once every five or more years, mostly in times of drought. The main reasons for shifting the household are decreasing quality of pasture or shortage of water in the neighbourhood, outbreaks of disease, quarrels within the neighbourhood or the fear of inter-tribal warfare.

Pasture control

The term control is used to refer to deliberate measures taken to preserve natural resources and their long-term productivity implies here direct intervention to preserve pasture resources at regional and neighbourhood level. The intention is to prevent overgrazing, giving the vegetation sufficient time to regenerate and to discourage bush encroachment.

The most important strategy followed by the Pokot is to make and enforce agreements about access to dry and rainy season pastures as well as the designation of exclusive grass lands for lactating cows or calves. These decisions made by the *kakwo* supplement unwritten rules, such as the prohibition on use of dry season grazing grounds during the rainy season.

Once there is dense bush the Pokot can only eliminate it by burning, although this has been officially prohibited since colonial time. Burning of rangelands has several desirable effects, which include the elimination of bushes, the regeneration of young and fresh grass, and control of tsetse-fly.

It is also a common practice for the Pokot to cut branches from specific trees for dry season fodder, and during droughts. Amongst the species most commonly used are *Acacia tortilis* or *ses* in Pokot, *Balanites aegyptiaca* (*tuyunwo*) and *Boscia angustifolia* (*likwon*) used for both browsers and grazers, and *Ficus sycomorus* (*mokongwo*) and *Terminalia brownii* (*koloswo*), used for browsers and grazers respectively.

Control of water resources

Where water is scarce, regulations to control its use are necessary. In dry times, dam use is restricted to household consumption including humans, young sheep and goats, and calves. The other animals have to travel to water over long distances.

A community may close access to its dam even during the dry season, when it judges there is enough water in the area (e.g. after the short rains in November). Apart from these restrictions dam use is free within the same tribe in the same way as pastures. When other tribes want to use dams during droughts or dry years, a contribution in the form of an ox or cash is usually required.

Adaptation in food supply and plant knowledge

The diet of the East-Pokot is based on milk, meat, and blood accompanied by maize, millet and sugar. Most East-Pokot have to buy maize and millet in the shops or at markets. Wild fruits and honey supplement the diet. The East-Pokot try to have enough livestock to provide the family with milk all year round. During the wet season when the cattle stay in the plains, fresh milk is the only food for some households. Soured milk produced by adding charcoal to the milk which is kept in a gourd washed out with cow's urine, can be stored for some months (see Table-4). During the dry season when milk is scarce, consumption of *ugali* (maize meal) and meat rises. Blood can be drawn from live or slaughtered animals and is mixed with milk. Most East-Pokot families kill a goat every few months, although sharing with others means goat meat is consumed around once a month. Oxen are slaughtered for celebrations once a year at the most.

Table-4: Storage of food

<u>Food item</u>	<u>Possible storage duration</u>
Fresh milk	2 days in gourd
Sour milk	3-6 days
Butter	3-4 months
Concentrated milk fat	1 year
Blood	3 days
Dry meat	1-2 months
Cooked meat kept in fat	1 year
Dried termites	3-6 months
Sorghum	1 year
Finger millet	4 years
Maize	3 months
Maize flour	2 months
Dried fruits kept in fat	1 year

In more difficult times, plant products can make up a considerable proportion of the diet and the East-Pokot's extensive knowledge of edible plants is brought to the fore. This knowledge is also decisive for the herdsmen when they are out in the highlands, and must rely on alternative food sources and medical herbs. Fruits, roots and tubers are consumed with a few plants being used as vegetables (e.g. *Amaranthus graecizans* - African spinach). Important plants used for human consumption by the East Pokot are, for example, *Balanites aegyptiaca*, known in Pokot as *tuyunwo*, which is eaten raw and *Boscia coriacea* or *Serikwo*, which is cooked.

The East Pokot also use medicinal plants in case of illness, since it is cheaper than the modern drugs they can buy through health centres or

veterinary staff. Most medicinal plants are trees and shrubs, the bark and roots generally being the most useful parts. Examples of medicinal plants used are *Salvadora persica* (*asiokonion* in Pokot), the roots of which are used to treat anthrax, dizziness, malaria and blood disease in humans. Another important plant is *Maerua subcordata* (*chepuluswo*) which is used to purify water (Timberlake 1987, Heine and Heine 1988).

CONCLUSION AND PROSPECTS

This description of the East-Pokot's survival strategies shows how they steel themselves against the risks of their environment and because of their dependence on their environment they take a fundamental interest in its preservation.

Environmentally oriented behaviour can be found in all spheres, such as where they have set up rules for controlled use of their pastures. Other strategies included control of water resources, burning and grazing practices. Their strategies also serve to ensure balanced use of pastures by herd dispersion and diversification and, high levels of mobility. During times of low carrying capacity, the East-Pokot tend to dispose of surplus livestock by consumption or sale since they know they will not be able to feed their animals sufficiently.

Up to now, the East-Pokot's mechanisms for coping with the great challenges of their living space have functioned well, but developments in recent years have struck hard at their survival systems. The most obvious problem is land scarcity due to the increasing population of the East-Pokot themselves and their neighbours (e.g. Samburu, Turkana, Tugen and West-Pokot). Mobility has already been considerably reduced so that increasing deterioration of rangelands by overgrazing has become more frequent.

Gradually most of the balancing mechanisms like mobility have lost their significance and efficiency because they can no longer be practised to the extent required and with the many socio-economic changes taking place, it is foreseeable that almost all rules regarding access to resources will be eroded and become impossible to apply. The Pokot people are confronted by processes of change which they can neither control nor manipulate because they lie outside their comprehension.

Role of Development Aid

The first "attempts to develop nomads" were focused on trying to settle them. This jeopardised the basis of nomadic existence - mobility - and through the provision of widespread famine relief⁵, suppressed initiative on the part of nomadic pastoralists. The situation of the people involved did not improve because of the lack of alternative economic activities and sources of income. It is no wonder that nomadic pastoralists have resisted every development intervention - since they have generally run counter to the strategies they need to survive and because they wish to avoid dependence.

"Development of nomads" in the sense of national integration is a long process which will take time, and must build on present conditions. As long as there are no real alternatives to the nomadic system in semi-arid areas, the challenge to development aid is to reinvest in the traditional system.

As shown, the economic system of nomadic pastoralists is justified by its optimal adaptation to the ecological conditions of semi-arid and arid areas and the absence of an alternative model for the future. But whether nomadism does actually have a future as a lifestyle and economic system will depend on the nomads' attitude towards their traditional survival strategies and whether they are willing to retain their lifestyle. Development activity has a vital role in helping to prevent the loss of self-reliance and self-belief and in promoting approaches which help to work from and build on the capacities of local people.

⁵ In the north of the country, one third of the nomads depended on famine relief programmes in the early 1980s, which was equivalent to at least 500,000 people if we refer to the nomadic population estimate of around 1.5 million people for that period (Schwartz 1982, Drabner 1988).

REFERENCES

- Ahuya, C. and Odongo S. (1991) *Livestock Marketing in Nginyang and Tanguibei Divisions, A Report for Kenya Freedom from Hunger Council, Naivasha.*
- Barrow, E. (1985) *An Analysis of Human and Environmental Factors in the Agricultural Development of East Pokot (Nginyang Division, Baringo District, Kenya), A Case Study, Volume 2, Results Paper, Discussion Paper, Master's Thesis, Lodwar.*
- Bollig, M. (1990a) *Der Kampf um Federn und Farben - Promotion von Altersgruppen bei den Pokot West-Kenias*, in Völger, G and von Welck, K (eds) *Männerbände - Männerbünde, Zur Rolle des Mannes im Kulturvergleich*, Köln, pp 259-266.
- Bollig, M. (1990b) *Ethnic Conflicts in North-West Kenya, Pokot/Turkana Raiding 1969-84* in *Zeitschrift für Ethnologie* 115 , pp 1-27.
- Bollig, M. (1990c) *The Family Herds, the Social Organisation and Economy of Pastoral Pokot Households, Nginyang Division, Baringo District, Köln.*
- Bollig, M. (1991a) *Intra- und Interethnische Konfliktaustragung bei den Pokot Nordweskenias, Eine Fallstudie zur Ethnologie des Konflikts*, Dissertation, Köln.
- Bollig, M. and Reckers U. *Überleben in der Savanne, Die Ost-Pokot in NW-Kenya* in *Deutsche Welthungerhilfe* (ed) *Kenya Broschüre*, Bonn 1991, pp 4-7.
- Bundt C. *et al* (1979) *Wo ist vorn? Sinn und Unsinn entwicklungspolitischen Eingreifens bei ostafrikanischen Hirtenvölkern*; In: *Sociologus* 29, pp 21-60.
- Conant, F. (1982) *Thorns Paired, Sharply Curved: Cultural Controls and Rangeland Quality in East Africa* in Spooner, Band Mann H (eds) *Anthropology and Desertification, Dryland Ecology in Social Perspective*, London, pp 111-122.
- Dietz, T. (1987) *Pastoralists in Dire Straits, Survival Strategies and External Interventions in a Semi-Arid Region at Kenya/Uganda Border: Western Pokot, 1900-1986*, *Netherlands Geographical Studies* 49, Amsterdam.
- Dyne, G. Van *et al* (1980) (eds) *Grasslands, Systems Analysis and Man*, International Biological Programme 19, Cambridge 1980, pp 269-537.
- Dyson-Hudson, N (1980) *Strategies of Resource Exploitation among East African Savanna Pastoralists* in Harris, D R (ed) *Human Ecology in Savanna Environments*, London, pp 171-184.

- Heine, B. and Heine, I. (1988) *Plant Concepts and Plant Use, An Ethnobotanical Survey of the Semi-Arid and Arid Lands of East Africa, Part I: Plants of the Chamus (Kenya)*, Saarbrücken, Fort Lauderdale.
- Herlocker, D. (1991) Rangeland Vegetation of Baringo District in GTZ and Ministry Of Livestock Development (eds) *Kenya Range Management Handbook*, Nairobi.
- Hjort, A. (1980) Herds, Trade and Grain: Pastoralism in a Regional Perspective in Galaty, J. et.al, (eds) *The Future of Pastoral Peoples, Proceedings of a Conference in Nairobi*, Kenya, 4-8 August, Ottawa 1980, pp 135-143.
- Meyerhoff, E.: *The Socio-Economic and Ritual Role of Pokot Women*, Dissertation, Cambridge 1981.
- Niamir, M.: *Herders' Decision-Making in Natural Resources Management in Arid and Semi-Arid Africa*, FAO Community Forestry Note 4, Rome 1990.
- Reckers, U.: *Environmental Perceptions and Migration Patterns: East Pokot, Tugen and Njemps*, In: GTZ and Ministry of agriculture, livestock development and marketing (eds): *Range Management Handbook of Kenya, Vol II, 6, Baringo District*, Nairobi 1994b, pp 125-144.
- SATO, S.: *Pastoral Movements and the Subsistence Unit of the Rendile of Northern Kenya: With Special Reference in Camel Ecology*, *Senri Ethnological Studies* 6, Tokyo 1980.
- Schlee, G.: *Zielkonflikte und Zielvereinheitlichung zwischen Entwicklungsplanung und Wanderhirten in Ostafrika*, In: Scholz, F. and J. Janzen (Ed.): *Nomadismus - Ein Entwicklungsproblem? Abhandlungen des Geographischen Instituts, Anthropogeographie* 33, Berlin 1982, pp 97-109.
- Schneider, H. K.: *The Subsistence Role of Cattle among the Pakot and in East Africa*, In: *American Anthropologist* 59, 1957, pp 278-300.
- Schneider, Harold K.: *Livestock in African Culture and Society, A Historical Perspective*, In: Simpson, J.R. and Evangelou (Ed): *Livestock Development in Subsaharan Africa, Constraints, Prospects, Policy*, Boulder, Colorado 1984, pp 187-199.
- Timberlake, J.: *Ethnobotany of the Pokot of Northern Kenya*, London 1987, Manuscript.
- Young, J.: *The KFFHC/EPAP/TTDJ Animal First Aid Programme, A Compilation of Project Documents and Summary of Experience*, Intermediate Technology Development Group (ITDJ), Rugby 1988, Manuscript.

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The Drylands Programme aims to contribute towards more effective and equitable management of natural resources in semi-arid Africa. It has built up a diverse pattern of collaboration with many organisations. It has a particular focus on soil conservation and nutrient management, pastoral development, land tenure and resource access. Key objectives of the programme are to: strengthen communication between English and French speaking parts of Africa; support the development of an effective research and NGO sector; and promote locally-based management of resources, build on local skills, encourage participation and provide firmer rights to local users.

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ISSN 1357 9312