the future of pastoral peoples
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the future of pastoral peoples

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contents

foreword 7
participants 11
research priorities and pastoralist development: what is to be done? 15
opening addresses 27
the future of pastoral peoples R.S. Musangi 30
some remarks on the roles of advisers and advocates Philip Carl Salzman 32
the role of anthropology in pastoral development 39
development for nomadic pastoralists: who benefits? Dan R. Aronson 42
an anthropological approach to economic development Walter Goldschmidt 52
research priorities in pastoral studies: an agenda for the 1980s Michael M. Horowitz 61
livestock and livelihood: a handbook for the 1980s Daniel G. Bates and Francis Paine Conant 89
the failure of pastoral economic development programs in Africa Walter Goldschmidt 101
the anthropologist as mediator Emanuel Marx 119
the political economy of pastoralism 127
political factors in the future of pastoral peoples Philip Carl Salzman 130
herds, trade, and grain: pastoralism in a regional perspective Anders Hjort 135
evolution of policy toward the development of pastoral areas in Kenya S.E. Migot-Adholla and Peter D. Little 144
theoretical implications of pastoral development strategies in East Africa Peter Rigby 157
pasture in the Malian Gourma: habitation by humans and animals André Bourgeot 165
education for nomadic pastoralists: development planning by trial and error John A. Nkinyangi 183
the economics of pastoralism 197
production in pastoral societies Gudrun Dahl 200
livestock as food and money H.K. Schneider 210
economic institutions and pastoral resources management: considerations for a development strategy Peter N. Hopcraft 224
consumption and marketing of pastoral products among the Kal Tamacheq in the Niger Bend, Mali Ag Hama 244
women and pastoral development: some research priorities for the social sciences Vigdis Broch-Due, Elsie Garfield, and Patti Langton 251

recent changes in bedouin systems of livestock production in the syrian steppe Faik A. Bahhady 258

the role of government in pastoral development 267

organizing government's role in the pastoral sector Stephen Sandford 270

organizations for pastoral development: contexts of causality, change, and assessment John G. Galaty 284

bedouin settlement: organizational, legal, and administrative structure in jordan Kamel S. Abu Jaber and Fawzi A. Gharaibeh 294

sedentarization of the nomads: sudan Mustafa Mohamed Khogali 302

sedentarization of nomadic pastoralists and "pastoralization" of cultivators in mali Salmane Cissé 318

livestock development and range use in nigeria Moses O. Awogbade 325

planning policy and bedouin society in oman Mohsin Jum'a Mohammed 334

the research process: strategies, goals, and methods 337

a methodology for the inventory and monitoring of pastoral ecosystem processes H.J. Croze and M.D. Gwynne 340

indigenous models of time and space as a key to ecological and anthropological monitoring Rada Dyson-Hudson 353

the collection and interpretation of quantitative data on pastoral societies: reflections on case studies from ethiopia Ayele Gebre Mariam 359

relevance of the past in projections about pastoral peoples Daniel Stiles 370

references 379
livestock as food and money

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Although this conference is devoted to the future of pastoral peoples over an area far greater than East Africa, I should make it plain at the outset that my remarks pertain specifically to East Africa. However, I feel sure that by implication they have relevance for at least some other pastoral areas. I want also to note that what I have to say is for the most part not new but a summation of what I have said in the recent past in other publications (Schneider 1974, 1979). My reason for replowing old ground is simply to make sure that all persons here know of the position I have taken on the matter of the explanation of East African pastoralism and can therefore discuss it on an equal basis.

peculiarities of indigenous pastoralism

It has long been recognized that livestock in East Africa, particularly the large animals — cattle and camels — are utilized in ways that conflict with sound management practices as they apply to beef production. As long ago as 1926, Herskovits tried to delineate this difference in terms of the notion of the cattle complex, and although today most people who are involved with these animals have rejected the idea that there is some mystique about their use, there is still puzzlement about how to explain pastoral practices. A good index is a paper by Ward et al. (1980) on animals as an energy source in Third World agriculture, in which they note that the annual offtake for cattle herds in Africa (by which they seem to mean all of sub-Saharan Africa except South Africa) averages only about 3% compared with 35 or 40% in North America. These North American rates are achieved through highly rationalized beef production practices, in which, most importantly, calves are brought up to feeder weight rapidly — within a year — and then are sold to feed lots for final fattening.

The situation in Kenya, if Aldington and Wilson's (1968) figures are still acceptable, is somewhat more complicated than Ward et al. indicate. There seems to be a bimodal distribution of local groups in terms of offtake, the higher group, with rates ranging from 16.9 to 24.4% yearly for the Kamba, Embu, Thika, Meru, and Taita, who are more “developed” than the more remote group including people around Lake Baringo, the Turkana, Kajiado Maasai, Narok Maasai, Samburu, Nandi, Elgeyo-Marakwet, and Pokot, whose offtake ranges from 7 to 13.2% per year. I suspect that at present the questions how to increase the offtake and what causes it to be so low are more relevant to the latter group.
subsistence explanations

Currently, the favourite explanation for the low offtake is subsistence. A recent volume by Ingold (1980), which compares reindeer herders with East African pastoralists, presents this view in an exaggerated form, almost a caricature, by classifying reindeer herders as carnivorous pastoralists and East Africans as milk pastoralists who keep herds principally for the purpose of producing milk for food. A more generalized form is Konczacki’s (1978) claim, applied especially to Somalis, that the maintenance of the largest herds possible is insurance against disasters such as drought. Widstrand’s (1975) views, most particularly as they apply to the Pokot, are well known in East Africa and are parallel to those of Konczacki in claiming that nomads keep large herds for insurance against hard times.

That East African livestock raisers use their herds for subsistence is not in question. Although the Turu of Singida in Tanzania, among whom I worked 20 years ago, accord little importance to milk, its value as a food seems to rise proportionally with the rise in the ratio of cattle or their equivalents to people because this ratio correlates with a decline in attention to agriculture (or the possibility of agriculture). Milk increases in importance not just because it is one in relative abundance but because utilizing it obviates the need to trade so many animals for grain and other agricultural products. Similarly, every person who has ever worked with pastoralists in East Africa, from as far back as Evans-Pritchard’s (1940) study of the Nuer, knows that almost every animal ends in the “pot” and is eaten, unless some special circumstance prevents this.

Those who have lived intimately with such people also know that to exist solely on milk is difficult or impossible — a fact made plain by the admirable study by Dahl and Hjort (1976). Their simulations of zebu herds showed that a family of six would theoretically require a total herd of 60 animals (a large proportion of milk cows and a support structure of calves and bulls). In the dry season, the herd numbers would need to be nearly 600 to produce enough milk to feed the family. By my calculations (Schneider 1979), only the Maasai, Samburu, and Barabaig of Tanzania and the Somalis could accomplish the required ratio (10 cattle/person) in the wet season, and probably none could reach the 600:1 ratio needed in the dry season. When I lived with the Pokot many years ago, the young men of humble means living along the mountains at Ortum used to speak of how they hoped some day to be real pastoralists living in the plains of Masol and Riwa subsisting only on milk, but they were idealizing a situation that at other times they admitted did not and could not exist because, during the dry season, cows give so little milk.

Similarly with beef, Adlington and Wilson’s (1968) study of the marketing of beef in Kenya showed graphically that the size of East African herds is not large enough to produce enough beef to maintain the population even if supplemented by milk. The 39 groups they studied consumed only about 10 kg of meat per person per year, judged by the sale of hides. Even the Turkana consumed only about 5 kg per person per year despite having herds averaging more than 10 head/person — a ratio that is high for East Africa. This consumption compares with per-person beef consumption (1976) of 60 kg (Ward et al. 1977) in the USA. The Turu in 1960 had about 225 000 cattle for a population of about 175 000 people. Based on the
maximum offtake rate that is possible for East African herds managed in traditional ways, 13%, one can calculate an annual supply of animals for slaughter, 29 250. The average weight of the zebu is about 230 kg, and the hanging weight, that is, annual consumable meat and bones, is about 50% of that or about 3324 Mk. This gives an average of 20 kg per person per year. I realize that these calculations leave a good deal to be desired: for example they take no note of mortality, which would reduce the amount of meat available, but based on Aldington and Wilson’s (1968) conclusions, I suspect that they come close to the actual case. Theoretically, the Turkana should have available a minimum of five times the amount of meat available to the Turu; yet they are shown as consuming only about 5 kg per year. As Aldington and Wilson (1968) used the hides sold to estimate beef consumption and because some of these people destroy the hides while slaughtering the cattle, they could have enormously underestimated actual slaughter. On the other hand, anyone who has worked with people like the Turkana or Pokot knows they do not eat large amounts of beef. Any American teenager would make them look like vegetarians.

In other words, all East African pastoralists must depend on foods other than milk and meat to sustain themselves, the rich to a relatively small degree and the poor (cattle : person ratios up to 5 : 1) a good deal. The Turu, with fewer than two cattle per person in 1960 depended for all practical purposes on bulrush millet as the staple, and the majority of Pokot I knew depended on finger millet. The wealthier Pokot used to buy grain from the agricultural Pokot, as did the Turkana. Deshler (1975) estimated that only 25% of the Dodos’ diet came from animal products, and according to N. Dyson-Hudson (1974) the figure is only about 35% among Karamojong.

monetary explanations

Although the subsistence explanation for low offtake is probably still the most popular, there is increasing recognition that there is another, formerly underestimated, reason: the use of livestock as repositories of value. Randall Baker (1980) is probably the most recent person to assert the importance of this fact:

In addition [cattle] are often a significant medium of exchange both for other foodstuffs and in building and maintaining a web of social bonds and obligations connected ultimately with security. It is this second function which has so often led to confusion over pastoralist behaviour and given rise to much of the mythology regarding "sentimentality" and irrationality.

Such views are not confined to East Africa. Horowitz (1975: 338–389) has emphasized the importance of exchange among pastoralists in Niger:

We are trying to understand . . . the processes of pastoralism, by centring on transactions, those interactions in which there is an exchange of value or, as Barth puts it, "... those sequences of interaction which are systematically governed by reciprocity." It is empirically verifiable that, where values are exchanged, each actor tries over the long run to see that the values received in exchanges are at least not less than the values given. . . .
Others who in recent years have stressed the financial function of livestock include Lewis (1976), Goldschmidt (1972), Sarbo (1977), and Haaland (1977).

The implications of livestock’s acting as a repository of value are worth exploring from the viewpoint of monetary theory. Einzig (1966) points out that money has two dimensions, its commodity value and its monetary value—features that to some degree move independently. When Radford (1945) analyzed the use of cigarettes as money in prisoner-of-war camps in Germany during the Second World War, he noted that when the supply of cigarettes from the Red Cross was interfered with, the supply of money declined precipitously because men continued to smoke cigarettes. The result was that trade was severely impaired. To some prisoners the joy of a smoke exceeded the value-holding function of cigarettes. To one degree or another, the same is surely true of cattle and other livestock in East Africa, where the subsistence uses of cattle compete with their value-holding function. In fact, disastrous declines in numbers due to devastating droughts might be expected to have consequences for trade parallel to the prisoner-of-war camp.

In considering the role of livestock as money, it is useful to recognize that the line between what constitutes money and nonmoney is thin or even relative. Almost any good has monetary qualities if one defines money, as Einzig (1966) does, as a good that acts as a medium of exchange, store of value, and unit of account (only the three most relevant characteristics). Even a banana acts as money relative to other goods when used as exchange for a mango or a papaw where mangos are always exchangeable for bananas but not for each other.

In such a circumstance, shrewd persons will try to convert their mangos and papaws into bananas whenever possible. In other words, the good that emerges as money in most people’s eyes is the one for which there is the widest demand. Because of demand, the value of all goods is stored in one good. People want to get as much of such a good as they can and to invest it, loaning it to others for a price. Sundstrom (1975) records that in precolonial East Africa at one time or another money was in the form of cloth, copper, brass, pewter, guns and ammunition, iron, salt, cowrie shells, beads, slaves, horses, and cattle. This list contains only the most obvious things; for example, it does not include goats and sheep, which also acted as money.

Because of the relative inelasticity of demand, one good tends to become the medium through which all other goods are traded. Gray (1965) perceived this fact among the Sonjo where, he says, almost all goods and valued rights were exchanged through the medium of goats, even rights to irrigated lands. In other East African pastoral societies, cattle, sheep, and goats, combined into a monetary system, are the medium of exchange. Furthermore, the good tends to become a unit of account, by means of which comparisons of value and calculations are made. When Turu consider problems of inheritance, they calculate the value of the inheritance in terms of cattle and decide how it will be proportioned in those terms, even though the inheritance is goats or sheep. The values for farmland and grazing land are calculated similarly so that the manager can make economic decisions about the manipulation of these goods.

Einzig (1966) also points out that not all monies can act as means of deferred payment (delayed exchange), because they do not hold their value well. The American dollar today is endangered as a means of deferred
payment because of inflation, leading many people to turn to a more secure medium such as gold. Cattle in East Africa have been a very secure means of deferred payment, allowing people to make transactions that extend over long periods.

It does not matter why people value livestock as much as they do. There is a terrible temptation whenever a good acts as a food commodity to think its value in every respect is based on that fact. Grain to a farmer who intends to sell it is not food but a valued good akin to money. Salt money may circulate for a long time without being eaten, to the point where it no longer has any value as food. Westerners surely understand that the value of gold has little if anything to do with its usefulness in filling teeth or making electronic parts.

Livestock have served as financial items in many places in the world including the West in earlier times. Ingold (1980:229) points out that the Latin word pecus, the word for money, also meant a herd of domestic livestock, and the Greek word texos, meaning interest on a loan, also referred to the progeny of domestic animals. He recalls that Marx noted the word capital originally meant cattle. The English language is shot through with words with this double connotation, including pecuniary and chattel.

money supply and politics

Although livestock fulfill Einzig’s criteria for money, the most important feature of money is its supply because this relates to politics. Although Ian Livingstone (1977) fails to take this relationship into account, his Institute for Development Studies paper exploring the rationale of pastoralists is a major attempt to apply economic theory to indigenous pastoral operations.

Livingstone (1977) asks the question whether it is economically rational for pastoralists like Pokot to want to expand their individual herds. Whereas he finds all their practices, including the use of cattle for bride-price, dispersion of animals for risk aversion, or holding animals for the purpose of gaining prestige, rational he does not find it rational to expand infinitely the size of herds. He asserts that my equation of the process of deflation with reduction in the size of herds is a misuse of economic concepts. His reasoning is that deflation in industrial economies leads to a failure of confidence among business managers, whereas among pastoralists it means a rise in the value of cattle relative to other goods. In this statement, Livingstone (1977) assumes something that is not made altogether clear in his account. Although he recognizes that cattle act as money he appears to believe that the monetary system is not comparable with that of industrial economies because there is no system of investment. I am puzzled because elsewhere he seems to realize that there is a system of investment built upon the loan of cattle to other people. In short, then, decrease in the cattle supply should have a demoralizing effect on the pastoralists too by closing off opportunities to invest.

Einzig’s (1966) cross-cultural study of money focused nearly entirely on agriculturally oriented people or people among whom money was a good that could be monopolized. He therefore concluded that the money supply in “primitive” communities is inevitably short and that the “monetary policy” of chiefs in such societies would be to encourage the increase in supply because a low or declining money supply leads to a decline in opportunities for the poor to make money and accumulate wealth, which in turn leads to
discontent. My own feeling is that Einzig is off the mark. I think the money supply is probably low or always in danger of declining in such societies because the nature of the money is such that it is difficult and costly to increase the supply. For a good to serve as money, its creation must be balanced with its destruction, as, for example, in the Lele where raffia cloth is money. But when the supply remains rather static, people are forced into patron—client relationships as the only path to security and affluence. Chiefs understand such things and would not encourage a growth in the money supply to the point where it would endanger their power. In short, societies in which authority of a kingly or chiefly nature emerges are those in which economic growth is little and money supply static. This was probably true of all the state areas of precolonial Africa as it was in feudal Europe. Keynes (1930) shows that the basis for the decline in feudalism in Europe was the huge influx of new wealth from the Spanish possessions in the New World.

Increasingly, economic anthropologists are becoming aware of the relationship between economic opportunity and the supply of money as a key to political equality. Awareness of this relationship is apparent in Melanesia (Strathern 1978; Sahlins 1962) and among the Northwest Coast Indians of North America (Belshaw 1965), and it is certainly apparent in East Africa among the pastoral people. It is this relationship that leads me to urge students of East Africa to abandon their preoccupation with subsistence explanations of nomadism. The more distinctive and analytically useful fact about East African pastoralists is their historical lack of political centralization based on growth economies in which the ratio of cattle (or their equivalents) to people is 1 : 1 or more (Schneider 1979). The pastoralists do not have to be nomads; it is the similarity between the sedentary ones and the nomads in every important respect that undermines subsistence explanations giving support to the explanation I am developing here. Maasai in their old home in the Rift Valley did not keep cattle because they had no alternative. They were living on prime agricultural land, as are the Nandi, Kipsigis, Teso, and many Pokot.

money supply and opportunity

According to monetary theory, a rise in the growth of money supply, which in many economies is based on the extension of credit, encourages production. Because the opportunity to produce wealth (pigs in Melanesia or blankets in the Northwest Coast) is widely available through credit and because the increasing money supply makes credit available, some people continually get rich whereas others fail. Big people abound but there are no chiefs, those whose fortunes continue from generation to generation. In East Africa, the growth in money supply is due to the natural increase in herds — a process that is not stifled by cyclic droughts and plagues that parallel Western stock-market declines, wiping out large amounts of accumulated wealth and redistributing the remainder, because of the confidence of herders in the recovery of their herds. Dahl and Hjort's (1976) simulations show that the number of female animals in a herd could, theoretically, double in 6.5 years. Massel (1963), using data I gathered among the Turu, showed an annual return over 15%. How this translates into widespread opportunity is not as apparent as in Melanesia or the Northwest Coast where lending institutions and interest are more easily observable and familiar. The basic mechanism in
East Africa appears to be what Gulliver (1955) called stock associateship. I will illustrate this from the Turu.

A Munyaturu who is (or was in 1959 when I lived with the Turu) lucky enough to have many cattle that are increasing steadily soon comes up against a constraint — only 30 head can be kept in one homestead corral; the cost of caring for them increases enormously at the margin because of decline in available grazing, the need for more labour and materials to build a larger homestead, and the like. So this Munyaturu loans some of the animals to another person, setting up a relationship called uriha; loans are made for many reasons — for instance, to take advantage of the skills of a person with a reputation as a good husband or to form an alliance with someone deemed dependable, etc. Because the reasons are diverse, the results at times appear irrational, for example, when a wealthy herd owner loans cattle to others while taking in animals of others who desire alliances.

As a result of uriha, a Turu who has no cattle can always get some because the cattle population is high. There are no households without cattle even though many Turu own no animals of their own. Through uriha, even the destitute Turu who has no legal right to any animals can obtain milk and manure and, over time, acquire such rights and begin the process of building a herd. Marriage is a form of uriha, but in this case the bride’s family acquires firm rights to the progeny of the cows and de facto rights to many or all of the bride-price cows.

Marriage and uriha create enormously complex cross-cutting ties in Turu society, so many that they led in 1958 to the demise of the destocking program being implemented by the colonial government of Tanganyika. The government was determined to reduce the numbers of cattle grazing in Unyaturu by 10%, which it tried to do by issuing destocking chits to individual households, ignoring the real ownership of the animals they contained. The government was aware of uriha but felt that because the Turu would not cooperate in identifying loaned animals, a heavy-handed approach was necessary. The result was a 3% rise in the offtake for export — till that time the Turu had voluntarily sold 7% of their stock to obtain money for taxes and a few cheap consumer items — but the rise from about 16 000 head to about 22 500 had immediate and devastating impact, partially because the obligations of uriha had been ignored. The reaction of homestead heads was to send animals back to their owners before the chits were issued on the grounds that they did not want to be responsible for the loss of any animals that did not belong to them. When the Turu tried to explain to government officers why they detested destocking so much, they told them that it was destroying uriha (and, it may be deduced, even marriage). I suspect, they also felt that the 3% increase in destocking interfered with the management of their herds for growth. Turu in fact saw destocking as a political attack upon opportunity, and they reacted violently, causing the government to abandon destocking within a year.

Institutions like uriha, tailored to local circumstances, exist all over East Africa. For instance, the Pokot call it tilia and also compare it with marriage. However, tilia is somewhat different from uriha. Basically, it involves the exchange of a steer for a cow, the cow’s original owner retaining rights for half the progeny. People of power and importance in these societies have many stock associates; in fact, whatever may be the optimum arrangement of a herd for the production of milk and meat, this will largely be subjugated to the need for stock associateship. A Turu will not forego the opportunity to set
up a good marriage or establish a strong stock association simply because depletion of the herd will interfere with the optimum milk supply, even though the sale of one cow could purchase an amount of grain, 400 kg, equal to the total produce of one monogamous household in a year, sufficient to feed the family for that period.

In sum, pastoralism in East Africa is not a peculiar subsistence system but a political economy based on a type of wealth that expands naturally, leading to widespread access to wealth and the growth of complex cross-cutting financial ties.

shift to beef production

A shift to beef production is not just an alteration in the pastoral way of life but a radical revolution, a shift to agriculture and a shift to a new political order based on hierarchies.

In the first place, livestock can no longer be treated as money. Beef production, when optimized as it is in the United States, requires large animals — even large calves, which are likely to grow better and produce more meat than small ones (Trenkle and Willham 1977). Such animals, in turn, require more and better quality fodder. Ideally grain is used to fatten them (Ward et al. 1977; Trenkle and Willham 1977), and the optimum beef-raising practices in the United States divide the cattle-production system into two parts, the breeders and the feeders. The former only keep the animals until they reach feeder weight (about 230 kg) when they are shipped to the feeders for final fattening. The process is optimized if males and females are kept apart (Maugh 1978) so that sexual agitation is reduced — a fact that any beef cattle raiser seems to sense instinctively.

All of this is contrary to rational, indigenous, East African cattle production. A form of Gresham's Law is operating in which "inferior" money drives out "superior." The East African values the cow as a unit, just as Westerners value a dollar as a unit and ignore whether it is wrinkled or torn. The result is that small cows drive out large cows, the way that inferior cigarettes in Radford's prisoner-of-war camp drove out higher quality cigarettes. Aldington and Wilson (1968) indicate that the typical East African zebu is about half the size of American beef animals, producing, therefore, about half the hanging weight in meat. Furthermore, cattle used as money will not be sold when they reach optimal feeder weight but will be kept to full maturity and until they can be used to effect an optimal exchange for grain, a wife, or political gain. The major portion of the herd will be kept in adult female animals, whereas in beef herds the largest number would be young animals and bulls. Caring for young animals and feeding them grain add to the costs and correspondingly decrease the herd's ability to act as a repository of value.

The long and the short of it are that East African pastoralists wishing to turn to beef production while still maintaining the hope of becoming wealthy would have to stop thinking of animals as repositories of value and think of them only as so much hamburger on the hoof. Then, they would have to begin putting their faith in banks, depositing the proceeds of cattle sales to earn interest, or investing the proceeds in other enterprises. The question is: Will their new investment return annually an amount equal to the return they earn by treating cattle as money? Nowadays, with inflation rampant in the
U.S., some people obtain interest exceeding 20%, but this return is based on a dangerously large growth in the supply of money that if not greatly reduced will destroy the economy. In times of stability, beef raisers are not likely to get more than a few percent return on bank savings; if they invested in stocks or bonds the rate probably would not exceed 6%, if that. These calculations assume a profit, which is not guaranteed. The production of protein is very expensive, giving back about one-tenth of the food inputs used to produce it. This fact means that beef is always competing with cheaper foods and is likely to lose a good part of the time.

Even a beef raiser who earns 6% on cash investments may be earning a monetary unit that has little strength as a means of deferred payment. One should not underestimate the shrewd pastoralist's ability to take such things into account. After all, in the U.S. today, it is not just sophisticated bankers who are buying gold and silver but all kinds of people, many of whom are taking old sterling silver, packing it in bags, and hiding it.

I paraphrase Allen Hoben (1979), recently senior anthropologist with the Agency of International Development (AID) in Washington, summarizing a critical examination of livestock projects in Africa, who said that pastoral livestock development is a political, not just a technical, process in which pastoralists are constituents without a leader. They are being asked to abandon a way of life that gives them opportunity to obtain wealth and political equality, for one in which a few will have the opportunity for wealth and the rest will be squeezed out, all in the name of providing sufficient beef at low enough prices to satisfy urban populations. Hoben's conclusions, it should be noted, are paralleled by those in a recent report (1980) on a Conference on African Pastoral Projects done for AID by the Institute for Development Anthropology.

future research

Evidence to support my conclusions is often thin or lacking but no more so than is the case for the subsistence explanation and others. I may have overstated my case but, if what I say about pastoral finance is true, it is important for development policy. The case, I feel sure, is strong enough to demand further investigation.

The recent workshop on pastoral development projects in Africa strongly recommended studies to obtain better quantification of pastoral operations because so many questions cannot be answered. Those who have worked with pastoralists in East Africa will be quick to point out that the pastoralists refuse to reveal information about the numbers in their herds. The Pokot had a special counting system reserved for cattle, which was used whenever there were public discussions of specific herds, consisting, as I remember, of only eight numbers: 10, 20, 30, 40–50, 60, 70–80, 90, and 100. But there is a danger of exaggerating this. When I worked with the Turu, I found the reverse, an almost embarrassing tendency to tell me everything. I suspect that the failure is often on the part of field workers who are not persuaded of the value of the information. Anthropology, in particular, has historically tended to emphasize the structure of social relations, embodied in such things as kinship terminologies, and has failed to pay much attention to the quantities involved in production. Perhaps this tendency stems from the fact that anthropologists are poorly trained in economics and have not made
the fascinating discovery, fundamental to economic thinking, that most functions are curvilinear, that is, the relationship, for example, between cost in producing cattle and the amount produced alters at the margin and is not constant.

No doubt it will be remarked that there are plenty of people now working on pastoral problems who do know how to count, particularly agricultural economists, but I think the social anthropologist or sociologist has a special role to play in this process by working on quantification from the inside. The agricultural economist does not ordinarily work closely with the people for a long time as the anthropologist does. What is necessary then is to train social anthropologists to ask new questions that encourage informants to talk quantitatively about such things as their management practices and even their philosophies of management. Pokot or Turkana might be reluctant to talk about how many cattle they have, but they would be less reluctant to discuss whether they are managing their herds for maximum milk production. They might even explain how they manipulate cattle for power and influence.

To test hypotheses about pastoralism, one needs better information on indigenous trade of livestock for other goods, particularly grain. One needs figures on ratios of livestock to people, rate of growth of herds, and rates of rise and fall of wealth. One also needs figures on the velocity of movement of livestock through the population as well as better information on cross-cutting links based on stock associateship. These are but samples, all derived from my claim that the key to understanding pastoralism in East Africa is to consider that it functions as a monetary system.

In addition to the general need for quantification of elements relevant to pastoral operations, most particularly their subsistence and financial uses, a special project, suggested by the bimodal distribution of offtake rates, should be to study groups of Africans, perhaps at places like Machakos (Livingstone 1976) or Kajiado (Hedlund 1971), where the quantum shift from pastoralism to ranching has been successful. By learning how Africans have succeeded in shifting from the use of cattle as money to cattle as beef and milk producers, one should be better able to understand how cattle work as money and to design policies that can encourage a shift to beef and milk production just as understanding how the monetary system works enables Western governments to devise policies to impede or promote inflation.

discussion

White: Historically, low volumes of commercial cattle sales from pastoral areas in Kenya were a response to low levels of demand from the rest of Kenya. Lack of alternative investment opportunities for pastoralists led to surplus wealth being held in the form of cattle. The store-of-value component is valid when these conditions hold. This position has changed over the last 10–20 years in Kenya. Pastoralists have shown themselves willing to sell those cattle surplus to their subsistence requirements when market opportunities exist. A recent Ministry of Livestock Development study, which we organized, attempted to calculate the potential supply of immatures (young bulls) from northern rangelands of Kenya and compare it with actual sales. In each district of northern rangelands, cattle were classified into selected age and sex categories. The potential supply of immatures was
defined as that proportion of bulls in the herd 1 year or older that could be sold annually. This supply of immatures is only around 5% of the herd in any 1 year.

We counted around 350,000 cattle and classified them into six groups: bull calves, cow calves, cows, heifers, working bulls, and all other bulls over 1 year. Range management field staff achieved a high coverage of cattle — 108,000 in Mandera, Wajir, and North Garissa (about 30% of cattle population), 25,000 in Isiolo (about 15%), and total coverage in Samburu (221,000). They gave almost exactly similar herd structures, when differences in preferred age of sale were taken into account. Cattle are sold as young as 18 months in Wajir and Mandera, rising to around 2 1/2 years in North Garissa and Isiolo, and 3–4 years in South Garissa and Samburu. No data exist yet for Marsabit. These consistent results are independent of dependence of populations on camels, goats, etc. Two important conclusions resulted from the exercise: First, the annual levels of sales of immatures are now close to estimated potential, which 20 years ago was not the case, primarily due to lack of demand by the Kenya Meat Commission; second, bull-calf mortality seems to be running at 35–40% compared with cow-calf mortality of about 10% in each district.

Similarly, in the southern range areas of Kenya, current sales levels of slaughter stock (bulls 3–4 years and culled cows) are close to available or potential supply. In both northern and southern rangelands, cattle are being sold when they are in good condition and at commercially desirable ages; there now seem to be few old, unproductive cattle in the herds.

Our tentative conclusion is that the pastoral herd structure is one that enables the herd to recover quickly after a drought.

Pastoralists in the south are using their surplus wealth to invest in productive livestock, both upgrading stock and, in Kajiado, buying immatures and fattening them for profit and for social investments such as school fees, school building programs, motor cars, etc. In Kajiado there is a higher per-person level of purchased foodstuffs (we have not investigated what northern pastoralists are doing with any surplus wealth).

Finally, we conclude that sales from pastoral areas can only increase if cattle herd structures change.

If herd structures determine the sale of cattle, what determines the herd structures? There are three possibilities:

- Milk is still in short supply, and bull calves are allowed to die. Maasai deny actually killing such cattle, but their herd structures are the same; bull calves disappear at 5 months of age, but we don’t know why or how.
- Drought recovery is possible if a high proportion of calves is retained, so dynamics of the herd itself may result in a certain structure.
- There may be a labour factor, for the amount of labour available for caring for all immatures may be insufficient. Only 4–5% of the herd can be sold each year; to increase that amount to 7–10% means selling fertile cows.

We dispute Schneider’s statement that pastoralists ignore the difference between high- and low-quality cattle. We disagree that it is difficult to collect good data on pastoral herd structures. Pastoralists will answer questions about herd structure, if they understand the motives of the questioner. We agree that low rates of offtake cannot be explained by subsistence needs, but
we think basically that the store-of-value argument is now out of date. The major factors influencing cattle sales and offtake rates are herd structure, market demand, and rates of return.

Schneider: Although the settlers and government of Kenya did impede the flow of indigenous cattle to market through such devices as quarantines, no one who worked among Pokot 30 years ago or Turu 20 years ago can believe that the cattle were held off the market like cows are now. Tanganyikka pastoralists actively sought to buy cattle in Singida and had regular markets, and in Kenya Pokot actively sought animals. But during the war the government had to, in effect, confiscate animals, and the Turu, as I have said, would not voluntarily sell more than 7% a year. It might be true that they refused to sell because prices were too low. I insist that the view that animals were not sold because there were no markets misunderstands fundamentally the internal use of animals in finance and investment.

If willingness to sell cattle has changed in the last 10–20 years, I would like to see the statistics. They would be valuable for research and commercialization of livestock raising and would also be an index to profound social change.

White’s data are interesting and valuable. But their meaning is not obvious; the data require reflection and further analysis. Therefore, I shall not comment further on them. There is, however, one thing that should be said about Kajiado. If the figures mentioned are from Kaputei Hedlund (1971) reported that some Maasai there have indulged in highly commercialized operations since the 1960s.

With regard to the specific comments on my paper by White: first, whether a person believes a cow is a cow and a cow is beside the point. East Africans use the animals in monetary and accounting transactions. They can and do treat cows as a commodity and do not equate them. Second, I don’t recall that I said that herd structures can’t be discovered. I never had any trouble getting such information; however, it is usually difficult to get herders to say how many animals they own. But, such figures can be obtained if one is persistent. Third, I am sorry to hear that people, whose positions in the Ministry of Agriculture make their impact on pastoralists great, flatly disown the idea that livestock are stores of value. Their opinion is surely wrong and will have unfortunate consequences. It is important to demonstrate the truth unequivocally, perhaps through wider dissemination of the statistical evidence.

Marx: Schneider’s main point, that animals also serve as “repositories of value,” is well known and considered self-evident in Middle Eastern anthropological literature. There, the pastoralists themselves view animals not only as bearers of value but as capital that creates interest. In view of the fact that the major products are sheep and goats, whose reproduction rate is high, this attitude may be valid. The main distinction between East Africa and the Middle East is of course that in the latter region pastoral production has, since time immemorial, been directed at a profitable market. In East Africa, only in recent years have markets developed. The pastoralists, are adapting easily to the new conditions, and the anthropologists are slower. Still, younger anthropologists, including Schneider, are now dealing with market conditions and treat animals also as capital.

Rigby: There is a contradiction is Schneider’s paper. He presents the view of pastoralists as “pursuing profit across the plains.” We should not universalize
this view of the maximizers and thus impose bourgeois economic notions onto groups for whom they are alien. If we do so, we shall miss the impact of capitalist economics on pastoralists. Herds in pastoral societies are not just capital but represent the means of production.

Schneider: Rigby has misunderstood the thesis. Stock association — the apparently nonrational ties through livestock — is the epitome of the thesis, for it represents investment in social ties. One cannot assume that the pastoralist is a capitalist; it is an outcome of analysis. At present, we have a real need for information, such as the valuable new data that White has described.

Conant: So far, your paper and Judy White’s figures all refer to cattle. Would your conclusions about pastoralists’ perceptions of their herds as money or White’s figures on offtake and herd composition be changed in any way if goats and sheep were included, along with cattle?

Schneider: There are two aspects to the answer. Aldington and Wilson’s study shows that adding goats and sheep to the meat supply in East Africa adds little to the total amount. So I don’t feel driven to take them into account in a general discussion. However, it would be good if we had a term for the total indigenous monetary system, of which goats and sheep are denominations (1 goat or sheep usually being worth 1/10 or 1/5 of a heifer, depending on the society). But we don’t have such a term so I simply use cattle. But goats and sheep act just like cattle, monetarily speaking, although they are smaller denominations than are cows.

Meadows: In Narok District, there seem to be more small stock in herds, but cattle herd structures are the same, independent of this. The Ministry’s census did not include all these types.

White: There will be a national livestock census in Kenya in 1981, and it would be relatively little extra work to extend it to flock composition, which would give more information than straight herd counts. It has been reported by Trevor Wilson of ILCA that in the north Ethiopian Rift Valley, because of lack of market opportunities, almost all males are culled at an early age; hence females constitute approximately 95% of herd and flock numbers.

Dahl: The question of differences between Middle Eastern and East African pastoralism relates closely to that of sheep and goats versus cattle. Small stock are a more liquid, faster-regenerating form of wealth. I question Dr Schneider’s use of undated and nonlocalized human:animal ratios. The distinction between the social and subsistence uses of livestock is false. A cow given to a stockfriend is not lost and does not disappear from the system but can still be consumed or sold. It is important to distinguish between male and female stock if we are not to blur the analysis — when we talk about cattle as food, means of production, or capital, this is simply essential.

Willby: The paper made some good points on the relative importance of meat and milk as pastoral products, especially in drawing attention to the enormous difference in minimum herd size required to maintain the subsistence milk supply in the wet and dry seasons respectively. Except where they occupy prime land with good rainfall (some were mentioned), pastoralists generally dwell in regions ill-suited to milk production — yields are severely depressed by early drought, and especially a severe season may depress reproduction and thus regeneration of the milk supply. In these
regions with an improved market for meat, I believe that pastoralists are already becoming more meat- than milk-oriented. Milk may become a treat to be enjoyed when there are genuine surpluses (there are few indigenous cows that produce more than their calves can usefully consume to convert into weight gain, that is, marketable meat) rather than a dietary staple. Herd structures may be expected to change accordingly as the immediate surroundings of Mogadishu in Somalia demonstrate; here milk has a high value whereas in remote areas there is no market for milk. In most pastoral areas, there is no feasible market for milk, which is a heavy, perishable, and immobile product, but there is a rapidly expanding market for meat, initially on the hoof. One useful field of research may exist in countries where market opportunities are equal for meat and milk for pastoral groups.

Sihm: Projects often look failures only because we had unrealistic expectations. If we had not had these failures we would not have been wiser today. I disagree that education from the outside is not useful; we need a two-way process of education. The conditions society has been offering have not been conducive to the savings of surplus. Livestock prices are depressed so returns are less, and interest rates and inflation diminish the value of marketed stock. When will we accept that whatever land can be cultivated eventually will be cultivated?